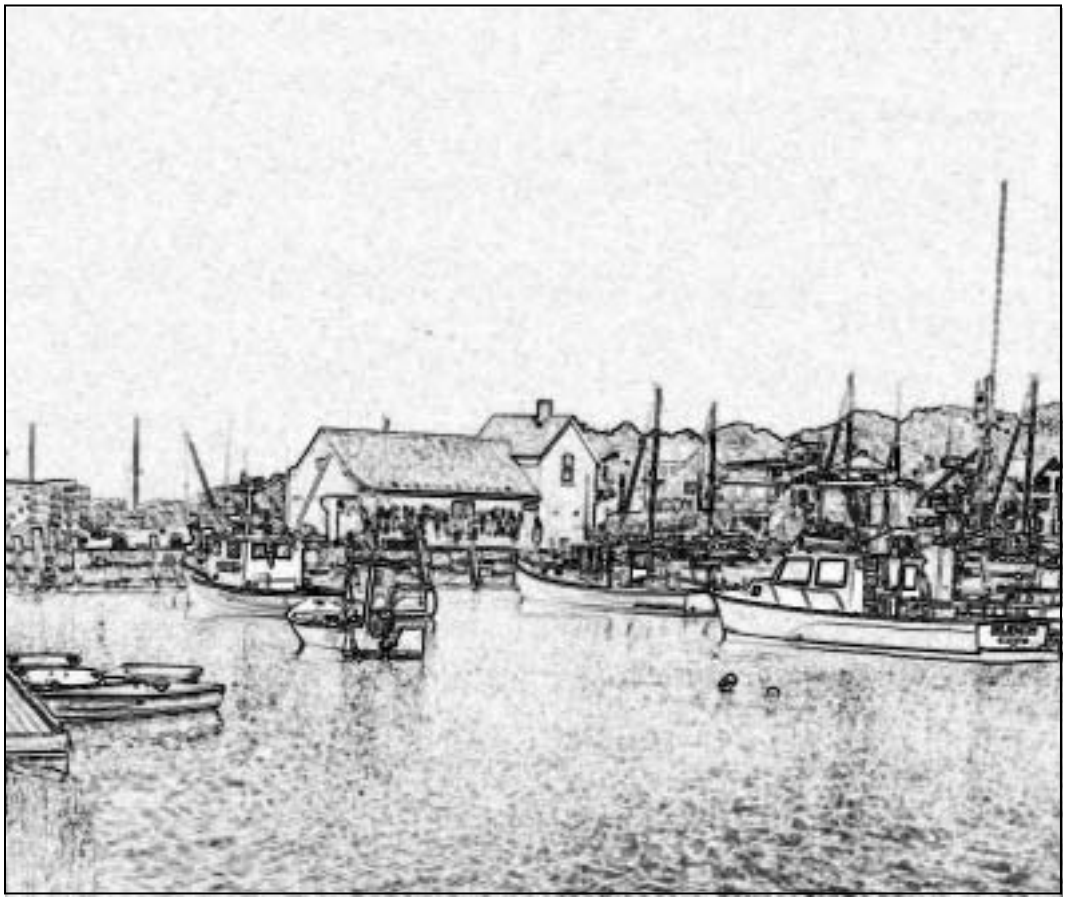
7-2003

Rockport Municipal Harbor Plan: Issues, Goals and Policies

Rockport Harbor Planning Committee, Town of Rockport, Massachusetts

Urban Harbors Institute, University of Massachusetts Boston



Rockport

Municipal Harbor Plan
Issues, Goals and Policies

Prepared by
Rockport Harbor Planning Committee
Town of Rockport, Massachusetts

July 2003

CONTENTS

TABLES

MAPS AND FIGURES

GLOSSARY

10A permit	A mooring permit issued under Section 10A of MGL Chapter 91
21E	MGL 21E governs management of hazardous waste spills and contaminated areas
Anadromous	Ocean dwelling fish that spawn in fresh water
ArcView, Arc/Info, ArcScan, ArcEdit	Refers to product names of different types of geographical information system software
AutoCAD	Product name of a particular computer assisted drafting software.
Bathymetry	The measurement of ocean depths
Benthic biota	Plants and animals that dwell on the ocean bottom
BWSC	Bureau of Waste Site Cleanup, a part of DEP
Catadromous	Freshwater fish that spawn in sea water
C-CAP	Coastal Change Analysis Program of NOAA
Chapter 91	MGL 91 governs the use of past and present tidelands
CMR	Code of Massachusetts Regulations
dB	Decibel, a unit of loudness measurement
DEM	Department of Environmental Management (of Massachusetts)
DEP	Department of Environmental Protection (of Massachusetts)
dpi	Dots per inch, specification of the level of resolution of a digital representation of an image (on a computer)
DPW	Department of Public Works (of Rockport)
DTM	Digital Terrain Model
EPA	Environmental Protection Agency (of the U.S.)
Fecal coliform	The collective name for bacteria that inhabit the intestinal tract of warm-blooded animals
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
Geomorphology	Science, nature and origin of the earth's topography

GIS	Geographical information system, computer software used for geographical data processing
.High Water Mark	The present mean high tide line, as established by the present arithmetic mean of the water heights observed at high tide over a specific 19-year Metonic Cycle (the National Tidal Datum Epoch), determined using hydrographic survey data of the National Ocean Survey of the U.S. Department of Commerce (see also Historic High Water Mark)
Historic High Water Mark	The high water mark which existed prior to human alteration of the shoreline by filling, dredging, excavating, impounding, or other means (see also High Water Mark)
Historic Low Water Mark	The low water mark which existed prior to human alteration of the shoreline by filling, dredging, excavating, impounding, or other means (see also Low Water Mark)
HPW	High Performance Watercraft, an unmuffled inboard engine speedboat
Hydrology	Science dealing with the water of the earth
LOMA	Letter of Map Adjustment, may be issued by FEMA to modify a FIRM
LOMR-F	Letter of Map Revision based on Fill, may be issued by FEMA to modify a FIRM
Low Water Mark	The present mean low tide line, as established by the present arithmetic mean of the water heights observed at low tide over a specific 19-year Metonic Cycle (the National Tidal Datum Epoch), determined using hydrographic survey data of the National Ocean Survey of the U.S. Department of Commerce (see also Historic Low Water Mark)
MCP	Massachusetts Contingency Plan, which governs a cleanup of a hazardous waste site
Mean Low Water	The level of the water surface when it is at the Low Water Mark
MGL	Massachusetts General Law
MPN	Most Probable Number, method for counting bacteria colonies whereby counts are obtained by statistical approximation
NOAA	National Oceanic and Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
Phase II	Second Phase of implementation of EPA’s storm water management program
PWC	Personal watercraft, such as the Jet Ski

Revetment	A casing usually fabricated of stone or concrete installed to protect against erosion (commonly used for seawalls and embankment protection)
Rip-rap	A foundation or wall made of broken stone placed irregularly or loosely
SBYC	Sandy Bay Yacht Club
SRV	Submersed Rooted Vascular beds, plants requiring sunlight to conduct photosynthesis
Substrate	Ocean bottom
TIFF	Tagged Image File Format, a particular type of digital coding of images (on a computer)
Title V	Refers to DEP's 1995 revisions to Title 5 of the state Environmental Code, 310 CMR 15.000, covering on-site sewage disposal systems
UHI	Urban Harbors Institute, University of Massachusetts Boston, provided professional consulting in the development of this document
WCP	Wetlands Conservancy Program, part of DEP

I. OVERVIEW

A. Introduction

This first phase of the plan for Rockport and its four (4) major harbor areas was developed to ensure growth, prosperity, and preservation of Rockport's important resources through responsible and reasonable future use and management of the harbors and their shorelines. The Plan has been prepared by the Town of Rockport to identify existing problems and to establish consensus about the character and quality of the harbors in the future. The Plan responds to a specific list of issues raised by the Harbor Planning Committee in a participatory planning process.

The Harbor Planning Committee is an ad hoc committee of the Town comprised of a diverse array of stakeholders. Each planning meeting was also posted and open to other interested residents of Rockport. The Urban Harbors Institute at the University of Massachusetts Boston provided professional consulting services for this phase of the plan.

Figure 1. Bearskin Neck

B. Planning Rationale

Economic Growth

Many of Rockport's most scenic and historic buildings have changed little over time, contributing to the charm of this close-knit community. Less static has been the economic makeup of Rockport, which has evolved considerably over time—as is the case in much of small town New England. The water-dependent timber, granite and fishing industries that once dominated the Town and shaped its waterfront have disappeared or been downscaled, and, over time, eclipsed by tourism.

While not considered water-dependent in the regulatory sense, tourism in Rockport is largely driven by its waterfront locale: it is the ocean environment, the boating opportunities, the active water-based industry of its past, and the scenic quality of the waterfront today that continue to interest and delight visitors to Rockport. In addition to tourism, the Town has managed to maintain a sufficiently large fishing fleet that contributes to both the economy of the Town and to the continued success of tourism.

While both of these industries are equally important to the residents of Rockport, subtle unplanned changes over time can compromise their prosperity. Because the quality and amenities afforded by the waterfront are integral to the success of both tourism and fishing,

planning today for the continued evolution of Rockport's harbor areas is the surest way to preserve existing uses and achieve desired changes.

Quality of Life
While protecting economic value is a central theme of the harbor plan, developing the waterfront's unique and inspiring qualities for maximum enjoyment by present and future generations is another. Residents of Rockport, for example, are long-time advocates for safe and plentiful public access to and along the Town's shoreline. While the Town's four (4) main harbors have different arrangements of pedestrian and boater access, the Town has expressed interest in providing continuous access, increased view corridors, and more public open spaces. In addition, the Town has expressed a desire to prevent increased traffic congestion in the Town by discouraging future uses that add vehicular traffic. A plan provides a means to characterize access, traffic, and other important cultural and natural resources and express short- and long-term goals that amplify their importance.

C. Vision for the Harbors

As an inspired and concise expression of how a community ultimately views its future, a vision statement provides a foundation for discussion in the planning process. A vision is usually arrived at using an open-ended format that encourages participants to be idealistic, to look beyond existing problems, conflicts, and short-term interests, and to think about the choices that are available to them.
The following statement was designed to capture the diverse interests of Rockport residents and is a keystone to the Harbor Plan:

HARBOR VISION
Rockport's harbors and waterfront are the defining assets of the community and central to its history, economy, image and quality of life. The harbors are what attracted residents past and present and continue to be a major attraction to visitors who are vital to the Town's economy. The harbors provide a livelihood for fishermen, inspiration for artists, a safe haven for boaters, recreation, and scenic views for residents and visitors. These qualities underlie the goals of the Rockport Harbor Plan and shape the plan's principal objectives which are to: increase and enhance access to the harbor for commercial and recreational purposes, protect the quality of the harbors' resources, and preserve the scenic and historical elements of the harbors and adjacent land, for this and future generations.

D. Organization of the Harbor Plan

The elements of the Rockport Harbor Plan have been organized to facilitate review and reference. Section II paints a picture of the problems and opportunities through a review of existing conditions, including natural resources, regulatory conditions, and existing uses. Section III provides a summary of the issues as identified by the Harbor Planning Committee and lists the goals and corresponding policies for the Town. This section will be expanded during the second phase of the planning process with a list of actions and an implementation strategy.

II. SUMMARY OF EXISTING CONDITIONS

A. Overview

This study of existing conditions in Rockport provides necessary background information for the planning process. Much of this information was gathered as a result of the issues and concerns identified by the Harbor Planning Committee during the planning process. This evaluation considers environmental conditions such as water quality, wetlands features, bathymetry (science of measuring ocean depths), and anadromous fish (fresh water spawning) habitat. It also considers existing uses of the harbor areas and regulatory conditions. Maps 1 to 4 provide a visual summary of existing conditions discussed in this section.

B. Physical Setting

Settled in 1690 and incorporated in 1840, the Town of Rockport is located 40 miles north of Boston on the outer reaches of a rocky headland known as Cape Ann (Figure 2). Rockport is surrounded by the Atlantic Ocean to the north, south, and east and by the City of Gloucester to the west and south. The topography is largely hilly with rocky coastal lowlands. The year-round population is approximately 7,000, expanding to 20,000 during the summer months.

The harbor areas and the rocky and rugged coastline of Rockport provide one of the most picturesque settings from both land and sea that has attracted residents, tourists, fishermen, and industry for decades. Much of Rockport's history, economy, and quality of life are derived from its harbor areas.

When Rockport was first settled, four man made harbors emerged from the needs of the timbering, fishing, and granite quarrying industries, the major economic bases for the Town. Timber structures on the waterfront were replaced with granite, creating much of the landscape still visible today. Rockport also became an important destination for artists, who began frequenting the area in the mid-1850's, drawn by its unique landforms, colorful scenery, and active seascape. Galleries, shops, and an abundance of patrons soon followed, and Rockport now benefits from tourism more than any other industry.

