Winthrop Harbor Assessment and Plan

Prepared for:

The Town of Winthrop, Massachusetts

Prepared by:

The Cecil Group

with

FXM Associates
Vine Associates

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Acknowledgements

Winthrop Harbor Plan Committee

At the center of the planning effort was the Winthrop Harbor Plan Committee's commitment and active involvement. The Committee met approximately every month during second half of 2004 to provide direction to the Plan, insight to understanding the area, feedback on issues, and input from the various members who were also involved with other Town committees. Members of the Committee also participated visibly in all the other meetings with the pubic and Town officials. The Committee was comprised of representatives of various Town committees and interest groups as shown in the following table.

Committee Member	Affiliation
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Mike Carney	Winthrop Harbor Management & Planning Committee
Joseph Clark	President, Winthrop Chamber of Commerce
Donald Colpak	Boat Captain
John Crosby	Planning Board, Conservation Commission
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TABLE OF CONTENTS

Executive Summary **1**

INTRODUCTION 1
VISION AND GOALS OF THE HARBOR ASSESSMENT AND PLAN 1
KEY FINDINGS 2
KEY RECOMMENDATIONS 3

I. Introduction **5**

OVERVIEW 5
STUDY AREA OF THE PLAN 5
ORGANIZATION OF THE PLAN 7
PLANNING PROCESS AND INVOLVEMENT 8

II. History **12**

SETTING 12
HISTORY OF THE HARBOR AREA 12

III. Existing Conditions **15**

OVERVIEW OF HARBOR USES 15
PROPERTY AND REGULATORY INFORMATION 15
COMPARISON OF MAPS FOR SHORELINE CHANGE 23
PUBLIC ACCESS/PUBLIC OWNERSHIP 32
MARITIME USES 44
HOMELAND SECURITY AND LOGAN AIRPORT 54
POLLUTION ASSESSMENT 56
RECREATIONAL ACTIVITIES AND TOURISM POTENTIAL 61

IV. Action Plan and Implementation Guide **81**

OVERVIEW OF THE PLAN'S RECOMMENDATIONS 81
IMPLEMENTATION SCHEDULE 81
WATERSIDE RECOMMENDATIONS 84
LANDSIDE RECOMMENDATIONS 85
PROGRAM AND REGULATORY RECOMMENDATIONS 86
SUMMARY OF FUNDING RESOURCES 89

Note: Copies of Public Waterways licenses have been submitted as a separate document

LIST OF FIGURES

Figure 1. Study Area of the Winthrop Harbor Assessment 7
Figure 2. Historic Map of Boston Harbor, 1775 25
Figure 3. Historic Map of Boston Harbor, 1894 26
Figure 4. Historic Map of Boston Harbor, 1903 27
Figure 5. Historic Map of Boston Harbor, 1950 27
Figure 6. Shoreline Changes in the Southern Portion of Winthrop Harbor, 1847 - 2002..... 28
Figure 7. Winthrop Zoning Districts along Winthrop Harbor 30
Figure 8. Proposed Layout of the Multi-use Pier..... 41
Figure 9. Winthrop Harbor Features 44
Figure 10. Existing Channels and Anchorage Areas located within Winthrop Harbor. 47
Figure 11. Winthrop Harbor Improvements Proposed by the U.S. Army Corp of Engineers, 1993 49
Figure 12. Potential Dredge Locations in Winthrop Harbor 51
Figure 13 Sampling Location Plan for 1995 Chemical Analyses of Sediments for the Dredging of Winthrop Harbor..... 58
Figure 14. Sampling Location Plan for 1997 Biological Testing of Sediments for the Dredging of Winthrop Harbor..... 59
Figure 15. Map of the Economic Study Area of the Winthrop Harbor Waterfront Area 70

LIST OF TABLES

Table 1. Public Waterfront Licenses for Coastal Structures in Winthrop Harbor 19
Table 2. Waterfront Zones of Properties along Winthrop Harbor* 29
Table 3. Land Uses of Parcels along Winthrop Harbor*..... 31
Table 4. Documented Public Access Sites 32
Table 5. Undocumented Public Access Sites..... 33
Table 6. Locations of Public Entitlements, Coastal Trails, or Pathways along Winthrop Harbor 34
Table 7. Local, State, and Federal Facilities and Structures on Wintrhop Harbor 35
Table 8. Easements that Lead to and Follow the Waterfront of Winthrop Harbor Front 38
Table 9. Yacht Clubs and Marina along the the Wintrhop Harbor 52
Table 10. Chemical composition of composite samples in Winthrop Harbor in 1995..... 60
Table 11. Winthrop Harbor Master Vessels 63
Table 12. Demographic Characteristics: Town of Winthrop and its Waterfront Area 71
Table 13. Occupational Characteristics: Town of Winthrop and Its Waterfront Area 71
Table 14. Employment Characteristics: Town of Winthrop and Its Waterfront Area 73
Table 15. Existing and Potential Retail Sales within the Harborfront Area of Winthrop 78
Table 16. Summary of Implementation Actions and Schedule..... 82

EXECUTIVE SUMMARY

Introduction

The Town of Winthrop has a vision to provide more recreational opportunities, improve options for commercial and recreational uses, increase public access to Winthrop Harbor and beyond, and improve the businesses that rely on the waterfront and its uses. The Plan provides the Town with a series of strategies and funding opportunities, and an implementation schedule to help reach its goals and achieve this vision. It reflects the desires and needs of the community and users of the harbor.

The recommendations within this Plan are the result of committee meetings and community participation through interviews and discussions with key stakeholders, along with local, state, and federal agencies. They were based on a variety of criteria and conditions including potential benefit to the local economy, appropriate uses, and impacts to the harbor.

Vision and Goals of the Harbor Assessment and Plan

The Plan envisions the Harbor to provide a resource for boating and passive recreation in a natural setting for the community of Winthrop. This Plan sees the Harbor as a vibrant area that supports both recreational and commercial uses on both the water and the waterfront. The Harbor and waterfront should be a resource for commercial fishermen, families, sailors, beach goers, and other users now and for future generations as well.

The overall purpose of this report is to assess the conditions of the harbor and its waterfront and to prioritize strategies and funding opportunities that can help the waterfront support the vision and goals. The Plan will also present options to develop and manage specific areas according to the goals of the Plan.

The Plan proposes to substantially improve commercial and recreational opportunities and increase access to the waterfront. Central to this Plan is the construction of a multi-use pier and dredging of the federal channel. Infrastructure requirements such as the stormwater system and stairways at public access points would need improvement as well. This will help unlock additional uses, access, and private development of existing and new businesses along the waterfront. Private investments to the marina facilities and in the open space areas would be needed to make the Harbor more enjoyable, aesthetically pleasing, and a safe boating and recreational area for the community of Winthrop.

Key Findings

During the development of the Winthrop Harbor Assessment and Plan, information was collected, reviewed, and analyzed from current plans and documents, Town assessor data, previous studies, federal, state, local economic and Census data, and conversations with key Town staff, businesses, and individuals. From this analysis, the following key findings were used to support the recommendations of this Assessment and Plan.

Waterside Findings

Winthrop Harbor as a Unique Resource
The Town has a unique resource: a protected harbor with direct access to both Boston Harbor and the Atlantic Ocean. With over four miles of harbor frontage, there are many opportunities for the public to access Winthrop Harbor.

Construction of a Multi-use Pier to Commercial Vessel Uses
The commercial fishing fleet, including mainly clammers and lobstermen, has been declining and has limited waterside and landside support facilities. There is strong support to invest in a multi-use pier in order to provide fishermen and other commercial uses, such a passenger and charter vessels, with a place to park vehicles, drop off fishing gear and passengers, tie up their vessels, and similar commercial vessel support operations.

Recreational Boating
There are four private clubs that operate marinas and three separate marinas on the Harbor. The Town supports a significant number of moored vessels in the Harbor. All of these vessels generate substantial waterfront activity, especially during the busy summer season.

Navigation and Dredging
Although the Harbor was dredged in the past five years, there are several channels that need to be dredged to ensure navigation and access to the Harbor and environs and to support the commercial and recreational uses of vessels as well as the businesses along the waterfront.

Shoreline Change
There have been significant changes in the shoreline over the past hundred years due mainly to dredge and fill operations. No major changes in the shoreline are seen in the near future.

Landside Findings

Tourism
The waterfront has no major tourism attractions except for several small charter boat, sport fishing operations. There is potential, however, to increase tourism and use of the waterfront by improving its infrastructure, access to the waterfront, and businesses that provide lodging.

Economic Opportunities
Restaurants and retail businesses in Winthrop now capture only about 22% of the town residents' yearly retail spending potential. Significant potential exists for these markets to be successful, relying mostly on Winthrop residents.

Public Access to the Water and Support Infrastructure
The location of the Harbor and its natural features will allow the public to have direct access to the Harbor and beyond. Although there are many places for the public to access the waterfront along the Harbor, it is limited due the poor condition of its walls, stairs, and other infrastructure. The Town has the opportunity to increase waterfront access that encourage use of the Harbor without changing its character, so that it can be used for many generations. Several key facilities, such as the Town Landing and the former rail bed, can provide substantial opportunities for increased public access, and would require substantial funding.

Zoning
Recent zoning changes were made to encourage mixed-use developments on the waterfront. Additional changes in the zoning ordinance to allow bed and breakfast operations could help support an increase in tourism.

Homeland Security
The proximity of the harbor and waterfront to Boston Harbor and Logan Airport runways is of major concern to the community. The Town of Winthrop needs to be involved with Boston Harbor and Airport security plans to ensure that safety and well-being of its residents and users of Winthrop Harbor.

Key Recommendations

The Winthrop Harbor Assessment and Plan is intended as a practical map for future actions. Changes to the recommendations may necessitate additional public comment, permits, additional study, and town approvals depending on available funding and changes in the development of the waterfront.

The Plan seeks to utilize the commercial harbor front, preserve the residential areas, and protect its natural resources. Maintaining and enhancing the existing uses and facilities of the marinas and yacht clubs along the waterfront would help accomplish this.

The Plan also provides recommendations to increase commercial fishermen's' and the public's access and use of the Harbor by creating a multiuse pier at the Town Landing, improving public access structures along the harbor front, and designating new waterfront paths. It also seeks to improve access from the waterside by dredging the Federal Channel and the channel under Belle Isle Bridge. Improvements to the management of the Harbor

would be through a new Harbormaster Office at the Town Landing and revenue increases for moored vessels and new ramp fees. Recommendations for the commercial waterfront areas focus on streetscape improvements and changes in the zoning to allow more lodging businesses that are compatible with neighborhood character of this area.

The multi-use pier, a key project of this Plan, would be built at the Town Landing on Shirley Street. Potential waterside uses at the pier would include pier and berthing space for a variety of vessel types such as passenger vessels, ferry, commercial fishing boats, Harbormaster boats, dinghies, and transient vessels. Landside uses would include a Harbormaster office, ticket both, pickup/drop-off area, and a place for temporary storage of commercial fishing gear. This type of development would set the stage for other water and non-water dependent uses including increased business along Shirley Street as a result of more people being attracted to and using the multi-use pier.

The following recommendations were designed to achieve the Town's overall goals for use of the harbor and waterfront, and have evolved in response to an analysis of the current conditions, issues, and resources, and comments and suggestions from businesses, residents, and members of the Harbor Plan Committee. The recommendations are summarized into three categories:

1. Waterside Recommendations

- Build a multi-use pier and operations facility at the public landing.
- Dredge Federal Channel
- Dredge Belle Isle Inlet.
- Continue Winthrop Beach Re-nourishment Program.
- Improve the boat ramp at the Town Landing.
- Investigate stabilization of Snake Island.
- Improve control of water at the Lewis Lake tide gate.

2. Landside Recommendations

- Develop the proposed HarborWalk
- Improve infrastructure (stairs and walls) at public access points
- Repair/replace Bridge over Belle Isle Inlet
- Design and implement Shirley Street streetscape improvements

3. Program and Regulatory Recommendations

- Develop a management plan for the Town Landing.
- Implement a new public access and signage program.
- Promote waterfront uses and benefits.
- Strengthen programs with existing waterfront users and advocates.
- Establish launch fees at the Town Landing.
- Increase Town mooring use and fees.
- Update and implement the shellfish management plan.
- Maintain existing businesses and attract new ones.
- Modify zoning to allow for Bed & Breakfast lodgings.

I. INTRODUCTION

Overview

Winthrop Harbor is the Town of Winthrop's greatest asset: it provides a mix of economic, recreational, and transportation opportunities and benefits to the community and its users. Located on the eastern edge of Winthrop, the Winthrop Harbor and adjacent land areas provide boaters with a calm and protected harbor. Its scenic waters and public access points provide panoramic views of the Boston Harbor and skyline, and its location allows direct vessel access to commercial fishing and recreational opportunities in Boston Harbor, the Atlantic Ocean, and points beyond. The harbor front has numerous businesses that have excellent water access, and its recently dredge harbor is home to hundreds of moored vessels. Winthrop Harbor, however, lacks investments to its infrastructure and assets that could create additional opportunities and uses to benefit the Town, residents, and businesses.

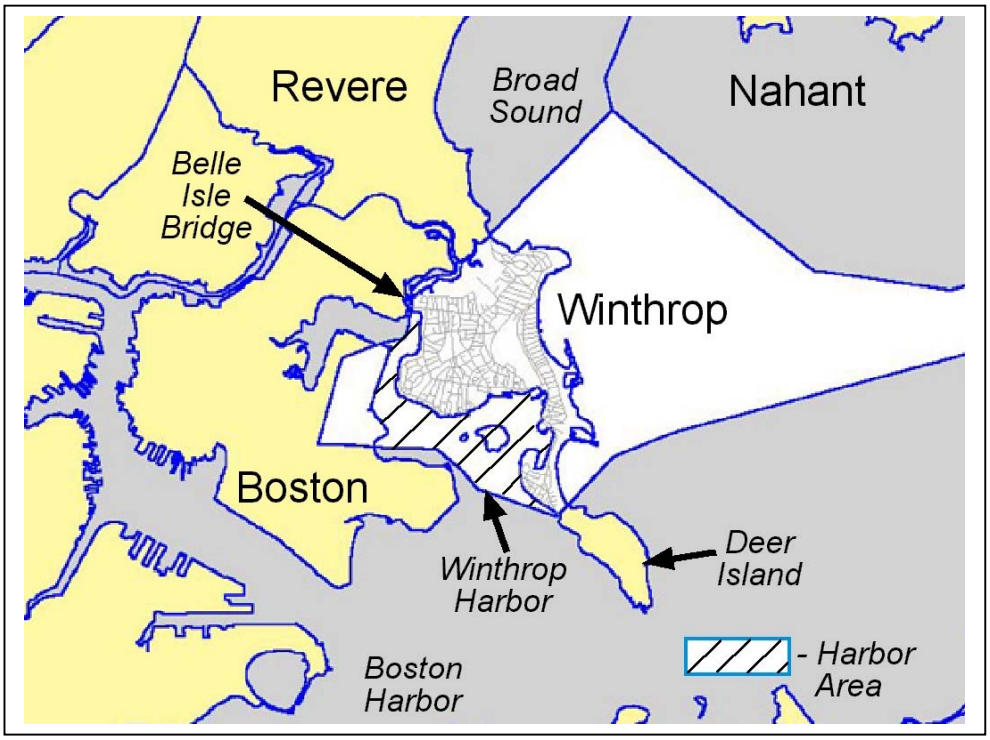
The Winthrop Harbor Assessment and Plan identifies its assets and resources on both the waterside and landside, and provides a series of recommendations that support its use and continued enjoyment by the residents, businesses, and visitors. It outlines feasible harbor development projects and describes the implementation process and costs associated with the proposed recommendations that will help realize its potential for recreational, commercial, and other waterfront opportunities. The Harbor Assessment and Plan is the result of a series of meetings, input from users, and extensive analyses of the existing conditions and potential opportunities on the Harbor and along the waterfront.

Study Area of the Plan

The planning area incorporates all the land, activities, and waterfront uses in and around Winthrop Harbor and its adjacent properties. This area encompasses approximately one square mile of water area and 4.4 miles of shorefront along the harbor (see Figure 1). In addition to the areas that are the focus of the planning efforts, the study has addressed conditions in the surrounding areas that attract people to the area and have a direct impact on the uses at Winthrop Harbor. These areas include

the adjacent Deer Island, Belle Isle Marsh and Greenway, Boston Harbor Islands, and the Winthrop beaches.

Figure 1. Study Area of the Winthrop Harbor Assessment



Source: MassGIS data base, 2004 and The Cecil Group, 2004.

Organization of the Plan

The organization of this Report includes the following elements:

- Executive Summary
- Introduction
- Existing Conditions
- Implementation Plan and Strategies
- Appendices

The recommendations of the Plan were derived in part from several sources:

- Previous reports, studies, and legal documents
- Meetings with the Harbor Plan Committee
- Interviews with key stakeholders in the Harbor
- Interviews with town, state, and federal officials
- MassGIS database
- The Cecil Group consultant team including FXM Associates and Vine Associates

Planning Process and Involvement

The Plan was prepared for the Town of Winthrop, Massachusetts. The Winthrop Harbor Plan Committee guided the planning effort throughout the process, which began in June 2004. A consultant team led by The Cecil Group, which included several team members from Vine Associates and FXM Associates, provided professional assistance.

Goals of the Master Plan

A set of goals and objectives were developed during the initial stages of the planning process. They also helped formulate a vision for this Plan. They were summarized from the workshop on Planning Goals and discussions with members of the Harbor Plan Committee and the Harbor Management Committee. They were ranked by members of these committees, and are organized with the highest ranked subjects first. The goals provided the basis for the planning recommendations and help set the priorities for these actions.

1. Commercial Fishing

- Support development of a commercial fishing dock and landside support area.
- Ensure commercial fishing vessels have sufficient shorefront facilities to conduct business.
- Fund infrastructure projects that support commercial fishing.
- Establish a shellfish management plan and fees.

2. Dredging

- Ensure harbor depths, navigation, and Federal Channel are improved and maintained to support commercial and recreational uses.
- Dredge areas as necessary to improve access for commercial and recreation vessels.
- Support dredging projects that ensure all areas are stabilized and minimize repeat dredging.
- Support dredging projects that improve the safety and security of the Harbor.
- Stabilize Snake Island to minimize repeat dredging in the Harbor.

3. Economic Development

- Maximize the potential of the Harbor in the context of economic development goals of the Town.
- Support water-dependent commercial uses.
- Ensure commercial fishing vessels have sufficient shorefront access to conduct business.
- Ensure public investment in the waterfront infrastructure will support and encourage private investment.
- Maintain balance with tourism and recreational uses and developments.
- Support development of the commuter ferry and pier.

4. Infrastructure

- Improve all waterside infrastructures so they improve water quality, public access, and safety along the Harbor.
- Improve infrastructure so that there are minimal barriers to the functionality and use of the Harbor.
- Support development of a commercial fishing dock and landside support area.
- Support development of a Town Pier.
- Ensure Belle Isle Bridge is rebuilt with increased height to allow for larger vessels and increased safety.
- Support development of a dock to house the Harbormaster, commuter ferry, and other water-dependent public uses.
- Support the on-going reconstruction and beach re-nourishment program for Winthrop beaches.
- Ensure boat ramp at the Town Landing provides adequate and safe access for the boating public.

5. Public Access

- Protect and enhance public access to the waterfront and on the water for the Winthrop community.
- Increase public access to the waterfront for recreational uses.
- Create a compatible recreational and commercial fishing dock.
- Improve use of public access areas with signs, maps, and amenities that invite the residents and visitors to use the waterfront.
- Improve access and parking for all transportation modes and emergencies.

6. Environment/Natural Resources

- Protect and enhance the environmental quality of the harbor as an integral component of any proposed development.
- Ensure Best Management Practices are used on any state, local, or private waterfront project.
- Support development of an ecological/educational center near proposed Town pier.

7. Homeland Security

- Ensure Town officials and Harbormaster are fully involved and coordinated with homeland security and safety plans and operations with Massport and the Coast Guard.
- Establish a harbor security, safety, and emergency plan with appropriate officials.
- Ensure the Harbormaster can effectively serve the community with the appropriate office space and equipment.

Existing Conditions

The consultant team identified the existing conditions of the harbor and waterfront. This assessment included property and regulatory information, public access, maritime uses, homeland security, pollution, and recreational activity and tourism. This information was collected through both primary and secondary resources including site visits, direct and phone conservations with several Town of Winthrop departments and state and federal agencies, and meetings with the Harbor Plan Committee.

Recommendations and Implementation

A draft and final plan including strategies, funding opportunities, and an implementation schedule emerged from input and discussions with town and state agencies, the Harbor Plan Committee, business owners, Town staff, the information assessment that provided an understanding of current harbor conditions, and the goals that helped direct efforts and development of the recommendations.

II. HISTORY

Setting

The Town of Winthrop is a small coastal community located approximately five miles east of Boston proper, and borders the communities of East Boston, Chelsea, and Revere. It had a population of 18,303 according to the US Census 2000.

Winthrop Harbor is located adjacent to the Town of Winthrop. It is situated on the northeastern side of Boston Harbor, to the east of Logan International Airport. Technically, the Harbor is named Boston Harbor, but the name Winthrop Harbor is used locally (and in this Assessment) to distinguish it from other waters.

