

Beverly Harbor/Waterfront Plan

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Prepared for the City of Beverly
Prepared by Harriman
FXM Associates • GEI Consultants

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The following individuals have contributed their time to develop the *Beverly Harbor/Waterfront Plan*. Their contributions join the comments of hundreds of residents and stakeholders who participated in meetings, workshops, and open houses during the planning process.

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INTRODUCTION

The City of Beverly has over 12 miles of waterfront, including the Harbor/Waterfront Area (HWA) that is the subject of this *Harbor/Waterfront Plan*. The HWA includes Beverly Harbor, the confluence of the Danvers and Bass Rivers (Goat Hill neighborhood area), and the eastern bank of the Bass River waterfront (both upper and lower). These three sub-areas have distinct identities and represent a significant opportunity to provide a variety of land- and water-based activities both to serve existing residents and attract visitors and future residents. These activities will support and be supported by future development that will add variety to the housing stock and increase available jobs within the City.

This *Harbor/Waterfront Plan* provides a conceptual illustration of the three sub-areas of the HWA and a supporting implementation program that identifies the goals, strategies, and actions that will supplement the vision developed by the community during this process. Seven goals support this vision and are tied to specific strategies and actions in the Implementation Program:

- **Goal 1** – Connect the Harbor and waterfront to each other and to the neighborhoods/Downtown by walkways, paths, and public access.
- **Goal 2** – Identify opportunities for increased economic development, including commercial marine activities, throughout the HWA to support a mix of land uses and provide more ways for people to access and enjoy the waterfront.
- **Goal 3** – Support Beverly’s commercial fishing fleet.
- **Goal 4** – Increase public access to the water, including support for and encouragement of recreational boating.
- **Goal 5** – Develop a distinct identity for each of the three sub-areas of the HWA.
- **Goal 6** – Promote the maritime heritage of the City, including cultural, historic, and natural resources.
- **Goal 7** – Increase the resiliency of the HWA given current and projected flooding and the projected impacts of sea level rise.

In addition, this *Harbor/Waterfront Plan* provides background regarding the underlying conditions within the HWA – economic, physical, and regulatory – that highlight opportunities that would help to bring the community’s vision to fruition as well as potential barriers to achieving that vision. This Plan carries forward important issues and recommendations from previous plans, such as the *City of Beverly Harbor Management Plan* (2002, revised 2003), and incorporates new needs and opportunities for the planning area.

HARBOR/WATERFRONT AREA (HWA)

The HWA is experiencing redevelopment pressures similar to those in other primarily industrial areas throughout the North Shore region of Massachusetts. Opportunities exist

in the Beverly Harbor and the Bass River waterfront to both protect the City's marine and waterfront resources and encourage new opportunities for development. Challenges within the HWA include (a) a limited area on both land and water to accommodate varied activities for multiple users, (b) the balance of resources between an active commercial fishing fleet and the desire for additional recreational boating, and (c) the critical need to address the impacts of climate change and effects of sea level rise. Additional public access to the water's edge and the water itself and strong connections from the HWA to the surrounding neighborhoods and the Downtown were also priorities identified during the planning process. The City of Beverly initiated this harbor planning process to ensure that future revitalization of the HWA incorporates these needs and occurs in a manner consistent with the community's vision.

Historical Land and Water Use and Development in the HWA

The City of Beverly, located along the coast to the north of Boston has over 12 miles of waterfront located along the Atlantic Ocean and its inner waterways, including the Danvers and Bass Rivers. Land uses in these areas have evolved over time. Beverly has established a distinctive character and identity all its own since its founding in 1668 when it separated from its neighbor, Salem.

Beverly's Harbor has a particularly rich history. It was originally a fishing and trade port, and played a vital role in several wars, including the Revolutionary War. Beverly's first nationally recognized historic district, the Fish Flake Hill Historic District, is adjacent to the Harbor with several homes dating back to the 1600s. The local economy diversified in the 1700s with the growth of retail and wholesale trades. The Harbor remained a critical asset; the port shipped and received goods, while supporting increased fishing and a growing mill industry. With the age of industrialization came a significant change in land use as the fishing industry declined and was replaced by other commercial operations such as lumber yards and manufacturing facilities producing furniture, shoes, bricks, and iron hollowware. Since the early 1900s, both the Harbor and Bass River have attracted additional industrial uses including coal yards, fuel storage and distribution facilities, and a marine industry to support commercial fishing. Most recently, recreational boating in the Harbor and along the Bass River has experienced a significant increase in popularity.

The HWA (see Figure 1) consists of 267.2-acres of waterfront and upland parcels along Beverly Harbor and the eastern shore of the Bass River, and the watershed of Beverly Harbor and the Bass River. It is bounded by Elliott Street on the upland side, the MBTA railroad tracks, Stone Street, and the southern fork of Quincy Park. For the purposes of this plan, the HWA encompasses three distinct sub-areas:

- **Bass River** – The northern portion of this area contains a mix of commercial uses, including some small-scale retail and a Stop & Shop, a private club (the Bass River Yacht Club), and Innocenti Park. McPherson Drive has some potential for streetscape improvements to address the needs of pedestrians and bicyclists to improve the land-

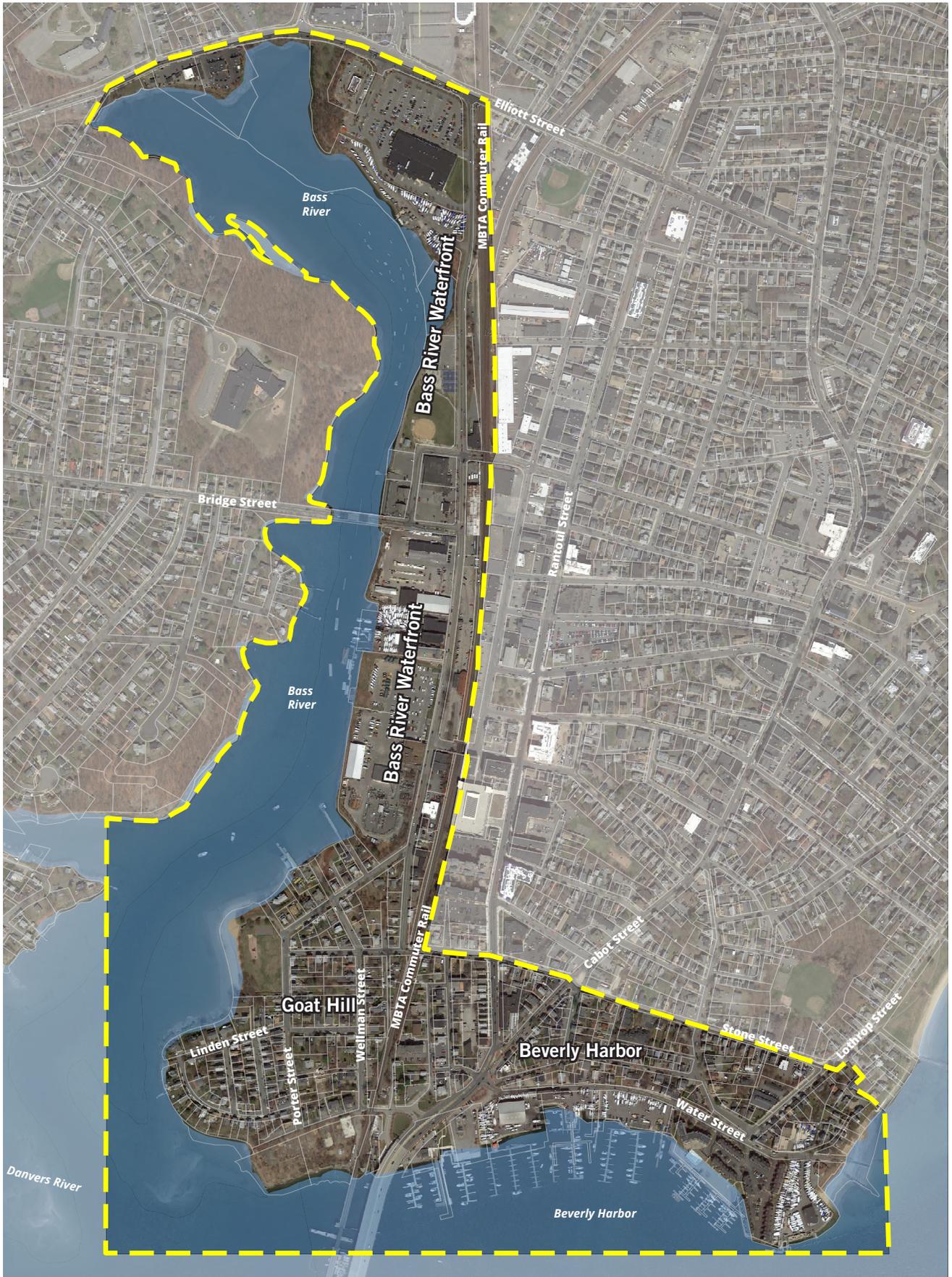


FIGURE 1: HARBOR/WATERFRONT AREA

scaped edge between the street and the sidewalk and between the sidewalk and existing industrial uses and the rail tracks. The greatest opportunities impacting the northern portion of this area are the potential for additional moorings as a result of dredging the Bass River and the ability to connect the trails on the Ryal Side/west side of Bass River with those on the east side of Bass River to form a continuous waterfront/harbor walk. The southern portion of this sub-area has the most long-term potential for future development within the HWA. A series of underutilized parcels could be redeveloped under a zoning change from an industrial district to a mixed-use district. Any zoning change should include the requirement to meet the minimum standards of Massachusetts General Laws (MGL) Chapter 91. Chapter 91 was adopted to protect and promote public use of the Commonwealth's tidelands and waterways. Adherence to this law requires public access and incentives for additional public amenities, on-site stormwater management, and creative design related to the mitigation of or adaptation to current and future flooding conditions. The southern portion also provides the opportunity to connect new development and public access along the waterfront to Beverly Depot and the Downtown. On the water, dredging would allow for additional slips and access to the existing marina at Hill's Yard.

- **Goat Hill** – This sub-area is the least likely to change, except for 10 Congress Street (the former Ventron site). The Goat Hill area, located south of the Webber Avenue-River Street intersection and west of the MBTA rail tracks, is an established residential neighborhood with access to Gillis Park and Pleasant View Beach. Recommended actions in this area are limited in scope, with the majority focused on the development of 10 Congress Street and pedestrian connections linking Congress Street to a proposed non-motorized boat access point, along the waterside of 10 Congress Street, and connecting to public access on the other side of the Beverly/Salem Bridge. Two commercial fishing docks are in this sub-area.
- **Beverly Harbor** – The former McDonald's site, now owned by the City, provides potential for redevelopment to support public access to the water's edge. The City-owned docks and slips, which have already benefited from substantial investment by the City and State, provide additional opportunity for direct access to the water, either by supporting commercial boats, such as ferries or excursion boats, or by allowing access to private recreational boats. A balance between commercial fishing and recreational boating is necessary to support the needs of all users in this area. On the land side, Water Street requires design and infrastructure improvements to provide a safe environment for pedestrian use. These changes should be related to planned improvements for the intersection of Cabot Street and Rantoul Street.
- **All Sub-areas: Public Access** – Throughout these sub-areas, maximizing public access to water-dependent activities on both the land and the water should be a priority. This includes connecting existing public walkways with new walkways and access along the water's edge within the Bass River sub-area, the southern portion of Goat Hill, and along Beverly Harbor. In the Goat Hill sub-area, the public access should include links to Gillis Park and Pleasant View Beach, but the main pedestrian connection would be along Webber Avenue and Porter Street so as not to impact the residents. The walkway would be implemented over time through either new or renewed Chapter 91 licenses or through negotiations between the City of Beverly and the property owner when the walkway crosses land not in Chapter 91 jurisdiction. Public access also includes signage along the walkway to indicate direction, other amenities, and to point out areas of cultural, historical, or natural resources. Finally, public access includes direct connections

back to public rights-of-way such as McPherson Drive, River Street, Congress Street, and Water Street. In the southern portion of the Bass River sub-area, those connections should be aligned with connections that lead to the Downtown, including Federal Street, Broadway (via an accessible pedestrian connection to the Beverly Depot) and Pleasant Street.

PLANNING PROCESS

The City of Beverly, with funding from the Seaport Economic Council, was assisted by a consultant team in the development of this *Harbor/Waterfront Plan*. The Beverly Planning Department served as the City's lead department, with additional City staff from the Engineering Department, including the Marina Manager. Harriman, an urban planning, design, and engineering firm, was the lead consultant. GEI Consultants and FXM Associates also provided supporting data, analysis, and recommendations for waterfront infrastructure and the implications of climate change and economic development, respectively. The regional coordinator from Massachusetts Office of Coastal Zone Management (CZM) provided guidance regarding CZM policies, the Municipal Harbor Planning process, and commented on the draft conceptual plan.

Data collected for use in this *Harbor/Waterfront Plan* came from site visits, previous planning studies, stakeholder interviews, public meetings, and relevant economic and labor databases.

Purpose of the Planning Process

The City established goals for this planning process, including:

- Identify the community's vision for future uses and public access to the water within the project area and develop long-range goals along with recommendations in order to achieve the vision.
- Support commercial and recreational fishing and boating and commercial marine activities.
- Understand the importance of connections between the HWA and the adjacent neighborhoods.
- Understand the impact of sea level rise and climate change on boating, public access, and future development.
- Identify public expectations and goals for the waterfront.