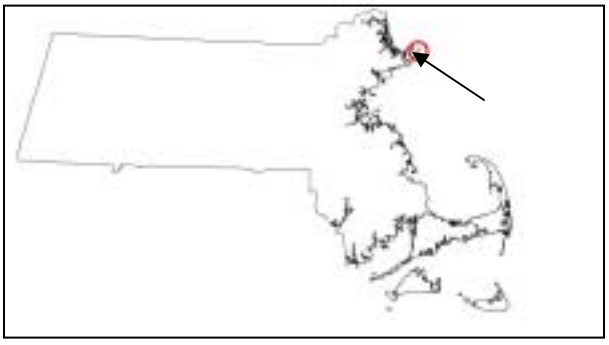
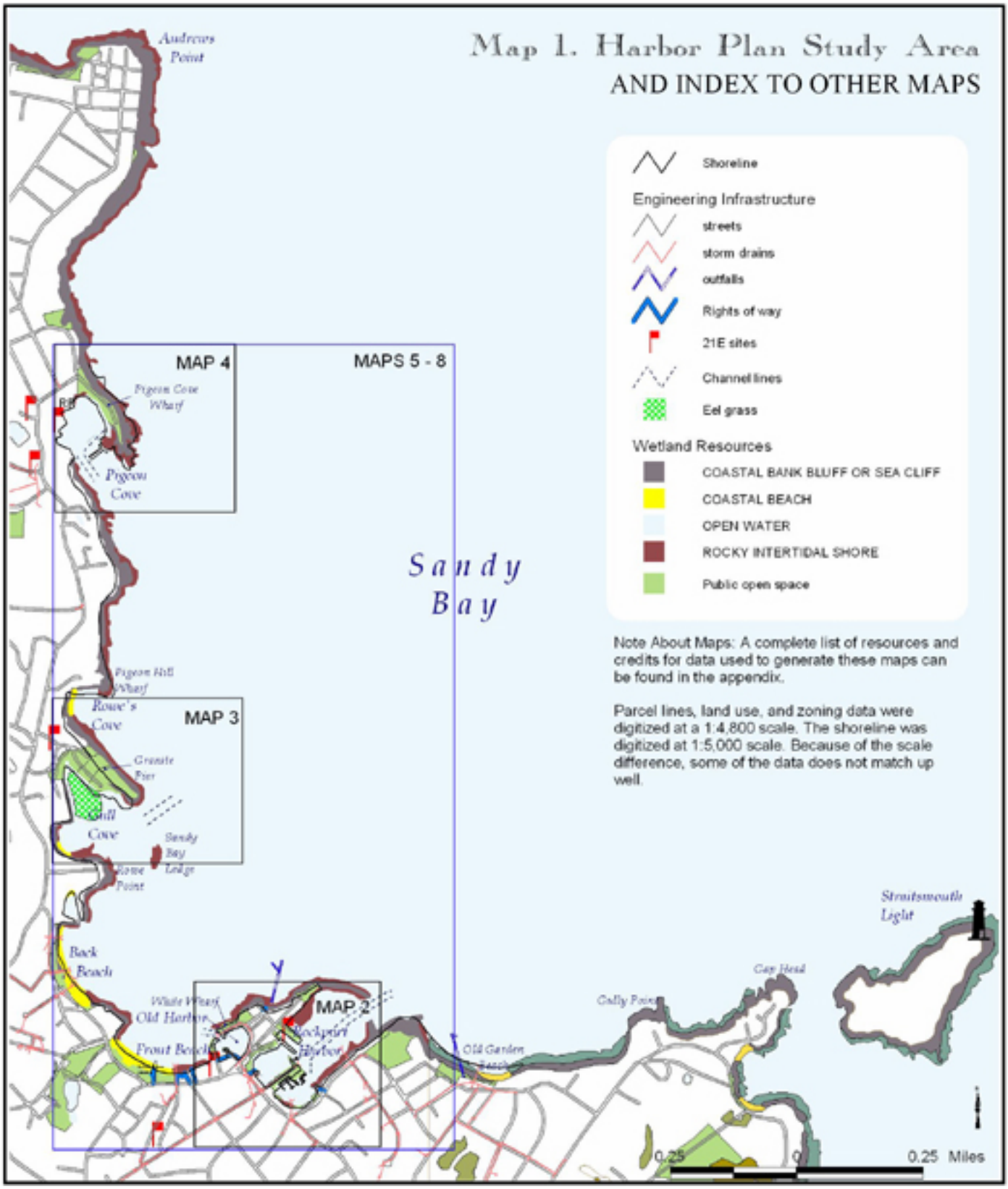
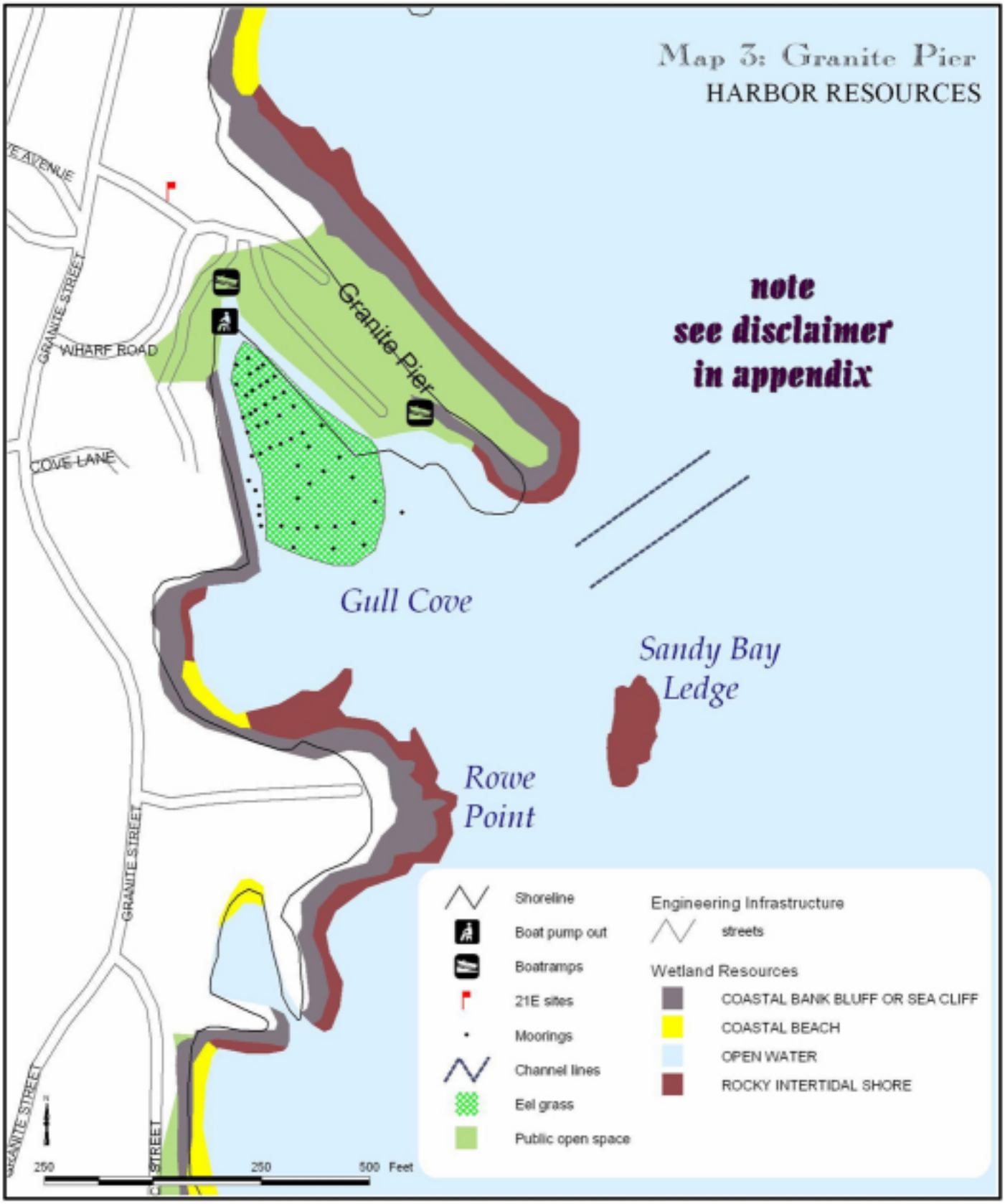
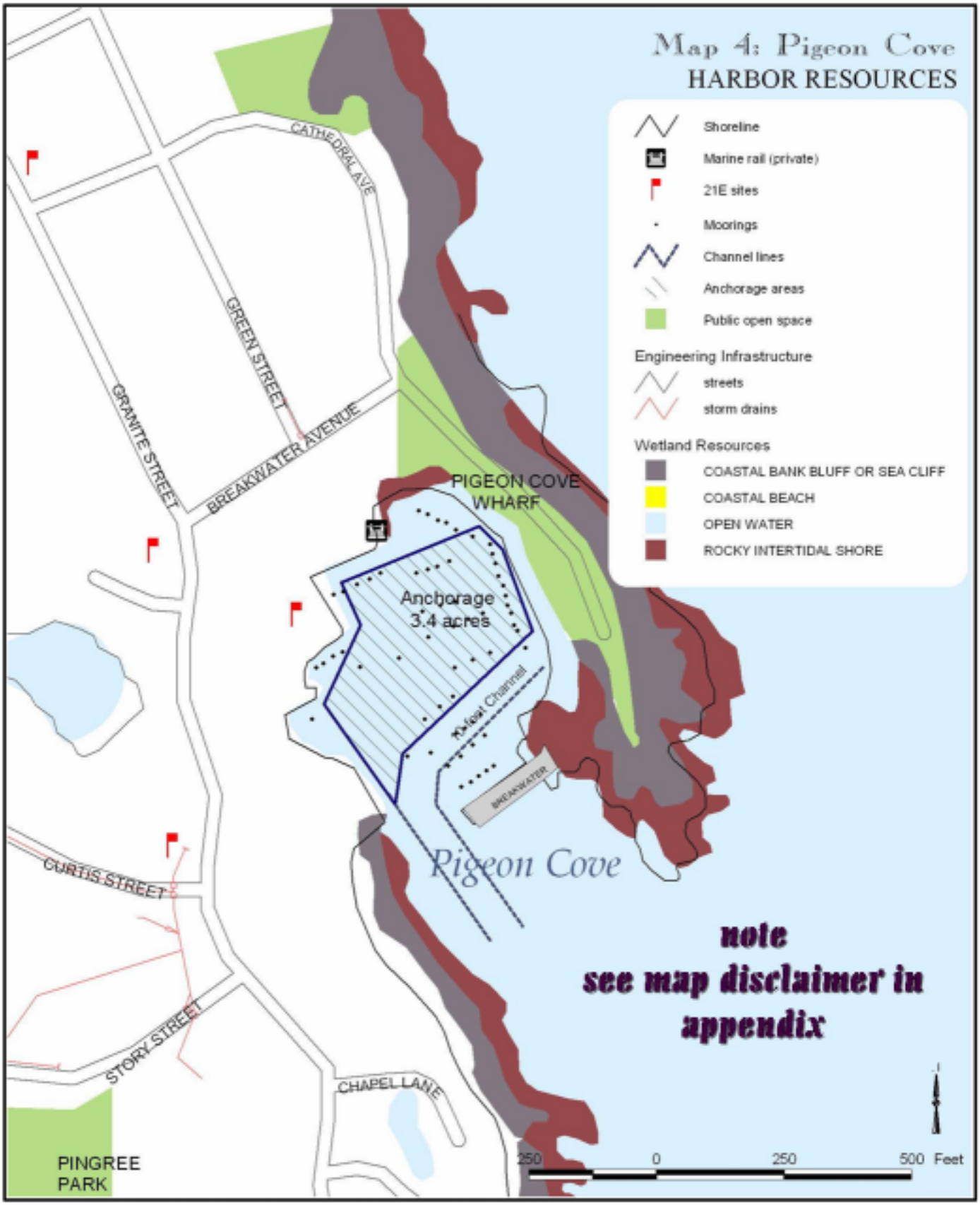


Figure 2. Locus Map


Map 1. Harbor Plan Study Area
AND INDEX TO OTHER MAPS
Andrews Point
MAP 4
MAPS 5 - 8
MAP 3
MAP 2
Pigeon Cove Wharf
Pigeon Cove
Sandy Bay
Pigeon Hill Wharf
Rowe's Cove
Granite Pier
Mill Cove
Sandy Bay Ledge
Rowe Point
Back Beach
White Wharf
Old Harbor
Front Beach
Rockport Harbor
Old Garden Beach
Cathy Point
Cape Head
Straitsmouth Light
Shoreline
Engineering Infrastructure
streets
storm drains
outfalls
Rights of way
21E sites
Channel lines
Eel grass
Wetland Resources
COASTAL BANK BLUFF OR SEA CLIFF
COASTAL BEACH
OPEN WATER
ROCKY INTERTIDAL SHORE
Public open space
Note About Maps: A complete list of resources and credits for data used to generate these maps can be found in the appendix.
Parcel lines, land use, and zoning data were digitized at a 1:4,800 scale. The shoreline was digitized at 1:5,000 scale. Because of the scale difference, some of the data does not match up well.
0.25
0
0.25 Miles


Map 2: Rockport Harbor
HARBOR RESOURCES
note
see map disclaimer
in appendix
Shoreline
Boatramps
Rights of way
21E sites
Moorings
Channel lines
Anchorage areas
Local dredging limits
Eel grass
Public open space
Engineering Infrastructure
streets
storm drains
outfalls
Wetland Resources
COASTAL BANK BLUFF OR SEA CLIFF
COASTAL BEACH
OPEN WATER
ROCKY INTERTIDAL SHORE
Old Harbor
Front Beach
Rockport Harbor
HEADLANDS
STAR ISLAND PARK
BROADWAY
MAIN STREET
PLEASANT STREET
0
250
500 Feet


Map 3: Granite Pier
HARBOR RESOURCES
note
see disclaimer
in appendix
E AVENUE
GRANITE STREET
WHARF ROAD
COVE LANE
Granite Pier
Gull Cove
Sandy Bay
Ledge
Rowe
Point
GRANITE STREET
GRANITE STREET
STREET
250
250
500 Feet
Shoreline
Boat pump out
Boatramps
21E sites
Moorings
Channel lines
Eel grass
Public open space
Engineering Infrastructure
streets
Wetland Resources
COASTAL BANK BLUFF OR SEA CLIFF
COASTAL BEACH
OPEN WATER
ROCKY INTERTIDAL SHORE


Map 4: Pigeon Cove
HARBOR RESOURCES
Shoreline
Marine rail (private)
21E sites
Moorings
Channel lines
Anchorage areas
Public open space
Engineering Infrastructure
streets
storm drains
Wetland Resources
COASTAL BANK BLUFF OR SEA CLIFF
COASTAL BEACH
OPEN WATER
ROCKY INTERTIDAL SHORE
CATHEDRAL AVE
GREEN STREET
GRANITE STREET
BREAKWATER AVENUE
PIGEON COVE WHARF
Anchorage 3.4 acres
75-foot Channel
BREAKWATER
Pigeon Cove
CURTIS STREET
STORY STREET
CHAPEL LANE
PINGREE PARK
note
see map disclaimer in appendix
250 0 250 500 Feet

Harbor Plan Study Area
The geographic extent of the harbor planning area is Andrews Point to Straitsmouth Light (Map 1), landward to the first public roadway, and seaward to include the waters of Sandy Bay. From north to south, these roads are Long Branch, Point de Chene, Phillips, Cathedral and Breakwater Avenues, Granite, Beach and Main Streets, Dock Square, including all of Bearskin Neck, Mount Pleasant Street, Atlantic and Norwood Avenues, Old Garden Road, Marmion Way, Gap Head Road and the Town waters of:

Granite Pier Harbor (Gull Cove)
Pigeon Cove Harbor
Old Harbor
Rockport Harbor

C. Environmental Conditions

(1) Coastal Water Quality

The coastal marine waters of Rockport are coded 'SB' according to the Code of Massachusetts Regulation (CMR) 314. SB-coded waters are suitable habitat for fish, other aquatic life, and for primary (prolonged) and secondary (incidental) contact recreation. The Massachusetts Water Quality Standards for SB waters are listed in Table 1.