In general, the Harbor is relatively quiet and with most boating activity occurring during weekends and the summer months. There are several, marinas, yacht clubs, and boat yards along the harbor front. A marina and two yacht clubs are located further inland in the neighboring communities of East Boston and Revere.

History of the Harbor Area

The history of Winthrop Harbor is tied to both its natural and built changes and is reflected by the current configuration and uses.

Geologic Formation of Winthrop

The configuration and topography of the land in and around Winthrop Harbor, which is actually part of Boston Harbor, was a series of landmasses, drumlins, and water. Drumlins were formed at the edges of retreating glaciers that left piles of rock and debris over 6000 years ago. Many of these drumlins remain today including Cottage Hill and Deer Island. Parts of the drumlins have eroded and contributed to the formation of the beaches and filling in of the water area, such as Shirley Gut, to form the present day Winthrop. Belle Isle Marsh is also sheltered among the drumlins in Revere and Winthrop.

The Built Harbor

Winthrop was settled in 1630, mainly as a sparsely settled agricultural community, and remained that way for several hundred years. In 1852, it was incorporated as a town. The community changed substantially in the late 19th Century due to the thriving economic activity in Boston and the transportation revolution.

During the 1900's, there were a series of events that change the uses and configuration of the Harbor:

- By the 1920's, the Narrow Gauge Railroad had an extensive network of stations throughout Winthrop.

- Part of the Harbor and Belle Isle Marsh was filled to form the rail beds that remain today.
- The expansion of Logan Airport during and after the 1950's filled much of Boston Harbor and incorporated several small islands (Governor's and Apple).
- Dredge and fill operations during this expansion resulted in several depressions and in Winthrop Harbor and the creation of new land such as Caughlin Park and the Town Landing.
- A tide gate was constructed early 1900's to form Lewis Lake and prevent flooding tidal pond and adjacent land.

These and other developments have led to the present day have shaped, molded, and supported additional developments that have led to the present configuration and use of Winthrop Harbor.

III. EXISTING CONDITIONS

Overview of Harbor Uses

Winthrop Harbor is currently used for both commercial and recreational boating. Its configuration and depth allow many vessels to utilize its waters. The Harbor can now accommodate large vessels, especially sailboats with deep drafts, since the mooring areas were dredged in 2001 to a depth of 6 feet (mlw). Several shallow areas in the Harbor restrict vessel navigation, but they do not present a major problem for boaters.

Physical Description of the Harbor

Winthrop Harbor is located at the entrance of Boston Harbor on the East side of the Town of Winthrop. The harbor area, about one square mile in size, has a variety of natural resources and physical features that make in a attractive place to moor and dock vessels as well as access the Harbor. The waterfront portion of the harbor is approximately 4.4 miles long and has many coastal features. Its edges also offer excellent views of Boston Harbor, the City of Boston, and the Atlantic Ocean from many of the street fronts, adjacent hills, and access points.

The Harbor is generally accessed by water from the south between Logan Airport on the west side and Deer Island on the east side. Boaters can choose one of two main channels to continue access to the harbors facilities. The eastern channel provides access to the main boat ramp and several marinas. The western channel, which continues past the airport runways provides access to several yacht clubs and marinas, Belle Isle Marsh and inlet, and to a beach and several marine facilities in East Boston and Revere. Snake Island, a small, protected island lies in the middle of Winthrop Harbor between the two channels.

Boston Harbor and Massachusetts Bay

Massachusetts Bay and Boston Harbor provide an excellent opportunity for the boating public. The location of Boston Harbor, its islands, Boston waterfront, and its marina facilities allows direct access to many points in Winthrop Harbor. The open waters of Massachusetts Bay and the Atlantic Ocean are only a half mile from Winthrop Harbor. These features are attractive for both commercial and recreational boaters transiting to and from Winthrop Harbor and open waters as well.

Property and Regulatory Information

Winthrop's waterfront and harbor fall under the jurisdiction of several regulatory authorities. This section identifies local, state, and federal regulations that control and regulate the use of the waterfront properties and harbor activities. It also identifies licenses that grant use of the waterfront for public access and private projects.

Regulatory Overview

Some of the recommendations within this Plan are guided by regulations, at the local, state, and federal levels. The clam flats adjacent to the Logan Airport runways, for example, are restricted to permitted users due to security concerns.

Moreover, environment regulations have to be considered when planning for the new uses, especially regarding activities near the shoreline and within protected buffer zones. For example,

- Waterfront developments are subject to many state and federal agency regulations.
- The Department of Conservation and Recreation (DCR) designated Belle Isle Marsh as an Area of Critical Environmental Concern, and much of it is subject to the Department of Environmental Management and DCR jurisdiction and regulations.

Current regulations also control the number of moorings and berths in the Harbor. Regulatory approval by the DEP, Army Corps of Engineers, and other agencies may be required in order to increase the number of vessels in the Harbor.

Additional constraints in planning for alternative harbor uses include land features, local and adjacent land uses, and infrastructure conditions. For example, there are several shoal areas in the Harbor that cannot be used for mooring vessels, and some of the ramps are have restricted access due to the tides.

State Regulations: Chapter 91

Winthrop's waterfront and harbor is subject to M.G.L. Chapter 91 (Public Waterfront Act). The waterways regulations (310 CMR 9.00) that were adopted to implement this law ensure that the Commonwealth's tidelands are utilized only for water-dependent uses or a public benefit to the water when there is a project to develop or alter the waterfront. The Waterways Regulation Program of the Massachusetts Department of Environmental Protection (DEP) administers the Chapter 91 licensing program.

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. On the landside, tidelands extend to the natural high water mark, i.e., the farthest landward tide line which existed ''prior to human alteration'' by filling, dredging, impoundment or other means. Generally, DEP jurisdiction applies to all filled as well as flowed tidelands.

Activities Subject to Chapter 91

Chapter 91 authorizations are generally required for the placement of fill, building of structures, and dredging in tidelands. Types of structures include piers, wharves, floats, retaining walls, revetments, pilings, bridges, dams, and waterfront buildings (if

on filled lands or over the water). A new license also may be required if there has been a structural change or change in use of a previously licensed structure.

Water-Dependent Uses

In general, uses licensed under the waterways program must either be water-dependent or " serve a proper public purpose that provides greater benefit than detriment to the rights of the public in said lands.'' In general, a water-dependent use is one that requires direct access to or location in tidal or inland waters, and therefore cannot be located away from said waters. A full definition of water-dependent uses can be found in the regulations (310 CMR 9.12(2)). Among the uses defined as water-dependent that are likely to apply to Winthrop are:

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

Designated Port Area and Harbor Boundaries

Designated Port Area

The Massachusetts Office of Coastal Zone Management (MCZM) established Designated Port Areas (DPA) to encourage water-dependent industrial uses at 12 ports. In general, water-dependent industrial uses are those industrial and infrastructure facilities that are dependent on marine transportation or require large volumes of water to be withdrawn from or discharged to a waterway for cooling, process, or treatment purposes. Since there is no DPA in Winthrop, waterfront uses are not bound by DPA regulations that generally require licenses for specific water-dependent uses. The nearest DPA is along the shipyard area of East Boston.

Harbor Boundaries

The boundaries for Winthrop Harbor determines the resources, facilities, structures, and uses that were documented as part of this Harbor Assessment and Plan (see Figure 1). In a clockwise fashion, the harbor boundary extends from the former trolley bridge in Belle Isle Inlet along the western coast of Winthrop to the City of Boston boundary at Deer Island. From there, it extends west through Boston Harbor to Logan Airport and follows the Winthrop town land (airport runways) north where it crosses back over to the former Belle Isle trolley bridge.

Public Waterfront Licenses

Table 1 presents a summary of the private and public waterfront structures and facilities located within Winthrop Harbor and available Chapter 91 license information. Due to the inability to readily identify the ownership of many of the waterfront structures listed, the locating of license information was limited. A full record deed search may reveal additional licensing information; however, such an effort is considered beyond the present project scope. Copies of the available Chapter 91 licenses as identified in Table 1 are presented in Appendix A.

Table 1. Public Waterfront Licenses for Coastal Structures in Winthrop Harbor

License Number	License Name	Awarding Authority[1]	Structure Location	Structure Type and Notes
10	John Winthrop Realty	E	Pleasant Street below PPYC	rip rap, fill, piles, railway, timber bulkhead **located in PW books, not DEQE binders **
27	Jennie M. Dellano	DPB	end of Sargent Street	pile pier
63	Willard M. Bacon	DPB	off Washington Avenue at Elmwood	seawall, fill - same plan as 64
64	E.A. Creeley & C.P. Tewksbury	DPB	off Washington Avenue at Elmwood	seawall, fill - same plan as 63
74	Robert E. Sproule	CWPL	end of Sunnyside Avenue	ocean swimming pool
190	Cottage Park YC	DPB	end of Orlando Avenue	pile bent foundation
215	BRB&L RR	DPB	off Grand View Avenue end of Otis Street	wharf
236	BRB&L RR	CWPL	end of Winthrop Street	bulkhead, fill
587	C.E. Stevenson	HL	unknown	solid wharf
602	O.F. Belcher	HL	end of Harbor Avenue	solid wharf
607	Pleasant Park YC	E	562 Pleasant Street	granite block seawall, fill, piles, floats
614	Sarah M. Lunt	PW	off Pleasant Street	timber bulkhead/solid fill
652	Anthony C. Gregory	E	466 Pleasant Street	timber pier, piles, floats ramp
727	William B. Rice	HL	off Shirley Street at Beacon	wooden pier
740	Albert C. Moody	HL	off Johnson Avenue	pile wharf
755	Town of Winthrop	HL	Crystal Cove	bridge
760	EJBSP&PS RR	HL	end of Railroad at end of Shirley Street	wharf
798	George H. Tyler	HL	unknown	wharf
875	George H. Wood	HL	end of Sunnyside Avenue	wharf and walkway
877	BW&S RR	HL	throughout harbor in channel	drive 8 piles
908	Pleasant Park YC	PW	560 Pleasant Street	piles
919	BRB&L RR	PW	Crystal Cove drawbridge	submarine cables
925	O.F. Belcher & J.B. Huchins	HL	end of Woodside Avenue	solid/timber wharf
978	Cottage Park YC	E	end of Orlando Avenue	piles, floats
1049	BW&S RR	HL	Crystal Cove	bridge, railroad
1058	Nelson M. Powell	PW	474 Pleasant Street	timber pier, rail incline
1071	Harvey A. Maibor	E	31 Court Road	pier, ramp, piles, floats
1071	Jesse L. Scott	HL	off Shirley Street at Crystal Cove Avenue	pile structure
1072	Atlantis Marina	E	off Pleasant Street	piles, floats, ramp, revetment
1194	C.E. & S.E. Stevenson	HL	end of Pico Avenue	fill
1215	Town of Winthrop	PW	Bay View Avenue @ Triton	fill
1229	Willis J. Reid	PW	550 Pleasant Street	timber pier
1253	Ezra B. Whittier	HL	off Shirley Street between Shirley Avenue	timber pier

1291	Town of Winthrop	HL	Along Shirley Street from Shirley Avenue to Shirley Avenue	rip rap, solid fill
1321		NEP		
1325	Gray Taft	HL	Point Shirley	pile wharf
1339	Winthrop YC	PW	off Shirley Street	piles
1389	Walter G. Baker	PW	63 Main Street	fill
1406	David J. Goll	E	Court Road @ ramp	pier, gazebo, ramp, float
1410	Pleasant Park YC	PW	562 Pleasant Street	platform, piles
1445	Winthrop YC	HL	off Shirley Street at Shirley Avenue	pile wharf
1506	Winthrop YC	HL	off Shirley Street at Shirley Avenue	clubhouse, pier, floats
1537	Orlando E. Lewis	HL	off Shirley Street south of Beacon	wharf
1602	Winthrop YC	E	off Shirley Street	piles, floats
1651	Atlantis Marina LP	E	off Pleasant Street	floats, pier, ramps, bulkhead, fill
1695	Linus M. Child	HL	off Shirley Street at Crystal Cove	timber pier
1710	Town of Winthrop	HL	Washington Avenue bridge	fill
1743	BRB&L RR	HL		North of Washington Avenue
1775	Anrthur H. Wolcott	HL	off Pleasant Street at Edgehill	pile wharf
1816	BRB&L RR	HL	Belle Isle Inlet	pile bridge
1838	Orlando E. Lewis	HL	off Shirley Street at Perkins	pile wharf, fill, dredge
1839	Orlando E. Lewis	HL	end of Bartlett Road	pile wharf, fill, dredge
1868	Orlando F. Belcher	HL	Cottage Park Road to Orlando Avenue	solid fill
1902	BRB&L RR	HL	Crystal Cove	solid fill
2044	Charles M. Partebow	HL	south of railroad pier at end of Shirley Street	marine railway
2056	David J. Goll	E	Court Road @ ramp	pier, float
2128	Oliver Corporation	PW	east of Point Shirley YC	pier, float
2187	Luther Harrington	HL	Crystal Bay off Shirley Street	pier
2300	BRB&L RR	HL	Crystal Cove	widening of solid fill bridge
2362	Orlando E. Lewis	HL		North of Washington Avenue
2371	Pleasant Park YC	PW	560 Pleasant Street	dolphins
2424	Norman F. Siefert	E	41 Court Road	bulkhead, pier, ramp, floats
2486	Willis J. Reid	PW	off Pleasant Street, south of Pleasant Park YC	pier
2545	BRB&L RR	HL	Crystal Cove	train trestle, fill pile bridge
2567	Town of Winthrop	PW	end of Grand View Ave	seawall, fill
2599	Pleasant Park YC	E	562 Pleasant Street	piles, floats
2648	Cottage Park YC	E	end of Orlando Avenue	floats, ramps, piles
2721	Jerimiah Green	HL	off Main Street west of Pleasant	bulkhead, pile wharf, fill, dredge
2731	Port Shirley Club	HL	north of end of Shirley Street	pile wharf
2826	Winthrop YC	HL	off Shirley Street at Shirley Avenue	pile structure
2951	Cottage Park Hotel Corp	HL	end of Cottage Park Road	swimming tank (embankments, dredge)
3160	Cottage Park	HL	end of Cottage Park Road	pile supported

	Hotel Corp			structure, swimming pool
3169	Cottage Park Yacht Club	HL	end of Orlando Avenue	float
3209	D.T. Sea Realty Trust	E	529 Shirley Street (CCMarina)	rip rap, fill, pier, piles, ramps, floats
3235	Gordon G. Fullerton	PW	Main Street @ Pleasant	rip rap, fill
3285	Pleasant Park YC	PW	560 Pleasant Street	rip rap, fill, marine railway
3355	D.B. Hoar & W.H. Dunbar	HL	off Washington Avenue east of River	rip rap, fill
3357	Winthrop Lodge of Elks	PW	off Washington Avenue	rip rap, retaining wall, fill, building
3405	Point Shirley YC	HL	end of Otis Street	pile pier
3429	D.B. Hoar & W.H. Dunbar	HL	Washington Avenue at Crystal Cove	seawall, fill, culvert ** need text **
3452	Cottage Park Hotel Corp	HL	end of Cottage Park Road	pile supported structures
3550	Charles J. Famolare	E	55 Court Road	pier, ramp, float
3585	Pleasant Park YC	HL	off Pleasant Street	clubhouse, piles, floats
3706	Pleasant Park YC	PW	off Pleasant Street	fill, marine railway, beached scow, float, dolphins, piles
3730	Winthrop YC	PW	off Shirley Street	piles, pier, floats
3753	Gordon G. Fullerton	PW	Main Street @ Pleasant	rip rap, fill
4082	Cottage Park YC	E	end of Orlando Avenue	concrete seawall
4152	Testa Realty Trust	E	97 Court Road	bulkhead & pier
4239	A.C. & M.A. Bangs	PW	181 Court Road	pier, float
4372	Viking Realty Trust	PW	Shirley Street @ Perkins	rip rap, fill
4407	Winthrop Lodge of Elks	PW	off Washington Avenue	rip rap, pile platform, fill
4480	Town of Winthrop	PW	end of Pico Avenue	jetty
4517	Viking Realty Trust	PW	Shirley Street @ Moore	steel bulkhead, fill, dredge
4605	George Barisano	E	436 Pleasant Street	seawall
4697	Viking Realty Trust	PW	Shirley Street @ Perkins	rip rap, steel bulkhead, fill, piles, footbridge, dredge
4771	Winthrop YC	PW	off Shirley Street	pier, piles, floats
5119	Winthrop YC	E	off Shirley Street	floats, reconfiguration zone, deck
5551	Albert Pratt & Alan Butler	E	165 Tafts Avenue	seawall
5618	Ronald D'Amore	E	480 Pleasant Street	bulkhead, pier, ramp, float
5664	Winthrop Lodge of Elks	E	191 Washington Avenue	pier, ramp, floats, piles, reconfiguration zone
5698	Viking Realty Trust	PW	529 Shirley Street	rip rap, dredge, fill
5944	Winthrop YC	PW	off Shirley Street	piles, floats, platforms
6138	Winthrop YC	PW	off Shirley Street	piles, floats
6223	A.H. & S.R. Stewart	PW	end of Elmwood Court	timber pier
6230	Cottage Park YC	PW	end of Orlando Avenue	piles, floats, deck
6412	Carmelo & Sandra Lafrazia	E	111 Court Road	retaining wall, pier, stairs
7392	Linda Cioppa	E	440 Pleasant Street	seawall, stairs

7415	Town of Winthrop	E	Pleasant Street at Brookfield	seawall
8487	James & Julie Marcotte	E	227 Court Road	deck, pier, ramp, float
8966	Keith Dreyer	E	68 Johnson Avenue	pier, ramp, float
9747	Town of Winthrop	E	Shirley Street	ferry terminal, hm building, pier, ramps, floats, revetment
10047	William & Cheryl DiCenso	E	169 Court Road	seawall, pier

1. Awarding authority codes: E - DEQE, HL - Harbor & Land Commissioners, PW - Department of Public Works, PBA - Port of Boston Authority, DPB - Directors of the Port of Boston, CWPL - Commission on Waterways & Public Lands, NEP - Not DEQE or PW (older or could be typo)

Comparison of Maps for Shoreline Change

When our coastlines were undeveloped, shoreline erosion happened but it went largely unnoticed. Now, however, coastal development is threatened by several factors:

- The normal erosion process,
- A potential rise in sea level throughout the region, and
- Storm-related surges of ocean water that can destroy property within a few hours.

As a result, more and more oceanfront property owners and state and local departments have built structures such as sea walls in order to protect their properties and people from flood and storm damage.

This section identifies areas where the shoreline has changed based on state maps and aerial photographs. These changes reflect both the erosion and accretion of material to and from an area. Other areas may have changed, but have not been surveyed, documented, or made available to the public at the time of this writing.

Shoreline Changes based on Historic Maps
Several historic maps reveal the extent of shoreline change over the past 300 hundred years (see Figures 2 and 3). Although the earlier maps from the 1775 and 1894 do not replicate actual boundaries with the accuracy of today's maps, they do show many changes in the water and land area including:

- The lack of fill between the drumlins (hills formed from glacial deposits) and lowlands in and around Winthrop,
- Filled marsh areas such as the former tidal marsh where Lewis Lake is now located,
- New structures in the tidal waters such as the former trolley rail bed, and
- Filled waterways in Boston Harbor such as the area southwest of Winthrop that was filled to make the runways for Logan Airport.

Shoreline Changes based on Recent Maps
Topographic maps by the United States Geologic Survey (USGS) from 1903 and 1950 reflect a more accurate configuration of the shoreline change than previous maps (see Figures 4, 5, and 6). The 1903 map shows:

- Apple Island in Boston Harbor prior to any filling for the airport runways,
- The lack of land where Coughlin Playground is now located,
- The trolley bridge, and
- Shirley Gut between Winthrop and Deer Island.

The 1950 map shows:

- Part of Boston Harbor filled to support the airport runways,

- Shirley Gut filled,
- The trolley bridge removed, and
- The extension of the Coughlin Playground area.

Shoreline Change Study
A recent study of various parts of the Massachusetts coastline by MCZM identified the changes in the shoreline from the previous maps and other area maps and photographs over the past 150 years. Part of this study included the southern part of Winthrop Harbor between the Town Landing and Deer Island (see Figure 6). The major changes were at Coughlin Playground and the land between Winthrop and Deer Island, formerly called Shirley Gut. Both of these areas show an increase of land and fill during this time.