Selecting the Type of Plan: Local Harbor Plan Versus Municipal Harbor Plan

In Colonial times, the law established protected public access to the tidelands for navigation, fishing, and fowling. MGL Chapter 91 still protects and regulates the public

interest and access to the waterfront and the water. Chapter 91 prioritizes water-dependent uses (uses requiring direct access to tidal waters, such as commercial fishing, marinas, and boating). However, nonwater-dependent uses are also allowed (such as retail, offices, and restaurants) if they provide greater benefits than detriments to the public's rights. Chapter 91 has specific standards for all nonwater-dependent developments that apply uniformly in all coastal communities in Massachusetts, unless a community has a state-approved Municipal Harbor Plan (MHP) that establishes substitute provisions based on local preferences.

The City of Beverly chose to develop a harbor plan – a locally-approved plan, distinct from a state-approved MHP – that establishes the community's vision for the waterfront and creates an implementation plan for achieving the vision within the standards of Chapter 91. A state-approved MHP would be required if Chapter 91's standards need to be altered to implement the community's goals for development and public access along their waterfront. The planning process for this *Harbor/Waterfront Plan* mirrored the requirements of an MHP process, in the event the City later chooses to amend this Plan and submit it to the state for its approval as an MHP.

Transition to Municipal Harbor Plan

In the future, the City of Beverly may decide to revise this *Harbor/Waterfront Plan* for state approval as an MHP. To do so, the City would have to complete the required process outlined in regulation 301 CMR 23.00. This process includes the following steps:

1. Submit a request for a Notice to Proceed to the Secretary of the Executive Office of Energy and Environmental Affairs (EEA). The City would distribute this request to certain state and local agencies and make it available to the public. The notice of the request would also be published in the *Environmental Monitor*. This process includes a thirty-day public comment period prior to the issuance of the Notice to Proceed. The Notice to Proceed grants permission for the study process to begin and defines the scope of that study process.
2. Hold at least one additional public meeting. The planning process for this *Harbor/Waterfront Plan* included two public workshops and two open houses, but CZM may recommend one or more additional meetings, especially if significant time has passed between the completion of this *Harbor/Waterfront Plan* and submission of a draft MHP for state approval.
3. Revise this *Harbor/Waterfront Plan* to include any modifications to Chapter 91 as a result of local preferences. These modifications – substitutions or amplifications of 310 CMR 9.00 – must be identified as part of the Harbor Plan and would become applicable to the HWA upon approval of the MHP by the state.

4. The draft MHP must be submitted within two years of the date of the Notice to Proceed and has publication requirements and a public comment period. The Secretary of the EEA may want to meet with members of the Beverly Harbor/Waterfront Plan Advisory Committee prior to issuing a decision.

Throughout the process of preparing the draft MHP, the City should continue its working relationship with CZM, who can advise on the appropriate changes to the current *Harbor/Waterfront Plan* and the process required for submittal.

Community Participation

Beverly Harbor/Waterfront Plan Working Group

The Working Group met approximately once a month during the planning process to discuss public engagement and draft public outreach materials and monitor the progress of the project. Members included representatives from the Beverly Planning and Development Department, Engineering Department (including the Marina Manager), as well as the regional coordinator from CZM, and the consultant team.

Beverly Harbor/Waterfront Plan Advisory Committee

The Beverly Harbor/Waterfront Plan Advisory Committee (Advisory Committee) provided oversight during the development of this *Harbor/Waterfront Plan* and guidance for the content of the Plan, participation methods, and process. It was composed of representatives from institutions, associations, and businesses within the planning area. The Advisory Committee also included elected officials and representatives from state and local regulatory agencies, harbor advocacy groups, and commercial interests.

The Advisory Committee met six times throughout the planning process. Initial meetings included a discussion of the roles and responsibilities of the Advisory Committee, communications and public engagement plan, and existing conditions within the planning area. The format, topics, and outreach prior to the public meetings was discussed, as well as the findings following the public meetings. The Advisory Committee prioritized harbor planning objectives, refined recommendations, and reviewed and provided comment on the draft harbor plan.



PUBLIC MEETING #2

Public Participation

Public engagement is a critical component of every planning process. A strong outreach plan sets the stage for the success of the engagement process by notifying people that the process exists and giving them a reason to participate. The team has developed a participation program including two public meetings, two open houses, and stakeholder interviews.

Public Meetings

The public meetings were designed to appeal to the widest audience and attract the most people. The meeting structure included an opening presentation that established a framework for discussion, foundational knowledge about the project area and project goals, a question session, and interactive exercises that guided discussion toward productive feedback that informs the direction of the plan. Venues and scheduling were selected to ensure the meetings were accessible to the greater Beverly community, including individuals with disabilities.

- **Public Meeting 1** – March 22, 2018, at Beverly High School. This meeting introduced the planning process to the public and allowed for a discussion of perceived positive aspects, opportunities, constraints, and the community’s vision for the HWA. Comment cards, allowing community members to provide additional feedback and ask questions, were distributed and collected.
- **Open House 1** – May 17, 2018, at the Beverly Public Library. This Open House provided an opportunity for community members to share their interactions with the HWA, review and provide comments on the existing conditions, vision for the area, and the planning process. Staff from the City Planning Department and consultant team were available for discussions and questions. Comment cards, allowing community members to provide additional feedback and ask questions, were distributed and collected.
- **Public Meeting 2** – May 22, 2018, at Beverly Senior Community Center. Meeting participants reviewed the planning process and existing condition analysis. The interactive exercises allowed for a discussion refining the community’s vision for development and concepts and strategies for public waterfront access.



PUBLIC MEETING #2

Community Vision

The Beverly Harbor and Bass River waterfront will include a series of distinct areas connected by waterfront walkways, parks, and public access. Goat Hill will remain a residential area with neighborhood connections between Gillis Park and Pleasant View Beach. Beverly Harbor and the east side of Bass River will develop their own distinct identities with a vibrant mix of uses and activities that draw the community and visitors to the waterfront.

On land, new open space with enhanced public walkways and pocket parks, where possible, and water-dependent uses along Beverly Harbor and the Bass River will be balanced with market-driven private development. The size and design of future development will complement the surrounding areas and be thoughtfully considered to encourage the public's use of the open space, waterfront public access, and water-dependent uses.

On the land and water, the heritage of a maritime economy within the waterfront, including commercial fishing, will be encouraged through improved facilities and increased support of operations. Recreational boating will be supported and encouraged by enhanced and maintained waterways and supporting facilities in the Beverly Harbor and Bass River.

On the water, the community and visitors will enjoy areas identified for the safe launching, use, and storage of small non-motorized watercraft.

Community members, employees of nearby businesses, and visitors will use streets and public walkways designed for all users that connect more directly from adjacent areas to the walkways along the water, restaurants, businesses, strategic open spaces, and access to the water.

- **Open House 2** – November 15, 2018, at the Beverly Public Library. During this Open House feedback from the community was solicited regarding a draft illustrative plan and recommendations. Staff from the City Planning Department and consultant team were available for discussions and questions.

Stakeholder Interviews

The consultant team also conducted stakeholder interviews with local business owners, property owners, community and neighborhood organizations, commercial fishermen, and individuals familiar with real estate and development within the HWA. The interviews served to engage the stakeholders in the planning process and enabled a focused discussion of their experiences, concerns, plans, and vision for the HWA.

Consultation with State Agencies

The regional coordinator from CZM attended and participated in Working Group meetings, public meetings, and Advisory Committee meetings. They provided guidance regarding CZM policies and the Municipal Harbor Planning process and commented on draft public outreach materials and the draft harbor plan.

Staff from the Massachusetts Department of Environmental Protection (DEP) assisted the consultant team in identification and location of relevant MGL Chapter 91 Waterways licenses and advised regarding the status of recently issued licenses.

Planning Framework

Considerable attention was given, as well as cumulative action taken, to secure the HWA's future place as a cornerstone of the economy in Beverly. The City has recently taken several actions to encourage new development and public access to the

waterfront, including, but not limited to, a formal review of the Designated Port Area and its subsequent de-designation, creating a new mixed-use zoning district (Beverly Harbor District) along the inner harbor, and investing over \$2.5 million to improve the City-owned Glover's Wharf and Marina.

The City has consistently committed resources to analyzing the obstacles to and opportunities to creating a vital waterfront, as evidenced by the following planning studies:

- *The Public Waterfront Usage Plan*, Fort Point Associates (1999)
- *Ferry Landing Waterfront Usage Plan*, Fort Point Associates (2000)
- *City of Beverly Master Plan*, Beverly Master Plan Steering Committee and Planning and Development Office (2002)
- *City of Beverly Harbor Management Plan*, Beverly Harbor Management Authority (2003)
- *Beverly Harbor Waterfront Development*, Vine Associates, Inc. (2004)
- *Strategic Plan for Downtown Beverly Massachusetts*, Community Land Use + Economics Group, LLC (2010)
- *Beverly Design Study*, Advanced Management Development Program in Real Estate, Harvard University Graduate School of Design (2013)
- *Market Analysis for Potential Transportation-Oriented Development at the Beverly Depot MBTA Station*, RKG Associates (2013)
- *Beverly Bass River District Vision + Action Plan*, Metropolitan Area Planning Council (2014)
- *Several stakeholder meetings and a public meeting regarding the Beverly Harbor Comprehensive Zoning Review and Rezoning* (2014)
- *Designation Decision for the Beverly Harbor Designated Port Area*, Massachusetts Office of Coastal Zone Management (2015)
- *The City of Beverly Open Space and Recreation Plan*, The City of Beverly Open Space and Recreation Committee (2016)
- *Coastal Resilience Plan (CRP)*, City of Beverly (2017)
- *Downtown Beverly Parking Strategy Final Report*, Nelson Nygaard (2017)

EXISTING CONDITIONS AND RECOMMENDATIONS

The 267.2-acre HWA includes the land side of Beverly Harbor and the eastern bank of the Bass River, in addition to the watersheet of the associated areas. 118.3 acres are land only and the City of Beverly owns 9.7 acres of land within the HWA.

Beverly Harbor has an irregularly shaped shoreline composed of rocky outcrops, salt marshes, sandy beaches, mud flats, waterfront recreational areas and marine commercial activities. A deep-water inner harbor is located between the City's Commercial Fish Pier and Tuck Point. A 225-foot wide Federal Channel runs from Jubilee Yacht Club to Glover Wharf near the Veteran's Memorial Bridge with depths generally at 24 feet.

The Bass River is a tidal river with the navigable limit adjacent to Elliott Street. It flows in a southerly direction to meet the Danvers River and runs beneath the Veterans Memorial Bridge out to Beverly Harbor. The western shore of the river is known as Ryal Side and is not in the Study Area. The shoreline is the eastern edge of Green's Hill a significant area of undeveloped land containing walking trails. West of Green's Hill, the area is mostly residential. The eastern shore of the Bass River has a decidedly industrial character which currently includes a lumber yard, car wash, yacht club, working yacht yard, National Grid utilities, and commercial condominiums. North of Bridge Street, the industrial character transitions into Innocenti Park, the Bass Haven Yacht Club, and yacht club, and commercial uses bordering Elliot Street and McPherson Drive. South of Bridge Street, the shoreline is almost all industrial until the beginning of the Goat Hill neighborhood.

Goat Hill and the Fish Flake Hill Historic District are primarily residential areas within the HWA. Goat Hill connects the Bass River waterfront with Beverly Harbor, although pedestrian connections between the two would travel along neighborhood streets because much of the shoreline in Goat Hill is privately owned. The Fish Flake Hill Historic District is within walking distance of Beverly Harbor. However, changes in grade may make walking difficult for those with less mobility and the current lack of a destination for residents makes walking to Beverly Harbor less desirable.

EXISTING CONDITIONS: MARKET TRENDS

This section summarizes baseline demographic and economic characteristics for the City of Beverly compared to those of Essex County and the Commonwealth of Massachusetts, assesses market conditions and trends by industry sector, and analyzes trends in the supply of office and retail space within Beverly and surrounding communities. It also analyzes relevant industry data for the commercial fisheries and other waterfront industries in Beverly and Essex County. A comprehensive array of the data and description of the methodology underlying this summary is provided in *Appendix A. City of Beverly, Municipal Harbor*

Plan: Baseline Demographic and Business Characteristics; Market Conditions, Trends, Opportunities.

Demographic and Economic Characteristics

Demographic characteristics provide an economic picture of those who currently live and work in Beverly, suggesting possible trends in terms of types of space required to support current and future jobs and demand for housing, goods, and services.

Beverly's population is estimated at about 41,000 in 2017, a 5% increase since 2010. It is projected to increase by another 3% by 2022, to over 42,000 persons. Between 2000 and 2010 population declined in Beverly by about 1% while population in Essex County and Massachusetts overall increased by 3% during the same period. Households, currently estimated at 16,444, are projected to grow to 17,049 by 2022, a 4% increase which would be similar to household growth projections for Essex County and Massachusetts overall.

The median household income in Beverly is estimated at \$79,325 in 2017, compared to \$73,924 for Essex County overall and \$72,671 for Massachusetts. Beverly's workforce population has a higher proportion of persons with a bachelor's degree or higher (46%) than in Essex County (38%) and Massachusetts overall (40%) and a lower proportion of persons (6%) with less than a high school education than in Essex County (11%) and Massachusetts overall (10%). The median value of owner-occupied housing in Beverly is estimated at \$421,000 in 2017, higher than in Essex County (\$397,000) and Massachusetts overall (\$370,000).