Table 1. SB-Class Water Quality Standards

Analyte	Water Quality Criteria
Dissolved oxygen	Not less than 6 milligrams per liter unless background conditions are lower.
Temperature	Not to exceed 85 F (29.4 C) or a maximum daily mean of 80 F (26.7 C). Rise in temperature not to exceed 1.5 F (0.8 C)
pH	6.5 to 8.5 standard units
Fecal coliforms	Not to exceed most probable number (MPN) of 88 colonies per 100 milliliters in waters approved for restricted shellfishing; no more than 10% of samples can exceed MPN 260 colonies per 100 milliliters. Not to exceed MPN 200 colonies per 100 milliliters in other waters; no more than 10% of samples can exceed 400 colonies per 100 milliliters.
Solids	Waters must be free from floating, suspended, and settleable solids in concentrations or combinations that would impair any use assigned to this class, cause aesthetically objectionable conditions, or impair benthic biota (ocean bottom dwelling plants and animals) 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.
Oil and Grease	Waters must be free from oil, grease, and petrochemicals that produce a visible film on the surface of the water, impart, an oily taste to the water or an oily or other undesirable taste to the edible portions of aquatic life, coat the banks or the bottom, or are deleterious or become toxic to aquatic life.

Pollution Sources
There is limited data available on water quality in Rockport. At present, monthly sampling of storm drains during dry and wet weather events is required through a consent order issued by

the Department of Environmental Protection (DEP) (see Storm water System discussion that follows).

Investigations indicated that there may have been fecal coliform bacteria from drains contributing to water quality problems along Rockport's coastline. The outfall pipe from the treatment plant that extends north off of Bearskin Neck has the potential to contribute to bacterial contamination. According to the Massachusetts Department of Fisheries, Wildlife, and Environmental Law Enforcement, this contamination is restricted to within one-half mile offshore. Other perceived contributors to pollution of the harbors include possible contamination from the Cape Ann Tool Company, dog feces deposited on beaches and other land near the water, and snow deposited near the water's edge.

During winter months, snow removed from Rockport streets is deposited on Granite Pier. DEP's March 2001 Snow Disposal Guidelines suggest that areas next to fresh or salt water bodies or areas with a highly porous substrate should not be considered for snow disposal. The rationale is that effective snow disposal requires a location where the snow meltwater can filter into the soil, separating the water from the sand, salt, and other debris commonly found on winter roadways. Under the current disposal practice, given the location and porosity of soil on Granite Pier, it is likely that most of the salt, sand, litter, hydrocarbons, and other pollutants find their way into the harbor where they can be harmful to aquatic life at certain levels. Eelgrass (*Zostera marina*) growing adjacent to Granite Pier, for example, can tolerate salinity ranging from 18-30 parts per thousand (ppt), but salinity exceeding this range can have an adverse impact on the grasses (Katwijk 1999, Kamermans 1996).

Storm water and Sewage System

The Town of Rockport sanitary sewers and storm drains are two separate systems. The drainage system collects rain and conveys it to outfalls along the coast without storm water treatment. The sewage system collects and directs sanitary waste to a wastewater treatment facility. Rockport has been conducting storm drain sampling over the past several years. The Town of Rockport Board of Selectmen appointed a Coastal Water Quality Task Force in 1993, implementing a sampling program at potential pollution sites in 1994. The results from the samples taken in 1994 and 1995 led to additional sampling ordered by the Department of Environmental Protection (DEP). The Town of Rockport is currently under a DEP Administrative Consent Order to investigate the sources of pollution to the drain lines and develop a plan to address polluted storm water runoff.

Some common pollutants found in storm water include bacteria, nutrients, suspended solids and sediments, trace metals, pesticides, hydrocarbons and chlorides from salting roads in the winter. The Consent Order mandates a close look at the potential sources of each pollution. Possible sources have been identified and work is being conducted to determine what is contributing to the bulk of the pollution. Private septic systems may fail during very high rain periods, or for a variety of maintenance and design reasons. The public sanitary sewage system encounters problems when subjected to excess flow from sources other than sanitary hookups, such as ground water infiltration, illicit sump connections and other inappropriate fresh water intrusions. Runoff from agricultural and livestock practices includes nutrient rich manure and fertilizers. Runoff from parking lots, roads, and yards also carries pet wastes and wastes from vehicles into streams through the storm sewers.

The Consent Order required the Town to collect and summarize water quality data, use television inspection to determine the origin and severity of pollution problems, sample dry and wet weather discharge in several locations and conduct first flush sampling. Sampling continues to be conducted by Weston & Sampson Engineers. Data from a 1999 Weston & Sampson report indicated several locations with fecal concentrations exceeding acceptable thresholds (200 colonies per 100 milliliters for beaches and 1000 colonies per 100 milliliters for other areas). Rockport has installed and used the television inspection and has done building inspections and smoke testing of storm drains to determine possible sources. Some illicit connections and potential agricultural sources have been eliminated and several Town practices help to eliminate problems.

Efforts to control storm water pollution include regular street sweeping and drain and catch basin cleaning. The Board of Health monitors water quality in several locations to

ensure safe recreational use of the waterfront and the Town has installed vortex manholes to reduce pollution by allowing sediments to settle before reaching the discharge locations. Trash removal and recycling, and an organized household hazardous waste and oil collection help Rockport keep trash and toxins out of the storm water system. A leash law has been passed to enforce the control of pets and a public education program was launched to inform residents of the effects of pet waste pollution on receiving waters.

Rockport does not have a regular inspection program for the infrastructure of the drainage system and no Town ordinance currently exists for the use of storm drains. However, the Town also has concentrated on identifying and removing illegal connections into the system by residents or local industry, and the management plan includes recommendations to implement Title V inspections (see Section D-11 for an explanation of Title V) and several structural improvements to the public drain and sewer systems. The town provides a regular opportunity to address storm water impacts associated with new developments.

Rockport is attempting to develop, implement and administer a storm water management plan that is compatible with the Phase II Pollutant Discharge Elimination Program permit process. The six measures of the Phase II permit are public education and outreach, public involvement and participation, illicit discharge detection and elimination, management of construction site runoff, post-construction storm water management, and pollution prevention/good housekeeping for municipal operations. For each measure the storm water management plan will detail the best management practices, establish measurable goals, state the frequency and timing of the implementation actions, and identify the official(s) or board(s) responsible for the action.

(2) Shoreline/Wetland Features

Rocky Intertidal

The shoreline from Andrews Point south to Straitsmouth Light is almost entirely a rocky intertidal ecosystem. Rocky shore plant and animal communities develop on the exposed faces of headlands and on man-made structures such as rock jetties, piers and riprap. Rocky intertidal plants and animals are uniquely adapted to live on a solid substrate that is exposed to the physical stress of wave action and variable tides. Substrates with a steep surface have very rapid drainage, compounding the challenges to marine organisms exposed to low tides. Because of the quick drainage and the tidal and wave energy released against this ecosystem, nutrients are not retained within the community and most of this production taking place fuels life in the neighboring habitats of the sandy beaches or open water. For similar reasons, rocky shores are not as sensitive to pollution as other coastal ecosystems. The movement of water on and against the rocks tends to wash most pollution loads away quickly and only constant exposure to high concentrations of pollution will degrade the rocky intertidal community. The plants and animals adapt to specific zones that meet their respective sensitivity to the tide, ranging from large algae and sea urchins in the submersed areas to the periwinkle, barnacle, and mussel populations that thrive in dryer regions of the shore.

Eel Grass Beds

Along the Rockport coast, an eel grass bed is located adjacent to the south side of Granite Pier and into the northwest section of Gull Cove. Eelgrass (*Zostera marina*) is a subtidal marine angiosperm—one of more than 60 species of seagrasses that grow in the oceans around the world. The depth at which eelgrass grows is variable from region to region and determined by light intensity and physical factors such as wave action and ice. In wave-swept coasts with clear water, eelgrass may begin at 3 – 6 feet below Mean Low Water and may grow as deep as 40 – 145 feet. At Granite Pier, it is estimated that the eelgrass grows to a maximum depth of 9 feet.

Eelgrass is an extremely productive and valuable resource. Seagrasses such as eelgrass protect shorelines from erosion, enrich the oxygen supply during photosynthesis, remove excess nitrogen and phosphorous that might otherwise result in abundant and

unwanted algal growth, provide food and habitat for waterfowl, fish, shellfish, and invertebrates, and serve as a nursery and refuge for many young or vulnerable species.

The decline of eelgrass has been a pervasive problem in Massachusetts with both man-made and natural disturbances playing a role in regulating its distribution and longevity. The single most important factor in determining the growth and survival of eelgrass is light—if there is not enough, the plants cannot photosynthesize. Suspended sediments (from erosion and runoff), algae, docks, and piers directly affect how much light reaches an eelgrass bed. Nutrients, on the other hand, indirectly affect eelgrass growth by creating excessive algal growth. Other sources of eelgrass degradation include dredging (direct removal), toxic pollution, and changes in salinity.

Figure 3. Rockport's Rocky Shoreline

Coastal Beaches

Moving south from Andrews Point, the eight coastal beaches that are situated within the study area of the Rockport Harbor Plan are as follows:

1. Beach to west side of Pigeon Cove Harbor,
2. Small beach north of Granite Pier,
3. Small beach in the southwest corner of Gull Cove,
4. Small beach on the north end of water basin near intersection of Beach and Granite Streets,
5. Larger beach south of Rowe Point, "Back Beach",
6. Larger beach to the west of Old Harbor, "Front Beach",
7. Small beach adjacent to Pier Avenue
8. Old Garden Beach east of Rockport Harbor.

Coastal sandy beaches are the least productive coastal habitats. Most plants cannot find any anchorage in the unstable sand and so only the unicellular algae are capable of producing food for the beach ecosystem. High wave energy, summer drying heat, and extremely rapid drainage are natural stressors to the plants and animals that do survive on sandy beaches. Without a base of food producers, detritus from more productive ecosystems supports most animal life. Where coastal currents, tides and waves import a detrital food base, the beach can support several species. Filter feeders and deposit feeders live below the surface and burrowing organisms like crabs and snails use the sandy beach for shelter. Several insects such as flies, fleas and beetles flourish along the high tide line. Sandy beaches are popular nesting sites for terns, gulls and other sea birds. Seasonal movement of sand with storms and human induced erosion due to vehicle travel and/or coastal development greatly influence sand beach organisms.

(3) Bathymetry (all measurements at Mean Low Water)

The depths of Rockport Harbor range from exposed tidal mudflats to a depth of 14 feet at mean low water. The entrance to the harbor is between 9 and 15 feet in depth and leads to a depth of 7 feet in the Back Basins. The mean tidal range is 8.6 feet, with a spring range of 10.0 feet and a mean tidal level of 4.6 feet.

Old Harbor is largely exposed tidal mudflats with a water depth of 4 feet at the entrance. Town gangway and float, by Granite Pier, has a depth of 9 to 15 feet while Pigeon Cove Harbor is 15 feet at its entrance and varies between 8 and 9 feet within the cove itself.

(4) Anadromous Fish Habitat

Since 2000, two (2) rainbow smelt (*Osmerus mordax*) spawning habitats have been identified in Rockport—one in the Sawmill Brook and one in Mill Brook which both discharge into the Town's coastal waters. A low number of eggs were found at both brooks in 2000 and even fewer in 2001. At Mill Brook, the eggs were found at the culvert opening as the brook spills out onto Back Beach. These brooks were previously not known to support anadromous fish populations, and it remains unknown whether these spawners are from a remnant population that was never identified or whether they are just beginning to colonize the brooks.

Rainbow smelt are native to the Arctic Ocean and northern portions of the Atlantic and Pacific oceans. They are anadromous, meaning they live in salt water but return to fresh water to spawn. They are also schooling fish and prefer open water where they feed primarily on microscopic animals (zooplankton). Rainbow smelt commonly reach 6 to 8 inches in length and can live for up to 8 years.

Smelt spawning occurs in Massachusetts Bay from March through May. They are a popular recreational species and an important component of the food chain. Smelt eggs are adhesive and are typically deposited on the substrate of freshwater riffles just upstream of tidal influences.