Figure 2. Historic Map of Boston Harbor, 1775

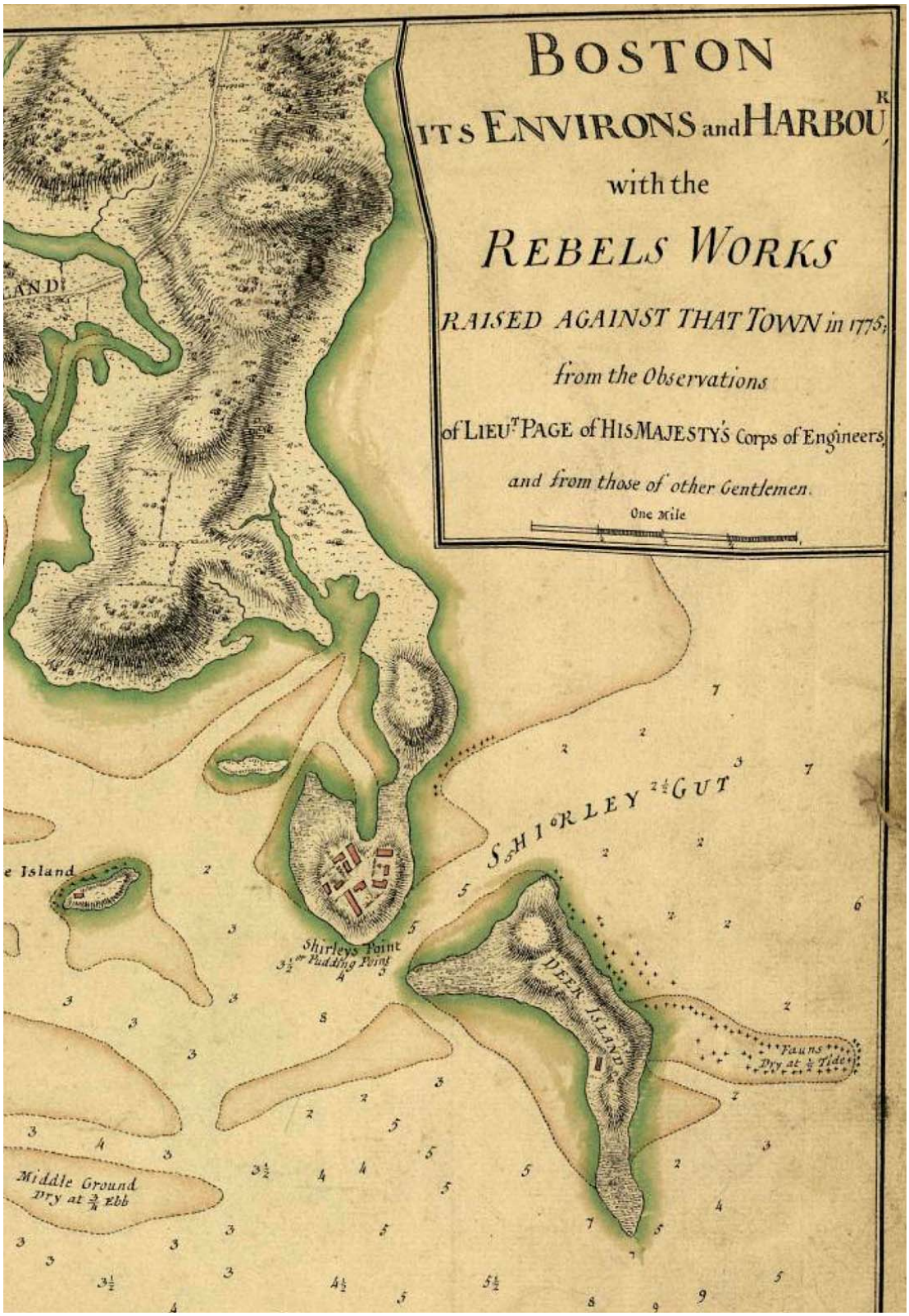


Figure 3. Historic Map of Boston Harbor, 1894

Figure 4. Historic Map of Boston Harbor, 1903

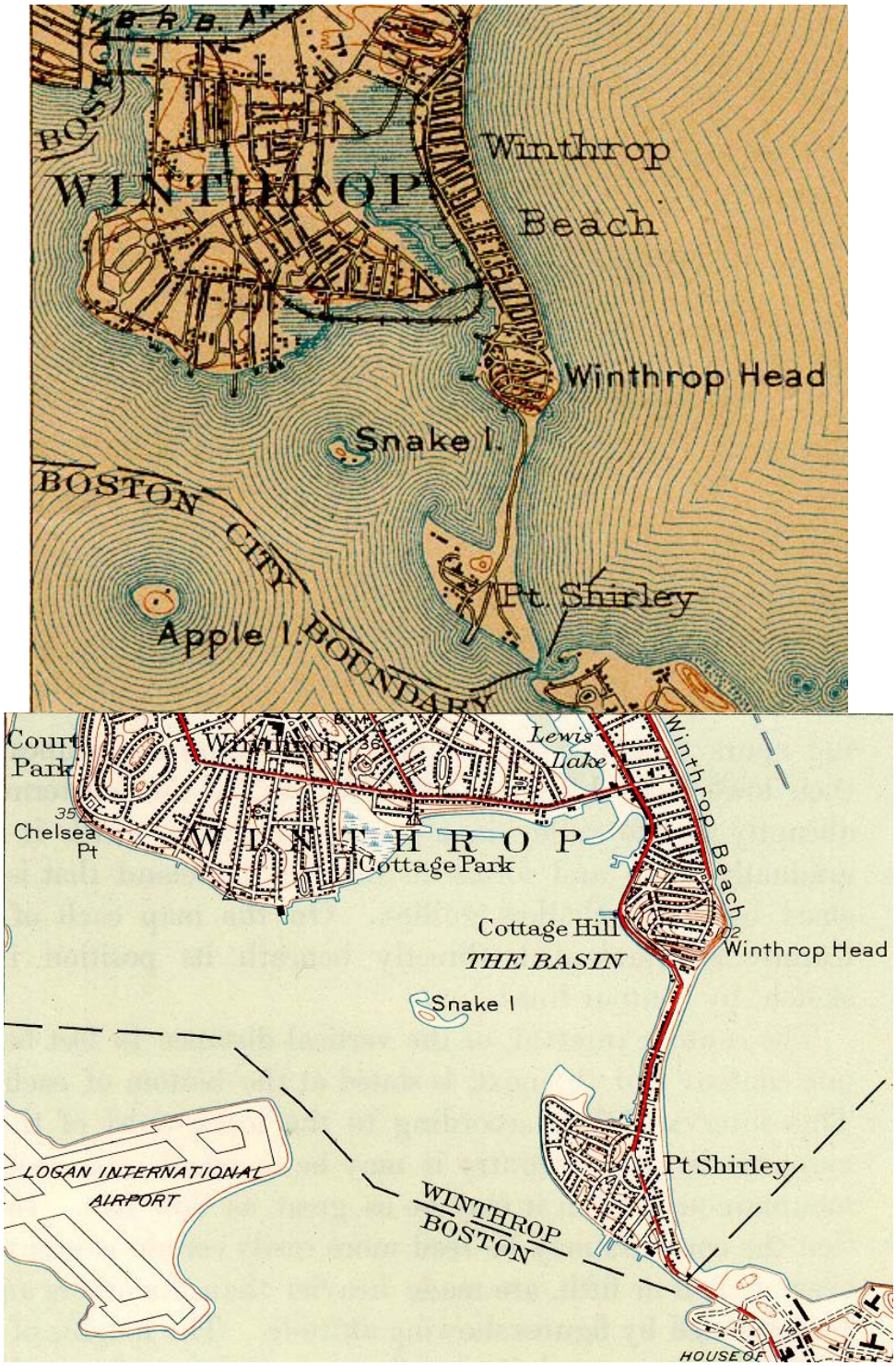


Figure 6. Shoreline Changes in the Southern Portion of Winthrop Harbor, 1847 - 2002

Note to Figure 6: This map represents the long-term shoreline change rate calculated over the past 140 years. Historic shoreline data were developed from a variety of sources including NOAA/NOS and FEMA topographic map sheets, hydrographic map sheets, orthophotos, and aerial photos. The transect number and the rate of change (feet/year) are presented at the offshore end of the transects (e.g. 12345:(6.78)). Negative values indicate erosion, positive values indicate accretion.

Zoning

The Town of Winthrop contains eight zoning districts, as designated by the Winthrop Zoning Ordinance, Chapter 145 of the Town Ordinances. Six of these districts overlay the land adjacent to the Harbor, and each district permits specific uses (see Table 2). In general, residences are allowed only in the residential districts and in the LM district by special permit, and commercial establishments are only allowed in the commercial districts. Mixed-use developments, those that combine residential and non-residential uses, were previously only permitted in the BA and CB district by special permit. However, the recent addition of the waterfront district now allows mixed-use developments along the two major commercial waterfront areas (see Figure 7). Deviations from any of the uses in these zones require either a variance or a special permit from the Board of Appeals as allowed under M.G.L. Chapter 40A.

*Table 2. Waterfront Zones of Properties along Winthrop Harbor**

District	District Code	Principle Use
Residential A	RA	Residential
Residential B	RB	Residential
Residential C	RC	Residential
Center Business	CB	Commercial
Business A	BA	Commercial
Light Manufacturing	LM	Industrial
Waterfront	WF	Mixed-use
Conservation	C	Protected Open Space

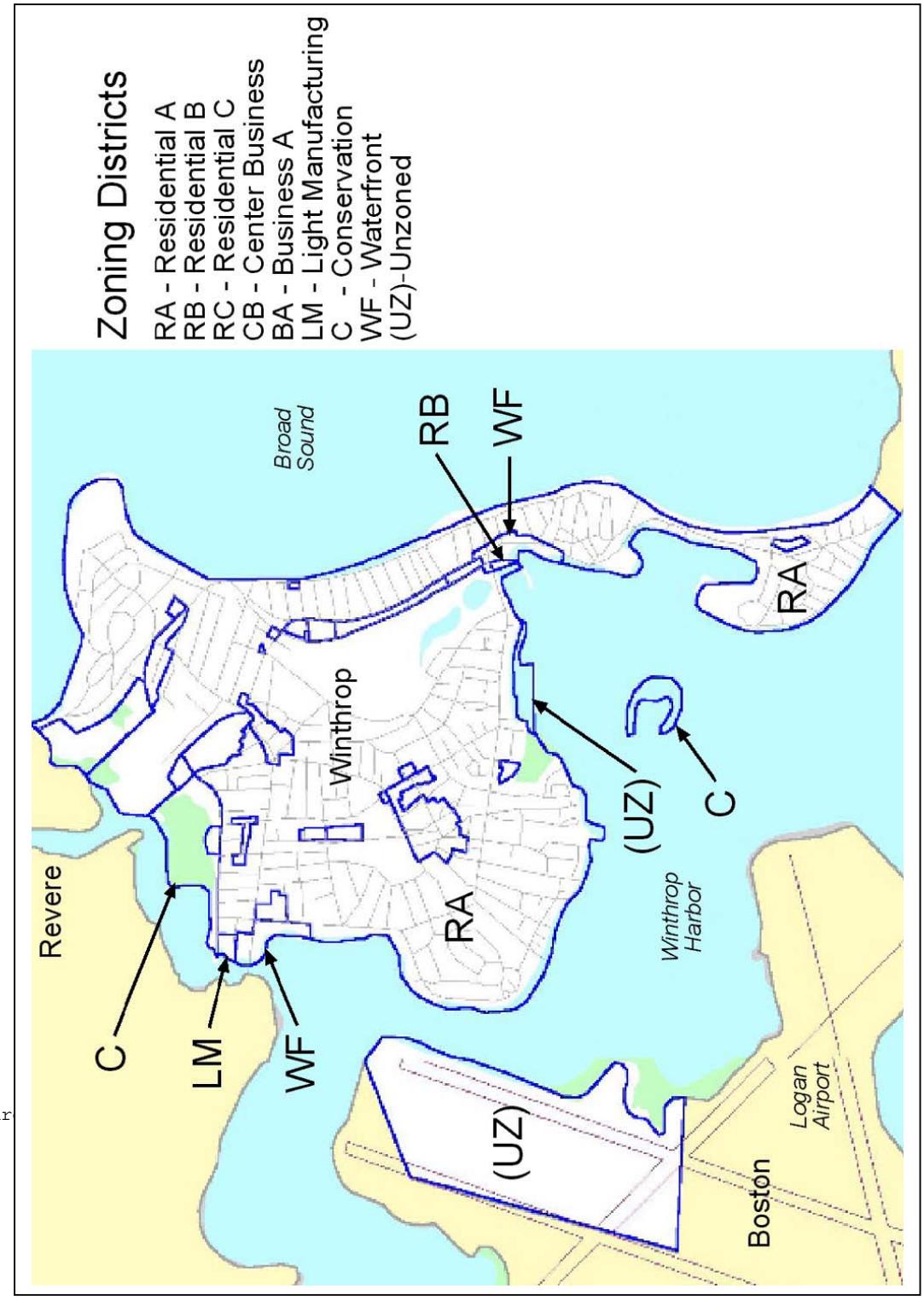
*Note - Districts in **bold** are on properties adjacent to Winthrop Harbor.
Source: Zoning Map, Town of Winthrop, 2004

Non-zoned Areas

Several areas along the harbor are not zoned and include Logan Airport runways and the western portion of the former trolley rail bed. According to the Ordinance, ''all unzoned land within the Town of Winthrop, if any, is hereby zoned as a Residential A District.'' For all practical purposes, the airport would never be used for residential purposes. However, the former trolley area has potential for public access, and this issue is discussed in the section Public Access/Public Ownership.

As shown in the following figure, most of the waterfront is zoned residential (RA). Only two small areas are designated for commercial uses, and one is designated for light industrial use. The land use generally corresponds to zoning, i.e. there are residential uses where it is zoned residential, and there are commercial uses where it is zoned commercial. However, two yacht clubs are located in areas zoned residential.

Figure 7. Winthrop Zoning Districts along Winthrop Harbor



Sour

Waterfront Property Inventory

An analysis of the properties on the waterfront reveals that there are 164 properties that border Winthrop Harbor (see Table 3). This assessment was made from the Assessor records of all properties that border Winthrop Harbor and Belle Isle Inlet between the Dump Road in the north side and Tafts Avenue in the south side. These parcels were designated as HF (harbor front) according to the assessor data base. Parcels that have a street between them and the water are not designated as HF, and therefore, were not counted. As identified by the land use designation of these parcels, most are residential and only a few are either commercial or exempt. The exempt parcels on the harbor front include state property near Deer Island, part of the former trolley bed, and Donovan Beach.

*Table 3. Land Uses of Parcels along Winthrop Harbor**

Land Use	Number of Parcels
Residential	147
Open Space	1
Commercial	10
Mixed use, Primarily Commercial	1
Exempt	5
Total Parcels	164

*Parcels identified as HF (harbor front) by the Town of Winthrop Assessor data base, 2004

Public Access/Public Ownership

Public Access Locations and Physical Conditions

Public access sites along Winthrop Harbor and their physical conditions were investigated as part of this Assessment. Two types of locations were found: 1) documented sites, and 2) undocumented sites (see Tables 4 and 5). The documented sites are generally known and publicized areas for the public to use. The undocumented sites were determined from site visits, aerial photographs, and Assessor maps of Winthrop Harbor.

Table 4. Documented Public Access Sites

Location	Description and Condition	Use
Belle Isle Marsh Reservation (DCR)	Salt marsh, excellent for nature study and birding. Hiking trails, picnic tables. Free parking. No dedicated structures or facilities.	Infrequent use
Coughlin Park	Park under flight path of Logan Airport. Playground, sports courts, benches, picnic tables, free parking. Good overall conditions.	Used regularly throughout the year.
Crystal Cove Jetty	Former trolley rail bed and jetty for nature study. No formal public amenities or structures. Free parking.	Parking, some pedestrian use
Pico Playground and Beach	Park with playground and rocky beach for sports and nature study. Sports courts, benches, wood stairway access to beach, free parking. Concrete pre-cast wall on stone revetment/mound structure with stone groin. Good to fair overall condition.	Neighborhood recreation area
End of Winthrop Street	Railroad right-of-way to rocky beach and salt marsh for nature observation. Resident parking. Dirt path to former trolley rail bed and Fishermen's Bend marsh. No structures.	Some pedestrian use to both trolley bed and marsh
Donovan's Beach and salt marsh	Beach and mudflats for water access and views of Crystal Cove. Cemetery bordered by salt marsh. Benches and handicap access. No parking. Good condition.	Neighborhood recreation area
Snake Island	Part of the National Park Service Boston Harbor Islands. Difficult to access (no access facilities)[1]	Little or no use observed
Winthrop Town Landing	Pebbly beach with concrete boat ramp and large, free parking lot bordered by a stone revetment. Benches. Overall fair condition.	Moderate, especially ramp during summer
Woodside Park	Wooded park and rocky beach with windsurfing rigging and launch location. Resident parking.	Low

Source: MCZM Public Access, 2004 and The Cecil Group, and Vine Associates 2004.

Table 5. Undocumented Public Access Sites

Location	Description	Use	Condition
Bridge over Belle Isle Inlet on Route 145	Viewing and fishing location from sidewalks on bridge.	Heavy use by fishermen	Good surface condition. Bridge structure recently inspected by MassHighway, needs rehab or replacement.
Loring Road, end	Small ramp for high tide use. Accessible with key from Town Rec. Dept. Road excellent, ramp poor condition.	Some pedestrian and small boat use.	Road good; Ramp fair to poor
Sargent Street, end	Concrete/stone masonry wall with stone revetment and concrete stairway access to shore. Remains of outfall pipe.	Some pedestrian use	Concrete/stone wall poor; concrete stairs and revetment fair.
Somerset Avenue, end	Concrete wall and stone revetment. Concrete stairway access to shore. Board in front of stair entrance. Outfall pipe in wall	Inaccessible	Concrete wall and stone revetment good to fair; Concrete stairs poor, deteriorated, hazard.
Bellevue Terrace, end	Concrete wall with dumped stone/masonry debris in front.	Inaccessible	Concrete wall fair to poor; dumped stone/debris, poor.
Cottage Park Road, end	Concrete wall and concrete stairway access to shore. Outfall pipe in wall.	Some pedestrian use	Concrete wall, fair. Concrete stairs, fair to poor.
Bartlett Road, end	Concrete/block wall. Concrete stairway access to shore.	Some pedestrian use	Concrete/block wall, fair to poor. Concrete stairs, poor, missing steps
Woodside Avenue, (Woodside Park[1])	Concrete wall. Concrete stairway access to shore. Concrete outfall pipe structure. Access provided on private lot. (Wooded park and rocky beach with windsurfing rigging and launch location. Resident parking.[1])	Moderate pedestrian use.	Concrete wall, fair. Concrete stairs, good to fair (no railings) Concrete outfall, poor.
Plummer Ave., end	Concrete Wall, various generations of construction. no access, jersey barrier.	Inaccessible	Concrete wall, fair
Frances Street, adjacent	Stone Revetment alongside road with wood guardrail	Inaccessible	Stone revetment, good to fair.
Shirley Street, adjacent	Mortared granite stone block revetment with metal guardrail adjacent to roadway.	Inaccessible	Stone revetment, good to fair.
Shirley Street, adjacent	Concrete wall and mortared granite stone block revetment adjacent to roadway.	Inaccessible	Concrete wall, fair to poor. Stone revetment, fair.

Petrel Street, end.	Concrete/block wall.	Inaccessible	Concrete wall, fair to poor.
Grandview Ave, adjacent.	Dumped stone revetment with concrete stairway opposite Foam St. providing access to beach	Use unknown	Revetment, good to fair condition. Concrete stairs, good to fair.
Grandview Ave, adjacent.	Concrete wall. Stone revetment.	Use unknown	Concrete wall, fair to poor condition. Revetment, good to fair condition.
Shirley Street, end.	Concrete wall/mortared granite block revetment	Inaccessible	Concrete wall good to fair condition. Mortared granite block revetment, good.
Pebble Avenue, end	Concrete wall with stone revetment	Inaccessible	Concrete wall and stone revetment, fair.
Otis Street, end.	Concrete wall with dumped stone revetment	Inaccessible	Concrete wall and dumped stone revetment, fair.
Townsend Street, end.	Concrete wall with dumped stone revetment	Inaccessible	Concrete wall and dumped stone revetment, good to fair.
Maryland Avenue, end	Concrete wall/mortared granite block revetment	Inaccessible	Concrete wall fair condition. Mortared granite block revetment, good to fair, missing mortar.
Tafts Avenue, adjacent	Concrete wall and stone revetment	Inaccessible	Concrete wall and stone revetment, good

Source: Site visits, September 2004 and November 2004.
Note 1. source from MCZM Coastal Access Project, 2004.

Public Access Entitlements, Coastal Trails, Pathways, and Right-of-Ways

The Town of Winthrop has a variety of public access entitlements, coastal trails, and pathways that provide access to or along Winthrop Harbor. The following locations were identified during the research of assessor maps, internet search of government web sites, conversations with state and local departments and agencies, and field visits (see Table 6). Properties that did not have any entitlements or official designation, such as the former trolley rail bed on the jetty off Shirley Avenue, were not included. Some of these areas are also considered public access points as shown in the previous tables.

Table 6. Locations of Public Entitlements, Coastal Trails, or Pathways along Winthrop Harbor

Name/Location	Description	Condition	Use
Town Landing, Shirley Avenue	State-owned, town-managed parking and concrete boat ramps	Excellent Condition, ramp needs structural improvements	Heavy use by residents, non residents, clammers, and other boaters during summer and weekends
Donovan Beach, Pleasant Avenue	Town-owned and managed public beach	Excellent condition and park amenities	Mostly summer use by residents
Belle Isle Marsh Reservation, Morton Street (generally)	350-acre reservation. Largest surviving marsh in Boston Harbor. Part of Rumney Marsh Reservation under the Department of Conservation and Recreation.	Extensive wetland reconditioning program over the past 5 years.	Light use
Winthrop Greenway	This greenway on DCR land along the Winthrop side of the Belle Isle Inlet, eventually connecting the East Boston Greenway to the ocean at Short Beach.	Generally an unpaved footpath, one park bench on Morton Street	Light use
Pico Beach, Pico Avenue	Town owned and managed public beach	Good condition	Most summer use by residents
Coughlin Playground, Bay View Avenue	Town-owned public playground	Good condition and facilities	Mostly residential year round
Snake Island, Winthrop Harbor	Town owned and managed island. Preference by NPS to retain as natural area.	Unknown, no access or facilities	Practically inaccessible

Public Facilities

This section summarizes all public town and state facilities on the waterfront (see Table 7). Additional information about the condition of public structures is in section C. Maritime Uses. Furthermore, no federal facilities were identified.