In 2017, Beverly is home to an estimated 31,000 jobs and 1,525 business establishments with \$3.5 billion in annual sales. Beverly has a relatively high concentration of jobs in Professional, Scientific & Technical Services (13% of all jobs compared to 7% in Essex County overall) and a relatively low proportion of retail jobs (7.7% compared to 13.2% in Essex County overall). The largest concentration of jobs in Beverly is in the Health Care & Social Assistance industry (23%), as it is in Essex County overall (18.5%). Average wages in Beverly's health care sector were 20% higher in 2016 (\$56,000) than in Essex County overall (\$46,800) and slightly higher than the statewide average (\$54,600).

Market Conditions and Trends

Office-using industries are projected to add nearly 1,000 jobs in Beverly over the next 5 years, generating projected demand for about 240,000 square feet of office space. While Beverly's inventory of office space (about 3.5 million square feet) had not increased through the first quarter of 2018 since 2009, vacancies declined significantly (from nearly 500,000 to just over 100,000 square feet) during this period. The now-limited inventory coupled with projected increases in demand augur well for expansion of office space through reha-

bilitation and possibly new construction of superior product and amenities (such as part of a mixed-use waterfront development).

While neither population growth nor projected change in retail employment suggest major opportunities for net expansion of retail space in Beverly, a modest net absorption of about 10,000 square feet per year is projected over the next 5 years. There are also opportunities to capture current retail sales leakages, especially for limited service eating places. Adequate parking to support additional retail would be essential.

Waterfront Industries Market Conditions and Trends

The marine transportation industry, encompassing passenger transportation/sightseeing and other industries, within Essex County, has experienced a growth in overall employment and is projected to continue to grow. Beverly is currently underrepresented in excursion/charter services compared to other North Shore communities. However, if such opportunities are to be captured along the Harbor, features must be in place, such as adequate waterfront access, infrastructure, and sufficient water depth to accommodate excursion vessels (such as those used in diner cruises, whale watch or harbor tours), and adequate parking.

Data regarding the landings of the commercial fishing and lobstering industry from the Massachusetts Division of Marine Fisheries demonstrate that both the landings and ex-vessel value of Beverly's lobster industry between 2010 and 2017 (latest available data) have been extremely volatile – ranging from nearly 900,000 pounds in 2013 and \$3.4 million in value in 2015 (with over 100,000 fewer pounds landed than in 2013) to a low of 450,000 pounds and \$2 million in value in 2017 (latest available data). It is not possible from these data to project longer term trends. Data between 2010 and 2017 from the Standard Atlantic Fisheries Information System (SAFIS) Dealer Database show Beverly reported 37 active harvesters in 2017 (compared to a high of 49 in 2013) and 11 active dealers in 2017 (compared to a high of 13 in 2014).

Impact of Market Trends

There are several opportunities to build upon the City's recent actions to encourage development within the HWA. Given the market conditions and trends presented above, the discussion below reviews potential changes that are expected in each sub-area.

Bass River

No changes are expected to the existing commercial and industrial uses in the northern portion of this sub-area. The southern portion of this sub-area provides the most opportunity for redevelopment over time, for several reasons. A few parcels were recently listed

for sale and other parcels are historically underutilized given the potential value of the properties. The parcels in this sub-area are of sufficient depth to allow for development, parking to support that development, and the space for the required public access under Chapter 91. Finally, the southern portion is within walking distance of Beverly Depot, the first stop (or last, depending on origin) common to both the Newburyport and the Rockport commuter rails lines to Boston, and the Downtown area.

The increased opportunity for redevelopment within the southern portion of this sub-area offers the chance to improve public access along the waterfront through the creation of new walkways and public spaces. In addition, the proximity to the Beverly Depot and the Downtown presents an opportunity for new transit-oriented projects, such as mixed-use development. In a waterfront location, a well-managed and promoted restaurant with good food and service will have a competitive advantage even with little apparent gap in current sales for a full-service restaurant.

Goat Hill

No changes are expected to the residential area of Goat Hill. A proposed development at 10 Congress Street would create greater residential density than the surrounding neighborhood but would also provide a public walkway along the waterfront where the Danvers River flows into Beverly Harbor.

Beverly Harbor

Most of this area is already developed, except for the former McDonald's site, which is now owned by the City. The City is in negotiations with a potential developer as of the writing of this Plan. The proposed use for this site is a restaurant that would act as a draw for residents and visitors alike. As noted above in the Bass River sub-area discussion, locating a restaurant along the waterfront can be successful, though adequate parking must be provided. Adding infrastructure to the City Pier to accommodate passenger/excursion vessels would allow Beverly to capture a greater share of this market within the North Shore region. Additional tourism-related projects could be explored in the future. In the past, community members have suggested a variety of options, including a Washington's Naval Base museum and visitor center and facilities for a replica of the armed schooner, Hannah. However, the potential for redevelopment within this sub-area is limited as the parcel dimensions pose a challenge for the space needed for development, associated parking, and required public access space.

EXISTING CONDITIONS: LAND USE

Land Use

Land uses throughout the HWA are shown in Figure 2. Most uses are non-water dependent, including a mix of commercial, industrial, and residential uses. Approximately 39.8% (47.1 acres) of the overall land area is residential use, 35.0% (41.4 acres) is commercial; 6.8% (8.0 acres) is industrial; 6.5% (7.6 acres) is open space; 6.0% (7.1 acres) is utilities; and the remaining 5.9% (7.0 acres) is a combination of mixed-use, institutional, parking and transportation uses.

Bass River

Commercial land use is the majority of the area within this sub-area (61.9%, 32.9 acres). Industrial and utility land uses occupy a similar amount of area, 13.9% (7.4 acres) and 13.3% (7.0 acres), respectively. Open space accounts for 8.6% (4.5 acres) of the land area, institutional uses are 1.0% (0.6 acres), and parking and residential uses are a total of 1.3% (0.7 acres) of the sub-area.

The landside uses within the upper portion of the Bass River, the area north of Bridge Street, are largely commercial and open space. The portion along Elliott Street includes small retail and a Stop & Shop. Several industrial uses are found along the rail tracks. The Bass Haven Yacht Club, a water-dependent use, is immediately north of the Innocenti Park. A privately-owned boat launch site is denoted as primarily parking use, with a successful car wash located immediately to the south. The portion of the Bass River south of Bridge Street and north of the Goat Hill neighborhood has commercial, industrial, institutional, and utility land uses. Hill's Yacht Yard is the only water-dependent use and is located immediately north of the utility parcels, owned by National Grid. These parcels include an electric substation which would be cost-prohibitive to move in the short-term and an employee parking lot utilized most often overnight for company vehicles.

VIEW OF THE UPPER
EDGE OF THE
BASS RIVER FROM
BENCHES NEXT TO
ELLIOTT STREET



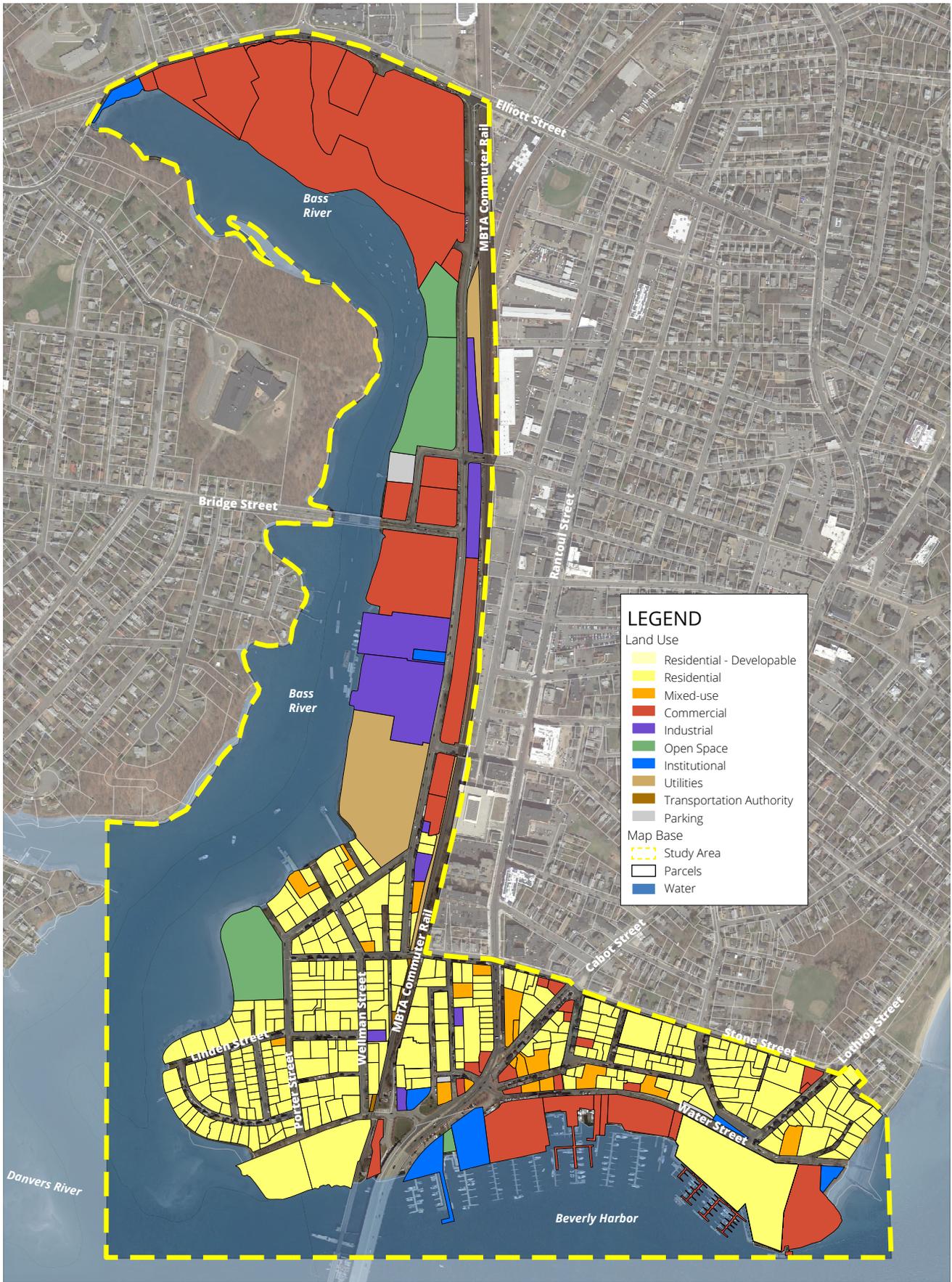


FIGURE 2: LAND USE IN THE HARBOR/WATERFRONT AREA

Goat Hill

The Goat Hill sub-area primarily corresponds with the Goat Hill neighborhood portion of the HWA and the land west of the MBTA rail tracks. Land uses are largely residential (85.2%, 24.1 acres), though there is open space at Gillis Park and Pleasant View Beach (10.4%, 2.9 acres), as well as a few mixed-use parcels (2.5%, 0.7 acres). A small amount of industrial (1.4%, 0.4 acres), transportation (0.5%, 0.1 acre), and utility (0.1%, 0.02 acres) uses are also in this sub-area. The two parcels along the water in the northern portion of this section that have both commercial lobstering and residential uses are shown as mixed-use within the Assessor's data. 10 Congress Street is the underdeveloped large parcel found along the water, west of the MBTA rail tracks, and is shown as residential, reflecting the most recent permitted use and proposed future development.

Beverly Harbor

This portion of the HWA is east of the MBTA rail tracks. Land uses north of Water Street are generally residential, while the south side of Water Street has institutional, commercial, and residential uses. The two City-owned parcels near the Beverly/Salem Bridge are separated by a small parcel of open space, known as Ferry Landing. Water-dependent uses include the Beverly Port Marina, Gold Coast Marina, and a commercial lobstering business in the central portion of the section; the City Pier immediately east of the Beverly/Salem Bridge; and the Jubilee Yacht Club on the eastern corner of the sub-area.

Open Space and Public Access

The HWA contains very little dedicated contiguous open space or public access along the water (see Figure 3):

Bass River

- The public walkway along the waterfront extending from the waterfront at the intersection of Green Street and Elliott Street to Bridge Street, except for the parcels at 244-246 and 252 Elliott Street
- The public walkway from River Street to the Bass River, between National Grid and Hill's Yacht Yard
- Innocenti Park, which includes a baseball diamond, two basketball courts, and a skate park

Goat Hill

- Gillis Park and Pleasant View Beach in the Goat Hill neighborhood



FIGURE 3: OPEN SPACE IN THE HARBOR/WATERFRONT AREA

Beverly Harbor

- The public walkway from Congress Street, under the Beverly/Salem Bridge, and along the waterfront until 1 Water Street
- The public walkway leading to the water at the east end of Water Street, north of Jubilee Yacht Club
- Ferry Landing and Beverly Pier, public open space adjacent to the Harbor Master's building

Open space in and within a quarter-mile walking distance of the HWA include parks, ball fields, and conservation areas: Green's Hill (adjacent to Ayers Ryal Side Elementary School) on the west side of the Bass River, Herlihy Park (Livingstone Avenue), the Veterans Memorials at Odell Park (Rantoul Street), Ahearn Park (between Fayette and Pleasant Streets), Bartlett Gardens/Norman S. Gilbert Park (near Bartlett and Stone Streets), and Independence Park (Lothrop Street).