There is a direct relationship between stream flows and smelt spawning. Discharge data and field observations from the Massachusetts Department of Fisheries, Wildlife, and Environmental Law Enforcement indicate that the present minimum flow at both brooks is just sufficient to attract spawning adults and protect the eggs. Withdrawals below this threshold could jeopardize the habitat, although further investigation is required before any definite characterizations can be made.

Anectodal evidence from the Division of Marine Fisheries indicates that American eel (*Anguilla rostrata)* also spawn in the freshwaters that drain out of Rockport.

D. Regulatory Conditions

The Rockport waterfront is subject to regulatory authority of the local, state, and federal governments. The Town regulates land use, density, and dimensions through its Zoning By-law. It also regulates wetlands through its General Wetlands Ordinance.

The Commonwealth has regulatory authority over the use and alteration of filled and flowed tidelands under Massachusetts General Law Chapter 91. The purpose of this law and its corresponding waterways regulations (310 CMR 9.00) are to protect the public's rights to use the state's waterways for the purposes of fishing, fowling, and navigation. Chapter 91 applies to structures such as piers, wharves, floats, retaining walls, revetments, pilings, and some waterfront buildings. All existing structures not previously authorized and any new construction or change of use of a structure requires Chapter 91 authorization.

The US Army Corps of Engineers regulates shorefront activities including dredging and filling in or near coastal waters below the High Water Mark (Section 404 of the Clean

Water Act and Section 10 of the Rivers and Harbors Act). The Federal Emergency Management Agency (FEMA) is the federal agency responsible for overseeing recovery and relief from natural disasters. FEMA administers the National Flood Insurance Program which produces Flood Insurance Rate Maps (FIRMs). FIRM is the official map of a community on which FEMA has delineated both the special flood hazard areas and the flood risk premium zones applicable to the community.

(1) Zoning

Maps 5 and 6 illustrate the land use and zoning patterns along the harbors' waterfront. Water-dependent commercial and recreational uses and facilities not situated on Town-owned property are located in either the General District or Residential "A" zoning districts. All Town owned property used for municipal purposes is exempt from the provisions of the Zoning By-law.

The General District allows by right any use permitted in any residential district, as well as retail and service businesses, office, restaurant, light manufacturing and storage incidental to a permitted use, and boatyards. Multifamily housing and a broader list of commercial and industrial uses are allowed by special permit from the Board of Appeals. This district covers the commercial waterfront surrounding Rockport Harbor and Pigeon Cove Harbor.

Residential A district allows single-family dwellings, professional offices and businesses in owner occupied residential structures, and accessory uses, by right and minor extensions of these uses by special permit.

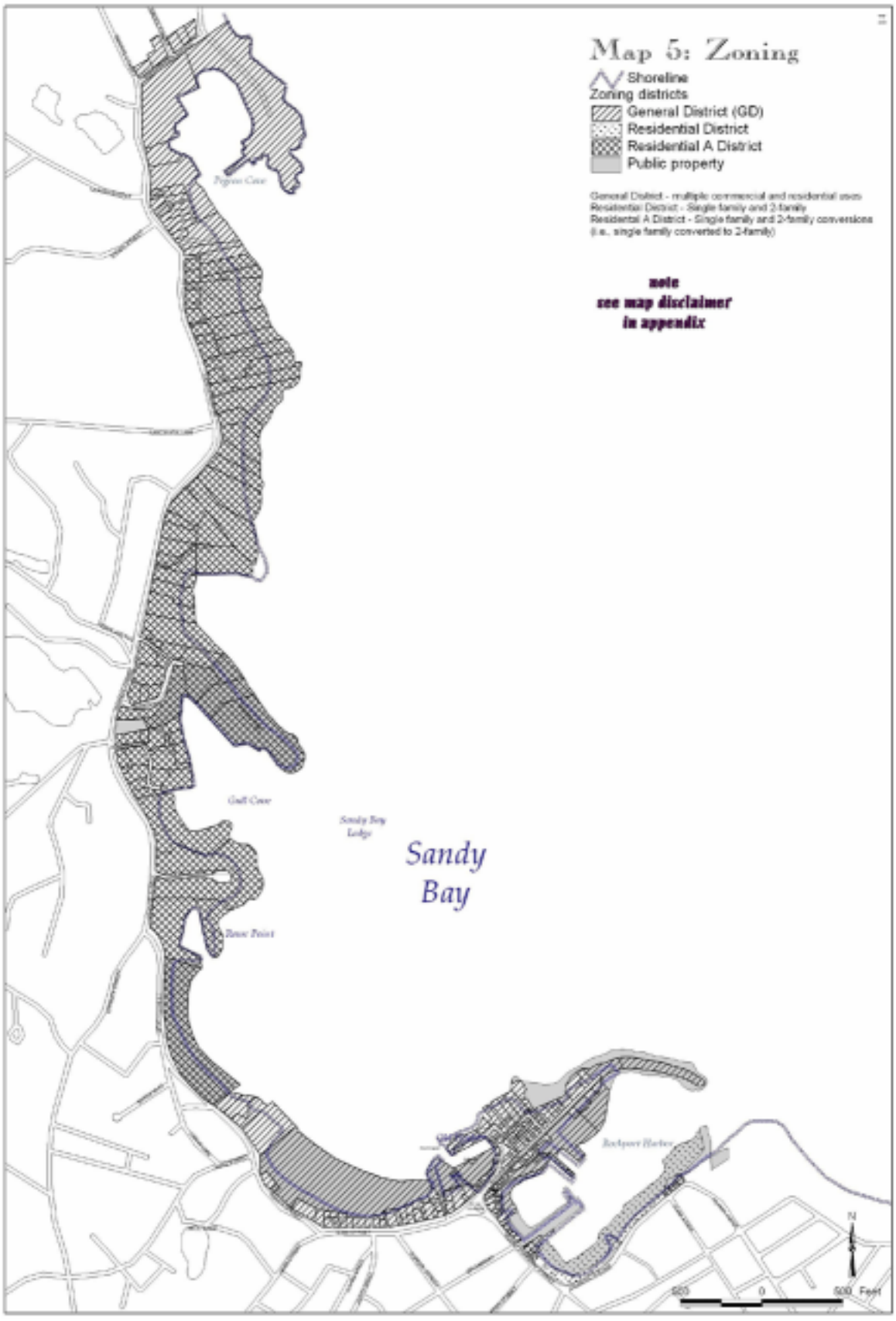
(2) Chapter 21 E

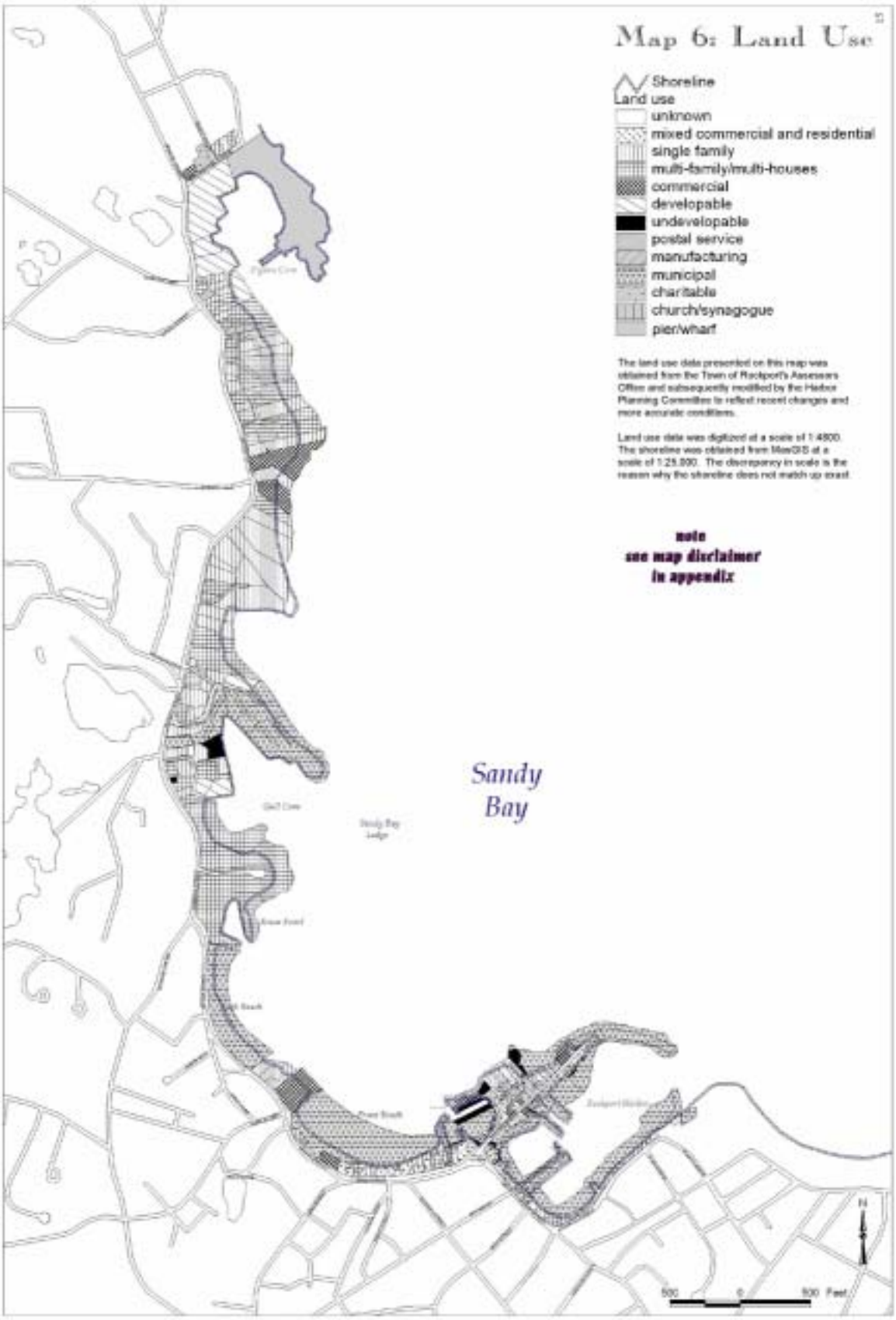
Maps 1 to 4 illustrate the 21E sites in the Rockport Harbor Plan Study Area. These maps were adapted from data obtained from the Department of Environmental Protection (DEP) and MassGIS.

Enacted in 1983, the state Superfund Statute, the Massachusetts Oil and Hazardous Material Release Prevention and Response Act (Massachusetts General Law Chapter 21E), establishes the state's authority to manage contaminated sites and hazardous waste spill emergencies. DEP implements the 21E program through a set of regulations known as the Massachusetts Contingency Plan (MCP). MCP describes the rules for conducting cleanups of contaminated sites. Chapter 21E requires DEP to ensure permanent cleanup of oil and hazardous material releases, to determine who is legally responsible for them, and to ensure responsible parties reimburse the state for cleanup costs. Once designated a 21E site, a property remains so in perpetuity, even after the site has been cleaned up.

(3) Wetlands

One of the primary responsibilities of the Rockport Conservation Commission is the administration and enforcement of the Massachusetts Wetlands Protection Act (MGL Ch. 131, sec. 40) along with its corresponding Wetlands Regulations (310 CMR 10.00). In addition, Rockport has adopted under general Home Rule powers a municipal wetlands by-law (Ch. 14, Environmental Protection and Public Health).


Map 5: Zoning
Shoreline
Zoning districts
General District (GD)
Residential District
Residential A District
Public property
General District - multiple commercial and residential uses
Residential District - Single family and 2-family
Residental A District - Single family and 2-family conversions
(i.e., single family converted to 2-family)
note
see map disclaimer
in appendix
Pigeon Cove
Gull Cove
Sandy Bay Lodge
Sandy Bay
Rose Point
Rockport Harbor
N
500
0
500 Feet


Map 6: Land Use
Shoreline
Land use
unknown
mixed commercial and residential
single family
multi-family/multi-houses
commercial
developable
undevelopable
postal service
manufacturing
municipal
charitable
church/synagogue
pier/wharf
The land use data presented on this map was obtained from the Town of Rockport's Assessors Office and subsequently modified by the Harbor Planning Committee to reflect recent changes and more accurate conditions.
Land use data was digitized at a scale of 1:4800. The shoreline was obtained from MassGIS at a scale of 1:25,000. The discrepancy in scale is the reason why the shoreline does not match up exact
note
see map disclaimer
in appendix
Sandy
Bay
N
500
0
500 Feet

Under the Wetlands Act and local by-law, the Conservation Commission has authority over projects in or affecting these resource areas: bank, beach, dune, flat, marsh, swamp, freshwater, coastal wetlands or any estuary, creek, river, stream, pond, or lake. The Commission also has jurisdiction for land under water bodies, including docks and piers, land subject to tidal action, land subject to coastal storm flowage, and land subject to flooding. Activities within these resource 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.

(4) Harbor Regulations

Rockport's Harbor Regulations outline the procedures and rules regarding moorings and also establish harbor speed limits. No one can moor, anchor or set any moored vessel or float within the limits of Rockport Harbor, Granite Pier Harbor, Pigeon Cove Harbor, or Old Harbor without obtaining a 10A Mooring Permit from the Harbormaster. Permits are issued on a first come, first serve basis. The Harbormaster has the authority to reassign mooring locations of any permitted vessels at anytime. If there is no room for the applicant's vessel, they will be put on a waiting list that is maintained by the Harbormaster. No mooring is allowed along Town floats, piers and wharves, or docks designated for commercial fishing or fuel and maintenance.

Mooring holders in the Town of Rockport may not transfer their mooring permits in the event of a death to another vessel or person other than the mooring holder's spouse (Town Bylaws, Chapter 9, Section 2(a)(v)).