Table 7. Local, State, and Federal Facilities and Structures on Wintrhop Harbor

Town Facilities

Facility	Location	Use	Size/Construction	Condition
Belle Isle Bridge (1)	Saratoga Street, Boston	Main road access to Winthrop, fishing	Piling supported bridge	Needs replacement or rehabilitation
Coughlin Park	Bay View Avenue	Playground, sports courts, benches, picnic	9 acres, good condition	Good

		tables, walking paths		
Donovan's Beach, salt marsh	Pleasant Street	Public beach and viewing area; no parking	.25 acres, 6 benches, lighting, handicap ramps	Excellent
Former trolley Bed	Shirley Street, Crystal Cove	Public open space	3.5 Acres, bituminous parking, concrete ramps	Fair
Pico Beach and Playground	Pico Avenue	Playground, basketball court, and beach	0.8 acres, 1 basketball court and public beach	Good
Public moorings	Winthrop Harbor	Vessel mooring	Privately owned mooring tackle	Privately maintained, unknown condition
Snake Island	Winthrop Harbor	Natural habitat	8 acres, natural wetlands	Good
Yirrell's Beach	Boston Harbor	Beach for walking, swimming, active recreation; free parking	Beach and access paths	Good; recent improvements include repair of seawalls, beach nourishment, and user amenities.

Note 1: per telephone conversation with department head of City of Boston, Highway Division, Bridges, October 4, 2004. The bridge over Belle Island Inlet (Route 145) is owned and maintained by the City of Boston. MassHighway is responsible for its inspection as they are for all bridges in Massachusetts.

State Facilities

Facility	Location	Use	Size/Construction	Condition
Winthrop Town Landing	Shirley Street	State boat ramp, parking area, path, and benches	3.5 acres, 4 benches 2 ramps, trailer parking	Good, ramps need to be rebuilt
Winthrop Beach and Winthrop Shore Drive	Boston Harbor	Beach for walking, swimming, active recreation ; access boulevard	Beach and roadway access	Fair: erosion problems resulted in a program targeted for beach nourishment and major park renovation including improved lighting, water fountains, sand showers, benches and shade shelters.

The following section describes some of these key facilities.

Town Facilities

Former Trolley Bed

The former trolley bed, which was built to support the Narrow Gauge Railroad in the early part of the 19th century, remains in two locations: at the head of Crystal Cove and at the end of Sea View Avenue. The proposed HarborWalk included the bed in Crystal Cove as part of its public access program. It has excellent opportunities for passive recreation, especially for viewing the Harbor and Boston skyline, as mentioned in the Community Development Plan.

Route 145 Bridge over Belle Isle Inlet

The bridge over Belle Island Inlet, which is part of Route 145, is owned and maintained by the City of Boston even though half of it is actually in Winthrop. MassHighway is responsible for its inspection as they are for all bridges in Massachusetts.

State Facilities

Town Landing

The Town Landing, which is owned by the state and managed by the Town, is the area's highest use facility. The 3.5-acre facility has two boat ramps and approximately 92 trailer parking spaces and 50 spaces for automobiles. It is the site of the proposed multi-use pier. This facility is in good condition except that the ramps need to be updated due to extensive wash out from boat

propellers at the bottom of the ramp. The addition of floats would also make launching vessels safer and more convenient for boaters.

Federal Facilities

There are no federal facilities located on the Winthrop waterfront.

Easements

An easement in land is an interest in land owned by another that entitles its holder to a specific limited use. In Winthrop, only one easement was found for the entire harbor front according to Assessor maps (see Table 8). This sewer easement crosses two lots and runs between Willis Avenue and Belle Isle Inlet.

Table 8. Easements that Lead to and Follow the Waterfront of Winthrop Harbor Front

Easement Type	Location	Map/Lot
Sewer	Willis Avenue	59-4, 59-1

Source: Assessor maps, Town of Winthrop, 2004.

Proposed Waterfront Projects

Public Projects

HarborWalk

The Town has submitted a grant application to support funding for design and construction of a new harbor walk. This project would provide public access to the waterfront areas of Winthrop Harbor including Shirley Avenue and the former trolley railroad bed. Specifically, the path would travel from Lewis Lake and the adjacent Daw Playground along Shirley Street to the Public Landing. There is potential for interpretive and public viewing areas, and vest-pocket seating. This project is also recommended in the Town's 2004 Open Space and Recreation Plan and the Community Development Plan, 2004.

Multi-use Pier Facility

The Town of Winthrop is currently seeking funds to support construction of a multi-use pier, which will provide support for a variety of users. The facility will provide floats and accommodations for the Harbormaster vessels, commercial fishermen and fishing head boats, charter boats, water taxis and possibly a future ferry operation. In addition, the facility will provide dockage for dinghies and for transient vessels.

Figure 8 provides a layout of the proposed facility. Access to the commercial and recreational area is from a 10 by 16 foot landing with 50-foot gangway. The configuration as shown provides for the berthing of 4 thirty-foot vessels, and 16 twenty-six-foot vessels within the finger slips. In addition, there are approximately 350 linear feet of parallel boarding area.

The end of the 250 by 16 foot timber pier will have 24 by 30 foot pier head, which will service larger vessels with a 30 by 80 foot steel boarding float. The entire pier and float will be fully handicap accessible. The float will be accessed by a two gangways from the pier head. The pier head will provide for staging to the float and a good overlook for the public. A series of gangways, platforms and ramps will be utilized to minimize slopes over tidal conditions.

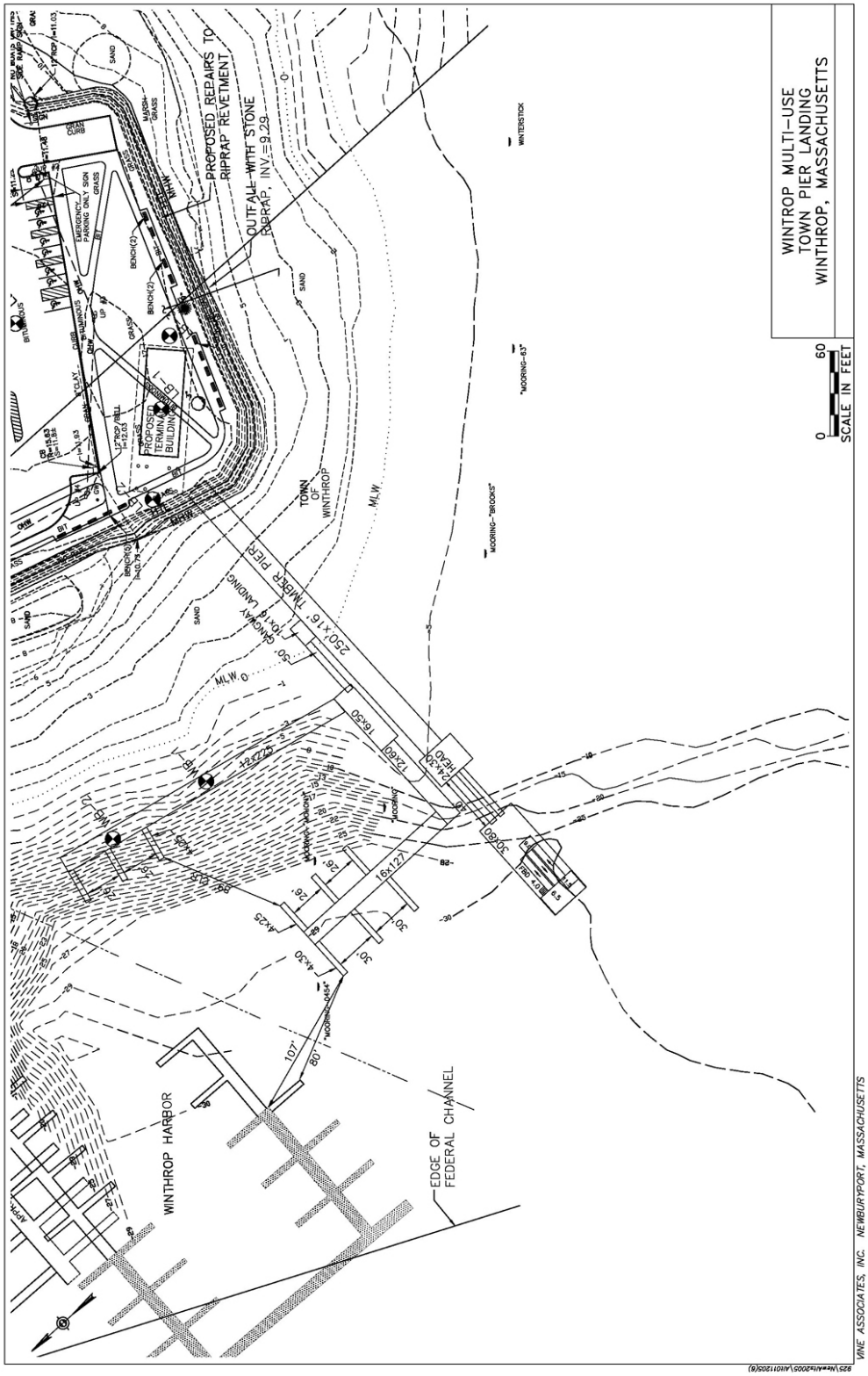
The float would provide for a variety of Boston Harbor side loading vessels up to 130 feet in length, as well a for a bow loading vessels. Future ferry operations can be accommodated by the infrastructure established by the multi-use pier construction.

Commuter Ferry

The Town of Winthrop is also seeking funds to support construction of a commuter ferry terminal at the Town Landing and operation of this ferry between Winthrop and Boston. The original Ferry Feasibility Study was concluded in January 2001. The study considered the waterfront sites throughout Winthrop Harbor. Considerations included water depths and dredging needs, necessary infrastructure, and the potential for providing necessary parking. The Study proposed a commuter ferry terminal to be built on the west side of the Town Landing off Shirley Street.

It is assumed that daily ferry service will operate from the facility and consist of four morning trips and four evening trips. It is anticipated that two commuter boats will be required to provide hourly trips. In addition, it is assumed that the operator will have the ability to utilize the pier and float system for non-commuter trips during off-hours, including weekend trips to various Harbor sites.

Figure 8. Proposed Layout of the Multi-use Pier



The commuter ferry facility will utilize the same infrastructure as the proposed mixed-use pier facility. Planned landside improvements are to include a new building, which will provide a passenger waiting area, harbormaster's office, and public restrooms. Water and electricity will be extended to both the building and the pier from existing Town facilities. Sewer will be extended to the building from existing Town facilities, but will not be provided to the pier. Modifications to the existing parking lot will allow for improved traffic circulation in and out of the parking lot. In addition, the existing parking area will also be re-surfaced, re-striped, and landscaped. A second curb cut is proposed in the improved layout, with additional green space provided along the waterfront park area.

The Town has advanced the permitting and design for the proposed commuter ferry project as detailed above. However, due to the fact that a long-term vessel operator could not be established and full project funding could not be obtained. The proposed mixed-use pier permitting will require modification of the existing permits for the ferry terminal facility.

Restoration of Winthrop Shores: Winthrop Beach and Winthrop Shore Drive

The Commonwealth's Department of Conservation and Recreation (DCR) has targeted Winthrop Shores for a major restoration project. The beaches in this area of Winthrop have been subject to substantial erosion. A project for nourishing the beaches has been planned and would place approximately 500,000 cubic yards of sand and gravel to rebuild the beach. The permitting for the project is not yet complete because of issues relating to the proposed offshore dredge borrow site. When complete, the project will involve the restoration of the parkway that provides access to this beach and an improved drainage system that will enhance water quality. Other improvements will include improved lighting, ornamental planning beds, water fountains, sand showers, benches and shade shelters. Total reinvestment in the area is expected to be about $12,500,000.

Private Projects

Mixed use Waterfront Developments

Atlantis Marina
A development team has proposed to demolish the Atlantis Marina building on Pleasant Street and build a new, mixed-use development. The project at this writing has been granted a Special Permit for a project that would retain a 91-slip marina and add 44 residential units and 2,400 square feet of commercial uses to the site. The proponents have applied for a parking variance that would allow provision of 144 parking spaces. Additional permitting applications are in process.

This is a key parcel on the waterfront since it is one of only two large marinas in Winthrop Harbor. New mixed-use development at this location will set the stage for other waterfront projects.

Crystal Cove Marina Project
The Crystal Cove Marina site at 529 Shirley Street is a likely candidate for future mixed use development. It currently encompasses about 130 boat slips and a mix of residential, restaurant and retail spaces. No formal submittals for a project have been made at the time of this writing.

Winthrop Yacht Club
The Winthrop Yacht Club, located next to the Town Landing on Shirley Street, recently applied to several permitting and approval agencies to extend their dock systems with 45 slips on 20 new finger floats. The Club plans to add these slips to the south side of their existing 122-slip dock system in the summer of 2005 pending approval of the MEPA Environmental Notification Form. They have already received a permit from the Army Corp of Engineers, a Chapter 91 license from DEP, and approval by the Winthrop Conservation Commission.

Maritime Uses

Navigation Characteristics

General

Winthrop Harbor is the water body located along the southern and eastern portion of Winthrop extending from Belle Isle Bridge to Point Shirley. The Harbor contains a centrally located crescent shaped island, called Snake Island, which further defines the harbor. Southwest of the harbor is Logan International Airport in East Boston (see Figure 9).

Figure 9. Winthrop Harbor Features

Source: MassGIS, 2004

Tidal range of Winthrop Harbor is generally similar to Boston Harbor. The mean tide range is 9.55 feet. The extreme low tide is in the order of 2.1 feet below mean low water (MLW) and the yearly high tide is about 12.2 feet above MLW.

Entrance to the harbor from the west is through the 200-foot wide East Boston Channel. This channel contains an upper northeastern 100-foot wide spur, called the Cottage Park Channel. Entrance from the south is by the 50-foot wide, 6-foot deep Federal Channel. The Federal Channel extends from just south of Winthrop Light, continuing northeastward to Crystal Cove Marina. A second channel, which is relatively deep, extends along the western portion of the Harbor next to the airport runways. This channel provides excellent access to the marinas and businesses located along Pleasant Street, Main Street, and to other vessels that access upper reaches of Boston Harbor near Constitution Beach.

The water area extending between the 8-foot deep Cottage Park Channel and the Federal Channel contains the 6-foot deep Cottage Park Anchorage and the 6-foot and 8-foot deep Snake Island anchorages. The 6-foot deep Winthrop Basin Anchorage is located east of the Federal Channel, south of the Town Landing. Landward of the channels and anchorage areas contain private homes and a series of marinas and yacht clubs, including the Cottage Park Yacht Club, the Elks Club Marina, Crystal Cove Marina, and the Winthrop Yacht Club. In addition, there is a deep area located east of the Federal Channel where water depths extend to 30 feet below MLW. This area was previously used as a borrow pit for area filling. This area is generally referred to as the ''gravel pit.'' Existing channel and anchorage locations presently located in Winthrop Harbor are illustrated in Figure 10.

Climate Conditions

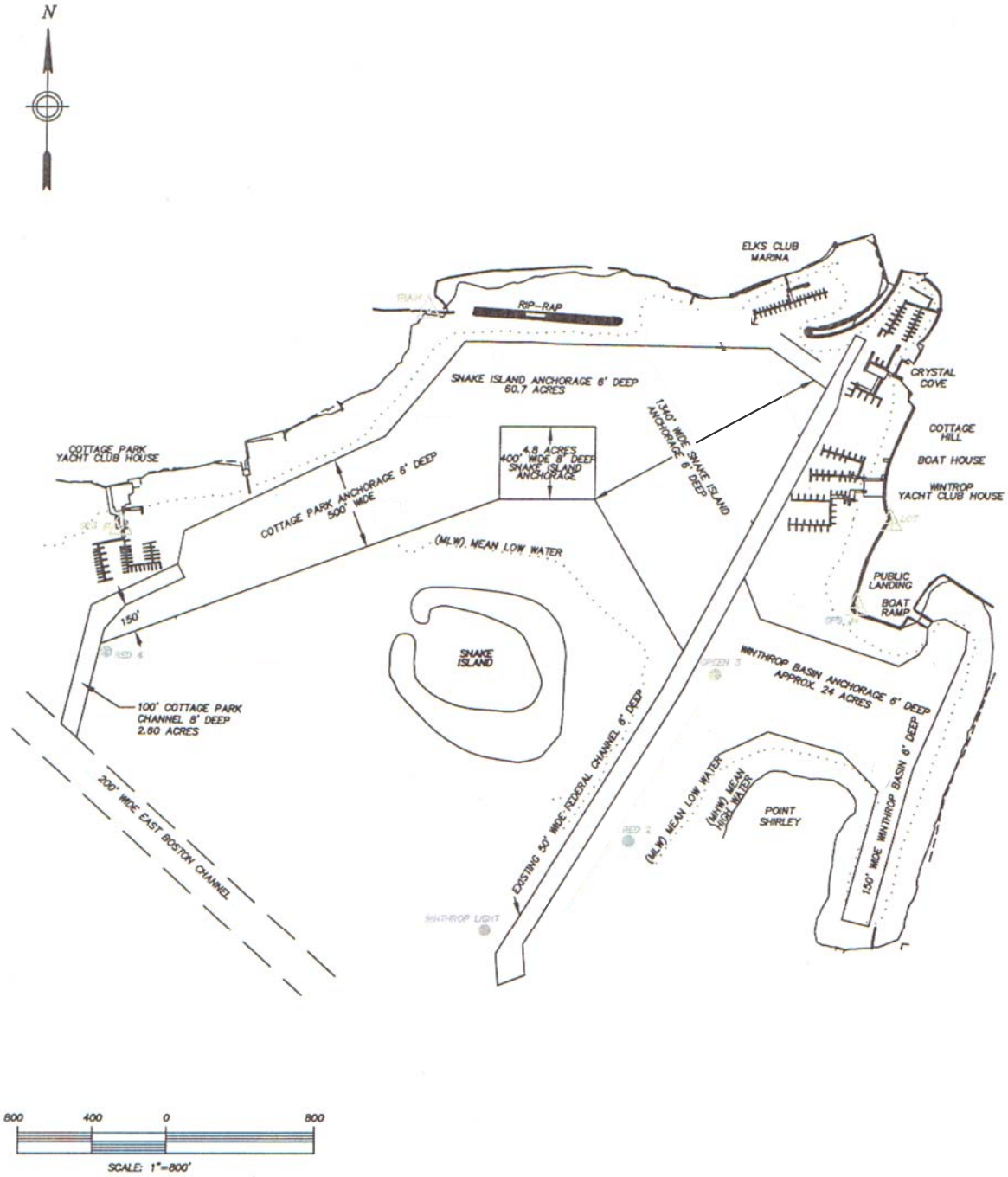
The wind and wave climate of the harbor is dictated by the wind conditions reaching the site predominately from the south and west. In general, the predominate wind conditions of the fall/winter are from the northeast, and the predominate wind conditions from the spring/summer are from the southwest. Snake Island's central location tends to break up some of the major storm conditions from the south and southwest. However, this also results in some funneling of waves directly along the Federal Channel. There is a measured fetch of 15,000 linear feet along the Federal Channel through to Quincy, which, under a direct southwest wind, can generate waves in the order of three feet. Typical waves generated by westerly winds are in the order of 1.5 feet.

Dredging

History of Dredging in Winthrop Harbor

The U.S. Army Corps of Engineers (USACE) first dredged Winthrop Harbor in 1894. Congressional authorization was issued in 1888 for the dredging of a 6-foot deep and 50-foot wide channel, which would extend 3,900 feet northeasterly from Winthrop Light to Rice's Wharf in Crystal Cove. In 1942, an emergency appropriation was issued by Congress for the USACE to dredge a 150-foot wide and 15-foot deep channel to Rice's Wharf to service coast artillery fortifications. This emergency dredging, however, was not considered a permanent alteration to the originally authorized federal project.

Figure 10. Existing Channels and Anchorage Areas located within Winthrop Harbor.



In 1946, the Commonwealth dredged an 8-foot deep channel in the vicinity of Cottage Park. In 1967-68, the State conducted a major dredging project within the Harbor. This project consisted of the dredging of approximately 45 acres within the harbor to a depth of 6-feet below MLW from the Cottage Park Yacht Club to the Winthrop Basin. Approximately 350,000 cubic yards of sediments were dredged and deposited on Snake Island, greatly increasing its size particularly to the southwest. In 1984-85, the State dredged the Winthrop Basin area to a depth of 6 feet below MLW.