Accessibility

Vehicular, pedestrian, and bicycle access to and within the HWA vary by sub-area. Wayfinding for local attractions are generally inadequate. There is no public transportation within the HWA; however, the MBTA commuter rail stop at Beverly Depot is immediately adjacent to the Bass River sub-area. Beverly Depot is a common station for two commuter rail lines: the Newburyport-North Station (Boston) Line and the Rockport-North Station Line. After Beverly Depot, the two northbound lines diverge; the next stop on the Newburyport line is North Beverly; the next stop on the Rockport line is Montserrat.

Bass River

- Access to this sub-area is primarily from Elliott Street from the north and Bridge Street from the west. The eastern border is bounded by the rail tracks, with connections to the east (and thus Rantoul Street and downtown Beverly) at Federal Street and Pleasant Street.
- Circulation within the sub-area is generally along Elliott Street, McPherson Drive, and River Street, with few lateral or internal connections.
- The close proximity to the Beverly Depot station provides local connections to the other four commuter rail station in Beverly and regional connections between the North Shore and the Greater Boston metropolitan area.

Goat Hill

- Access from the north is from River Street. The area is cut off from Beverly Harbor by the rail tracks, with east-west connections at School Street and Congress Street.
- Pedestrian circulation is along sidewalks of varying condition throughout the residential neighborhood.

Beverly Harbor

- Access by Rantoul Street from the north, Cabot Street on the western side of the sub-area, and Lothrop Street on the eastern side.
- Streets within the Fish Flake Hill area are typically narrow as historic development patterns largely shaped the configuration of streets and intersections.
- The sidewalk along Water Street is on one side of the street, is broken, narrow, and occasionally on different levels.
- The only specified bicycle lane within the HWA is on Rantoul Street, which crosses into the HWA in this sub-area. Rantoul Street's sidewalks are on two sides of the street, generally smooth, adequately wide, and have ramps for accessibility on the corners.
- The City owns three parcels, including Ferry Landing.



PEDESTRIAN CONDITIONS ON WATER STREET

Recommendations for Land Use

Opportunities for redevelopment and to increase public access to the waterfront within the HWA vary according to land use patterns, location, and environmental conditions. The recommendations below build upon the current physical conditions, feedback from the community members at open houses and public meetings, and interviews with stakeholders throughout the area.

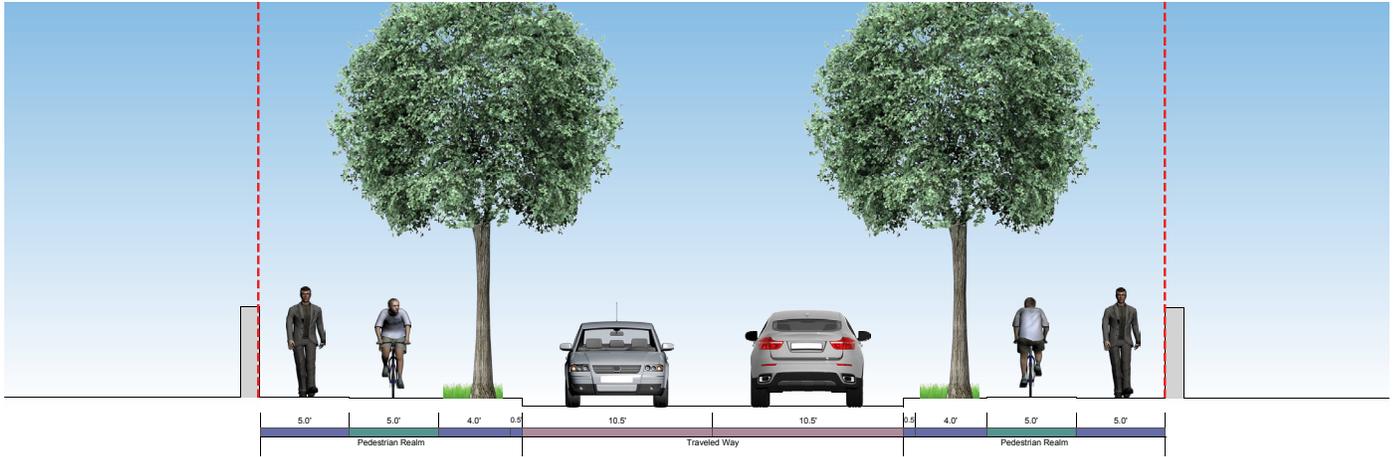
HWA

- Establish guidelines for the waterfront walkway in terms of paving materials; lighting, benches, and other street furniture; and maintenance, including the removal of invasive species from the shoreline and the maintenance of seawalls. Note that the requirements in the guidelines should vary by sub-area to reinforce the individual identity of each sub-area.
- Encourage private (commercial) property owners to construct the missing segments of the waterfront/harbor walkway.
- Add wayfinding signage to direct people into, through, and out of the HWA, as well as to specific destinations within the HWA and nearby areas.
- Add informational signage that addresses the cultural, historic and natural resources in the area.
- Add temporary and permanent public art and other gateway treatments at the entry points into the HWA and at transition points from one sub-area to the next.

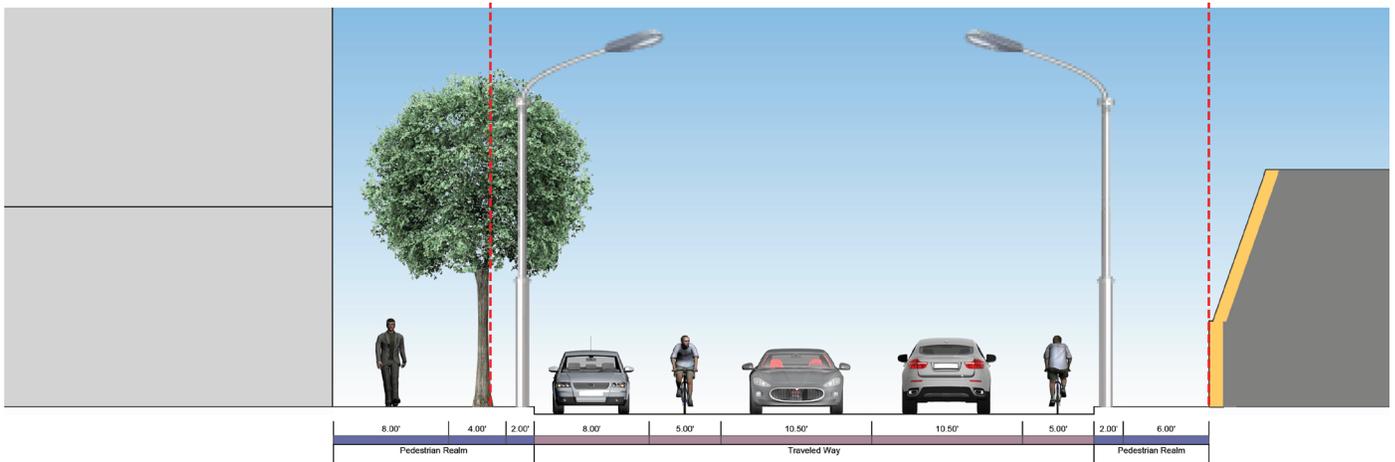
- Evaluate the condition of sidewalks through the HWA and repair, modify, or create, as needed.
- Create bicycle lanes with connections to existing bicycle lanes.
- Create a bicycle and pedestrian map of the HWA to promote the connected facilities.
- Provide periodic walking tours focused on the natural and historic resources within the HWA. This could include open houses of historic buildings.
- Create a year-round program of after-work and weekend activities that draw employees and community members to the waterfront areas.
- Increase landscaped areas throughout the HWA. Install plantings and bioswales along public sidewalks as a buffer between pedestrians and traffic, and to encourage water capture and infiltration. Encourage businesses to create additional landscaped areas and green roofs.
- Encourage land owners and developers to create a wide riparian buffer along the Bass River waterfront to improve flood management.
- Review and update City’s Zoning Ordinances along the waterfront areas. Consider artist live/work, co-working, and maker spaces along the Bass River and Harbor along with other residential, retail, restaurant, and office uses, as well as water-dependent uses subject to dredging.
- Consider design standards for private development. Incorporate design standards into the City’s Zoning Ordinances.

Bass River

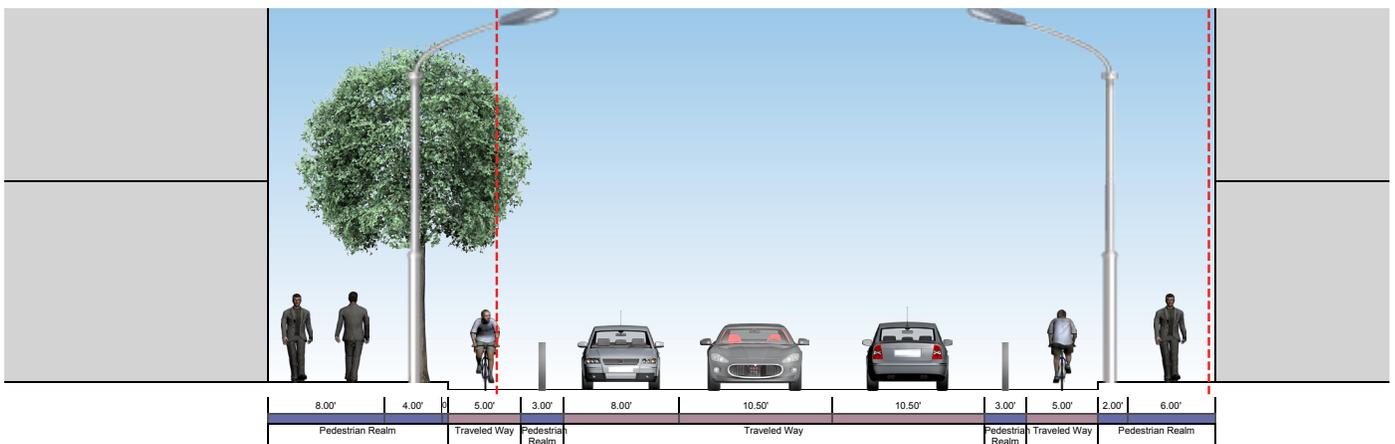
- Investigate opportunities for economic development that leverage the proximity of the Bass River Waterfront to Beverly Depot and the Downtown. This may include a zoning change to promote Transit-Oriented Development at a scale that is appropriate for the area.
- Connect the existing trails on Green’s Hill to the pedestrian walkway along the waterfront in this sub-area.
- Develop a pilot program to explore a shuttle connecting locations between Beverly Depot and the Cummings Center as a joint project among local employers, the City, and the MBTA.
- Investigate creating a shuttle or trolley connecting the Bass River waterfront, Beverly Harbor, and Downtown. Facilitate discussion among business owners within the connected areas regarding support and sponsorship.
- Explore creation of a mobility hub at Beverly Depot with additional connections to the Bass River and Beverly Harbor. For example, establish a bike share system with locations throughout the HWA and at Beverly Depot.
- Create a “Complete Streets” design for McPherson Drive (see Figure 4) and River Street to allow safe access for pedestrians, bicyclists, and motorists.
- Create a direct connection between the Bass River waterfront and the Veterans Memorials at Odell Park by creating an ADA-accessible pedestrian link from River Street to the Beverly Depot and Broadway.



McPherson Drive (Between Elliot Street and Federal Street)



McPherson Drive/River Street (Between Federal Street and Pleasant Street)



McPherson Drive/River Street (Between Federal Street and Pleasant Street)

FIGURE 4: EXAMPLES OF COMPLETE STREET OPTIONS FOR MCPHERSON DRIVE



FIGURE 5: FLOODABLE PROMENADE, HAFENCITY, GERMANY.
SOURCE: KCAP

- Create a more pleasant environment for pedestrians between both the Downtown area and Beverly Depot. For example, construct or reconstruct sidewalks and install street lighting to increase the safety of pedestrians.
- Require pedestrian/bicyclist connections between the waterfront and the Downtown at strategic points such as Federal Street and Pleasant Street.
- Change zoning regulations to create incentives for public amenities beyond the minimum required by Chapter 91.
- Install a naturalized berm along the southern side of Elliott Street and a living shoreline along the marsh abutting the street.
- Create public amenities such as pocket parks, plazas, or expanded seating areas at the waterfront where the pedestrian links intersect with the public waterfront walkway. Ensure the edges of such amenities are designed to handle floodwater (see Figure 5).
- Evaluate an Incentive-based Overlay District to promote resilient building practices for new development.

Goat Hill

- Provide public parking for a new kayak/small boat launch at the end of Congress Street within any new development at 10 Congress Street site.
- Connect 10 Congress Street site via direct pedestrian access to City-owned property east of Veteran's Memorial Bridge.

Beverly Harbor

- Connect Independence Park with the beach area (and potential non-motorized boat launch) at the eastern end of Water Street.
- Create traffic-calming improvements along Water Street, including an ADA-accessible sidewalk on one side of Water Street.