If an assigned mooring is not used for at least 30 consecutive days in a boating season, the location is considered abandoned and may be reassigned unless the permit holder has arranged special conditions with the Harbormaster. The boat owner has a one-year grace period to not have a boat on their mooring, but this year off must be discussed and agreed upon by the Harbormaster. Transient permits may be issued by the Harbormaster for up to seven (7) days. Temporary mooring permits also may be issued through the Harbormaster for up to one (1) year. Upon the completion of an application and payment of the designated fee, the mooring permit holder may authorize a non-permit holder to use his mooring for one (1) year with the written approval of the Harbormaster.

The maximum length of any vessel assigned a mooring in Rockport is 50 feet. It is the responsibility of the permit holder to install and maintain appropriate mooring gear. Mooring gear should be inspected by the permit holder once a year and lifted out of the water for inspection if necessary.

Mooring fees are established annually based on vessel length and permits may be revoked by the Harbormaster if any fee is not paid in full within 90 days (Chapter 9, Section 2(b)(iii), Town Bylaws).

The maximum speed of any vessel operating within all Rockport harbors is headway speed or five (5) miles per hour.

(5) Chapter 91, Public Waterways Act

Massachusetts' principal waterfront regulatory program in tidelands and other waterways is Massachusetts G.L. Chapter 91 (Public Waterways Act, 1866). Chapter 91 and the corresponding waterways regulations (310 CMR 9.00) are administered by the Division of Wetlands and Waterways of the Massachusetts Department of Environmental Protection.

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., below the Historic High Water Mark. This area is 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 for the purposes of fishing, fowling, and navigation. The Waterways Act and its corresponding regulations codify the public trust doctrine in Massachusetts.

As clarified by the 1983 amendments to the waterways regulations, Chapter 91 jurisdiction extends landward to the Historic High Water Mark and seaward three miles to the limit of state jurisdiction. The Historic High Water Mark is the farthest landward tide line which existed "prior to human alteration" by filling, dredging, impoundment or other means (310 CMR 9.02). 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 Water Mark, are subject to Chapter 91 jurisdiction.

Chapter 91 authorization is generally required for any fill, structure, or use not previously authorized in tidelands, 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 located on filled lands or over the water).

The benefits that the Chapter 91 program can afford a town are best captured in the five basic objectives of the program: (1) ensure the waterfront is used primarily for water-dependent purposes, (2) provide public access, (3) facilitate other state programs related to shoreline use and conservation, (4) strengthen local controls and encourage harbor planning, and (5) ensure accountability to present and future public interests.

For planning purposes, the location of the Historic High Water Mark (i.e., upland limits of Chapter 91 jurisdiction) must be established through a review of maps that may reliably show the original natural shoreline or through engineering studies. Previously issued Chapter 91 licenses are also a source of information on the Historic High Water Mark for specific parcels. Ultimately, jurisdiction will be determined by DEP on a property-by-property basis at the time of licensing.

A review of the shoreline from Andrews Point to Straitsmouth Light using historic maps as well as a review of Acts of Legislation and existing Chapter 91 licenses indicates that most of the man-made shoreline alteration occurred in the harbors. Outside of the harbors, the absence of licenses, the geology, and distribution of natural resources would suggest a shoreline driven by natural processes. A list of Acts of the Legislature (see below) and Chapter 91 licenses in the Harbor Plan Study Area can be found in Table 2. In addition, Map 7 provides a graphical presentation of those properties that have had an Act or Chapter 91 license issued at some point in time.

Prompted by existing highly desirable vacant and developable land along Pigeon Cove, a group of citizens in Rockport has initiated a request for a determination of applicability of Chapter 91 in the area. At this time, DEP is conducting research to determine the best placement of the historic shoreline around Pigeon Cove. Three studies that attempt to delineate this shoreline exist already, however considerable discrepancies make it difficult for DEP to draw any conclusions from these sources alone.

A DEP public hearing held in May 2001 in Rockport, brought forth the following recommendations and concerns regarding Pigeon Cove: (1) DEP should consider sub-surface core studies to help ratify the historic shoreline debate, (2) the extent to which structures and fill in Pigeon Cove are not licensed needs to be clarified, and (3) the extent to which human alteration of the shoreline in the past has affected the shape of the land and flow of water in the cove today should be considered. To the maximum extent reasonable, DEP will consider these recommendations, which in combination with existing studies, historic maps, and Chapter 91 licenses should enable them to make a reasonable determination of the historic shoreline in Pigeon Cove.

In the case of Pigeon Cove, it was the development opportunities around the cove and citizen concerns that future plans would not benefit the Town that prompted their actions. While the other harbors do not present the same development potential at this time, a determination of Chapter 91 jurisdiction might be beneficial if the Town determines that there are certain public interests, such as access, that it would like to see expanded or protected in the region. Alternatively, the Town might determine that there are certain properties, presumed to lie within jurisdiction, that they would like to target for future water-related

public benefits in the event that there is a change of use or redevelopment of the property that would trigger Chapter 91 licensing. All of this information can be specified in the Harbor Plan, which provides the best means for collectively expressing a Town's Chapter 91 objectives.

(6) Special Acts of the Legislature

Prior to 1866 when Chapter 91 was first promulgated, the Massachusetts legislature issued Special Acts to transfer title of a property from the Commonwealth to a waterfront landowner and to enable particular types of development to take place on the property as specified in the Act. The rights granted within a Special Act are transferred to each successor at the time of sale, but they do not exempt a property owner from Chapter 91 review for a new or modified use of the property.

(7) Federal Emergency Management Act Regulations

The FEMA Flood Zones Map provides a plan for the various Flood Insurance Zones along the shoreline as established by the Flood Insurance Study of the Town of Rockport. Map 8 delineates the FEMA flood zones in Rockport.

As defined by FEMA, the Old Harbor, Bearskin Neck and some of those properties seaward of Mount Pleasant Street on Rockport Harbor are areas that fall within the coastal floodplain and would be inundated by 100-year flooding with the additional hazards associated with storm waves. The houses along Atlantic Avenue to the southeast of Rockport Harbor are determined to be outside the floodplain. The land along Main Street and Beach Street between the Old Harbor and Rowe Point falls within the floodplain, with the properties seaward of Main Street in the Back Harbor potentially being flooded to a depth of 1-3 feet.

Although the eastern end of Rowe Point is deemed to be safe from flooding, according to the FEMA maps the stretch of Granite Street to the west of the point would be inundated to a depth of 1-3 feet in a 100-year flooding event. This also applies to Granite Pier where the seaward end is safe from flooding but would be cut off from the land in the event of a 100-year flood.

To the north of Granite Pier to Pigeon Cove, a 100-year flood and storm waves would only affect those properties directly on the waterfront. However, such an event would have the same effect on all those properties on the cove itself, seaward of Granite Street and Cathedral Avenue and including Breakwater Avenue.

FEMA periodically updates flood hazard maps by conducting a detailed reevaluation of flood hazards, referred to as a flood study. However, flood studies are time consuming and expensive, so far fewer than needed are done. As an alternative, FEMA has established procedures by which a community may compile appropriate data and request a map revision. Further, if an individual homeowner has technical information to indicate that his or her home has been inadvertently shown within the Special Flood Hazard Area on a Flood Insurance Rate Map, the homeowner may submit that information to FEMA and request that FEMA remove the flood zone designation from the home by issuing a Letter of Map Amendment (LOMA) or a Letter of Map Revision Based on Fill (LOMR-F). Requests for LOMAs/LOMR-F must include the surveyed elevation of the lowest grade adjacent to the structure or the lowest enclosed level of the structure along with certain other information.