In April 1993, the U.S. Army Corps of Engineers (USACE) conducted the *Winthrop Harbor Navigation Improvement Study, Detailed Project Report and Environmental Assessment.* This study evaluated several improvement alternates for modifications to the existing Federal Navigation Project located in Winthrop Harbor for the purpose of commercial navigation. The recommended plan of improvements presented in the USACE study consists of the following:

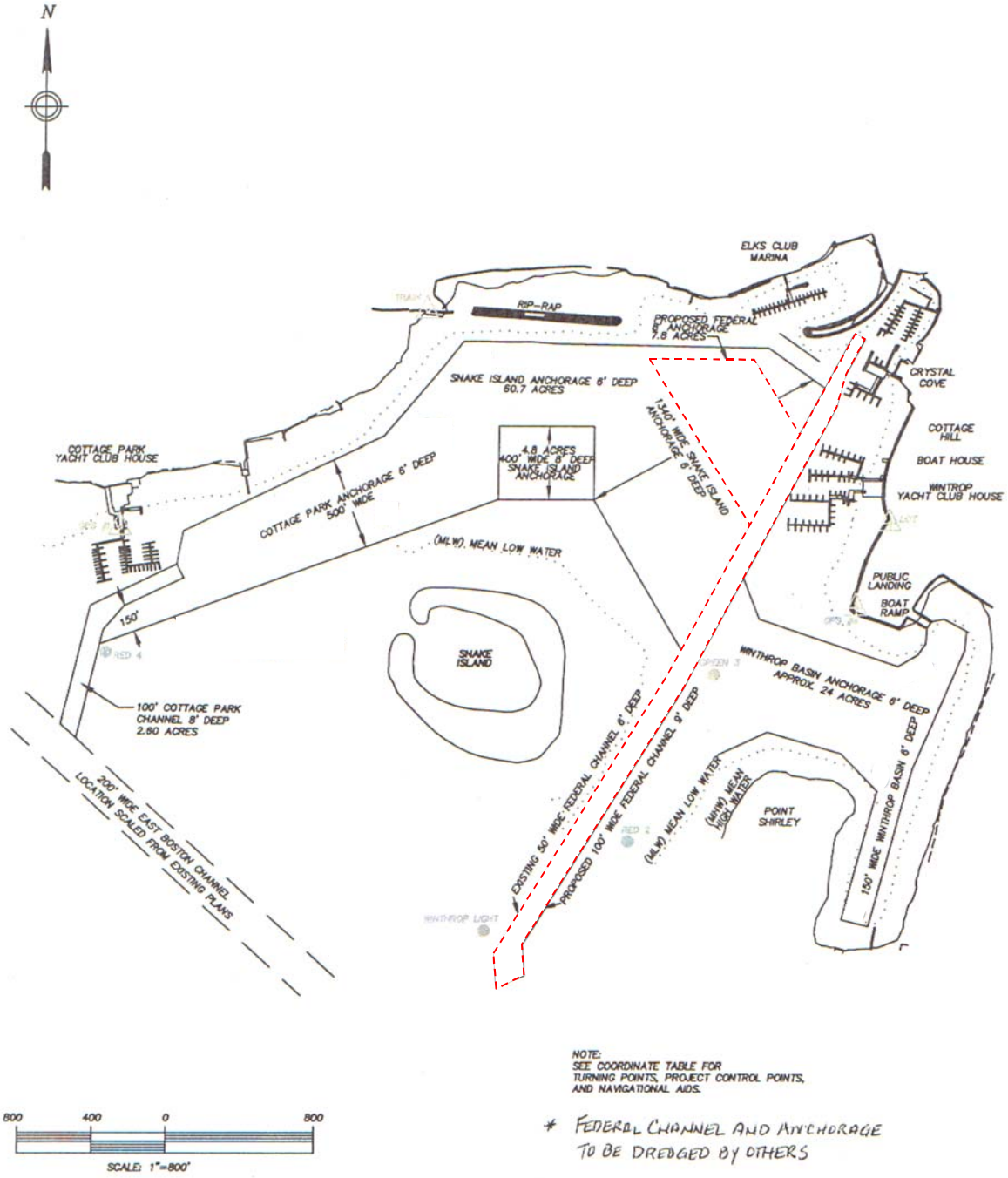
- Widening the existing Federal entrance channel in the 3,900 feet of channel reach above Winthrop Light from its current width of 50 feet to 100 feet, except for the upper most 400 feet at Crystal Cove, which would be widened to 60 feet. The channel reach seaward of Winthrop Light, currently shown at 150 feet, would be adopted and extended seaward to deeper water in the vicinity of the East Boston Channel for a distance of approximately 1,100 feet. The modified Federal Channel would have a total length of approximately 5,000 feet and would be deepened from its existing depth of 6 feet MLW to 9 feet MLW

- Creation of a 7.5 acre commercial anchorage in the area northeast of Snake Island at the mouth of Crystal Cove to a depth of 8 feet MLW.

The proposed improvements as described above are illustrated in Figure 11. To date, the improvements have not been implemented by the USACE. According to discussions with the USACE, the cost/benefit of the improvements proposed in 1993 needs to be re-evaluated to reflect present day commercial fleet usage of the harbor as well as to identify a suitable disposal site before the project can move forward. The current report identifies the deep-water gravel pit area located to the east of the Federal channel as a suitable disposal area for dredge sediment. Massachusetts Division of Marine Fisheries (MADMF), however, has identified this location, as being suitable nursery habitat for juvenile shellfish and finfish species in 1993. The USACE estimates that it will cost approximately $80,000 to update the 1993 report, of which the Town will be required to provide a 50% cost-share. Due to several years of inactivity on this project, the project file has been closed by the USACE. Should the Town wish to proceed with federal improvements to the harbor, a formal request must be submitted to the USACE Engineering and Planning Division.

Due to shoaling within the Federal channel, the U.S. Coast Guard and Town have been relocating channel markers toward the adjacent gravel pit deep waters in order to extend its usage.

Figure 11. Winthrop Harbor Improvements Proposed by the U.S. Army Corp of Engineers, 1993



Winthrop Harbor was most recently dredged by the Commonwealth (Department of Conservation and Recreation (formerly DEM), Office of Waterways) in 2000-2001. Approximately 100,000 cubic yards of sediments were mechanically dredged from the Cottage Park Channel and the Cottage Park, Snake Island, and Winthrop Basin Anchorages. Dredge sediments were disposed offshore at the Massachusetts Bay Disposal Site (MBDS). Total costs for the project were approximately $1,000,000. Funding for the project was provided on a 75% State-25% Town cost-share basis. The project restored the existing channel, anchorages, and basin areas within previously authorized footprints and depths, with the exception of the 400-ft x 400-ft area within the Snake Island anchorage that was deepened from 6 to 8 feet MLW (see Figure 9). This 4.8-acre area within the Snake Island Anchorage was created to allow for the temporary harboring of larger vessels during storm events.

Dredging Process

Dredging approval within the State is a time consuming and, at times, a difficult process that involves coordination between local, State, and Federal agencies. Prior to implementing dredging, sediments must be sampled and chemically tested to determine a suitable disposal location. Typically, dredge sediments are approved for either unconfined offshore disposal (within the federally regulated Massachusetts Bay Disposal Site - MBDS), or disposal at an upland site such as a regulated landfill facility.

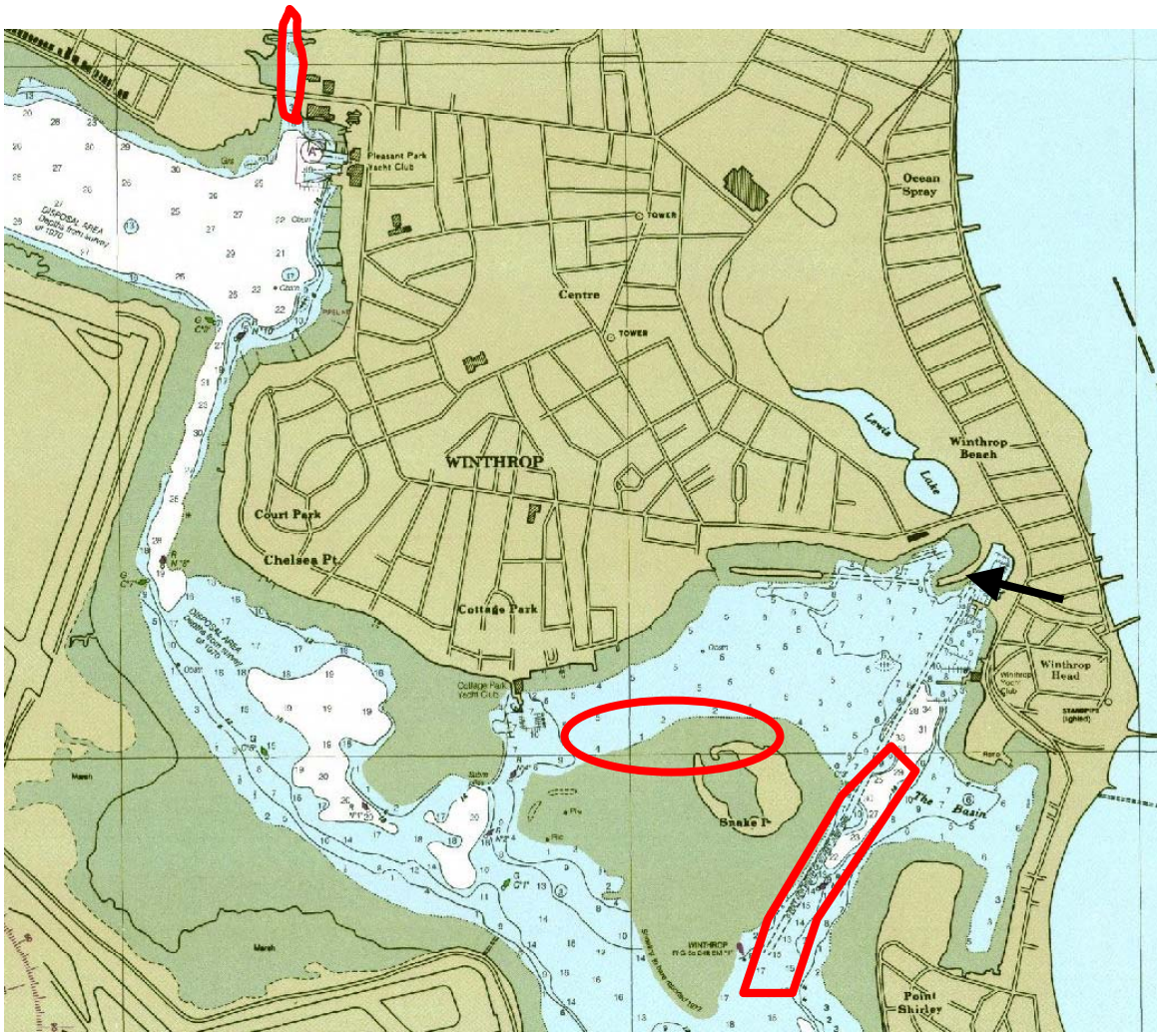
The unconfined disposal of dredge sediments must receive approval from the U. S. Army Corps of Engineers (USACE) prior to going offshore. A chemical analysis of dredge sediment must be conducted to determine if placement offshore will have a detrimental effect to the marine environment. Sediments approved for unconfined offshore disposal are typically mechanically dredged and transported via scow to the disposal site. Costs for unconfined offshore disposal can be expected range from $16 to $22 per cubic yard.

For sediments that are found to be unsuitable offshore disposal, chemical analyses are performed to determine suitable upland disposal alternatives, which can include beneficial reuse, beach nourishment, and/or placement at a regulated landfill facility. With upland disposal, sediments are typically hydraulically dredged and placed in a containment basin for dewatering. Costs for hydraulic dredging typically range from $8 to $12 per cubic yard. These costs, however, do not include those associated with the construction of a containment basin, trucking, and/or tipping fees that may be associated with disposal at landfill facilities. Unless a suitable disposal site is located within proximity to the dredge area (up to 2 miles), the upland disposal of sediments is typically less economical than offshore disposal due to the costs associated with the handling and transporting of materials. Accordingly, costs can vary significantly with respect to upland disposal and therefore, need to be determined on a case-by-case basis.

Current Dredging Needs in Winthrop Harbor

During the planning process, four sites were identified as needing to be dredged. They are indicated with several circles and one arrow in the following figure.

Figure 12. Potential Dredge Locations in Winthrop Harbor



Federal Channel

The existing federal channel should be dredged due to the significant shoaling that has occurred over many decades. Presently, the U.S. Coast Guard and Town are extending use of the channel by relocating channel markers toward the adjacent gravel pit into deeper waters.

Belle Isle Inlet

The Town, City of Revere, and City of Boston have investigated the dredging of Belle Isle Inlet on several occasions in conjunction with assistance through DCR Waterways. In 1999, the proposed dredging of the inlet from the Saratoga Street Bridge up to the Beachmont Yacht Club was put on hold due to high costs and the potential impact to salt marsh, tidal flats, and wildlife and marine habitat.

Railroad Trestle

The area south of the former trolley bed (arrow) is proposed as the site for a HarborWalk/ public access. It was also considered as an option for a Town Pier for fishermen use. The area is shallow and would need to be either dredged if it was used for vessel access. It would also compete with existing uses of the adjacent marinas.

Stabilization of Snake Island

Snake Island has been long been questioned as being a potential source contributing to sediment build-up within the harbor; thereby, increasing the frequency for maintenance dredging. It is recommended that an investigation be conducted to determine if the island is indeed a sediment source feeding the harbor, and if so, provide cost effective and environmentally sound alternatives for stabilization.

Waterfront Business Inventory

An inventory of all businesses on the harbor was conducted during August 2004. This section identifies all the waterfront businesses. It includes all the businesses properties on the harbor side of streets along Belle Isle Terrace, Main Street, Pleasant Street, Shirley Avenue, Washington Avenue, and Willis Avenue (see Table 9).

Marina and Yacht Club Locations

The location of the Winthrop Harbor marinas relative to boating destinations has important implications for the demand of its services by users who access the from either land or water. Some users prefer to be in secluded areas and have minimal services, while other users prefer very active marina centers that have a range of marina services.

In Winthrop Harbor, there are four public marinas and three yacht clubs (see Table 9). The following is a summary of public and private marina services in Winthrop Harbor.

Table 9. Yacht Clubs and Marina along the Wintrhop Harbor

Marina	Address
Atlantis Marina	550 Pleasant Street
Crystal Cove Marina	529 Shirley Street
Cottage Park Yacht Club	
Winthrop Yacht Club	649 Shirley Street
Pleasant Park Yacht	562 Pleasant Street

Club	
Mullins Marine Service	554 Pleasant Street

There are numerous marinas in outside of Boston Harbor and the neighboring communities, including the East Boston Yacht Club and the Orient Heights Yacht Club on the East Boston portion of the harbor, approximately 0.5 nautical miles to the west, and the Beachmont Yacht Club that is up river on the Bell Isle Marsh at 168 Pearl Street in Revere that is accessible only at high tide.

Transportation Infrastructure

Sufficient access from both land and water is extremely important in order for users to enjoy the full benefits of a waterfront including marina, businesses, and recreation areas, and to potential uses such a the proposed commuter ferry and Town Pier. This section describes existing and potential transportation needs including an update of the Ferry Feasibility Study, which was completed in 2001.

The pier and float system described in the Proposed Waterfront section is a multi-use pier facility providing support for a variety of vessel operations. The facility will provide floats and accommodations for the Harbormaster vessels, commercial fishermen and fishing head boats, charter boats, water taxis and possibly a future ferry operation. In addition, the facility will provide dockage for dinghies and for transient vessels.

The steel berthing float provides multi-freeboard berthing solution proposed for the Winthrop facility considers three types of vessel freeboard, which may use the facility. The facility includes a 24-inch freeboard for water taxis and party vessels; 48-inch freeboard for portside loading shuttle and ferry vessels; and the 84-inch freeboard with a bow loading cradle for high loading ferry vessels that could use the facility. There is also a 12-foot by 60-foot concrete float, which will have an approximate 22-inch freeboard for the Harbormaster, and other smaller sized vessels.

Homeland Security and Logan Airport

Homeland Security

Since the time of the terrorist events that began in September 2001, the security concerns for transportation nodes, in particular harbors and airports, has become a major focus of attention. Logan International Airport and Boston Harbor, which includes Winthrop Harbor, have been identified as two major potential targets that have increased security needs.

The U.S. Coast Guard (USCG), which under the Department of Homeland Security, is responsible for the security plans of all the nations ports. The USCG First District, Sector Boston, has established the Boston Area Maritime Security Plan. The Area Maritime Security Committee, which is comprised of various government agencies, developed this Plan. MassPort, which controls Logan Airport, is represented on this Committee. This Committee distributes security planning information to subcommittees, which is then provided to the Winthrop Harbormaster among other local port, harbor, and security-related agencies.

Port of Boston

The Port of Boston is active with cargo and container ships, oil barges, ferries, recreational vessels, and a variety of small crafts and users. More importantly, liquefied natural gas (LNG) tankers pass through the Port to a transfer facility in Everett, Massachusetts. LNG tankers have received a lot of attention due to their potential as terrorist targets. When LNGs are scheduled to arrive, typically from Trinidad, the Coast Guard provides a 48-hour notification to port and security personnel.

Logan International Airport

Logan International Airport has also been placed under tight security from both outside and inside its perimeter. In fact, MassPort installed approximately 30 buoys around the 6.6 mile-perimeter of the airport in June 2003. They mark the 250-foot inner airport security zone, which is patrolled by State Police, the Coast Guard, Boston Police, the environmental Police, and Boston and Winthrop Harbormasters.

Winthrop is next to Logan International Airport and the entrance of Boston Harbor

Winthrop Security and Planning Issues

The Town of Winthrop has been and is subject to all the security and planning activity concerning both Boston Harbor and Logan Airport. All the large vessels entering Boston Harbor must pass within a quarter mile of Winthrop. Smaller vessels such a

recreational and commercial users typically approach the airport security zone, many of them trying to catch fish or dig for clams. In fact, only clammers that have security clearance and badges from MassPort, are allowed to access the clam flats within the security zone around the airport. The clammers must first have a MA Department of Marine Fisheries license to get a badge.

The proximity of the Town to the airport runways and flight paths is also a major concern to the security and emergency agencies. Town property near Court Park, aside from its ownership of part the airport runways, is less than a 1,000 feet from the runways. Massport has planned for emergencies if a plane crashed into the area as part of its Airport/Community Emergency Planning Program. Of particular concern was the poor access to the Belle Isle Marsh Reservation since the bridge for Route 145 at the entrance and the shallow water depth, especially at low tide, limits the size of emergency vessels that could access the Reservation.

Pollution Assessment

Contaminated Areas

Winthrop Harbor has been tested for a variety of contaminants in the sediments over the past decade. Sediment testing, which detects the presence of elevated concentrations of substances in the sediments that are above the natural background level, is conducted as part of the dredging process prior to dredging and for dumping dredge spoils. However, no testing was conducted in Winthrop Harbor outside of the dredged areas or in any of the areas where waterfront structures will be altered or constructed.

As part the Winthrop Harbor maintenance dredging project conducted by the Department of Environmental Management, Office of Waterways (Waterways) in 2000-2001, the existing levels of various chemical containments contained within sediments were analyzed in 1995 with limited chemical analyses being conducted again in 1997 as part of the biological testing program that was required for approval of offshore disposal of sediments at the Massachusetts Bay Disposal Site (MBDS).

In 1995, thirteen (13) core samples were obtained from the harbor and analyzed for physical and chemical properties. Figure 13 shows the approximate locations of 13 cores that were collected and analyzed. Each core sample was discretely analyzed for metals, Total Petroleum Hydrocarbons (TPH), Polychlorinated Biphenyls (PCBs), Polynuclear Aromatic Hydrocarbons (PAHs), Volatile Organic Compounds (VOCs), and Oil & Grease (O&G). The chemical concentrations identified at each of the sample locations are summarized in Table 10.

In 1997, additional testing was required to determine if dredge sediments were suitable for offshore disposal at the Massachusetts Bay Disposal Site (MBDS). Figure 14 shows the locations of the six (6) core samples obtained for the chemical and biological testing performed on sediments in 1997. Two (2) composite samples were created from the 6 individual cores. Both composites were analyzed for copper, mercury, PAH's, and Total Organic Carbon (TOC), along with biological survival rates based upon a 10-day bioassay, 28-day bioaccumulation and tissue analyses. It is noted that the only metals that needed to be tested as part of the biological testing program were copper and mercury due to the relatively ''high'' concentration levels identified in 1995 sediments. The chemical concentrations identified in each composite sample are summarized in Table 10.

Water Quality of Winthrop Harbor

Available water quality data was limited. Although most of it pertained to Boston Harbor, some was available from previous studies and some from ongoing monitoring the area waters.

The Massachusetts Water Resources Agency (MWRA) was responsible for improving the water quality of Boston Harbor over the past ten

years. The elimination of sewer discharges in Boston Harbor, the addition of secondary treatment at the Deer Island treatment plant, and the extension of the sewer outfall from the Deer Island plan into Massachusetts Bay all combined to significantly improve the water (and sediment) quality of Boston Harbor.

The MWRA has many water-quality monitoring stations throughout Boston Harbor, three of its largest tributaries, and Massachusetts Bay. One of these stations is located in Winthrop Harbor. The water quality indicators typically found in their reports include water clarity, human and animal bacteria, algae (chlorophyll), and monthly rainfall. Reports from these stations are available from the MRWA or their website at www.mwra.com.