- Modify Water Street to be a shared street for all users. The design should allow the street to be easily and safely crossed at any location. Explore using different pavement types to indicate the space is shared with all modes of transportation.
- Use properties that are near or adjacent to the commercial marina to support the land-based operations of commercial fishermen on a shared basis with recreational and other activities, as appropriate.
- Investigate the redevelopment of Ferry Landing and the other two City-owned parcels that would incorporate public access and amenities that attract the public.
- Explore possibilities for preserving links to maritime and historic resources, such as including appropriate interpretative signage or docking facilities for a replica of the armed schooner Hannah.
- Redevelop the City-owned “McDonald’s” site for a new restaurant and appropriate public amenities.

EXISTING CONDITIONS: WATER USE

The assessment underlying this summary of existing conditions and proposed recommendations is provided in *Appendix B. Beverly Harbor – Waterfront Elements City of Beverly Municipal Harbor Plan*.

Infrastructure

Beverly Harbor has a significant number of shoreline structures. Most of the shoreline is owned by private entities who are responsible for the maintenance of infrastructure on their properties; the remaining sections of the shoreline are owned and maintained by the City. The City also owns and maintains revetments, groins, and seawalls.

The privately-owned shoreline structures vary in condition and purpose. Most of the commercial private structures are better maintained and consist of seawalls and piers. The non-commercial private structures were typically revetments, vegetated slopes or concrete seawalls. The commercial structures varied in condition and were situated between stacked stone walls, steel bulkheads, revetments, concrete walls, and vegetated shoreline slopes. The list below includes most, but not all, of the shoreline and water infrastructure.

Bass River

- **Innocenti Park Seawall** – The seawall at Innocenti Park is a stacked stone wall. The wall is generally in satisfactory condition with minor stone movement and voids present between the stones. There are visual signs of settlement along the top edge.
- **Hill’s Yacht Yard** – The water-dependent operations at Hill’s Yacht Yard needs repairs to the bulkheads and requires dredging to maintain their operations.

Goat Hill

- **Porter Street Seawall** – The Porter Street seawall is located at Pleasant View Beach. The seawall is a stacked stone wall and is located above the high tide elevation. The wall was found to be in fair condition in the 2013 inspection with localized cracking and mortar missing. The wall had no signs of movement during our observations in 2018. The wall supports the playground above.
- **10 Congress Street Seawall** – The seawall at 10 Congress Street consists of a stacked stone wall. Several portions of this wall have collapsed leaving the site exposed to wave action.

Beverly Harbor

- **Water Street Groin** – The Water Street Groin is a quarry stone groin over a sewer outfall and appears to be in satisfactory condition and functioning adequately. A few smaller stones were observed to be dislodged along the crest of the groin.
- **Cabot Street Bulkhead and Seawall** – The Cabot Street bulkhead (11 Cabot Street) consists of a steel sheet pile bulkhead. The bulkhead was recently replaced between 2007 and 2013. The bulkhead was noted as being in excellent condition in 2013. The bulkhead supports the recently reconstructed shoreline walkway between the Harbor-master’s Office and the Beverly Harbor Management Authority.
- **Cabot Street Seawall** – The Cabot Street Seawall is a stacked stone seawall with an approximate length of 246 feet. The seawall abuts the recently replaced steel bulkhead and extends east. The seawall was noted as being in excellent condition in 2013 with a few small blocks fallen out of place.
- **Cabot Street Pier** – The Cabot Street Pier is a timber pile supported pier. The Pier is approximately 260 feet long and 20 feet wide. The Pier has an overall “L” shape at the end extending approximately 40 feet to the west. The Pier is in excellent condition with concrete floats on either side and no floats on the outshore end.

BOATS ON SLIPS
IN FRONT OF
BEVERLY PORT
MARINA



- **Rowand's Pier** – This pier belongs to Rowand's Seafood, a commercial fish market. The pier collapsed following severe weather in 2018. The debris from the pier remain on-site and partially submerged.
- **Beverly Port Marina** – The marina supports a large volume of recreational and commercial boaters. The Marina is in satisfactory condition; however, one or more of the travel lifts are non-functional and some floats have tripping hazards.

Water Use

Water uses on the Bass River and Beverly Harbor include large commercial fishing boats, weekend recreational boaters, and non-motorized watercraft such as small kayaks and stand up paddleboards. The Bass River sub-area includes Hill's Yacht Yard and two commercial fishing vessel docking facilities. Beverly Harbor includes marina facilities with slips for varying sizes of commercial and recreational vessels. This includes the 12 main access floats that provide the principal private commercial/recreational marine services of the Beverly Harbor waterfront. There are several commercial fishing vessel support facilities mixed within the marinas plus the City owned/maintained dockage supporting the commercial lobster fishing fleet to the west of the City Pier.

Along the waterfront there are several facilities that support recreational boating which include:

Bass River

- North of Bridge Street is the Bass River's Bass Haven Yacht Club which provides floating docks and moorings as well as a boat ramp that provides access to the Bass River for its members. The current waterway has silted-in and now has a very restrictive draft and is only mainly navigable in higher tides.
- Just north of Bridge Street there are floats, a pier, and a private boat ramp that provides public access to Bass River for a fee. All are in marginal condition and the ramp is only usable at high tides.
- South of Bridge Street, Bass Haven Yacht Club also supports several mooring locations for the larger boats which cannot transit past the bridge.
- Hill's Yacht Yard has available slips and may have available moorings.

Goat Hill

- Pleasant View Beach at the end of Porter Street Extension supports a public park and provides a paved access to a sandy beach. This area seems to be in good condition.
- The two commercial fishing docks located in this sub-area do not currently have suitable dockage at low water.
- City-permitted moorings are located on the west side of the channel, southerly to the #4 red nun,

Beverly Harbor

- East and adjacent to the Beverly/Salem Bridge, the City also has a public facility which includes floating docks, a timber pile supported pier, and a recreational marina which is managed by the Harbor Management Authority.
- East of the City commercial vessel area, Beverly Port Marina supports approximately 200 recreational slips and a few commercial vessels. This facility includes its own travel lifts for vessel launching and retrieval.
- Adjacent and associated with the Tuck Point Condos is a private marina consisting of four main dock access systems providing slips for about 50 recreation vessels.
- At the eastern end of the main waterfront is Jubilee Yacht Club, which is a private recreational boating facility with water access for members to get to and from their boats. Jubilee Yacht Club has a travel lift facility to support its members for boat launching/retrieval.
- The eastern most limit of the waterfront evaluation area, located at the end of Water Street, includes a boat ramp which is primarily used for small craft on trailers and could be used for kayaks and stand-up paddleboards. As this area is an extension of Water Street, it provides public access to this beach area.

Recommendations for Water Use and Infrastructure

Improvements to the Bass River and Beverly Harbor would support both the commercial fishing fleet and increased public access to the water itself. Improvements include dredging the Bass River, repairs to existing public boat ramps or installation of new ones, adding boat slips and moorings, and creating infrastructure for passenger vessels.

Uses along the Bass River are restricted by water depths; however, the river is currently permitted for dredging and awaits funding. The authorized river channel is approximately 100 feet wide south of Bridge Street and 75 feet wide north of Bridge Street, but has a limited operational width and a variable depth. The proposed dredging will increase channel depths north and south of Bridge Street, which would allow larger boats to use the area and create a broader area for moorings, avoiding encroachment of the channel. North of Bridge Street, the functional water sheet is only about one acre, but with the proposed dredging, this would expand to a functional area of over seven acres. South of Bridge Street, the channel is proposed to be widened and deepened to allow commercial traffic to have adequate clearance and allow vessel mooring along the edge of the river. This would allow as much as 2,500 linear ft on each side of the channel for bow/stern mooring configurations.

HWA

- Add short-term docking facilities that can be used by transient boaters visiting the area's future amenities and businesses.

- Coordinate safe locations for public walkways and signage regarding safety where lift systems and other heavy machinery are used.
- Add signage to differentiate between kayak/canoe launch, boat launch, and boat lift systems.
- Establish conditions of approval by the local land use boards for new slips constructed by private entities to ensure an equitable distribution of a portion of the slips to the general public.



SIGNAGE EXAMPLES
SOURCE: UNKNOWN (ABOVE); COLUMBUS.GOV/
GREENINFRASTRUCTURE (BELOW)

Bass River

- Dredge the Bass River to restore its historic authorized width and depth. This would provide the ability to add moorings north of the Bridge Street swing bridge, restore functionality to the Margin Street Boat Ramp, address the ability of Hill's Yacht Yard to work on larger boats throughout the tidal cycle, and add potential for additional slips.
- Investigate rearrangement of vessels within Bass Haven Yacht Club to allow public access along the water. Vessel storage rearrangement would need cooperation by an entity approved by the City.
- Add moorings, as appropriate, throughout the area north of the swing bridge. The additional moorings can be accommodated through the proposed dredge footprint. Bow/stern moorings should be used where possible to minimize impacts. The control of the layout and process of mooring assignments, coordination of a launch service, and dinghy docks and parking support for users could be managed by an entity approved by the City.
- Encourage adding a special condition to the Bass Haven Yacht Club Chapter 91 license that provides space for a carry-down kayak/canoe/paddleboard launch on Bass Haven Yacht Club's property.
- Consider replacing the Hall-Whittaker Bridge. This would allow the Bass Haven Yacht Club to service sailboats and other vessels with higher air-drafts within the mooring field north of the bridge. Arrangements would be needed to move or relocate the existing powerline as it is currently too low for larger sailboats.
- Investigate installation of additional floats and slips in the area adjacent to the National Grid property. They could not impact the federal dredging project and must receive required approvals from National Grid and federal project approvals to ensure the area could be dredged again. Access and management would need to be coordinated with National Grid and the coordinating entity determined by the City.

Goat Hill

- Add a kayak/paddle board launch to Pleasant View Beach. The Harbor Management Authority has received Conservation Commission approval to locate a kayak storage rack along the path to the beach, and the beach access and minimal currents make this location well-suited for paddle board and kayak landings.

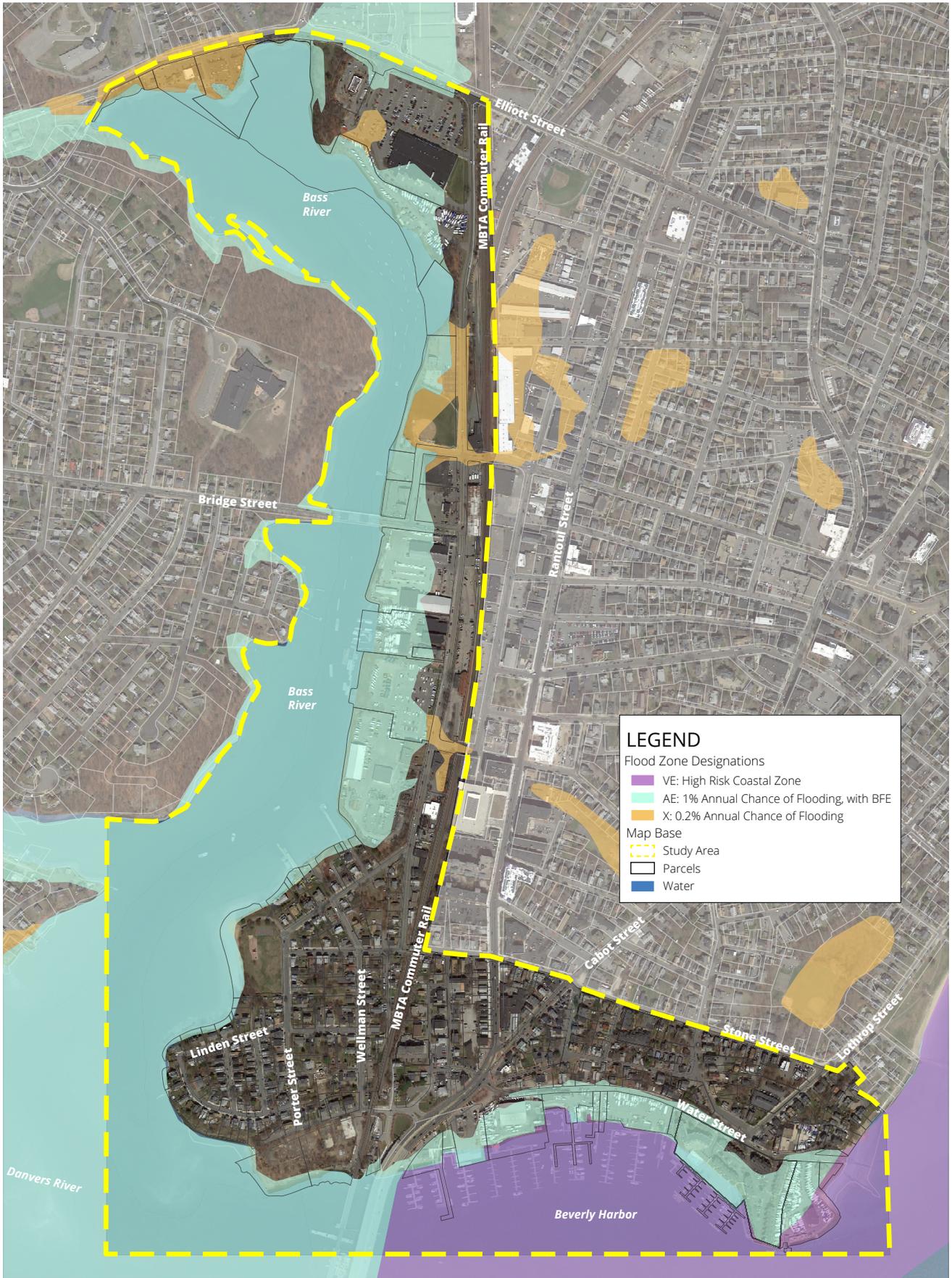


FIGURE 6: FEMA ZONES IN THE HARBOR/WATERFRONT AREA

- Explore water access to Beverly Harbor from the parcels at 10 Congress Street. A ramp could be provided but would only be accessible at higher tides. Dredging could be proposed for the site, but potential contamination, both on and off shore, may make permits difficult to obtain.