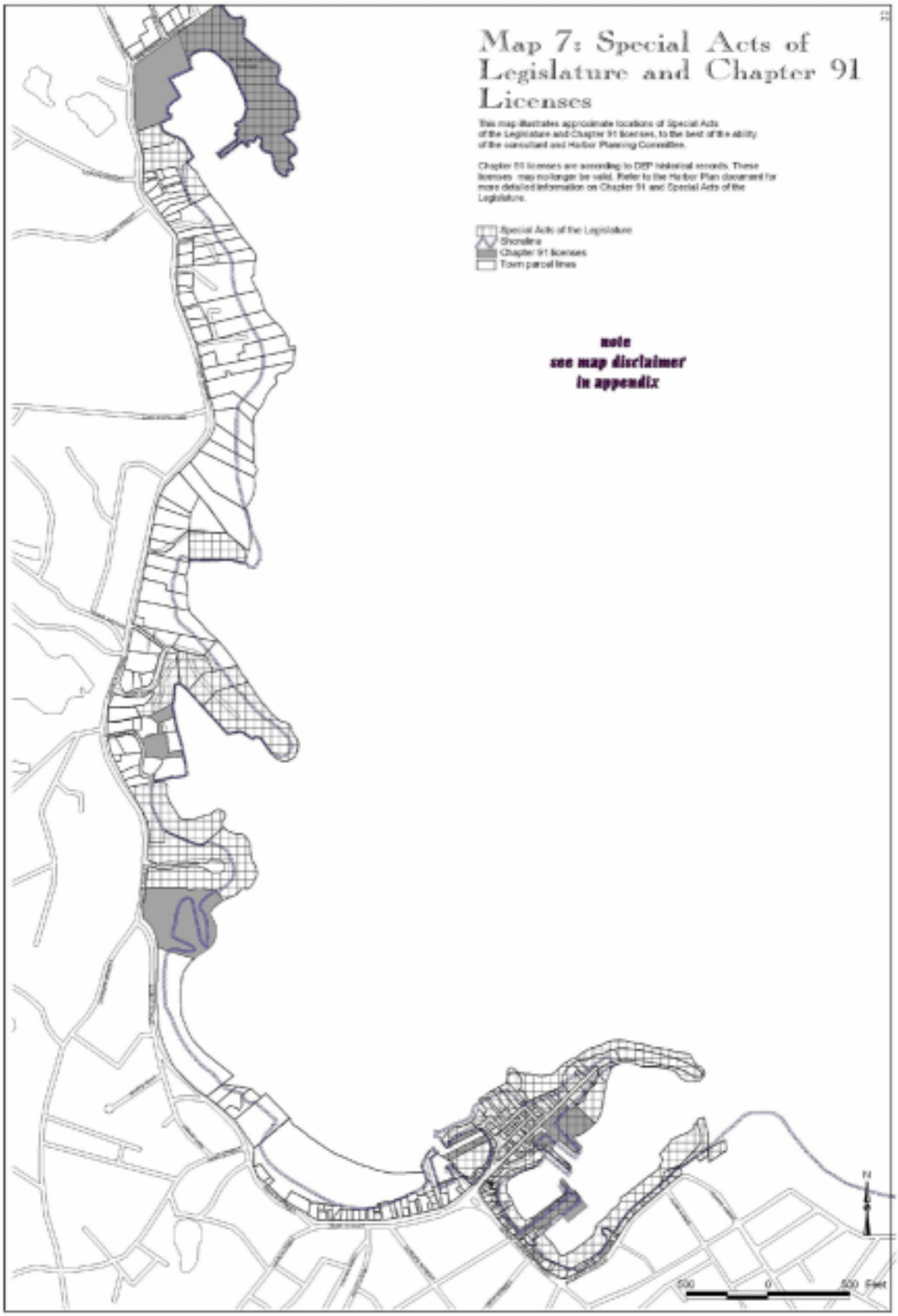
SPECIAL ACTS OF THE LEGISLATURE

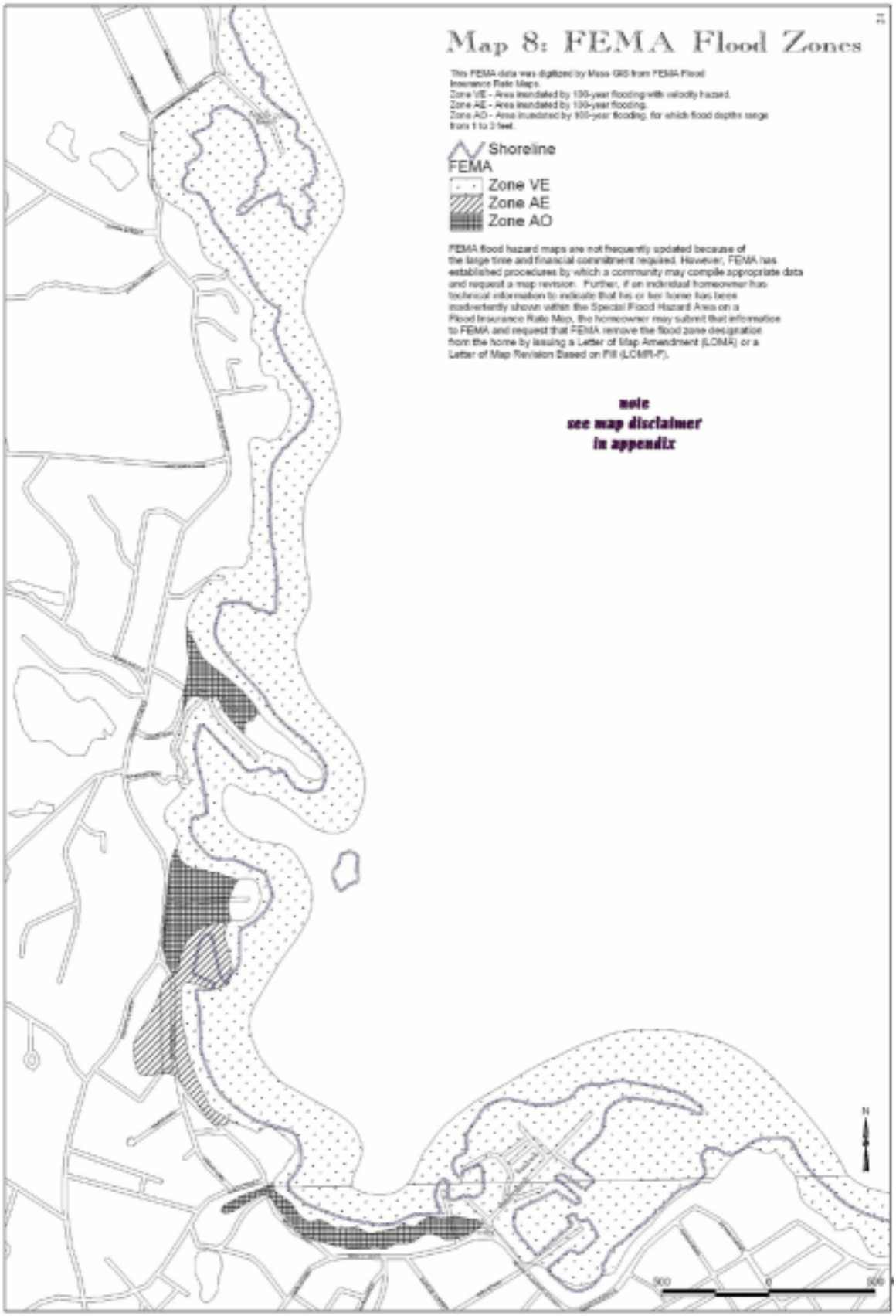
MAP	PARCEL	ADDRESS	CURRENT OWNER	DESCRIPTION	CHAPTER/ LIC. NO.	YEAR	OWNER AT LICENSING	DESCRIPTION
16	26	Pigeon Cove Wharf	Pigeon Cove Boat Owners Assoc.	Pigeon Cove Wharf	Ch. 34	1830	Pigeon Cove Harbor Co.	erect or maintain pier or breakwater in Cove
16	26A	Granite Street	Old Colony Maritime LLC	former Cape Ann Tool Co.	Chap. 26	1826	Pigeon Cove Pier Co.	build pier
16	28A	Granite Street	Old Colony Maritime LLC	Former Cape Ann Tool Co,.	Chap. 26	1826	Pigeon Cove Pier Co.	build pier
17	8	3 Pigeon Hill Wharf	Roger Kellog	single family residence	Chap. 230	1871	Pigeon Hill Granite Co.	construct and maintain wharf
17	18	Off Wharf Road	Town of Rockport	Granite Pier	Chap. 281	1855	8 individuals listed	construct breakwater, maintain and extend wharf
17	19	Off Wharf Road	Town of Rockport	Granite Pier	Chap. 281	1855	8 individuals listed	construct breakwater, maintain and extend wharf
17	20	Wharf Road	Town of Rockport	Granite Pier	Chap. 281	1855	8 individuals listed	construct breakwater, maintain and extend wharf
17	40	59 Granite Street	Mary Malone	multi-family residence	Chap. 261	1855	W.H. Knowlton	build and maintain wharf in Rowe's Cove
17	41	Rowe Point		multi-family residence	Chap. 261	1855	W.H. Knowlton	build and maintain wharf in Rowe's Cove
35	1A	21 Old Harbor Rd	Town of Rockport	White Wharf	Chap. 76	1810/1811	Sandy Bay Pier Co.	build Pier off Bearskin Neck
35	3	Old Harbor Rd	Town of Rockport	parkland	Chap. 76	1810/1811	Sandy Bay Pier Co.	build Pier off Bearskin Neck
35	5	15 Old Harbor Rd	Millicent Bruce	single family residence	Chap. 76	1810/1811	Sandy Bay Pier Co.	build Pier off Bearskin Neck
35	6	Old Harbor Rd	Millicent Bruce	undevelopable	Chap. 76	1810/1811	Sandy Bay Pier Co.	build Pier off Bearskin Neck
35	6A	Old Harbor Rd	Town of Rockport	boat slips	Chap. 76	1810/1811	Sandy Bay Pier Co.	build Pier off Bearskin Neck
All coastal parcels between Headlands and Old Harbor					Chap.261	1855	Sandy Bay Pier Co.	Purchase all lands and flats, build breakwaters piers and wharves

CHAPTER 91 LICENSES

MAP	PARCEL	ADDRESS	CURRENT OWNER	DESCRIPTION	CHAPTER/ LIC. NO.	YEAR	OWNER AT LICENSING	DESCRIPTION
16	26	Pigeon Cove Wharf	Town of Rockport	Pigeon Cove Wharf	163&457	1873	Pigeon Hill Granite Co.	rebuild breakwater
16	26&28	Pigeon Cove Wharf & Breakwater Ave	Town of Rockport & Old Colony Maritime	Pigeon Cove Wharf & former Cape Ann Tool Co.	1006	1887	Pigeon Cove Harbor Co.	extend north wharf and fill
16	28	Granite St	Old Colony Maritime LLC	former Cape Ann Tool Co..	1758	1895	Pigeon Cove Harbor Co.	build seawall and fill solid
16	28	Granite St	Old Colony Maritime LLC	former Cape Ann Tool Co.	2375	1941	Cape Ann Tool Co.	build and maintain seawall and fill solid
17	30	Granite Pier	Lakeview Realty Trust	coded undevelopable	4401	1997	Lakeview Trust	maintain existing seawall, fill, and 3 floats
17	34	4 Gull Cove	Bruce W. Levick Trs	residences	4914	1995	B. Levick	maintain existing seawall, fill, and float
17	42	27 Beach St	Joseph P. Digiovanni Trs	residences	2541	1901	D. Newcomb	build dam, seawall [dam & pipe removed 2002]
17		Sandy Bay	Town of Rockport	Sewer outlet	1929	1938	Town of Rockport	Build and maintain sewer outlet
35	6A	Old Harbor Rd	Town of Rockport	White Wharf boat slips	1810	1988	Robert Ramsdell	dredge, fill, piles, utilities, floats, ramp, guard rail
35	7A	Old Harbor Flats	Andrew A. Menna	Flats/new lot since 1995	3536	1953	M.G. Kenney	maintain seawalls, steps, terrace, boathouse
35	10	6 Old Harbor Rd	Theodorus Taminiau	Fresh Ketch Restaurant	3536	1953	M.G. Kenney	maintain seawalls, steps, terrace, boathouse
35	11B	2A Old Harbor Rd	Albert Ruben	mixed use	3536	1953	M.G. Kenney	maintain seawalls, steps, terrace, boathouse
35	11	14 Bearskin Neck	Margaret Coonley	The Ice Cream Store	3536	1953	M.G. Kenney	maintain seawalls, steps, terrace, boathouse
35	15	4 Bearskin Neck	Helena L. Radi	Tradewinds	4669	1963	J. T. Fine	maintain existing building on piles and construct an addition

MAP	PARCEL	ADDRESS	CURRENT OWNER	DESCRIPTION	CHAPTER/ LIC. NO.	YEAR	OWNER AT LICENSING	DESCRIPTION
35	17	21 Dock Square	William McLaughlin	Restaurant, shops	8818	2002	Dock Square Realty Trust	Maintain existing 2 story building on previously filled tidelands
36	17	Atlantic Ave	Town of Rockport	park	1597	1987	Town of Rockport	retaining wall, rip-rap fill
36	26	Mt. Pleasant	Laurence Bershad	Blacksmith Shop Restaurant, residence	3634	1954	Blacksmith Shop, Inc.	Maintain & extend building on piles
36	26	Mt. Pleasant.	Laurence Bershad	Blacksmith Shop Restaurant, residence	4448	1961	Blacksmith Shop, Inc.	extend existing building on piles
36	33	T Wharf	Town of Rockport	T-Wharf	7918	1999	Town of Rockport	wharf reconstruction, new piles, dredge and fill around T-wharf (and Bradley wharf)
36	33A	T Wharf	Sandy Bay YC lease from Town of Rockport	Yacht Club	153	1917	G. Perkins	build seawall & pile wharf, fill, dredge
36	33A	T Wharf	Sandy Bay YC lease from Town of Rockport	Yacht Club	4104	1996	Sandy Bay YC lease from Town of Rockport	maintain buildings, floats, ramp, and establish marina reconfiguration zone
36	69	Bearskin Neck	Tuna Wharf Condos	shops and living units	830	1884	Sandy Bay Pier Co.	fill to mean high water and build seawall
36	69	Bearskin Neck	Tuna Wharf Condos	Parking lot	4065	1957	Rockport Pier Co.	Fill to mean high water and build seawall
36	69	Bearskin Neck	Vaughan Hawley	Tuna Wharf	2229	1990	V. Hawley	construct and maintain a landing, ramp, and float for commercial landing of excursion passengers


Map 7: Special Acts of Legislature and Chapter 91 Licenses
This map illustrates approximate locations of Special Acts of the Legislature and Chapter 91 licenses, to the best of the ability of the consultant and Harbor Planning Committee.
Chapter 91 licenses are according to DEP historical records. These licenses may no longer be valid. Refer to the Harbor Plan document for more detailed information on Chapter 91 and Special Acts of the Legislature.
Special Acts of the Legislature
Shoreline
Chapter 91 licenses
Town parcel lines
note
see map disclaimer
in appendix
N
500
0
500 Feet


Map 8: FEMA Flood Zones
This FEMA data was digitized by Mass GIS from FEMA Flood Insurance Rate Maps.
Zone VE - Area inundated by 100-year flooding with velocity hazard.
Zone AE - Area inundated by 100-year flooding.
Zone AO - Area inundated by 100-year flooding, for which flood depths range from 1 to 2 feet.
Shoreline
FEMA
Zone VE
Zone AE
Zone AO
FEMA flood hazard maps are not frequently updated because of the large time and financial commitment required. However, FEMA has established procedures by which a community may compile appropriate data and request a map revision. Further, if an individual homeowner has technical information to indicate that his or her home has been inadvertently shown within the Special Flood Hazard Area on a Flood Insurance Rate Map, the homeowner may submit that information to FEMA and request that FEMA remove the flood zone designation from the home by issuing a Letter of Map Amendment (LOMA) or a Letter of Map Revision Based on Fill (LOMR-F).
note
see map disclaimer
in appendix
N
500
0
500

(8) US Army Corps of Engineers Regulations

Section 404 of the Clean Water Act authorizes the Corps to regulate the discharge of dredged or fill material into all waters (including wetlands) of the US. The limit of jurisdiction is the High Water Mark in tidal waters. Regulated activities include the placement of fill for construction, site-development fill, riprap, seawalls, and beach nourishment.

Section 10 of the Rivers and Harbors Act of 1989 authorizes the US Army Corps of Engineers to regulate structures and work in navigable waters of the US. Jurisdiction extends shoreward to the High Water Mark. Regulated activities include construction of piers and wharves, permanent mooring structures such as pilings, intake and outfall pipes, boat ramps, and dredging and disposal of dredged material, excavation, and filling. The Corps' other major responsibility is to plan and carry out water resources projects such as improvements to navigation. Since 1986, the cost for such projects is shared between the federal government and the nonfederal sponsors. An important consideration in the Corps' decision to undertake a project is that its benefits exceed the cost. For projects such as dredging of harbors and navigation channels, highest priority goes to projects that benefit maritime industry such as shipping and fishing.

The channels into Rockport Harbor and Pigeon Cove Harbor are federally created and maintained navigation channels. Rockport Harbor and Old Harbor are both in need of dredging at this time. The breakwaters sheltering Rockport's harbors are all in need of repair.

(9) Phase II NPDES Storm Water Program

The US EPA's storm water management program, initiated in 1990 under the Clean Water Act, is aimed at preserving, protecting and improving the Nation's water resources from polluted storm water runoff. The first phase of the program focused on the National Pollutant Discharge Elimination System (NPDES) permits to address storm water runoff from larger storm sewer systems serving populations of 100,000 or more, construction activities disturbing five acres or more and certain industrial activities. Phase II, which began in 1999, extended the NPDES permit coverage for storm water discharges from smaller storm sewer systems (under 100,000 population) in urbanized areas and smaller construction sites (activities disturbing between one and five acres of land).

Phase II is an attempt to further reduce adverse impacts to water quality and aquatic habitat through the use of controls such as public educational programs, storm sewer inspections for illegal connections, and ordinances to control construction site runoff.

(10) Massachusetts Ocean Sanctuary Program

In 1970, Massachusetts passed the Ocean Sanctuaries Act (Ch. 132A, Section 12A), which applies to the area between the Low Water Mark and three miles offshore, except for the area between Lynn and Marshfield. The Ocean Sanctuaries Act is designed to protect coastal waters by prohibiting activities that could be environmentally or aesthetically damaging. The Act prohibits exploitation or development that would seriously alter or endanger the ecology or appearance of the ocean, seabed or the subsoil. Some of these prohibited activities include building on the seabed, drilling, dumping wastes, and commercial advertising. However, fishing, sand extraction, and special projects are still allowed under the act. The Department of Environmental Management (DEM) has jurisdiction over the ocean sanctuaries and DEM must approve all activities that occur on, or in, these areas.

(11) Title 5

Refers to the Massachusetts Department of Environmental Protection's 1995 revisions to Title 5 of the state Environmental Code, 310 CMR 15.000, covering on-site sewage disposal

systems (septic systems, cesspools, and the like). Title 5 regulations require that on-site systems must comply with state-mandated design and performance standards. The regulations require that private septic systems be inspected upon the conveyance of the property or upon any change in use or expansion of use of the facility that requires issuance of a building or occupancy permit. Title 5 also establishes a comprehensive system for the review and approval of alternative technologies such as recirculating sand filters and humus/composting systems.

E. Existing Uses

Rockport's harbors are used for a variety of purposes. Recreation, tourism, fishing, and commercial activities and other uses are discussed below.

(1) Shoreline Access and Recreational Areas

Rockport is one of the most "access rich" communities in Massachusetts with approximately four miles, or half of the eight-mile coastline either publicly owned or accessible by public rights of way. This is significantly greater than the aggregate statewide percentage of only 19 percent of publicly accessible land.