The greatest threats to Boston Harbor have been from urban runoff, especially from the tributaries that have poorer water quality than Boston Harbor. Changes to improve the water quality in Winthrop Harbor could include an analysis of the number of point discharge locations such as stormwater outfalls and the use of best management practices (BMPs) that minimize and buffer stormwater flows and runoff. BMPs would also help reduce the amount of sediments and contaminants that entered the Harbor.

Figure 13 Sampling Location Plan for 1995 Chemical Analyses of Sediments for the Dredging of Winthrop Harbor.

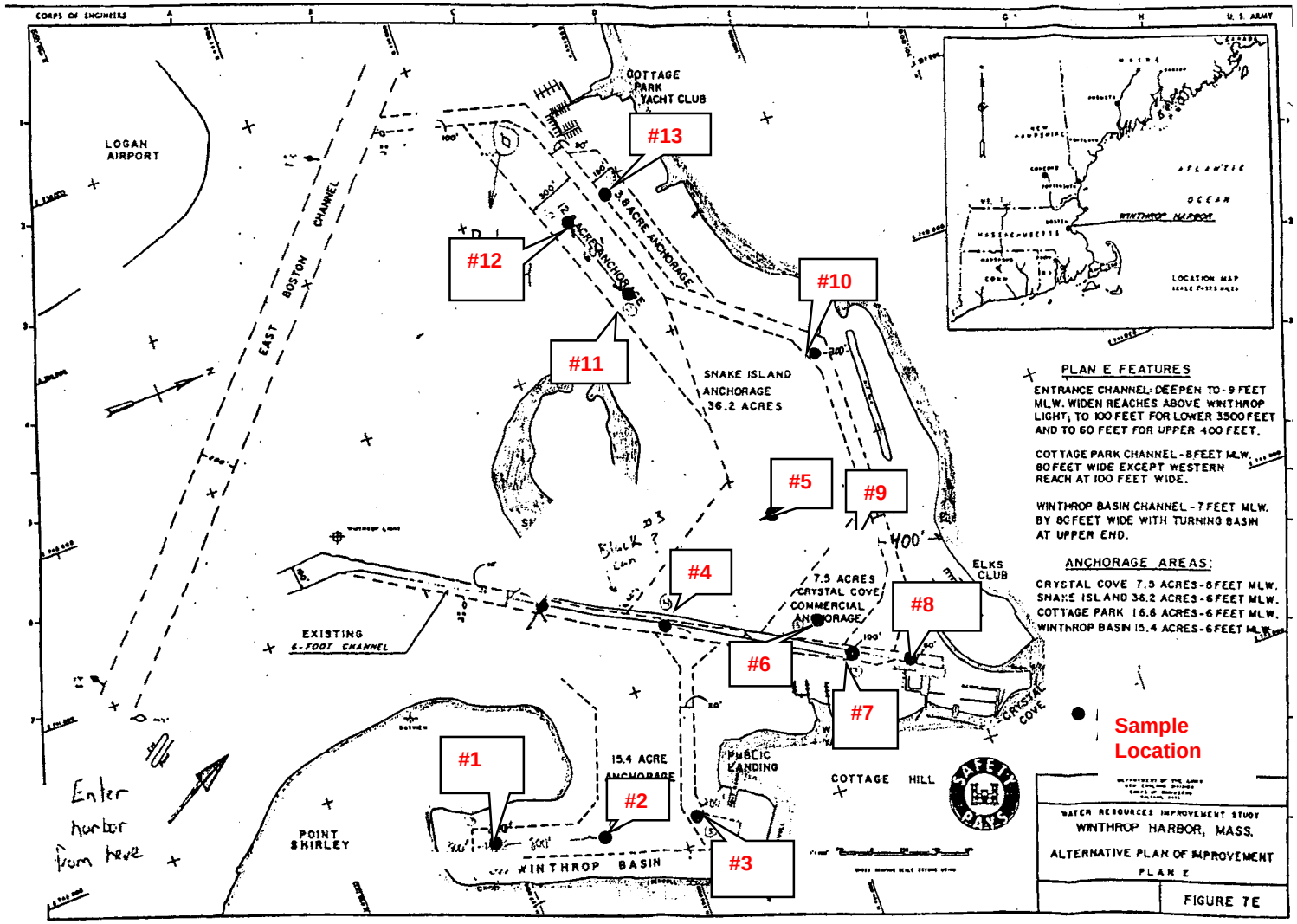


Figure 14. Sampling Location Plan for 1997 Biological Testing of Sediments for the Dredging of Winthrop Harbor

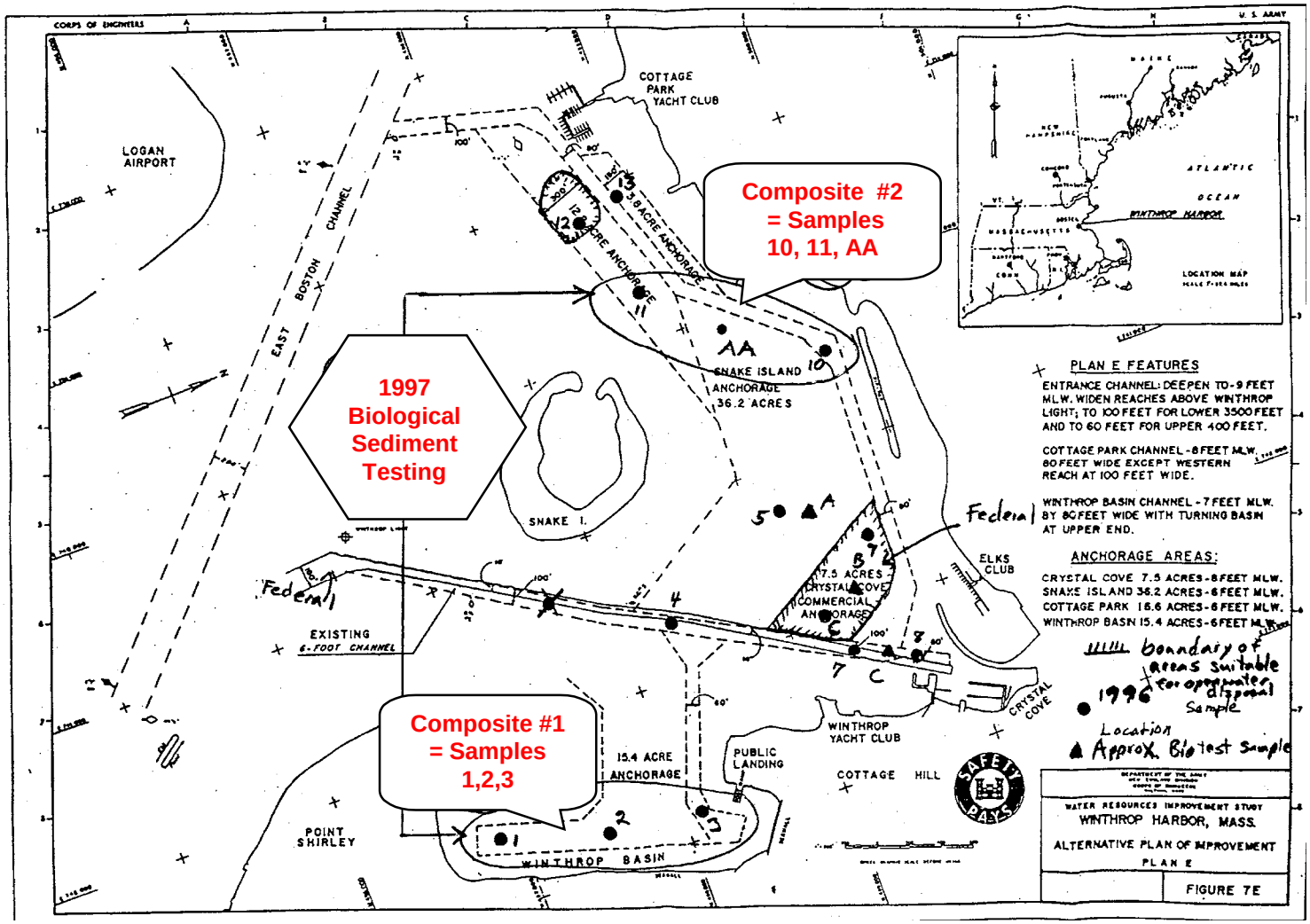


Table 10. Chemical composition of composite samples in Winthrop Harbor in 1995.

Parameter	1995 CHEMICAL CONCENTRATIONS (ppm)													1997 CHEMICAL CONCENTRATIONS (ppm)	
	Sample No.													COMPOSITE #1 (Samples 1,2,3)	COMPOSITE #2 (Samples 10, 11, AA)
	1	2	3	4	5	6	7	8	9	10	11	12	13		
Arsenic	17	13	11	12	12	9	10	13	6	14	13	7	10	NT	NT
Cadmium	3	2	2	2	2	1	2	3	1	3	2	5	2	NT	NT
Chromium	85	79	106	83	102	49	86	98	33	99	82	50	65	NT	NT
Copper	139	129	101	82	111	54	70	148	33	122	84	51	74	17.53	17.38
Lead	78	61	53	51	65	38	37	64	21	66	51	34	<5	NT	NT
Mercury	0.46	0.41	0.44	0.45	0.46	0.26	0.47	0.55	0.15	0.55	0.87	0.25	0.33	0.16	0.12
Nickel	20	16	17	18	18	11	14	17	16	21	16	13	14	NT	NT
Zinc	169	157	135	115	148	75	99	148	43	162	99	78	96	NT	NT
TPH	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	<5	NT	NT
PCBs	<0.00125	<0.00125	<0.00125	<0.00125	<0.00125	<0.00125	<0.00125	<0.00125	<0.00125	<0.00125	<0.00125	<0.00125	<0.00125	NT	NT
PAHs	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	<0.5	0.619	0.479
VOCs	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	<0.1	NT	NT
O&G	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	<1	NT	NT
TOC	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	NT	0.89	0.91

Note: Parameter not tested.

Recreational Activities and Tourism Potential

Boating Uses

Winthrop Harbor

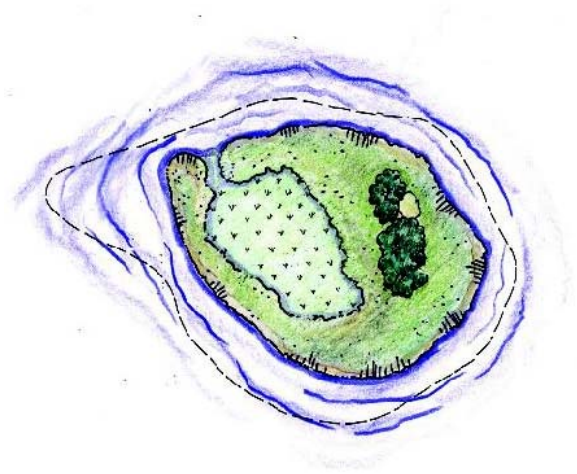
Winthrop Harbor is used mainly for recreational and commercial vessels. Its configuration and depth allow many vessels to navigate its waters. The Harbor can accommodate large vessels with drafts up to 6 feet in most places except in some of the coves and some, since the mooring areas was dredged from 4 to 6 feet (mlw) in 2001. Several shallow areas in the Harbor restrict vessel navigation, mostly in the Federal Channel, which needs to be dredged within the next few years.

One of the Harbor's best assets, aside from its deep water and protection from storms and waves, is its location on Boston Harbor. Vessels can have direct access to Boston Harbor and all of its attractions including the Boston Harbor Islands and the City of Boston waterfront. The open waters of the Atlantic Ocean are only a half mile from the main part of the Harbor just south of Deer Island. These features are attractive for boaters transiting to and from the Harbor and open waters.

Snake Island

Snake Island is a small, 8-acre island in the center of Winthrop Harbor. Its shape is basically round with a marsh in the middle as shown in the following illustration. Access to the island is mainly by small vessels such as kayaks since it is surround by shallow tidal flats. Although the island is considered a natural island, its size increased in 1967 when approximately 350,000 cubic yards of sediments were dredged from Winthrop Harbor and deposited on Snake Island.

Illustration of Snake Island in Winthrop Harbor



Source: Boston Harbor Islands, U.S. National Park Service, 2004

The island is part of the National Park Service Boston Harbor Islands. The Town of Winthrop owns and manages it. The National Park Service prefers to retain it as natural area.

Commercial Vessels

According to the Assessor's office, there are 21 commercially registered vessels in Winthrop Harbor.

However, only five of these are excise tax exempt since they meet state commercial fishing permit regulations. All other vessels must pay excise tax to the Town.

Harbor Management and Operations

Harbormaster
The Winthrop Harbormasters are responsible for many functions and operations on Winthrop Harbor on a daily and seasonal basis. Their range of responsibilities includes collection of mooring and ramp fees, harbor safety, security, patrol, and vessel inspections and registrations. They have an administrative function for approximately 1,000 public moorings. Approximately 750 of these are used on seasonal basis, and 250 of them are reserved in a protected area of the Harbor for use during storms. The Town does not own or manage any floats or docks.

The Town owns a variety of vessels for the Harbormasters' use (see Table 11). It recently purchased a new 25-foot patrol vessel to complement its fleet and be used as the main patrol boat.

Table 11. Winthrop Harbormaster Vessels

Asset	Year	Notes
25' Power boat	2004	New vessel, main patrol boat
21' Power boat	1985	Secondary patrol vessel
20' Power boat	1980	Harbor pump vessel

Mooring Control
The Harbormaster determines mooring locations, collects fees, and performs other police duties depending on the need. Although there are no designated transient moorings, the Harbormaster could accommodate a vessel in need of one. Many towns like Winthrop leave it to the private sector to own the moorings and provide other services such as mooring repair.

Mooring Fees
Mooring fees are the only source of revenue from the harbor. There are no ramp fees or berths that contribute to the general fund of the Town. Yearly mooring fees are $25 with boats under 12 feet exempt.

Mooring Demand and Use
Boaters must first sign up on a list with the Harbormaster to get a mooring. They are then assigned moorings as they become available. As of this writing, however, there were no people on the waiting list, which is not typical of waterfront communities in the North Shore. Most coastal communities with mooring fields typically have a waiting list due to the demand for moorings. Gloucester, for example has about 600 people on its list and many of them may have to wait more than seven years to get a mooring. Hull, a more comparable community to Winthrop in terms of it island/peninsula geography, population, and location on Boston Harbor expects to fill its approximate 400 moorings in 2005.

Town Landing
The Town Landing is located on the south side of the Harbor along Shirley Street. Its main use is for launching and retrieving boats and for parking trailers and their vehicles. There are two adjacent ramps and parking for 90 vehicles with trailers and 50 automobiles. The Landing also provides other recreational uses since it has several walking paths and benches.

The state Public Access Board owns the ramps and the Town manages them. No ramp or parking fees are charged for their use. Should the Town begin charging a ramp fees, the money would have to be put in a separate account and could only be use to support costs related to the use of the ramps such as maintenance costs or a fee collection attendant.

The ramps are in poor condition. On an annual basis, the Town fixes holes at the base of the ramps that are caused by boaters using their engines to launch and retrieve their boats. The ramps are approximately 30 years old and need to be replaced with modern concrete ramps that prevent propeller washout at the ramp bases. Floats should also be added to assist boaters with launching their vessels as well as improve the safety of launching operations at the ramps.

Pumpout Facility

The number of pumpout facilities has been increasing over the past ten years along the Massachusetts coast. There are presently over 20 pumpouts within a ten-mile radius of Winthrop Harbor, which includes the coastal towns from Lynn to Boston to Hull. Most pumpouts are at facilities that provide other services (such as water and fuel) so that boaters only have to make one stop when servicing their vessels or purchasing items for their voyages.

Pumpout management is different at various marinas, and usually depends on the demand for the service. Some large marinas, such as Boston Harbor Shipyard, offer pumpouts at shore side facilities and by a pumpout vessel.

Some marinas outside of Winthrop sell pre-paid cards that let boaters pump out their vessels either a specific number of times or a specific volume of liquid during a season. Many pumpouts are funded by the Clean Vessel Act (CVA) and provide free pumpouts.

In Winthrop, a pumpout vessel is funded by the CVA and its use is free. Users can request a pumpout by calling the harbormaster on either the telephone or the local VHF radio.

According to the Winthrop Harbormaster, the Town is addressing the need for a landside pumpout facility, with preference for a facility at the proposed multi-use pier at the Town Landing. This would give the Harbormaster more time for other harbormaster activities and make it more convenient for users since they would not have to wait for the pumpout vessel.

Waterfront Visitor Uses and Attractions

There was no data available on tourists to the Winthrop harbor front, due mainly to the fact that there are no major tourists attractions on the harbor. However, the consultant identified several small sport fishing boats that offered day trips attracted relatively few people to several marinas and the public landing as pick up and drop-off points for their businesses. Their contribution to the local economy would be minor since they would most likely purchase a few items such as bait, tackle, ice, and food for a day trip on the water.

There are several other attractions located near Winthrop Harbor including Belle Isle Marsh Reservation, Boston and Winthrop Greenways, Boston Harbor Islands, Deer Island, and several beaches on the Atlantic Ocean side of the Town. Although these resources are not directly on the harbor front, visitors may pass by some of the businesses and purchase local goods and services.

Belle Isle Marsh Reservation

The Belle Isle Marsh reservation, a 350-acre reservation, was acquired from MassPort in the late 1970s by the former Metropolitan District Commission (MDC, now the Department of Conservation and Recreation, DCR). It was opened as a public park in 1985. In 1986, the MDC reclaimed a major section of Belle Isle Marsh as a reservation. The Friends of Belle Isle Marsh, a grassroots environmental organization, was formed in the early 1980s to help preserve the marsh and publicize its importance as an urban nature laboratory and resource. Approximately 150 acres of the marsh is in Winthrop. Birdwatchers, kayakers, and others frequently use it with small vessels. Its main water access point is at the Belle Isle Bridge.

Boston Harbor Islands

The Boston Harbor Islands became a unit of the National Park System in November 1996 by an act of Congress (Public Law 104-333) that contains several provisions, which, in total, make this a national park like no other. It includes 34 islands that lie within the large "C" shape of Boston Harbor. Managed by a unique Partnership, the islands have been closely linked to Massachusetts Bay and to coastal communities for thousands of years.

The islands also offer an exceptional perspective on change in the region's ecosystem. Thus the islands are both a recreational haven for urban residents and tourists and a highly effective laboratory in which to learn about natural change, cultural history, and stewardship.

In 1985, Boston Harbor was labeled the most polluted harbor in the nation, but the dramatic recovery of water quality during the 1990s, through the Massachusetts Water Resources Authority's wastewater treatment, contributed to widespread support for establishing a national park area. Now, after an investment of more than $4 billion in better wastewater management and treatment, the harbor is cleaner and more inviting. Over the past

three decades, numerous public and private agencies have once again turned their focus to Boston Harbor and its islands, as the region seeks to rebuild its historical and ecological ties to Massachusetts Bay.

The 34 islands of Boston Harbor (ranging in size from less than 1 acre to 274 acres) have served numerous public and private uses and are a unique example of an island cluster intimately tied to the life of a city. Although within sight of a dynamic and densely populated metropolitan area, they continue to offer the visitor a rare sense of isolation. Their proximity to a large urban population and their special natural and geologic resources, cultural and historic resources, and associated values contribute to their national significance.

Winthrop Greenway

The Winthrop Greenway is on DCR land and runs along the Winthrop side of the Belle Isle Inlet. Beach. The Greenway is currently a footpath and connects to the East Boston Greenway and to Short Beach in Winthrop. To encourage its use and benefits, the Winthrop Greenway should be linked the other pedestrian and bicycle paths and recreational resources such as the Town Landing or the proposed HarborWalk.

East Boston Greenway

The East Boston Greenway connects marshes, beaches, playing fields, Logan Airport, MBTA stations, and residential areas throughout the East Boston community. It was created from an abandoned railroad right-of-way in 1996. It will be extended to Belle Isle Marsh, mostly on DCR owned land.

Winthrop Beaches

There are two main beaches in Winthrop, both are on the Atlantic side of the town and are within a five to ten-minute walk from the center of town. Winthrop beach is a popular sandy beach that is maintained by DCR. It has restrooms and free parking. Yirrell Beach is a less popular beach and also offers free, but limited parking.

Deer Island

Deer Island is the site of wastewater treatment facility of Massachusetts Water Resources Authority (MWRA). It is located beyond the southern end of Point Shirley and is connected to it by a causeway. There is a park at the northerly end, perimeter walkway with numerous lookout points, visitor station, and free parking. Due to its relative high topography, the island provides panoramic views of the Boston skyline, Boston Harbor Island, and the Atlantic Ocean.

Winthrop Waterfront Area Economic Condition

Introduction

While Winthrop's waterfront is the defining geographic asset of the community, its potential to provide jobs and serve both local resident and visitors has not been fully realized. As part of this study, FXM Associates interviewed a selected sample of waterfront area business establishments, marine businesses, and others to determine what, if any, public or private sector actions could stimulate the waterfront more effectively as an economic asset.

Town officials, business representatives, and recent planning reports anticipate new development along the waterfront area during the next 5 to 10 years. Significant changes are anticipated, in part because of the preliminary planning approvals and developer feasibility studies for mixed-use (residential/commercial) development within a five- to six-block area along Pleasant Street involving the Atlantis and Crystal Cove marinas.