Beverly Harbor

- Reconstruct the Commercial Fishing Pier, replacing the existing pier with a steel pile-supported concrete pier and new hoist, to better serve the commercial fishing fleet.
- Investigate dredging in Beverly Harbor; however, note that the presence of ledge as the Danvers River moves into Beverly Harbor may limit the ability to dredge in a cost-effective manner. Boats with an 8-12-foot draft can be accommodated now, and change to City Pier would allow for a 200-foot boat.
- Investigate narrowing the Federal Channel and whether the value of an increased number of moorings offsets the loss of access, if any, for larger boats (such as tour boats or smaller cruise boats) to the Bass River. More information regarding limiting the Federal Channel is found in Appendix B. The benefit of a narrowed channel is the increase in the number of slips available for boats.
- Enforce existing regulations to prevent encroachment of slips and moorings into the Federal Channel and protect the Channel for navigation.
- Continue close coordination between the Harbormaster and the Harbor Authority on access to the waterfront, moorings, safety and expansion of waterside facilities within the harbor area.
- Improve infrastructure at the City Pier for passenger vessels of varying lengths. For example, ADA-tailored ramping systems, berthing accommodations, ticket booths, and passenger staging areas.
- Federal approval has been granted to add a float to the end of the pier (the pier is within the US Army Corps of Engineers channel “buffer”). This could be used for large commercial vessels and for public access.
- Continue upgrades to waterside and landside facilities at the marinas and public pier to encourage and expand opportunities for recreational boating. For example, maintain docks, piers, and walkways for safe use; provide access to supplies and accessories; offer electrical service to docks, sewage pumpout station, and vessel maintenance services.
- Evaluate whether the boat ramp at the end of Water Street can be reconstructed or modified to be functional throughout the tidal cycle, or provide signage that it is only usable at high tides.



CITY DOCK

EXISTING CONDITIONS: FLOODING AND SEA LEVEL RISE

The assessment underlying this summary of existing conditions and proposed recommendations is provided in *Appendix B. Beverly Harbor – Waterfront Elements City of Beverly Municipal Harbor Plan*.

Flood Hazard Area

Figure 6 shows the Federal Emergency Management Agency (FEMA) flood zones within the HWA. Most of the parcels along the Bass River and the harbor are within Zone AE (1% annual chance of flooding) and several parcels along the harbor are in Zone VE (subject to inundation by a one-hundred-year flood with wave action). There are also a few areas within the HWA that are Zone X (0.2% annual chance of flooding), which are not included in the FOD but do present a moderate or minimal flood hazard. Both the Bass River and Beverly Harbor were identified in the *Beverly Coastal Resiliency Plan (CRP)* (2017) as having a vulnerability to coastal flood inundation. The Plan also noted that the storm magnitude needed to cause inundation from a storm surge along the Bass River decreases as sea level rise raises water levels.

Impact of Sea Level Rise on Land

Beverly's 2017 CRP represents a recent and comprehensive evaluation of adaptation options on land that may increase resiliency in the City regarding the combined threats of sea level rise and storm surge. For such evaluations to have strong utility they often need to rely on sound underlying analysis of likely future hydrodynamic conditions to which



MARCH 2, 2018
HIGH TIDE AT THE
CAR WASH

the jurisdiction wishes to adapt. The CRP relied on the Boston Harbor Flood Risk Model (BH-FRM) developed by the Massachusetts Department of Transportation and the Federal Highway Administration. The research team for that project made probabilistic estimates for risk of flooding events of various sizes, considering riverine flows, tides, waves, wind, storm surge, and wave set-up, and under several sea level rise scenarios. The CRP report used the BH-FRM results to examine the likely spatial extent and elevation of inundation resulting from the scenarios and identified portions of Beverly that may warrant consideration for protection from future inundation through adaptation. It described four candidate interventions at areas of constriction along the pathway of predicted flooding (summarized in the recommendations below).

The CRP analysis used estimates for risk based on probabilities in a methodology established by the BH-FRM team. They applied these estimates to infrastructure throughout the City, including the Margin Street Stormwater Pump Station. These estimates provide a useful, if imprecise, idea of the impact of sea level rise on potential flooding based on the scenario planning done by the BH-FRM team. For example:

- For present conditions, there is an approximately 5% chance that flood water levels would exceed the estimated Margin Street Stormwater Pump Station critical elevation of 7.91 feet North American Vertical Datum of 1988 (NAVD88) in any given year.
- For the 2030 planning horizon, there is an approximately 50% chance that flood water levels would exceed the estimated Margin Street Stormwater Pump Station critical elevation of 7.91 feet NAVD88 in any given year. At the 1% chance (100-year annual recurrence interval), the water level would be approximately 2.4 feet above the asset's critical elevation of 7.91 feet NAVD88.
- For the 2070 planning horizon, there is an approximately 100% chance that flood water levels would exceed the estimated Margin Street Stormwater Pump Station critical elevation of 7.91 feet NAVD88 in any given year. At the 1% chance (100-year annual recurrence interval) the water level would be approximately 4.8 feet above the asset's critical elevation of 7.91 feet NAVD88.

With additional analysis, these scenarios could be further refined to evaluate the HWA's mix of salt marsh, sea wall, and shoreline to understand the impacts throughout the three sub-areas.

Protection against major storm events is critical for development of water-dependent usage. For most infrastructure, optimal siting would be in protected harbors where exposure to wave conditions during extreme weather events is reduced. The level of exposure a structure can tolerate is dependent on its type and usage. Information regarding considerations for various structures and uses is included in *Appendix B*.

Impact of Sea Level Rise on Water

The impacts of sea level rise on floating structures, while still present, may be seen as less severe than upland fixed shoreline structures. In general, primary land-based infrastructure

typically needs to be improved for resiliency against coastal storms based on sea level rise impacts and the associated potential impacts of waves superimposed on sea level rise and storm surge. For floating marinas and moorings, the primary floating infrastructure will rise, provided there is sufficient pile height and/or chain length, for example, and may not be directly impacted by increases in water levels. These facilities are likely to require the following assessments and improvements to ensure their sustainability:

- Mooring systems that allow for greater range of water depth. This would include increased mooring pile height and longer mooring chain lengths for systems that are bottom moored. Individual vessel moorings would also need to accommodate greater water depth from larger storms and increased surge size. This transition would not be dramatic because most improvements would be incorporated into normal maintenance cycles for mooring systems, which are assumed in this report to undergo annual inspections.
- Vessel berthing and mooring areas are likely to experience impacts from larger storms, and areas that are marginal today may require some wave protection at higher tides. For marinas, upgrades may involve wave attenuation systems adapted to higher water surface elevations and potentially higher waves. In areas with severe conditions, float systems may additionally require seasonal removal.
- Landside access improvements are likely to be required including increased gangway connection elevations and possible systems to suspend gangways so that they are disconnected from float systems during major storm events.
- A secondary impact in higher water surface elevation scenarios may be the reduction of required dredging frequency. This would be a relatively small benefit but for marinas that dredge at a limited frequency it could extend the period between dredgings by a number of years.
- It is not just the act of flooding that is problematic, but the duration of the flood; in other words, how long the water will stand before receding or draining into the ground. Flood mitigation strategies will need to address the possibility of standing water.

Recommendations for Flooding and Adaptation to Sea Level Rise

HWA

- Ensure future planning documents consider the impact of sea level rise and climate change throughout the City. Current flood risk includes inland flooding with duration (i.e. storm and tide); standing salt water contributes to the corrosion of building materials. The City completed a Coastal Resiliency Plan in 2017. The recommendations of this plan were reviewed as part of this planning effort and appropriate recommendations were brought forward in *Appendix B. Beverly Harbor – Waterfront Elements City of Beverly Municipal Harbor Plan* and in this section.
- Consider an Incentive-based Overlay District that creates incentives for flood-resilient development strategies. This would include incentives for ensuring that the ground-level floor does not contain habitable space; mechanical, electrical, HVAC equipment, and generators are located on upper floors; and utilities are underground and electrical transformers are flood-proof. The Overlay District should also provide incentives for green building practices such as alternative forms of energy, on-site stormwater retention,

and safe pedestrian connections to public streets and transportation. Potential incentives include additional height or reduced building permit fees.

- Establish development incentives for a consistent public walkway, landscape elements and expanded public access within the southern portion of this sub-area. Specify low-impact development strategies, such as floodable pathways/esplanade along a hard shoreline and/or expanded green infrastructure along a soft shoreline, to address stormwater management and green infrastructure improvements.
- Consider a flood-fringe overlay district that establishes minimum design standards for construction in flood-prone areas. This would include the FEMA flood zones and an appropriate buffer.
- Evaluate the need for additional hydrologic modeling on a parcel-by-parcel basis to understand the likely path for flood waters relative to proposed future development on both the landside and the waterside. This modeling would be required as parcels are redeveloped within the area and would be paid for by the developer as part of a site plan and/or special permit application.
- Evaluate whether solid bulkheads and seawalls can withstand major wave exposure.
- Design deck systems for fixed open pile supported structures with sufficient freeboard above peak wave crests or incorporate systems with wave pressure release.
- Evaluate existing pile systems and timber structure for ability to withstand projected wave loading.
- Locate public access ramp systems in protected waters with limited wave or wake impacts.
- Ensure that commercial boat marinas have commercial grade float systems and moorings to withstand year-round activity.
- Provide sufficient loading and unloading space at commercial docks for fishing activities.
- Consider a perimeter wave attenuation system to ensure less than one foot of swell and greater design loading on outshore floats and mooring piles for recreational marinas.



FLOODABLE EDGES
SOURCE: ES.FANTASYTURISMO.COM/14-BEST-WATER-PARKS-SOUTH-CAROLINA-806207 (ABOVE);
AECCAFE.COM/BLOGS/ARCH-SHOWCASE/2011/05/15/
SHANGHAI-HOUTAN-PARK-IN-SHANGHAI-CHINA-
BY-TURENSCAPE-ARCHITECT (BELOW)

Harbor

- Explore temporary deployable flood barriers, such as AquaFence or similar, at the end of Water Street to break wave surge during storms. Such barriers are designed to be installed quickly and can be moved to other locations, as needed.