Pedestrian access to the shoreline is available at all four harbors. Other pedestrian rights of way identified by the Rockport Rights of Way Committee are found at the Headlands off Atlantic Avenue, the Old Boat Ramp off Dock Square, the Old School House Landing at the foot of Jewett Street, the Old Garden Beach foot path and the Atlantic path with numerous associated foot paths. A number of parks, beaches, and designated open space areas can be found including Old Garden Beach, the Headlands, Star Island Park on Atlantic Avenue, Rotary Park, the tip of Bearskin Neck, Inner Harbor Park, Middle, Lumber, and White Wharf, Front Beach, Back Beach, and Granite Pier. Public restrooms are available at T-Wharf and portable facilities at Granite Pier.

Straitsmouth Island, located at the extreme eastern end of the designated Harbor Plan study area, is a bird sanctuary wholly owned by the Massachusetts Audubon Society and is off limits to visitors.

Fishing for striped bass, as well as some other species, takes place along the shoreline.

(2) Mooring Areas

The four harbor areas of Rockport accommodate a total of 355 boats at slips or on moorings. Approximately one-third of these boats belong to commercial fishermen. Fees for owner maintained moorings and for Town-owned finger piers and slips varied between $7 per foot and $100 per foot for 2002, depending on location and facilities available. Mooring tackle is privately owned but must be approved by the Harbormaster and inspected annually. Over 450 people are currently on a waiting list for a mooring in Rockport.

Until recently White Wharf in Old Harbor was privately owned. The wharf was acquired by the Town in 2001. White Wharf slips provide 32 spaces with restricted water use and limited electricity and parking.

In Rockport Harbor, fore and aft moorings are used in the North, South, and South Outer basins; the North Outer Basin uses swing moorings. There are also 30 slips in the Town leased finger piers in the South Basin. The Sandy Bay Yacht Club maintains its own floats to accommodate Club launches, service boats and sailing school fleets.

The moorings at Granite Pier and Pigeon Cove, with a few exceptions, are all fore and aft.

(3) Service Facilities

There are no marinas in Town, nor does the zoning bylaw currently provide for them. There is one private fueling facility in Rockport at Pigeon Cove. This is a certified, above ground, 6,000 gallon diesel fuel tank. Diesel fuel is also available from trucks on Granite Pier and T-Wharf. There are no marine gasoline fuel facilities in Rockport, and boaters oftentimes fuel their gasoline engine vessels in the harbors using portable containers. This practice presents a number of environmental and safety concerns to local residents.

There are no vessel repair facilities in Rockport. A private marine railway exists in Pigeon Cove Harbor for commercial vessels. A significant amount of minor maintenance work is carried out afloat, and fishermen at both Granite Pier and Pigeon Cove complete major repairs and maintenance work on shore with the aid of a hydraulic trailer used to haul and launch the boats. There is no formal Town oversight to encourage proper handling and disposal of the materials used and waste generated during boat maintenance.

T-Wharf in Rockport Harbor, Pigeon Cove Harbor, and Granite Pier each have hoists which fishermen use to load and off-load.

The Town has one Pump-out boat to service the harbor areas seasonally. The service is provided on an as-called basis by the Harbormasters. The transfer facility for the Pump-out boat is located at Granite Pier.

(4) Commercial Fishing

All harbors in Rockport serve a fleet of close to 100 commercial fishing vessels. All harbors are sheltered by breakwaters of Rockport's granite.

The most valuable fishery is lobster, followed by groundfish, and shrimp. All vessels are small and employ one to three persons.

Lobsters

Rockport is the home port of 65 lobstermen, ranking Rockport 5th in the state for the size of its lobster fleet. The most recent statistics obtained from the Massachusetts Department of Marine Fisheries indicate that a total of 650,671 lbs of lobster were trapped in 1999, ranking Rockport 8th in the state for total catch. Of this total, 119,576 lbs—approximately 18 percent of the total lobsters landed—were obtained from federal waters. The remaining lobsters were landed inshore within 3 miles of the coastline. Table 3 illustrates trends in lobstering effort in Rockport spanning 10 years. Table 4 illustrates some statewide trends in lobstering over a 13-year period (1987-1999).

During this time, the greatest growth in landings and total value of the lobster industry occurred between 1998 and 1999; the greatest decline was between 1988 and 1989. Additional information on total landings between 1995 and 1999 indicate a 4.35 percent decline and a total value increase of 11.79 percent for lobsters landed in state waters. In federal waters, the total landings rose 6.66 percent and the total value rose 24.66 percent. It should be noted that these figures do not suggest that lobsters harvested from federal waters fetch a higher price.

Table 3. Trends in Rockport Lobstering (1990-1999).

Year	No. of Lobstermen	Total lbs. Landed	Percent Landed in state waters	Percent Landed in federal waters	Rank in state for total catch
1990	60	450,985	95	5	17
1991	59	441,806	98	2	15
1992	59	423,316	95	5	15
1993	59	374,024	90	10	15
1994	58	492,549	90	10	13
1995	60	462,586	91	9	12
1996	59	503,887	84	16	11
1997	60	479,003	85	15	12
1998	64	492,243	84	16	10
1999	65	650,671	82	18	8

Table 4. Statewide Statistics.

Years	Percent Change in Total Landings	Percent Change in Total Value
1987-1991	19.44	7.72
1991-1995	-0.24	16.94
1995-1999	-0.27	16.56

(5) Shellfishing

The Massachusetts Division of Marine Fisheries (DMF) has the responsibility for monitoring the water quality in shellfish bed areas and classifying shellfish beds. The shellfish beds immediately offshore in Sandy Bay are classified as Management Closure by DMF using Federal Standards. The Management Closure indicates the maximum area which could be directly impacted by potential bacterial contamination because of total failure of the sewage treatment process. The closure is in effect even if no contamination currently exists. The Town meets current state standards. Recreational and commercial shellfishing is prohibited in a Closure area. However, anecdotal information exists that there is some recreational shellfishing of surf clams (*Spisula solidissima*) by divers off the coast of Rockport. Other shellfish resources in the area include surf clams, blue mussels (*Mytilus edulis*), sea scallops (*Placopecten magellanicus*), and ocean quahogs (*Arctica islandica*).

(6) Commercial Boats

Depending on economic conditions, there are commercial tour boats that operate out of Rockport Harbor in the summer months for fishing trips, whale watching trips and sail cruises. Small boats are used for deep sea fishing trips in the summer and carry a maximum of six passengers each. A lobster boat is used to take approximately 30 passengers to observe lobstering. It is anticipated that this industry will not expand much due to Rockport's 50 foot boat limitation and the lack of fueling facilities.

Figure 4. Boats in Rockport Harbor

(7) Recreational Boating

Transient Dockage
All transient vessel tie-ups in Rockport Harbor are under the direction of the Rockport Harbormasters. The fee for overnight tie-ups is $1.00 per foot per night. Harbor depth restricts boats to a six foot draft in Rockport Harbor. Anchorage is also available northwest of Bearskin Neck off Front and Back beaches, but this area is treacherous in high north, northeast, and east winds.

Boat Ramps
Although boat ramps exist at Rockport Harbor and Granite Pier, the only publicly available ramp is at Granite Pier. The Pigeon Cove marine railway is available by arrangement with Pigeon Cove Boat Owners Association, Inc. The ramp in Rockport Harbor is restricted for emergency use. There is a need for additional trailered boat ramps and launching sites. There is also a need for storage and launching facilities for hand launched small boats. The “old ramp” at the eastern end of Granite Pier could be used for launching small boats.

Marine Recreational Activities
The normally protected and kindly waters of Sandy Bay attract locally moored, trailered, and car-topped small power boats and sailboats and, increasingly, sea kayaks. All four harbors shelter a mix of recreational sail and power boats as well as the commercial fishing fleets with the greatest concentration of all boats in the main harbor in downtown Rockport. The larger cruising boats are located on the south side of the harbor while the smaller and principally sail powered class fleets are located on the north side. Commercial boats are principally moored in the inner harbor.

The Sandy Bay Yacht Club (SBYC), which occupies leased Town land on the south side of T-wharf, is an open membership, self-governing operation similar to a community boat club. SBYC provides a sailing school for juniors and two classes of small boats for their training, individual adult sail training in “loaner” boats, and manages weekend fleet races and regattas.

SBYC also provides launch service to member boat owners through a member boat fee assessment and provides free services for visiting boats. Over half the Club’s 900 members are “rocking chair” sailors and avail themselves of the seasonal social events and view of the harbor activities from the porch. Since Rockport is a dry town there is no bar and food service is restricted to a seasonal snack bar.

Both day trip visitors and local residents fish from private boats, charter boats, and from the wharves and breakwaters for seasonally available blue fish, stripers, and groundfish.

Recreational swimming and scuba diving is permitted outside Rockport harbors and their approaches.

Figure 5. Sandy Bay

Personal Watercraft (PWC) and High Performance Watercraft (HPW)
Many in Rockport are concerned that the growing numbers of PWCs and HPWs are adversely affecting the quality of life in the harbors and Sandy Bay. Particular concerns are that:
(1) PWC and HPW are much noisier than other types of motor boats. PWC, in particular, present problems with both noise level and duration. While other boats travel over larger areas and disturb one area for a limited amount of time, PWC are operated in a limited area for a prolonged period of time. Their noise is characterized as high-pitched and variable (fluctuating as the PWC bounces on and off the water's surface), in the 85-100 decibel (dB) range. Eighty-five dB is comparable to the noise level of a busy city street.
(2) Reckless operation of these vessels interferes with the recreational enjoyment of the water by other watercraft users, swimmers, and skin divers. PWC, for example, account for 11 percent of all watercraft registered in the country yet produce 35 percent of all watercraft accidents.

(8) Harbor Administration

The annual fees collected for mooring and slips are deposited in the general fund. In fiscal year 2002, the following revenue was generated from harbor activities:

- User fees Pigeon Cove: $16,702
- User fee T-Wharf SBYC: $15,540
- User fees Granite Pier: $31,600
- User fees Bradley Wharf: $6,000
- Mooring and slip fees all harbors (paid): $137,999
- Mooring and slip fees all harbors (uncollected): $16,921
- Waterways Fund (returned from State): $5,620
- Transient fees Main Harbor: $4,000
- Mooring list fees (projected) based on 452 applicants: $2,260
- Some fees from Town-owned property may not be included

The total Town income from waterfront related revenue is $236,642.

NOTE

Based on information provided by Town agencies, committees, and Harbor Department on or before July 30, 2002.

In fiscal year 2002, the budget of the Harbormaster and Shellfish department was $81,152 of which $75,964 was expended. In the same year the Granite Pier budget was $11,300 of which $8,727 was expended.

III. Goals and Policies

A. Overview

This section presents the core of the first phase of the harbor plan; it documents pertinent issues in Rockport and establishes appropriate goals and policies to tackle these issues. The goals and policies identified in this plan originate from six (6) primary themes: scenic value, public access, water use, natural resource protection, use of municipal waterfront facilities, and harbor administration. This information is central to the next phase, which will make recommendations on appropriate actions to implement each policy.

B. Harbor Issues

Rockport Harbor issues were identified through open discussions conducted by the Harbor Planning Committee. To a significant degree, the Harbor Plan's content, particularly the goals, policies and recommendations, have been shaped by and are directed toward addressing these issues.

G*eographic extent of the harbor planning area*

The geographic extent of the harbor planning area is Andrews Point to Straitsmouth Light (Map 1), landward to the first public roadway, and seaward to include the waters of Sandy Bay. From north to south, these roads are Long Branch, Point de Chene, Phillips, Cathedral and Breakwater Avenues, Granite, Beach and Main Streets, Dock Square, including all of Bearskin Neck, Mount Pleasant Street, Atlantic and Norwood Avenues, Old Garden Road, Marmion Way, Gap Head Road and the Town waters of:

Granite Pier Harbor (Gull Cove)
Pigeon Cove Harbor
Old Harbor
Rockport Harbor

1. Scenic Concerns

The scenic character of Rockport's harbors is a source of pride and satisfaction for residents and attracts artists, tourists, commercial photographers, and movie companies. The scenic value of the waterfront is subject to degradation through replacement development and architectural updating.

2. Commercial fishing

Commercial fishing operates from every harbor in Rockport. The role and benefits of Rockport's commercial fishing fleet should be documented in the plan to provide appropriate support for maintaining this water-dependent use.

- Conflicts exist between the commercial fishing landside operations and abutters, particularly residential uses. The conflicts include noise (engines in early AM), odor (of bait), truck traffic, storage of gear and boats.
- Fishermen need parking spaces on the waterfront for loading and unloading.
- Should the fees charged for mooring permits for commercial vessels be the same rate as mooring permits for recreational boats?
- There is concern that marine industries will not be able to survive on the waterfront under market pressures that favor non-water dependent uses.

3. *Recreational boating*

- Inadequate support facilities (fuel, water, restrooms, electricity, adequate tender tie-ups) for recreational boaters.
- Insufficient dock space and floats to accommodate the transient boaters who come to Rockport for the Town's restaurants and tourist attractions.
- Lack of launching areas and secure storage areas suitable for small non-motorized boats.
- Demand for additional dockage and moorings for residents, non-residents, and transient boaters. There is limited potential for expansion in the harbors.

4. *Town owned waterfronts and infrastructure*

- Most Town owned wharves and piers exhibit a certain amount of physical deterioration.
- Potential purchases of privately owned waterfront areas.
- Public restroom facilities and water are not currently available at all harbors.