Senior staff of FXM Associates conducted interviews and analyzed relevant secondary source data (reports, studies, city records, etc.) on existing economic conditions, planned and proposed waterfront activity, economic trends, and potential effects on the harbor and town economy. This portion of the Plan reports on the results of the existing conditions assessment.

Community Profile

The Town of Winthrop is situated on a peninsula located five miles north of downtown Boston. It is bordered by Revere, Boston, and the Atlantic Ocean. Bus service travels throughout the town and connects to the MBTA rapid transit service (Blue Line) at Orient Heights station in East Boston.[1] The town is described as ''a close-knit, family-oriented community where everything is within walking distance and that has retained its reputation for being a safe and pleasant place to live.''[2] There are numerous parks and playgrounds, six public beaches, four tennis courts, five athletic fields, a public landing for boats, indoor skating rink, three yacht clubs, and a golf course.[3]

Winthrop is one of 24 communities that make up the Inner-Core region of Greater Boston, and is within the Metropolitan Planning Council (MPC) region as well as the Boston Metropolitan Statistical Area (MSA).[4] In 2001, a town buildout analysis projected continued population growth to 18,493 in 2025, about a 10% increase, and that these additional 190 residents would occupy 83 new households.[5] The analysis starts with available land in

[1] Winthrop (Suffolk County) Community Profile, Massachusetts Department of Housing and Community Development (DHCD)
[2] Ibid.
[3] Ibid.
[4] Op. Cit., DHCD Community Profile
[5] Ibid.

each zoning district and makes projections of additional housing units and commercial/industrial space according to each zoning district's minimum lot size and other regulations. The projections only account for as-of-right development and do not include development by special or comprehensive permit that may increase the amount of development.[6] Essentially, the EOEA analysis found Winthrop to be built up and built out.

Community Development Plan

The planning framework for an assessment of Winthrop Harbor's economic potential is provided by the Community Development Plan (CDP) (Final Draft, April 2004), prepared by the MAPC in conformance with Executive Order 418. The Plan provides an overview of local demographic, housing, transportation, and economic development conditions, and incorporates the results of two town-wide workshops sponsored by the CDP Committee, the Vision Workshop (June 2003), and the Economic Development Workshop (January 2004). The resulting vision statement aims to foster development that ''will be compatible with and take advantage of the outstanding water assets of Winthrop's seaside location - its harbor, beaches and marshes.''[7] By 2020, this ''hidden jewel'' of Boston's North Shore will still feel like ''a small-town oasis in a heavily urbanized area'' with convenient intermodal access to all points, with ''ferry service providing additional opportunities for carless travel to and from Winthrop.''[8]

The Economic Development section of the Community Development Plan highlights salient characteristics and economic indicators of the local economy and resident workforce, and acknowledges that access to Winthrop from neighboring communities is problematic and limits the type and scale of viable local businesses. Key findings in the Plan include the following:

- Winthrop has a small base of local jobs relative to its population: 50% of residents work in Boston, and 70% of jobs based in Winthrop are filled by residents
- More than 50% of commuters to Boston work downtown (1,750) or at Logan (900), and 2.6% (249) work from home
- Resident workforce trails Boston region in education attainment, managerial/professional jobs
- 50% of private sector jobs are stores, restaurants, and local health care facilities
- Average Winthrop private sector job wage was $25,324 compared to Boston metro average of $50,752 in 2003
- Resident workforce grew 7% to 10,644 (2000 - 2002)
- Number of Winthrop jobs declined to 2,300 in 2002 from 3,100 in 1992; the town exports workers
- Average unemployment rate has been slightly below the state average since 1985; in December 2003 it was 5.1% and the state's was 5.4%

[6] Massachusetts Executive Office of Environmental Affairs (EOEA), Winthrop Buildout Analysis Summary, 2001
[7] Ibid.
[8] Winthrop Community Development Plan, Final Draft, April 2004

- The town receives less business tax revenue than other suburban Boston communities

The Plan also references public infrastructure improvements to sustain and stimulate waterfront and water-related business and real estate development, as well as encourage greater public use of Winthrop's coastal resources. Six of the eight priority goals set forth by participants at the Economic Development Workshop are pertinent to this waterfront area assessment.[9]

- Examine zoning to allow high intensity (density) redevelopment, and address associated traffic and parking issues
- Address parking and traffic problems at Port Shirley, downtown, and beaches
- Grow existing businesses
- Improve transportation links
- Promote marine uses on the waterfront
- Pursue opportunities for a ferry link to Boston, Harbor Islands National Park and excursion destinations, and related development on Shirley Street

This section of the Community Development Plan identifies and maps several potential or prospective locations for public and private sector economic development initiatives in the Harbor Area and Shirley Street area (from harbor to Cross/Crescent Street/Beach Road).[10]

Goals for Harbor Area

- Encourage hospitality, tourism-related businesses (restaurants, shops, bed & breakfast lodging, small/boutique hotel) to leverage the harbor location and ferry service-related traffic (pedestrian)
- Pursue funding for Harbor Walk design, implementation[11]
- Expand parking to support businesses and establish bus service to Wonderland/Revere to facilitate through traffic circulation
- Redevelop the marina and business district more intensively, including mixed uses (residential above commercial)
- Improve DCR beach and establish more water-based and waterfront visitor attractions
- Support marine uses (e.g., marine electronics sales/service) to maintain working waterfront and harbor navigation

Goals for the Shirley Street Subarea

- Develop a more pleasant streetscape to encourage pedestrian use
- Allow a mix of residential and commercial uses
- Reduce traffic speeds to enhance pedestrian crossing

[9] Ibid., "Section One – Vision"
[10] Ibid., p. 24
[11] Ibid., pp. 35, 36

Goals for the Beach Area

- Beautify beach to attract visitors according to US Army Corp of Engineers' plan
- Explore potential for bed & breakfast development on the one small parcel available for development in this entirely residential neighborhood

Waterfront Economic Area - Secondary Source Data Analysis

The Waterfront economic area is defined for the purposes of this study as the area extending from the immediate harbor area two to three blocks inland, depending upon the configuration of the segment. The economic area lies between Pleasant Street in the northwest corner of the town and approximately Ocean Avenue on the eastern shore. This is the area containing virtually all of the waterfront-related economic activities (see Figure 15).

Data in the Table 12 summarize selected demographic characteristics of the waterfront area compared to the Town of Winthrop as a whole:

Figure 15. Map of the Economic Study Area of the Winthrop Harbor Waterfront Area

Prepared on: May 21, 2004
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0 miles 0.21 0.43

Table 12. Demographic Characteristics: Town of Winthrop and its Waterfront Area

	Waterfront Economic Area	Town of Winthrop	Waterfront Economic Area
Population			
1990	4,900	18,127	27%
2000	4,800	18,303	26%
% • 1990-2000	-1.97%	0.97%	
2009 (est)	4,500	17,600	
Avg. hhld size	2.38	2.3	
owner-occupied	64%	53%	
renter-occupied	36%	47%	
median hhld income	$70,000	$63,000	111%
< $15,000 income	7%	10%	

Source: Claritas, Inc. and FXM Associates

The total population of the waterfront area is estimated at 4,800 in 2000, a slight decline from the 1990 census figure of 4,900. This decline has been projected to continue, with the 2009 estimate put at 4,500.[12] In contrast, the Town of Winthrop grew at the rate of 1.11% over the period 1990-2000; however it too is expected to experience a slight decline by 2009, to a total population of 17,421. The waterfront area, then, comprises a little over a quarter of the town's population. The average size of waterfront area households is 2.38 persons, compared to the town's 2.3 persons per household. Over 95% of both waterfront and town population is white. Housing units in the waterfront area are slightly more likely (64%) to be owner-occupied than units in the town as a whole (54%). Incomes in the waterfront area are higher than in the town: the median household income is estimated at $69,397 compared to $61,798. Only 7.3% of households in the waterfront area have incomes below $15,000, whereas the town has 9.44% of households in this category.

Data in the following table show the distribution of occupations a in the waterfront economic area and the Town of Winthrop overall.

Table 13. Occupational Characteristics: Town of Winthrop and Its Waterfront Area

[12] All figures in this section are drawn from Claritas, Inc. **Site Reports**, whose data are based on the US Census.

Occupation	Waterfront Economic Area	Town of Winthrop	Waterfront Economic Area %
Executive & Profess.	157	1,220	13%
Adminis.& Support	123	979	13%
Service	73	638	11%
Trade & Labor	137	895	15%
Total	490	3,732	13%

Source: Claritas, Inc. and FXM Associates

In the waterfront area, the largest category of occupation is executive and professional, which accounts for 32% of employment, followed closely by trade and labor at 28%. Administration (25%) and service (15%) personnel make up the balance of waterfront employment. In the Town of Winthrop, the profile is similar, but not identical: 33% of occupations are categorized as executive and professional, followed by administration and support at 26%, trade and labor at 24%, and service personnel at 17%.

Data in Table 14 present the employment characteristics of the waterfront economic area and the Town of Winthrop overall.

Employment in the waterfront area is predominantly in services, which account for approximately 35% of employees. Second in frequency is retail trade, where about 20% of employees work. Remaining employment, in order of frequency, is in finance/insurance/real estate (13%), transportation/communication/utilities (11%), construction (10%), and government (6%). The service sector in the Town of Winthrop is even more dominant, accounting for 48% of employment. Retail trade is next at 14%. No other categories of employment reach even 10% of remaining employees.

Within the Town of Winthrop overall there are about 530 business establishments with 3,700 employees and $370 million in business sales annually. About 17% of these businesses are located within the Waterfront Study Area, including 90 establishments that account for 500 jobs and approximately $50 million in business sales annually. The proportion of town-wide retail establishments within the Waterfront Study Area, where 17 of the approximately 97 retail businesses in Winthrop are located, is slightly higher and accounts for 100 jobs (out of 500 retail jobs town-wide) and $11 million of the $55 million in town-wide retail sales. Eating and Drinking places comprise the largest category of retail employment in Winthrop, with over 200 jobs (more than double those of food stores), and 6 of the 26 eating and drinking establishments town-wide are in the Waterfront Study Area. Neither the Waterfront Study Area retailers nor retailers town-wide capture more than 15 to 22% of the retail sales potential of Winthrop residents, who purchase most goods and services out of town. This suggests that tourists or out-of-town residents do not account for a significant proportion of business sales in Winthrop, including the sales of restaurants, retail shops, general or specialty merchandise, food stores, and so forth.

Table 14. Employment Characteristics: Town of Winthrop and Its Waterfront Area

Employment	Waterfront Economic Area	Town of Winthrop	Waterfront Economic Area %
Retail	99	521	19%
home improvement	*14*	*23*	*61%*
general merchandise	*0*	*8*	*0%*
food stores	*7*	*93*	*8%*
auto dlrs & gas sta.	*5*	*15*	*33%*
apparel and accessories	*1*	*4*	*25%*
furniture & home furnishings	*10*	*45*	*22%*
eating and drinking places	*50*	*213*	*23%*
misc retail	*12*	*120*	*10%*
FIRE	66	264	25%
Services	174	1,798	10%
Fishing	9	19	47%
Construction	48	211	23%
Manufacturing	5	206	2%
Transport/Communic.	57	153	37%
Wholesale Trade	13	269	5%
Government	28	299	9%
Total	598	4,261	14%

Source: Claritas, Inc. and FXM Associates

In both the waterfront economic area and in the town as a whole there are substantial market opportunities to capture ''leaked'' sales, especially in the areas of eating and drinking places and specialty retailing: Waterfront area residents spend over $11 million in eating and drinking places outside the area and over $5 million in special retailing stores outside the area. Town of Winthrop residents overall spend almost $40 million in eating and drinking places outside the town and over $18 million in special retailing stores outside the town. Both these categories of retailing are typically found in successful waterfronts, as the appeal of the waterfront provides distinctive locational advantages for specialty shopping and dining.

Waterfront Economic Area -- Summary of Interviews

FXM has interviewed nine business and property owners of marinas, restaurants, lodging, boat repair, commercial fishing, and other waterfront activities, some of whom are members of the Harbor Plan Committee. This effort is not intended to represent a comprehensive sample of the many, diverse businesses operating in the harbor area. To date, FXM has not received any objective data from town officials or proponents of planned and/or proposed waterfront real estate development. This summary highlights the relevant points of these interviews.

Recreational boating represents a significant amount of the business activity along Winthrop Harbor's waterfront from Crystal Cove to Main Street. The town maintains a 'major league' mooring field that accommodates 800 to 900 boats, the majority of which are 50- to 60-foot vessels and some as large as 110 feet. These public moorings are typically filled throughout the season (May - October). The harbormaster started keeping a waiting list in 2004, and expects to add 10 to 15 public moorings for transient boaters in tandem with construction of a public pier at the proposed ferry terminal. There are private marinas such as Atlantis Marina and Crystal Cove Marina, with slips for members, the general public, and occasional transient boaters. Mullins Marine Service also has slips available to the general public, local lobster boats, and, as needed, Massport fire and police boats.

Winthrop has a number of yacht clubs (Winthrop, Country Park, Pleasant Park) that maintain numerous slips and moorings for their members and guests. These social clubs are zoned and taxed as commercial uses; yacht clubs have entertainment/liquor licenses and most rent function rooms to the general public. The Winthrop Yacht Club was established in 1884 and has grown to 400 regular members and 125 lifetime members. Its marina has 122 slips and there are plans to add another 45 slips. It is also the home base for the US Coast Guard Auxiliary Flotilla 51, which conducts public education and community services. The Pleasant Park Yacht Club has 300 members, about 55 parking spaces on-site, and 70 slips for boats up to 43 feet. The club would like to add 10 to 15 floats to accommodate members with larger boats but there are problems at low tide when water depth is reduced to 3 to 4 feet.

The harbormaster, yacht club representatives, and local planning officials identify a public pier as the priority waterfront infrastructure improvement. The 150 public parking spaces available in the waterfront district are deemed adequate for existing businesses and waterfront activity. There has been limited demand for transient docking or 'touch and go' berths because the town does not have a public pier; however, some transient boaters are accommodated as guests at one of the local yacht clubs. Local marina operators expressed interest in future expansion to accommodate transient boaters, noting that the lack of such facilities diminishes business potential for day-trippers or visitors to restaurants, shops, etc.

There are 12 to 15 lobster boats and 4 to 5 charter fishing boats operating from Winthrop Harbor, as well as a dozen or more residents who regularly harvest clams from Airport Flats, an area reputedly owned by the Town of Winthrop. These lobster boats are owned by Winthrop residents and since the town does not have a commercial wharf, lobster boats are berthed at either Mullins Marine marina, East Boston marinas, or at moorings in Winthrop Harbor, and local fishermen have no adequate place to load/unload, store traps, bait, etc.. Current town policy would separate commercial fishing activity from the planned ferry landing, although the proposed pier design could accommodate both types of vessels at Town Landing. The Trestle location is cited as an alternative site for a commercial fishing wharf, however the

harbormaster reports that there is a serious problem with shoaling between Snake Island and Coughlin Park affecting the ferry landing, Crystal Cove development, and other proposed waterfront improvements.

Mullins Marine Services provides boat, sail and mast repair as well as specialty services (woodworking, antique boat restoration) at their historic boatyard that operates one of the few remaining railway/cradle haul-out systems. This boat yard also includes a small marina (12 slips), but opportunities to expand moorings for transient boaters are constrained by significant silting from Belle Isle Creek.

Waterfront restaurants and lodging establishments are generally optimistic about proposals for ferry service, condominium development, and marina expansion, anticipating that these uses will attract more customers. However, most proprietors are also concerned about additional vehicular parking and traffic congestion potentially associated with the residential and commercial development at Atlantis Marina and Crystal Cove.

Waterfront Area Economic Development Potential

Introduction

At the November 17, 2004 meeting of the Harbor Planning Committee, Frank Mahady, FXM Principal, presented the firm's findings on existing economic conditions in Winthrop overall and the waterfront area in particular, including commuter ferry and multi-use public pier issues. His presentation also covered landside economic development opportunities based on resident and tourist markets and potential physical improvements along the waterfront. Participants at the meeting discussed these and other issues. Their concerns included support of local businesses and prospects for new business development linked to waterfront area improvements and related considerations. This memorandum summarizes that discussion, focusing on economic development opportunities and public policy and program initiatives to advance those opportunities.

Multi-use Public Pier

- Since publication of the *Winthrop Commuter Boat Feasibility Study* (January 2001) the Town has been unable to secure commitments from a private ferry operator for an *unsubsidized* commuter ferry service to downtown Boston, as called for in the recommendations of that study. While the demand analysis and vessel characterization assumptions contained in the 2001 report remain valid, an initially restrictive RFP resulted in no operator response, and subsequent efforts have been unsuccessful for a number of reasons, including changes in the supply of potentially available vessels, changing business circumstances for the operators who expressed interest (1999-2000) prior to the initial RFP, and dramatically increased fuel costs. Efforts by the Town to secure commitments from the Commonwealth of Massachusetts for

a *subsidized* demonstration project have thus far proved unsuccessful.

- Members of the Committee and the consultant recalled meetings during the commuter boat feasibility study in which the broader purpose of a multi-use public pier had been a primary community objective. The ferry project had been viewed as a first step towards securing funding and other commitments to build a pier, or piers, that would satisfy the needs of the fishing industry, local charter and excursion vessels, and the harbormaster, as well as provide the ferry option for commuters to downtown Boston.

- From an economic development perspective, one objective of the ferry project had been to bring visitors to Winthrop to patronize local shops and restaurants and the two hotel/motels currently in Winthrop. The Chamber of Commerce views visitors and tourists as a major benefit of waterfront revitalization in general, and the ferry is viewed as a contributor to that goal. The consultant noted that the original ferry study had recommended that the ferry operator be allowed to stage dinner cruises and other charter and excursion opportunities from the new pier, and this potentially substantial source of revenue could be an inducement for the commuter ferry operator. Previous studies of commuter boat operations in Boston Harbor had shown that non-commuters and excursions make up 29 to 38% of overall ridership and 45 to 48% of revenues for vessel use.

- Programming for a multi-use pier should consider the needs of Winthrop-based commercial lobster boats, charter and excursion vessels (both existing local and potential new operators that could bring visitors to Winthrop), commercial clammers, transient recreational vessels (touch and go and possible longer term), and safety, security, and management needs identified by the Harbormaster.

FXM Observations and Recommendations: The potential uses at the new multi-use pier may not be complicated, but neither are they transparent at this time. For example, the implications of moving vessels now docked at private marinas (such as local fishing and charter boats) to a public pier have not been addressed, and such uses will affect capital and operating costs at the public pier and possibly revenues to existing marina owners. The design of the pier needs to be informed by prospective uses, even if the objective is for optimal flexibility for potential uses (including a ferry). Management and use rules and priorities have not been established but may be a secondary priority until the pier is closer to operational. A *pro forma* for operating costs and revenues should be prepared for a multi-use public pier, and responsibilities should be identified for assuring the solvency as well as management of the new pier on an annual operating basis.

Each of these issues should be addressed as part of conceptual and final site planning and engineering for the new pier. They need not delay the process of securing funding for the construction of

a new pier and may in fact *expedite* the process by assuring potential grantors and other capital contributors that both community support and sound pier operations are in place prior to construction. Annual operating subsidies from the State are highly unlikely, as are contributions from general tax revenues by the Town.

Landside Economic Development Opportunities

As noted in FXM's prior technical memorandum (*Winthrop Waterfront Area Economic Conditions,* October 26, 2004), available secondary source data indicate that retail stores and restaurants in **Winthrop now capture only about 22% of the town residents' yearly retail spending potential.** A breakdown of spending potential, current store sales, and ''leakage'' from the town by business type is shown in Table 15.