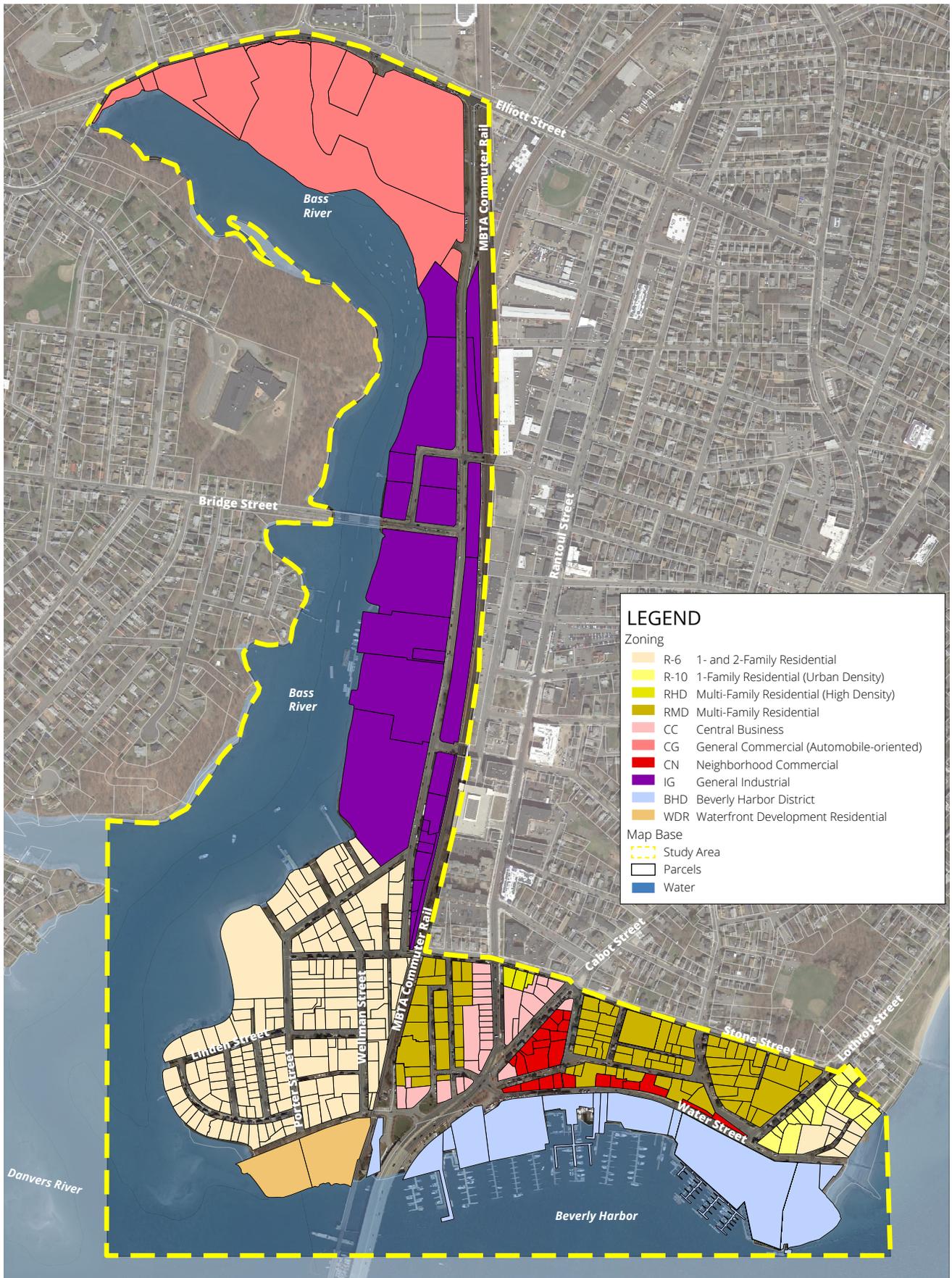


FIGURE 7: ZONING DISTRICTS IN THE HARBOR/WATERFRONT AREA

Bass River

- Undertake a study to determine the flood risk to Elliott Street based on current conditions and future projections for increased precipitation events and examine possible mitigation options. Flood risk includes both sides of Elliott Street
- Explore elevating the Margin Street Stormwater Pump Station outfall pipe.
- Investigate methods to protect the Margin Street Stormwater Pump Station building from water intrusion, such as a water-tight door or deployable flood barrier (e.g., AquaFence or similar product).
- Redesign and replacement of the Hall-Whittaker Bridge should consider sea level rise.
- Evaluate installation of tidal control measures below the superstructure of the Hall-Whittaker Bridge. The measures would remain open during most conditions but could be closed prior to impending storms and would include installing tide gates along the length of the bridge and raising adjacent roads. Consider a concurrent environmental impact study.
- Conduct a culvert assessment for the culvert and piping system on Elliott Street to support minimization of salt water intrusion and maximal stormwater drainage.
- Explore both natural and traditional engineered methods of mitigating the impact of flooding, including a naturalized berm along the southern side of Elliott Street, a living shoreline along the marsh abutting the street, potentially raising the road, and/or a temporary deployable flood barrier along Elliott Street.
- Evaluate the appropriateness of a deployable flood barrier (e.g., AquaFence or similar product) as a strategy that could be installed in advance of potential future storm events in the vulnerable portion of Federal Street.

EXISTING CONDITIONS: REGULATORY STRUCTURE

The assessment underlying this summary of existing conditions and proposed recommendations is provided in *Appendix C. Zoning Analysis of the Harbor/Waterfront Area*.

Zoning

The HWA, shown in Figure 7, contains 10 zoning districts: four residential districts; three commercial districts; one industrial district; one district that promotes marine and waterfront uses and amenities and public access to the water; and one district that promotes mixed-use development, residential development, and public access along the waterfront. A full description of each district is provided in *Appendix C*. The districts are as follows:

Bass River

- **General Commercial District (CG)** – This district allows for suburban and automotive-related commercial development outside of mostly residential areas. Allowable uses include one or more dwelling units in a permitted commercial building and general commercial uses.

- **General Industrial District (IG)** – This district is primarily industrial but allows business and professional offices. Subsidized elderly housing is allowed by right; artist live/work uses are allowed by special permit. No other residential uses and no retail uses are allowed. The mixed-use development proposed within this Plan would require a zoning change.

Goat Hill

- **One-Family and Two-Family District (R-6)** – This district has the same allowed uses as the R-10 district, but also permits semidetached and two-family residences. Uses allowed by special permit are the same within the R-10 district.
- **Waterfront Development Residential District (WDR)** – This district promotes mixed-use development, residential development, and public access along the waterfront. In this sub-area, 10 Congress Street is the only site within this zoning district.

Beverly Harbor

This sub-area is a mosaic of zoning districts, reflecting historic development patterns and more recent attempts to address possible uses.

- **One-Family and Two-Family District (R-6)**
- **Waterfront Development Residential District (WDR)**
- **One-Family District (R-10)** – This district allows detached single-family residences; historic site or non-profit museums; sanitary landfills; and home occupations.
- **Multifamily District (RMD)** – This medium density district has the same allowed uses as the R-6 district, but also permits multifamily residences or apartment houses and subsidized elderly housing.
- **Multifamily District (RHD)** – This district has the same allowed uses as the RMD district, but at a higher density.
- **Neighborhood Commercial District (CN)** – This district allows allow for limited commercial development primarily intended to serve adjacent residential neighborhoods. Allowable uses include detached single-family residences; semidetached and two-family residences; one or more residences in a permitted commercial building; retail establishment serving local area needs up to 5,000 square feet of floor area per establishment; personal and consumer service establishments; and business and professional offices and banks.
- **Central Business District (CC)** – This district is similar to CN but allows a wider combination of uses, including mixed-use buildings containing both commercial and residential (multifamily dwelling) uses.
- **Beverly Harbor District (BHD)** – This district promotes marine and waterfront uses and amenities and public access to the water. Commercial fishing is allowed as of right in the BHD.

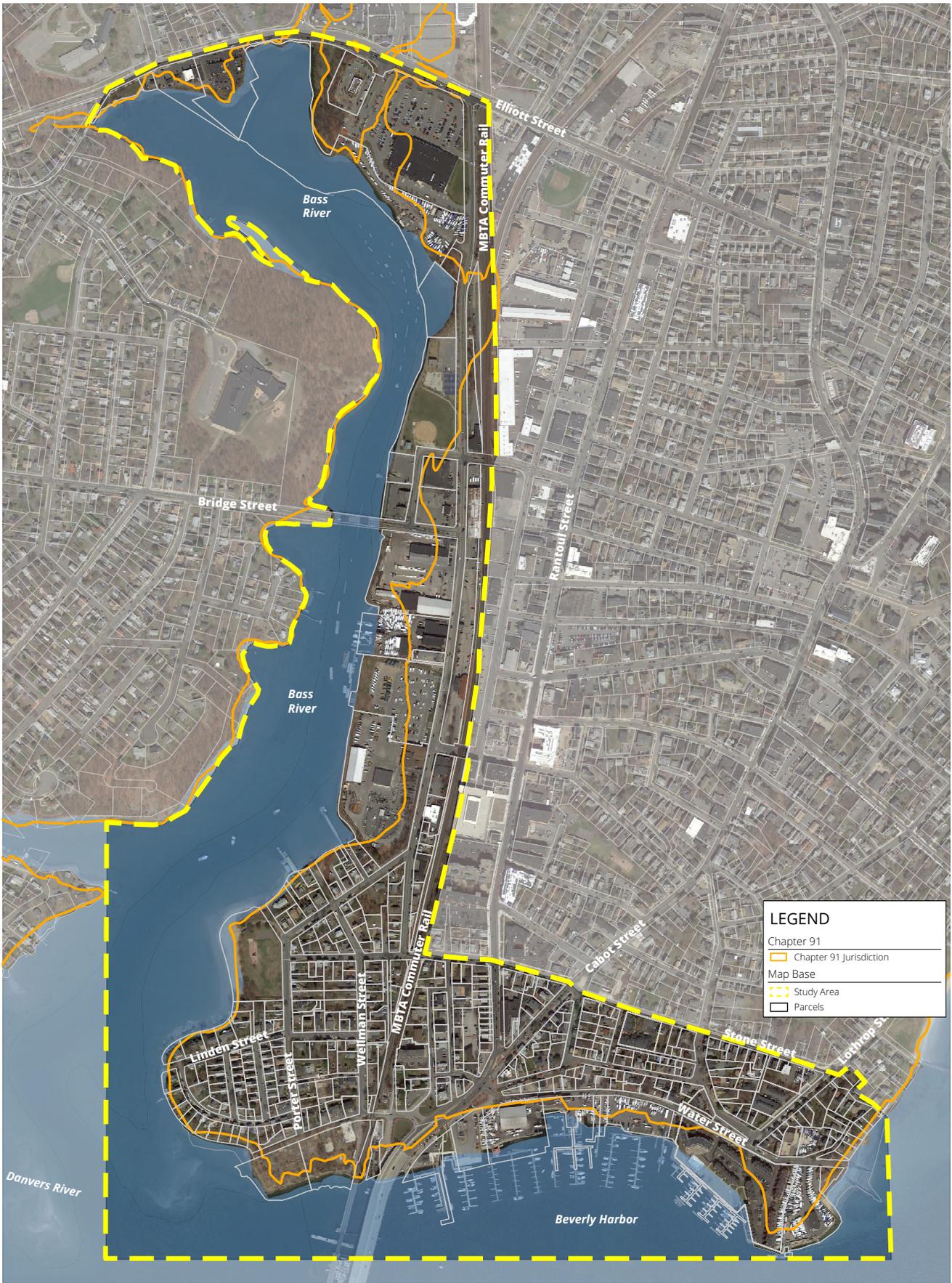


FIGURE 8: CHAPTER 91 JURISDICTION IN THE HARBOR/WATERFRONT AREA

Dimensional Requirements

Maximum heights range from a low of 35 feet in the R-10, R-6, RMD, BHD, WDR, IG, and CG districts to 55 feet in the RHD and CC districts. A maximum height of 70 feet is allowed in the IG if the building is set back 400 feet from all abutting public ways. As the Bass River is a public way, this height limit may not be achievable and is almost certainly in conflict with the Chapter 91 limit of 55 feet.

Because the northern portion of the Bass River and the Goat Hill sub-areas are unlikely to change, the focus of this discussion is on the southern portion of the Bass River and Beverly Harbor sub-areas. As noted earlier, to accomplish the land use recommendations, the southern Bass River sub-area would have to be rezoned to allow for mixed-use, including multifamily residential and retail.

Most of the Beverly Harbor sub-area is also unlikely to change, and the recent creation of the BHD should allow most of the uses anticipated for this area. However, the relatively narrow depth of the parcels along Beverly Harbor present challenges to future development particularly when factoring in the need for on-site parking for all uses. Should the City anticipate changes to existing uses, such as a redevelopment of the Beverly Port Marina, it may want to consider the mix of on-site and off-site parking requirements.

Parking

The City of Beverly's *Zoning Ordinance* specifies parking requirements, in addition to use and dimensional requirements, by zoning district. All the zoning districts within the HWA must provide off-street parking, as defined in the *Zoning Ordinance- Article X*. Residential parking can be located (a) on-site, (b) in a privately-owned lot off-site within 500 feet of the property it serves, or (c) by special permit in an off-site public parking facility within 500 feet of the property it serves. Nonresidential parking can be located (a) on-site, (b) in a privately-owned lot off-site within 500 feet of the property it serves, (c) in an off-site public parking facility within 500 feet of the property it serves, or (d) on street, if the parking spaces are contained within the property's frontage.

Nonresidential parking requirements vary by use, including one off-street parking space for every 250 square feet of gross floor area in business and professional offices, one space for every four seats in restaurants, and 0.5 space per boat moored/docked/stored/trailer at a marina. In addition, the parcels within the WDR District must provide one off-street parking space for each marina boat slip.

Floodplain Overlay District

The Floodplain Overlay District (FOD) is an overlay district that includes all special flood hazard areas within Beverly designated as Zone A, AE, AH, AO, A99, V or VE on the

Essex County Flood Insurance Rate Map (FIRM) issued by the FEMA. As noted above, most of the parcels along the Bass River and the Harbor are within Zone AE and several parcels along the harbor are in Zone VE. There are also a few areas within the HWA that are located in Zone X, which are not included in the FOD but are exposed to moderate or minimal flood hazard risk.

Development is prohibited in the regulatory floodway (the channel of a river or other watercourse and the adjacent land areas that must be reserved to discharge the flood waters). However, no regulatory floodway has been designated within the HWA, so the best available data would be used to prohibit development that would increase flood levels within the community. In Zone VE, all new construction or substantial improvements must be landward of the mean high tide.

Massachusetts General Laws Chapter 91

State regulations, in addition to the City's zoning regulations, govern development in or near the HWA. The Massachusetts Public Waterfront Act, or MGL Chapter 91, preserves and protects the rights of the public interest and access to water, establishes a priority for water-dependent uses, and ensures that private uses of tidelands and waterways serve a proper public purpose.

Chapter 91 jurisdiction includes inland Great Ponds and many rivers; all flowed tidelands in coastal areas, up to 3 miles offshore; and many filled tidelands. The areas within the jurisdiction of Chapter 91 in the HWA generally consist of the harbor areas and lands that were once below the mean high-water mark but have since been filled. All the parcels immediately along the Bass River and Beverly Harbor, and several parcels a bit inland, are within the Chapter 91 jurisdiction (see Figure 8).

Chapter 91 differentiates between water-dependent uses and nonwater-dependent uses. The definition of water-dependent uses includes water-dependent industrial uses and requires direct access to or a location within tidal waters. The proposed project must be completely water-dependent to qualify – a nonwater-dependent use as part of the project will result in determination of the entire project as nonwater-dependent. Nonwater-dependent uses must have a proper public purpose, be consistent with the policies of CZM and provide public benefits that outweigh the negative effect on the public of the nonwater-dependent use. A Massachusetts DEP Waterways License is required for activities subject to Chapter 91 jurisdiction.