5. *Environmental and safety concerns*

- Certain activities, such as boat maintenance, taking place over or adjacent to the water, may adversely affect water quality in the harbors. The extent and severity of these effects is unknown.
- Discharges from boats anchored off swimming beaches may affect public health and the environment.
- The harbors are crowded. Increase in transient boating services will exacerbate problems.
- Certain types of vessels such as PWC and HPW are of particular concern.
- Vehicular traffic around the harbor area is a problem.
- There are not enough parking spaces to accommodate all the water-dependent uses.
- Current waterfront fueling practices raise environmental safety concerns.
- Defective or inadequate private and municipal sanitary sewer systems, as well as contaminated streams and storm drains discharging into the harbors and adjacent waters may affect water quality.
- The practice of disposing of snow near harbors affects water quality.
- Excessive aesthetic and security lighting on the shoreline interferes with navigation and makes harbor approaches hazardous at night.
- Lack of data on the health of inshore plants and animals.
- Potential contamination of harbors and bay from 21E sites (hazardous waste), contaminated sediments, and the disturbance of these sediments.
- Maintain safe and adequate maneuvering room for vessels in all Town harbors.
- Minimize detrimental effects on eel grass by using good environmental practices.
- Shoreline public access areas which are not under direct supervision or frequent scrutiny are subject to the accumulation of trash and refuse from recreational activities as well as human and animal waste from visitors and local users.

6. *Public access and water-dependent uses*

- Lack of plan or policy on siting water-dependent commercial activities (gambling, deep sea fishing and whale watches) that have landside impacts.
- Limited waterfront access for pedestrians, picnickers, visitors, artists, and other water-enhanced recreational activities.
- Inadequate landscaping at Granite Pier and elsewhere along the harbors.
- Loss of public access over Town and private land.
- Question of control and ownership of harbor bottoms.
- Lack of official public awareness of waterfront permitting processes.
- Encroachment on public land and private properties subject to Chapter 91 public access requirements.

- The influx of scuba divers at Front and Back Beaches, Old Garden Beach, Cathedral Rocks and presence of diving classes at Back Beach cause a shortage of parking in these areas.

7. *Harbor administration*

- Decision-making process over future activities and uses needs to be clarified. There is a need to improve coordination among municipal, state, and federal authorities. This includes DPW, Conservation Commission, Board of Selectmen, Harbormaster, Harbor Advisory Committee, Planning Board, Historical District Commission, Fire Department, Police Department, Board of Health, Rights of Way Committee, Granite Pier Committee, Mass. Department of Environmental Protection, Mass. Coastal Zone Management, and the US Army Corps of Engineers.
- Equitable fee structure for public and private moorings, slips, shoreside tie-ups, and other harbor facilities.
- The Town lacks an effective, overall harbor management for managing the harbors and their facilities.

C. Goals and Policies

As a guideline, goals are general statements about what a community would like to achieve in the harbor areas.

(1) Scenic Values

Goal

- Preserve and protect the scenic qualities of Rockport harbors and coast as viewed from both the land and water.

Policies

- Protect the natural and man-made elements of the harbors and waterfront that contribute to the scenic, historical, and aesthetic qualities that give the community its character and support its economy.
- Ensure that future development or redevelopment is compatible with existing uses and does not detract from the waterfront's historic and scenic qualities and uses.
- Encourage acceptance of only water dependent applications for Chapter 91 permits.

(2) Public Access and Water-Dependent Uses

Goals

- Preserve, increase and enhance access to the Harbor Plan study area for water-dependent commercial and recreational purposes, including public and pedestrian access to and along the waterfront.
- Identify, protect and recover historic Rights of Way.

Policies

- Create and support opportunities for public access and enhancement of recreational or commercial boating on waterfront property within the Harbor Plan study area.
- Ensure Town-owned waterfront property be used only for water-dependent uses related to commercial and recreational boating, access, and passive recreation.
- Strive to protect, promote, and further public access under every Chapter 91 license and permit.

- Develop objective standards for the purpose of providing input on Chapter 91 license applications regardless of whether the Town is an abutter.
- Establish a process to monitor and respond to all Chapter 91 license applications in a timely manner.
- Create or set aside additional space for transient boaters to tie-up in locations convenient to commercial areas.
- Provide additional facilities in each of the harbors in support of small, non-motorized boats to include launching areas, secured storage areas for vessels, restrooms, and equipment.
- Address the existing parking shortage as it affects harbor use. Encourage, create, and use satellite parking facilities.
- Create an acceptable historic shoreline base map.
- Actively pursue the possibility of increasing mooring capacity by extending Granite Pier to Sandy Bay Ledge.
- Examine methods for increasing mooring density in all the existing harbors.
- Enhance waterfront access for water-enhanced activities of pedestrians, picnickers, visitors, and artists.
- Improve landscaping, cleanup, and maintenance of all Town and waterfront properties.
- Determine the ownership of harbor bottoms.
- Ensure that private use of the Town's harbors not be expanded beyond that which exists at the time this plan is adopted if such private use will reduce town mooring capacity or displace existing mooring holders.
- Establish a file of Chapter 91 licenses, permits, and acts of legislation relating to waterfront structures within the Harbor Plan area.
- Research and establish a file of information on waterfront structures and floats that lack the appropriate Chapter 91 licenses, permits and tideland determinations.
- Encourage acceptance of only water-dependent applications for Chapter 91 licenses.
- Consider maximizing sticker parking spaces at Town beaches.
- Consider restricting Scuba diving classes and large groups to specific portions of Town beaches and shoreline.

(3) Water Use

Goal

- Protect and maintain existing commercial and recreational water-dependent uses.

Policies

- Consider long-term impacts of new development on water-dependent uses when reviewing permit applications.
- Discourage offshore mariculture ventures.
- Support commercial fishing for its economic, cultural and historical contributions.
- Promote water-related youth and adult activities, such as sailing programs, regattas, boater safety classes, and swimming classes.
- Discourage the proliferation of personal watercraft and high performance watercraft in Sandy Bay.

(4) Natural Resource Protection

Goals

- Protect and improve the quality of land and water resources of Rockport harbors and Sandy Bay.
- Minimize the impacts of recreational boating and boat-related activities on water quality. Town waters should be clean enough for safe swimming.

Policies

- Reduce potential impacts to water quality by educating waterfront facility managers and users on best practices.
- Establish new regulations consistent with good management practices for activities on the water and waterfront that affect the environment.
- Ensure that the Town of Rockport complies with local, state, and federal regulations regarding outflow from storm drains.
- Control unmuffled marine engine exhaust noise.
- Use available opportunities, such as during regulatory reviews and distribution of annual permits, to provide educational materials on activities that cause pollution and on ways to avoid or minimize these impacts.
- Monitor water quality through periodically published reports. Take action if water quality is not appropriate for swimming.
- Monitor the health of significant populations of indigenous sea plants and animals through formal periodic studies.
- Monitor local and transient "live aboard" vessels to insure sanitary policy compliance.
- Preserve continuing access for existing anadromous and catadromous fish.

(5) Use of Waterfront Land and Structures

Goals

- Ensure that land within the scope of the Harbor Plan is used appropriately for the greatest public good.
- Improve the condition and function of Town-owned waterfront lands and structures.

Policies

- Prepare a long-term capital improvement and maintenance plan for municipal waterfront property and facilities.
- Schedule periodic assessments of the physical condition of wharves and breakwaters. Prioritize needs, identify revenue sources, and create an annual budget.
- Seek federal, state, and private funds for capital improvements of Town-owned land and structures.
- The Harbor Advisory Committee and the Harbormasters shall be responsible for reporting any storm related damage in a timely fashion to the Selectmen and DPW Commission so they may secure FEMA or any other available funds for repair of the damage.
- Prevent conflict between land use regulations and waterfront use regulations by using consistent language with specific and distinct definitions.
- Improve visual aspects and use of the waterfront (e.g., landscaping, benches).

(6) Harbor Administration

Goals

- Pursue the goals and policies of the Rockport Harbor Plan.
- Assign all mooring and Town slip facilities to vessels of appropriate size, draft, hull configurations, and similar means of propulsion.

Policies

- The Town should complete a Municipal Harbor Plan. After approval of the Plan by the Board of Selectmen and adoption of relevant bylaws by Town Meeting, the Plan should be used to guide and coordinate all decisions made at the local, state and federal levels that affect Rockport's harbors and waterfront.
- The Harbor Plan shall provide guidance to the Department of Environmental Protection for projects that require Chapter 91 licensing.

- The Harbor Advisory Committee shall be responsible for overseeing implementation of the Harbor Plan and for bringing periodic revisions to the Board of Selectmen for appropriate actions.
- Explore the most appropriate structure to manage harbors and implement the Harbor Plan.
- Establish a harbor management matrix to define the authority of Town boards and individuals related to harbor issues.
- Institute a process for ensuring maximum and coordinated participation in Chapter 91 licensing and permitting decisions of the Department of Environmental Protection. Use this process to provide consistent comments to the other state, federal and municipal agencies with decision-making authorities. For each Chapter 91 permit and license, Town officials will request DEP to require the maximum amount of public access provided for by the regulations.
- Periodically review and revise as appropriate the fees charged for use of harbor facilities.
- Develop a schedule for periodic maintenance of all harbor facilities, including walls, wharves, channels, basins, and buildings. Establish an enterprise fund to carry out this maintenance. The enterprise fund should receive an annual appropriation as a line item in the Town budget, whether or not work is scheduled in that year.
- Ensure that the allocated revenue from an Enterprise Fund is dedicated to the waterfront and harbors, and managed by the Harbor Administration.

Appendix A – Map Data Sources

DISCLAIMER: The information presented in the maps in this report represents the best information available at the time the report was prepared.

Note To GIS User
The Rockport Harbor Plan maps were produced using ArcView GIS 3.2. The following text describes the sources of information used to produce the visual database. Accuracy of data digitized by Urban Harbors Institute is not guaranteed and is for planning purposes only. These maps should not be reproduced in any form without appropriate reference to the sources.

Town Parcel Lines
Source: Town of Rockport Assessor/UHI georeferencing
Parcel sheet maps were obtained in digital TIFF format from the Rockport DPW. Each map was subsequently georeferenced into Massachusetts Mainland State Plane Coordinates 1983 using geographic transformation software. To obtain a best fit and to minimize root mean square error, either first order, second order, or affine polynomial transformations were used on each sheet. These sheets were tiled in ArcView and the parcel lines were digitized on-screen to create the existing parcel line theme. Parcel specific information obtained from the Town's assessors office was added to this theme to create a comprehensive parcel attribute table.

Rights-Of-Way
Source: Rockport Right of Way Committee.
Rights-of-way were digitized on-screen by UHI.

Boat Ramps and Moorings
Source: Harbormasters
Digitized on-screen by UHI.

Channel Lines and Anchorage Areas
Source: National Oceanic and Atmospheric Admin. Charts
Digitized on-screen by UHI.

Local Dredging Limits
Source: Army Corps of Engineers
Digitized on-screen by UHI.

Engineering Infrastructure
Source: Town DPW/Weston & Sampson Engineers
AutoCAD data layers were obtained from W&S and converted into ArcView by UHI.

21e Sites.
Source: MassGIS.
The DEP Tier Classified Oil or Hazardous Material Sites datalayer is a statewide point dataset containing the approximate location of oil or hazardous material disposal sites that have been (1) reported and (2) Tier Classified under M.G.L. Chapter 21E and the Massachusetts Contingency Plan (MCP). Location types featured in this datalayer include the approximate center of a site, the center of a building on the property where the release occurred, the source of contamination, or the location of an on-site monitoring well. For the purposes of this document, the terms "DEP Tier Classified oil and hazardous material disposal sites" and "Tier Classified Chapter 21E sites" are synonymous and are often referred to simply as "sites". This STATE library layer is named **C21E**; its coverage name is **BWSC_DEP**.

Releases of oil and hazardous materials are reported to the Department of Environmental Protection's (DEP) Bureau of Waste Site Cleanup (BWSC), according to procedures established in the MCP (310 CMR 40.0000). The sites mapped in this datalayer represent only a subset of the total reported Chapter 21E sites tracked by DEP BWSC. Chapter 21E sites that have not yet been Tier Classified are not contained in this datalayer.

Wetlands
Source: MassGIS
The wetlands were interpreted from stereo, 1:12000 scale, color-infrared photography by staff at UMASS Amherst. The interpretation is field checked by Department of Environmental Protection (DEP) Wetlands Conservancy Program (WCP). Completed interpretations are then scanned at 250 dpi with a Howtek Scanmaster 3+. The resulting images are converted to ARC/INFO coverages using ARCSCAN with additional processing in ARCEDIT. The distortion from terrain and camera coordinates are removed using a combination of PHOTOGIS, a photogrammetry software program, and a digital terrain model (DTM) derived from 1:5,000 black and white ortho-rectified digital aerial photography. In ARC, the corrected coverages are then mapjoined and clipped by the boundary of a State Plane Coordinate grid cell which represents a 4 kilometer by 4 kilometer orthophoto sheet. Plots are generated at 1:5,000 scale and final quality control is performed at that scale. It should be noted that the resulting wetlands are for planning purposes only; final wetland boundary determination must accord with MA Act M.G.L. c. 131.

Eelgrass
Source: MassGIS
The Mass. Department of Environmental Protection (DEP) Wetlands Conservancy Program (WCP) has developed and completed a project to map the SRV resources of the entire Massachusetts' coastline. This mapping effort was conducted with the financial and technical assistance of the National Oceanic and Atmospheric Agency (NOAA) Coastal Change Analysis Program (C-CAP) and the NOAA Coastal Services Center located in Charleston, SC. The project (conducted from 1994 through 1997) acquired aerial photography and conducted photointerpretation and extensive fieldwork to map the coastal SRV resource.

Flood Data
Source: MassGIS
FEMA created the Q3 Flood data by scanning current FIRM paper maps and vectorizing the data. Though the scales of the map sheets vary and the original paper FIRMs contain no horizontal control, the data do have horizontal control consistent with 1:24,000 maps. This was accomplished by fitting the flood data to a USGS quadrangle. Edgematching, overlaps and underlaps in data and other problems were not corrected during the conversion process. The data were received from FEMA as ARC/INFO export files which were processed by MassGIS and incorporated into the data library. While FEMA intends to perform bi-annual review of data, the user is advised to confirm that the digital data does indeed represent the most current FIRM.