Table 15. Existing and Potential Retail Sales within the Harborfront Area of Winthrop

Retail Market Potential		
	Waterfront Area	Town of Winthrop
Business Type		
Bldg. Mat, Garden Supp.	$ 1,805,183	$ 6,555,194
Gen'l Merchandise	$ 4,871,713	$ 17,611,322
Food & Drug Stores	$ 13,212,524	$ 48,005,765
Auto Dlrs & Gas Stations	$ 10,317,813	$ 37,316,243
Apparel & Accessory	$ 5,136,325	$ 18,589,198
Eating & Drinking Places	$ 13,753,229	$ 50,252,573
Home Furnishings & Equipment	$ 2,814,134	$ 10,139,412
Total of categories	$ 51,910,921	$ 188,469,707
Other Retail	$ 15,738,875	$ 56,514,015
Total Retail Potential	$ 67,649,796	$ 244,983,722

Current Retail Sales		
	Waterfront Area	Town of Winthrop
Business Type		
Bldg. Mat, Garden Supp.	$ 2,300,000	$ 3,500,000
Gen'l Merchandise	$ -	$ 800,000
Food & Drug Stores	$ 1,000,000	$ 23,100,000
Auto Dlrs & Gas Stations	$ 1,000,000	$ 2,900,000
Apparel & Accessory	$ 100,000	$ 400,000
Eating & Drinking Places	$ 2,400,000	$ 10,900,000
Home Furnishings & Equipment	$ 1,800,000	$ 7,400,000
Total of categories	$ 8,600,000	$ 49,000,000
Other Retail	$ 2,100,000	$ 5,700,000
All Retail Sales	$ 10,700,000	$ 54,700,000

Current Retail Sales Leakage		
	Waterfront Area	Town of Winthrop
Business Type		
Bldg. Mat, Garden Supp.	$ (494,817)	$ 3,055,194
Gen'l Merchandise	$ 4,871,713	$ 16,811,322
Food & Drug Stores	$ 12,212,524	$ 24,905,765
Auto Dlrs & Gas Stations	$ 9,317,813	$ 34,416,243
Apparel & Accessory	$ 5,036,325	$ 18,189,198
Eating & Drinking Places	$ 11,353,229	$ 39,352,573
Home Furnishings & Equipment	$ 1,014,134	$ 2,739,412
Total of categories	$ 43,310,921	$ 139,469,707
Other Retail	$ 13,638,875	$ 50,814,015
Total Leakage	$ 56,949,796	$ 190,283,722
% captured	16%	22%

and FXM

3 data)

It is unrealistic to assume that new businesses in Winthrop could capture even a majority of the $190 million in annual spending of Winthrop residents now taking place outside of town (see Table 15 for details). Big box retailers, grocery chains, major auto dealers and others serving regional markets will continue to capture most of local resident spending for large ticket items, weekly groceries, and general merchandise. However, **significant potential exists for Eating & Drinking Places (restaurants, lounges, entertainment, and related) and specialty retail shops (including Apparel & Accessories stores) to be successful in Winthrop, relying mostly on the local resident market**. Visitors and tourists would help, but may not be essential to the success of new business ventures of these types along or near the waterfront.

The waterfront area could offer the special ambience and visibility important to a successful restaurant (good food and good service are essential in any location), as well as to specialty retail shops (quality merchandise targeted to the local market and competitive prices are essential in any location). A distinctive environment, such as waterfront views and access, will help attract residents as well as visitors to new eating, entertainment, and shopping opportunities.

FXM Observations and Recommendations: The landside of Shirley Street along the main waterfront area is currently a mix of commercial and residential uses that, depending upon the success of revitalization and improved access along the immediate waterfront, may transition to more intensive commercial uses. There is little developable area on the immediate waterside of this main thoroughfare.

It is our understanding that zoning allows for commercial uses in this mixed residential/ commercial neighborhood, but specifically prohibits B&Bs. The opportunity to accommodate visiting boaters overnight, whether docked at the private marinas or a new multi-use public pier, or other visitors attracted to Winthrop by an excursion or charter vessel outing from the Winthrop pier or a water taxi or ferry from downtown Boston, should not be prohibited. B&Bs have traditionally allowed local property owners and entrepreneurs opportunities to compete in small ways for overnight visitors by offering an attractive alternative to more traditional and larger hotels or motels. With fewer services typically internalized at B&Bs, visitors are encouraged to eat and shop elsewhere in the local community.

Winthrop is now facing waterfront development issues, which, while outside the scope of this study, bear comment in general terms. Efforts to limit obstructions to the waterfront views and access corridors and to expand waterfront-walking opportunities are essential to the revitalization and economic development potential elsewhere in the waterfront area and in the community as a whole. An attractive, publicly accessible waterfront adds to the quality of life and property values of an entire community and not simply the uses immediately adjacent to the waterfront. Where communities have encouraged or demanded public access to the

waterfront as part of private development initiatives, they have realized longer term value and off-waterfront investments even as such access may have required trading off short term property tax benefits along the immediate waterfront. In most instances, however, an attractive and active public space along the water has enhanced waterfront property values (the Fort Point Channel, Boston, *Watersheet Activation Plan (2003)* is a good example: waterfront property owners believe that the value of their residential, hotel, retail and other commercial investments will improve as a consequence of public access and activity on and along the water, and, as a result, they are contributing to the support of waterfront infrastructure and events programming).

IV. ACTION PLAN AND IMPLEMENTATION GUIDE

Overview of the Plan's Recommendations

This section describes the principal recommendations proposed in the Winthrop Harbor Assessment and Plan. They are designed to achieve the Town's overall goals for use of the harbor and waterfront, and have evolved in response to an analysis of the current conditions, issues, and resources, and comments and suggestions from businesses, residents, and members of the Harbor Plan Committee.

The recommendations are organized according to planning elements. In some cases, the discussion expands upon a specific use or activity over short, mid, and long terms.

Implementation Schedule

The following pages describe the implementation strategies for the Plan (see Table 16). The recommendations are organized according to five elements.

Action	Lists the actions necessary to achieve the goals of the Plan
Costs	Estimated costs of project. Detailed costs would require site inspection, permitting, and other site-specific investigations.
Funding	Potential funding agencies
Responsible Agencies	Assigns the elected or appointed body, agency, group, individuals or volunteers principally responsible to initiate the implementation action.
Priority	Identifies the need rank of a project. However, a low priority may take precedent due to availability of funding or other reason.
Time Frame	Identifies the relative time that the project should begin.

Table 16. Summary of Implementation Actions and Schedule

Waterside Recommendations

Action	Costs	Funding	Responsible Agencies	Priori ty	Time Frame
Build a multi-use pier and operations facility at the public landing.	Pier @ $2M, Landside @ $1M.	Seaport Advisory Council, PWED	Town Administrator, Harbor Management, Harbormaster	High	Immedia te
Dredge Federal Channel		ACE	Town Administrator, Harbor Management	High	Short
Dredge Belle Isle Inlet.	Unknown	State	Harbor Management	Low	Medium
Continue Winthrop Beach Re-nourishment Program.	$12,500,00 0	DCR	DCR	High	On-going, complet e by 2005
Improve the boat ramp at the Town Landing.		Public Access Board	Harbor Management	High	Short
Investigate stabilization of Snake Island.	$80,000	ACE, NOAA	Harbor Management	Medium	Short term
Improve control of water at the Lewis Lake tide gate.		NOAA	Public Works	Medium	Medium

Landside Recommendations

Action	Costs	Funding	Responsible Agencies	Priori ty	Time Frame
Develop the proposed HarborWalk	Planning and Design @ $15,000 Constructi on $unknown	MassPike Tourism, Seaport Advisory, Urban Self Help	Open Space and Recreation Committee	High	Short term
Improve infrastructure (stairs and walls) at public access points		DCR, MCZM	Public Works	Medium	Medium
Repair/replace Bridge over Belle Isle Inlet		Design - Boston 50%, Winthrop 50% Build -	MassHighway, Bridges Division, Public Works Department, City of	Medium	Medium

		MassHighway 100%	Boston; Winthrop Public Works		
Design and implement Shirley Street streetscape improvements		CDBG	Town Administrator	Medium	Medium

Program and Regulatory Recommendations

Action	Costs	Funding	Responsible Agencies	Priorit y	Time Frame
Develop a management plan for the Town Landing.	Minimal	None	Harbormaster, Harbor Mgt. Committee	High	Short
Implement a new public access and signage program.	Minimal	Minimal	Town Administrator, Public Works		Medium
Promote waterfront uses and benefits.	Minimal	None	Town Administrator	Medium	Short
Strengthen programs with existing waterfront users and advocates.	None	None required	Town Administrator,	Medium	Medium
Establish launch fees at the Town Landing.	None	None required	Town Administrator, Harbormaster, Selectmen	High	Short
Increase town mooring use and fees.	None	None required	Harbormaster, Selectmen	High	Short
Update and implement the shellfish management plan.	None	None required	Harbormaster, Town Administrator	Medium	Medium
Maintain existing businesses and attract new ones.	None	Small Business Administration	Town Administrator	Medium	Medium
Modify zoning to allow for Bed & Breakfast lodgings.	None	None required	Selectmen	Medium	Short

Waterside Recommendations

Build a multi-use pier and operations facility at the Town Land.
The Plan envisions a multi-use pier at the Town Landing that would support a variety of commercial and public uses. The Town should embark upon a program to develop waterside and landside structures that will improve marine-dependent opportunities in Winthrop Harbor as well as businesses along the waterfront. A new pier would provide berthing and access for the Harbormaster vessels, commercial fishing vessels, dinghies, a commuter ferry, and excursion and transient vessels. A new building adjacent to this pier would house the harbormaster office, restrooms, and a ticket booth. This facility would also provide an area for fishermen to temporarily store gear, pickup and drop-off gear and passengers. The Town will need to work with appropriate funding sources such as the Seaport Advisory Council, to secure funds for additional design work and to develop a management plan for the Town Landing.

Dredge the Federal Channel.
The existing federal channel should be dredged due to the significant shoaling that has occurred over many decades. Presently, the U.S. Coast Guard and Town are extending use of the channel by relocating channel markers toward the adjacent gravel pit into deeper waters.

As a federally designated channel, the USACE is obligated for its maintenance and/or for implementation of any improvements. The Town should submit a formal request to the USACE Engineering and Planning Division in order to proceed with unlocking the potential assets and opportunities within the Harbor.

Dredge Belle Isle Inlet.
Due to the past history for dredging Belle Isle Inlet, opposition expressed by the US Environmental Protection Agency, the regulatory process for the dredging of Belle Isle Inlet would be expected to be extremely difficult, time consuming, and costly. It is anticipated that the project would require the preparation of an Environmental Impact Report (EIR) and could require significant mitigation to offset impacts due to dredging.

Investigate stabilization of Snake Island.
Snake Island has long been questioned as being a potential source contributing to sediment build-up within the Harbor; thereby, increasing the frequency for maintenance dredging. It is recommended that an investigation be conducted to determine if the island is indeed a sediment source feeding the harbor, and if so, provide cost effective and environmentally sound alternatives for stabilization.

Continue with Winthrop Beach Re-nourishment program as part of the Winthrop Shores Reservation Restoration of Winthrop and Short Beaches.
The state and the town should continue to support the Winthrop Beach Re-nourishment program. This project, which includes

$12,500,000 of improvements to the drainage system, landscape amenities, and reconstruction of Winthrop Shore Drive, will help protect the area from storms and increase the size of the beach, which is a major recreation attraction for the residents of Winthrop as well a thousands of people that visit Winthrop from the region.

Rebuild the boat ramp and add floats at the Town Landing.
Improve the condition of the current facility and expand the usage by providing side boarding floats to tie-up to. Improvements are currently being investigated by the State Public Access Board (PAB). The Town should peruse with PAB, the implementation of these improvement plans.

Improve the control of water at the Lewis Lake tide gate.
The tide gate located on Washington Street controls the water levels for Lewis Lake. This gate, which has not functioned properly, has resulted in stagnant water in the Lake. It needs to be upgraded to improve the water quality, control floodwaters, and to possibly reduce sedimentation at the confluence of the waters exiting the gate and Winthrop Harbor. The Town should seek funds to assess the sedimentation process, reconstruct the gate, and manage its operations.

Landside Recommendations

Develop the proposed HarborWalk.
The proposed HarborWalk is a key component of this Plan. The HarborWalk, which would create a pedestrian path along and between Dow Playground and the Town Landing along Shirley Street, would link important recreational resources as well as provide viewing locations, in particular, at the former trolley bed in Crystal Cove. It would be an attractive resource that could link other recreational uses such as the Winthrop Greenway. The HarborWalk would complement the recreational uses at the proposed multiuse pier at the Town Landing as well as support businesses along Shirley Street by increasing the number of people that pass through the commercial area.

The area south of the former trolley bed is proposed as the site for a HarborWalk/ public access. It was also considered as an option for a Town Pier for fishermen use. Issues with this option would include the need to provide an extended pier/gangway/float system to gain ample water depth for boat docking. Other considered methods would be to provide shoreline stabilization with some dredging but this would but this would be a more complex project. The proposed use of this area would also need to consider the navigation issues within the area, as presently the water area is shared with adjacent marinas. Landside limitations include parking and work area, which need further be further investigated considering specific usage.

Improve the infrastructure at public access points.

Public access is critical to the success of any town harbor front. Equally important is the need for good quality and safe infrastructure to support this access. The Town needs to upgrade and rehabilitate many of its public access points as indicated in the existing conditions sections on public access locations. Missing or crumbling stairways, for example, prevent people from access the shoreline. Faded or missing signs that would normally direct people where to go or inform them about the history of the area should also be replaced. A program of infrastructure improvements should be developed and prioritized so residents, tourists, and others can access and enjoy Winthrop's beautiful waterfront and its history and amenities.

Repair and/or replace the bridge over Belle Isle Inlet.
Transportation access is critical to the function of a working community. The bridge over Belle Isle Inlet is one of only two access points to the Town of Winthrop. The channel under the bridge provides the only water access to Belle Isle Marsh. This bridge should be replaced and, possibly, built several feet higher to accommodate larger boats, especially emergency or rescuer vessels. This project would complement the other recommendation to dredge near and under the bridge to increase the water depth for deeper draft vessel.

Design and implement Shirley Street streetscape improvements.
Shirley Street is the main commercial/retail area along Winthrop Harbor. The conditions of its streetscape should be improved to help attract people and support businesses along the waterfront. Improvements would include directive and informative signs, pedestrian walkways, benches, and similar streetscape amenities. These improvements would also link this business area with other destinations such as the Town Landing and the proposed HarborWalk. This recommendation is also in the Winthrop Community Development Plan.

Program and Regulatory Recommendations

Establish launch fees at the Town Landing.
The Town Landing is owned by the state Public Access Board (PAB) and managed by the Town. Although user fees for the ramp are not collected at this time, the Town should establish launch fees. They could be used to support the operational costs of this facility or other costs that are used to support the ramp. The only requirement by the PAB is that the fee structure is equitable for all users. Options for this fee structure include daily, seasonal, or yearly fees.

Increase town mooring use and fees.
The Town should increase revenues from Town moorings by 1) increasing mooring fees and 2) promoting and increasing the number of Town moorings. Additional revenues would support harbor improvements and management. Depending on the fee structure, the increase may affect resident and non-resident vessel owners with moorings. Although all the Town moorings are not currently

occupied, the Town should attract boaters to the Harbor with the use of brochures or other economic development programs that promote the benefits and advantages of mooring in Winthrop Harbor.

Adopt a shellfish management plan.
The clam flats in Winthrop are designated by the Division of Marine fisheries (DMF) as conditionally restricted, which means that the shellfish can only be dug by commercially permitted diggers and must be brought to the depuration plant for cleansing. The Town's option to implement a shellfish management plan is dependent on the DMF, which only allows the Town to manage the flats if they are designated clean areas. There is potential for the flats to open as Boston Harbor becomes cleaner. The Town should take advantage of improvements to the flats and update and adopt a previously written shellfish management plan, should flats become cleaner. Furthermore, permit fees would help offset to the cost of a shellfish constable, which would manage, inspect, and collect fees from both commercial and non-commercial diggers.

Develop a management plan the Town Landing and proposed multi-use pier.
A key component of the proposed multi-use pier at the Town Landing is a management plan that would be needed to manage all uses, activities, building spaces, and operations at the Town Landing. Existing uses include boat launching, parking, and passive recreation. Additional uses with the multi use pier would include a harbormaster's office, collection of ramp and berthing fees, additional parking needs for users of the pier, vessel docking for commercial vessels, loading and unloading of fishing gear and seafood products, scheduling of excursing and passenger vessel berthing and use, and similar pier activities. A management plan for the pier, ramp, and parking facility would coordinate the use and users, maximize revenue, and support the goals of the Town. It would also be part of an operations plan for the pier.

Support efforts to maintain existing businesses in and attract new ones to the commercial waterfront areas.
Businesses located along or near a waterfront have an advantage over others non-waterfront areas since people are typically attracted to waterfronts, especially to businesses that are water-enhanced such as restaurants, specialty retailers, and lodging. New businesses to Winthrop's waterfront would help increase business, improve the local economy, and reduce sales leakages, which is relatively high for Winthrop. Options for the Town could be to create a business improvement district or an economic development committee that would focus on methods to attract business, business support and startup programs, marketing, and partnerships with other business organizations such as the Winthrop Chamber of Commerce.

Modify zoning to allow for Bed & Breakfast lodgings.
The Town should change the current zoning ordinance to allow bed and breakfast businesses in the commercially zoned areas as a measure to improve the tourism and hospitality services in Winthrop. Currently, there are only two facilities of accommodation, the Inn at Crystal Cove and the Winthrop Arms Hotel

and Restaurant. Smaller lodging businesses would provide direct and indirect revenue to the Town, which is typical of businesses that offer overnight visits. Bed and breakfasts would fit with the character of the homes and businesses, fill a niche market, increase pedestrian traffic, and support other businesses such as restaurants.

Promote waterfront uses and benefits to the residents of Winthrop.
The Town of Winthrop has excellent waterfront and natural assets that are available to the community. The Town should take advantage of these assets and promote the cultural and recreational benefits of Winthrop Harbor with an informational and educational program. It would address the Harbor's opportunities, amenities, natural resources, uses, activities, and contribution to the local culture. The local school system should also be included to help develop the program and educate students about the resources, culture, and benefits of the waterfront. The goal of a waterfront program would be to encourage more residents to visit and enjoy the Harbor. A key method to support this recommendation would be to improve signs the direct people to the waterfront and education them about it when they get there. The recommendation is explained below.

Implement a new public access and signage program.
A public access and signage program would help support the Town's goal to improve public access, education them about the area, and attract more residents and tourists to the waterfront for recreational uses. This program should provide both informative and directive signs. For example, informative signs could tell people about the history or views at or from a specific location. Directive signs could help people locate attractions or designated routes. They could also direct tourists to take paths along commercial areas and other places of businesses.

Strengthen programs with existing waterfront users and advocates.
There are a variety of groups that have been involved with the uses and activities on the waterfront including the Department of Conservation and Recreation, Friends of Belle Isle Marsh, and the Harbor Management Committee, and the Harbor Plan Committee. The Harbor Management Committee, who is responsible, for the overall management of the Harbor should ensure programs and partnerships of harbor users, stakeholders, and interested groups are strengthened and expanded as necessary. This would support the exchange and dissemination of ideas, opportunities, and activities along the waterfront.

Summary of Funding Resources

A variety of both debt and equity (grants) sources may be appropriate to the implementation of this Plan. A range of state and federal sources was explored as part of an implementation strategy for this Plan. The following summary represents a first step in this process, but is not intended to foreclose other options that may arise as the Town implements specific action of the Plan.

The Town would be eligible for funds generally authorized for improvements to coastal facilities, public access, business development, and recreational areas. Boating access to Winthrop and Boston Harbors, improved handicap access, and increased open space are improvements that generally may qualify for some type of state or federal financial support. Funds may be available for construction, expansion, and improvement of public facilities, piers, boardwalks, bulkheads, and other harbor and waterfront facilities. Moneys may also become available for additional research, planning, and public infrastructure investments as the Plan is implemented. A brief description of public funding programs of potential relevance to the implementation of the Plan follows.

State Sources

Source	**Seaport Bond Bill**
Amounts	Varies - requires a 25% local match for dredging and a 50% match for other projects.
Uses	Design and construction of coastal projects such as piers, wharves, and revetments.
Timing	
Contact site	www.mass.gov/seaports

Source	**Rivers and Harbors Grant Program, MA Department of Environmental Managements**
Amounts	Generally < $300,000 - 25% local match for dredging and a 50% match for other projects.
Uses	Design and construction that address problems on coastal waterways
Timing	
Contact site	www.mass.gov/dcr/grants

Source	**MA Riverways Program**
Amounts	Grants typically average $1,000 to $5000. Over $92,000,000 granted in 2002.
Uses	Projects that promote the restoration and protection of Commonwealth's rivers, streams, and adjacent lands.
Timing	Submission deadlines are generally in the late Fall.
Contact site	www.mass.gov/dfwele/reiver/rivsmallgrnts.htm

Source	**Smart Growth Technical Assistance Grants (EOEA)**
Amounts	Up to $30,000
Uses	Projects identified in the Community Development Plan
Timing	November

Contact site www.comm-pass.com

Source	DEM Greenways and Trails Demonstration Grants
Amounts	Up to $5,000 for non-profits, municipalities, and regional planning associations.
Uses	Greenway and trail planning, mapping and resource assessment, greenway public education and outreach. Promotion of linkages across town boundaries,
Timing	unknown
Contact site	www.mass.gov/dem/programs/greenway/grants

Federal Sources

Source	NOAA/NMFS Community-based Restoration Program
Amounts	unknown
Uses	Restoration of wetlands and supporting structures
Timing	Active
Contact site	www.nmfs.noaa.gov/ or Eric Hutchins at 978.281.9300 x6313

Source	Five-star Restoration Matching Grants Program
Amounts	$5,000 to $20,000 average $10,000
Uses	Competitive grants for communities that support wetland, riparian, and coastal habitat restoration projects that build diverse partnerships.
Timing	March 1, 2005
Contact site	www.nfwf.org

Source	Clean Vessel Act, Department of the Interior, US Fish and Wildlife
Amounts	Total program $6,000,000
Uses	This grant program provides funding for the development, operation, and maintenance of sewage pumpout facilities for recreational boaters and also for programs that educate boaters about the importance of proper disposal of their sewage.
Timing	January 7, 2005
Contact site	www.fedgrants.gov

The likelihood of acquiring funding under any of these or other sources depends on a variety of factors, including timing, eligibility and competing applications. At the same time, the inclusion of a recommendation of a project seeking funding in a harbor plan or other community plan would undoubtedly strengthen its position in any competitive review process.