Public access is a critical component of the Chapter 91 regulations. A property owner considering redevelopment of their property must understand the location of the Water-dependent Use Zone, the area required for Facilities of Public Accommodation, and whether the property contains Commonwealth Tidelands. These conditions will determine what uses are allowed at the ground level of both land and building and where on

Summary of Chapter 91 Terms

Mean Higher High Water Mark: 19-year average of the higher high water height of each tidal day (NOAA). Per NOAA's website, the most recent was completed in 2001; it is reviewed annually for possible revision and must be actively considered for revision every 25 years.

Water-dependent Use Zone: Area in which water-dependent uses are required; especially active use of the project shoreline. Water-dependent uses are identified in 310 CMR 9.00.

Chapter 91 Jurisdiction: Composed of flowed tidelands, filled tidelands, great ponds, and non-tidal rivers or streams. Within these areas the Commonwealth seeks to preserve and protect the rights of the public, and to guarantee that private uses of tidelands and waterways serve a proper public purpose.

Facility of Public Accommodation: Any facility at which goods and services are made available directly to the transient public on a regular basis.

Commonwealth Tidelands: Tidelands held by the Commonwealth in trust for the benefit of the public. Commonwealth Tidelands lie seaward of the historic low water mark or of a line running 1,650 feet seaward of the historic high water mark, whichever is farther landward. See 310 CMR 9.00 for further details about the determination of and requirements for Commonwealth Tidelands.



FIGURE 9: POTENTIAL BUILDING ENVELOPES WITHIN THE BASS RIVER SUB-AREA

the site those uses may be located. Key lines include the high water mark, the historic high water mark, the historic low water mark, and the relationship of those to the current shoreline and the depth of the parcel. Those who properties fall within Chapter 91 jurisdiction should investigate those conditions thoroughly as an initial part of the development process.

Property owners are responsible for ensuring that they are compliant with the requirements of their licenses. Existing Chapter 91 licenses are provided in *Appendix D. Table of Chapter 91 Licenses*. Note that enforcement of Chapter 91 licenses are under the jurisdiction of MassDEP, not the City of Beverly.

Right-to-Fish

One of the goals of this planning process was to support the commercial fishing industry. Because two commercial fishing docks are in a residential area and a third is sandwiched between two marinas, there exists the possibility of conflict between the needs of the commercial fishermen and those of their neighbors. Commercial fishermen rise early, their equipment is noisy, and some people may find the smell of fish or bait unpleasant.

In Massachusetts, a precedent for protecting the rights of the commercial fishermen exists in the “Right to Farm” laws adopted in several communities. According to

Right-to-Farm By-Law

Immediately upon the execution of a purchase and sale agreement for the purchase of any real estate is entered into, or prior to the sale or exchange of real property if no purchase and sale agreement exists, for the purchase or exchange of real property, or prior to the acquisition of a leasehold interest or other possessory interest in real property, located in Newbury, the landowner shall present the buyer or occupant with a disclosure notification which states the following:

“It is the policy of Newbury to conserve, protect and encourage the maintenance and improvement of agricultural land for the production of food, or other agricultural products, and also for its natural and ecological value. This disclosure notification is to inform buyers or occupants that the property they are about to acquire or occupy lies within a town where farming activities occur. Such farming activities may include, but are not limited to, activities that may cause noise, dust or odors. Buyers and occupants are also informed that the location of property within Newbury may be impacted by commercial agricultural operations including the ability to access water services for such property under certain circumstances.”

A copy of the disclosure notification shall be signed by the landowner prior to the sale, purchase, exchange or occupancy of real property. A copy of the disclosure notification must be filed with the Board of Selectmen prior to the sale, purchase, exchange or occupancy of such real property. In addition, the Town may mail a copy of this disclosure notification to all landowners once each fiscal year by inclusion in its mailing of real estate or excise taxes.

Any violation of this section shall be subject to a fine of \$300 and shall be enforced by the Board of Selectmen or its designee. The Town is authorized to enforce this section under the non-criminal disposition provision of G.L. c. 40, § 21D.

Town of Newbury, Massachusetts <https://ecode360.com/15580367>

the EEA, a local bylaw is allowed by the Home Rule Amendment (Article 89 of the Articles of Amendment of the Massachusetts Constitution).

The Right to Farm is based on Article 97 of the Amendments to the Constitution of the Commonwealth of Massachusetts. Article 97 allows the protection of natural resources as a common good (the right of the people to have clean air and water, freedom from excessive and unnecessary noise, and the natural, scenic, historic and aesthetic qualities of their environment). Article 97 also declares the “right to the conservation, development, and utilization of the agricultural, mineral, forest, water, air, and other natural resources” as a public purpose. This appears to allow the use of water as a public purpose, and the protection that Chapter 91 affords the public for use of the tidelands for fishing, fowling, and navigation also suggests that fishing is a right.

Massachusetts General Laws offers some additional support in terms of thinking about the Right to Farm as a parallel to the Right to Fish. These laws are as follows:

- **MGL Chapter 40A Section 3, Paragraph 1** – Defines what zoning cannot restrict with respect to commercial agriculture, aquaculture, silviculture, horticulture, floriculture, and viticulture.
- **Chapter 90, Section 9** – Regulates ability of tractor, trailer or truck used exclusively for agricultural purpose to use public roads.
- **Chapter 111, Section 125A** – Governs procedure for a farm to be declared a nuisance. Odors and noise from generally acceptable farming operations do not qualify.
- **Chapter 128, Section 1A** – Definition of agriculture, which includes “production, cultivation, growing and harvesting of any agricultural, aquacultural, floricultural or horticultural commodities.”

The legal question would be whether the combination of Articles 89 and 97 could be expanded to include the idea of a “Right to Fish” for commercial fishermen that is consistent with the “Right to Farm.” In communities that have adopted a “Right to Farm” bylaw, new homeowners are required to sign a document when purchasing their home that states that they understand that the community is a “Right to Farm” community and that they and their neighbors may conduct generally acceptable farming operations.

Recommendation for Regulatory Changes

HWA

- Establish a “Right-to-Fish” local ordinance. Research the necessity of a Home Rule Petition and evaluate support from the Massachusetts state legislature.

Bass River

- Create a new zoning district along the waterfront of the Bass River, west of the rail line, to encourage development and public access to the water. Such a district would



FIGURE 10: CONCEPTUAL PUBLIC WALKWAY ALONG THE BASS RIVER

Note: these are conceptual illustrations and do not represent a specific project or regulatory requirement.

allow mixed-use to promote transit-oriented development at a scale that is appropriate for the area. Mixed-use developments should encourage active ground floor uses and emerging uses such as artist live/work, maker, or co-working spaces, and upper floors of residential, office, and/or laboratory space. Development must ensure view corridors to the waterfront and public access must at least comply with the requirements of Chapter 91, with incentives possible for enhanced access.

- Establish development incentives for a consistent public walkway, landscape elements and expanded public access within the southern portion of this sub-area. Specify low-impact development strategies, such as floodable pathways/esplanade along a hard shoreline and/or expanded green infrastructure to address stormwater management and green infrastructure improvements.

The southern portion of the Bass River sub-area presents the most likely opportunity for significant change over the next ten years. During the planning process for this *Harbor/Waterfront Plan*, the property on which the Bowl-O-Mat was located was for sale. Certain other parcels, including those owned by National Grid, are underutilized relative to their location next to the Bass River and within easy walking distance of the Beverly Depot and even the downtown core. The development values of these parcels will increase and the uses will shift over time following a change to the existing IG zoning to allow mixed-use development, including office, retail/restaurant, and residential.

City zoning is not the only restriction on development. Chapter 91 also has an impact on the type and location of certain land uses. Figure 9 illustrates the available building envelopes (i.e., the area of a lot available for a building, taking into account all restrictions) for mixed-use development in a portion of this area.

Chapter 91 also requires public access to the waterfront, including a walkway along the water's edge. This *Harbor/Waterfront Plan* recommends that each new development connect its walkway to existing paths and that the entire walkway network in the southern Bass River sub-area have a consistent character in terms of materials, lighting, benches, and other street furniture. Figure 10 is a conceptual illustration of this public walkway.

New zoning should include development incentives to provide expanded public access, such as small plazas, water features, or pocket parks. These larger spaces should be connected to River Street by pathways accommodating both pedestrians and bicyclists.

Should the City choose to transform this document into a state-approved Municipal Harbor Plan, the City should specify any desired substitutions, amplifications, or offsets to the requirements of 301 CMR 9.00 and Chapter 91. For example, the City could require a wider public walkway to promote greater public access, modify height limits in exchange for improvements to address flooding and sea level rise, or provide some flexibility for the location of Facilities of Public Accommodation (FPA) in one area under Chapter 91 jurisdiction in exchange for enhanced FPA in other areas under Chapter 91 jurisdiction.

Goat Hill

- No changes.

Beverly Harbor

- Consider relationship of parking needs and requirements (not necessarily the same) of future redevelopment on parcels with shallow depths.

CONCEPTUAL PLANS FOR THE HARBOR/WATERFRONT AREA

The recommended actions to implement the goals of this *Harbor/Waterfront Plan* build upon the recommendations of previous reports and studies and the community's goals. They are the result of the research and analyses of current economic and physical conditions, as well as feedback from the community members and businesses who participated in public meetings, public open houses, interviews, and surveys.

These four conceptual plans show the general geographic area of the recommended actions noted in the previous discussion. The implementation program that follows these plans supplement the information presented here. Note that some of the actions in these conceptual plans are private actions that City policies and regulations can support; these are identified in the implementation plan.

Conceptual Plan – Bass River (North)

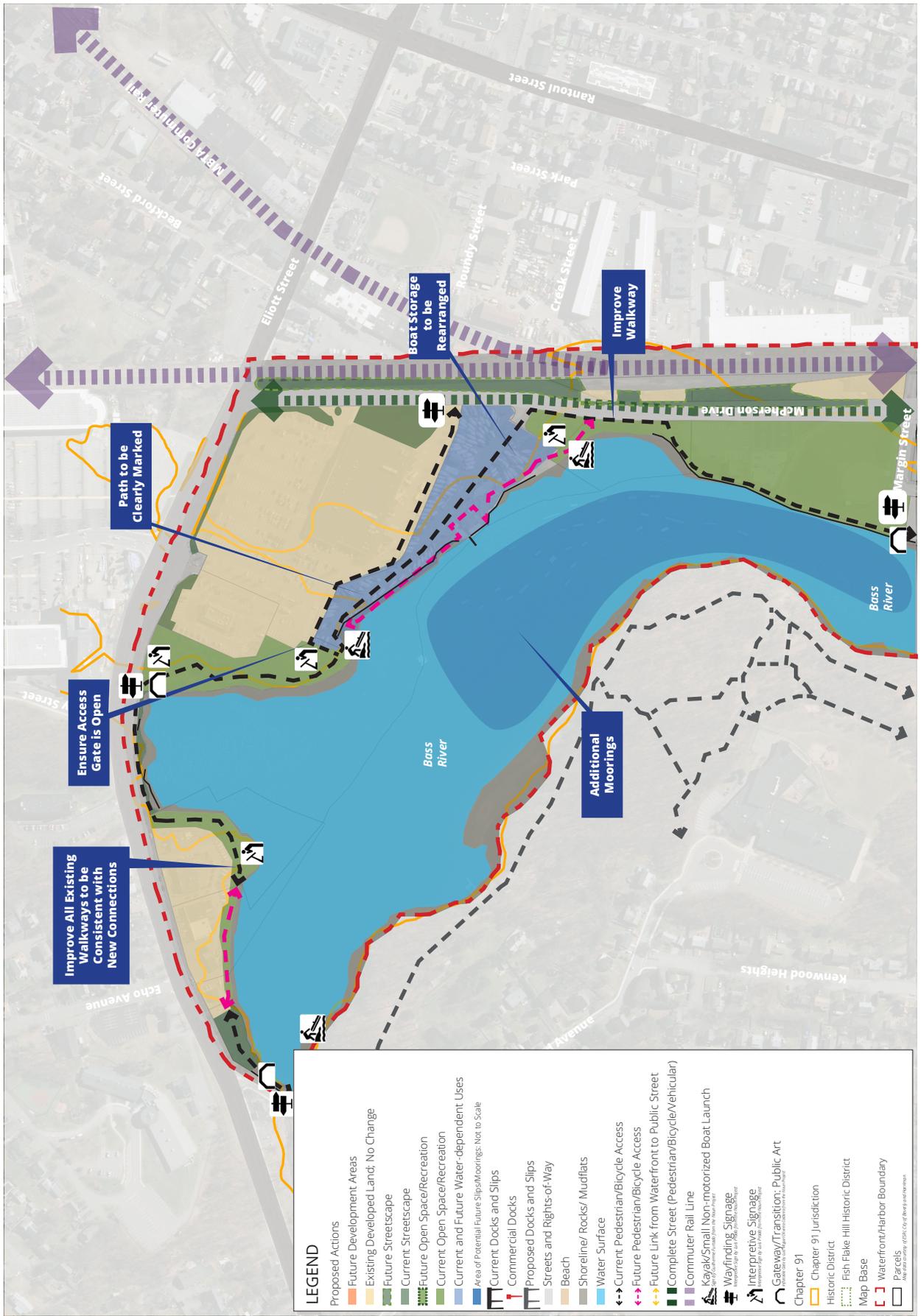


FIGURE 11: CONCEPTUAL PLAN — BASS RIVER (NORTH)

Conceptual Plan – Bass River (South)

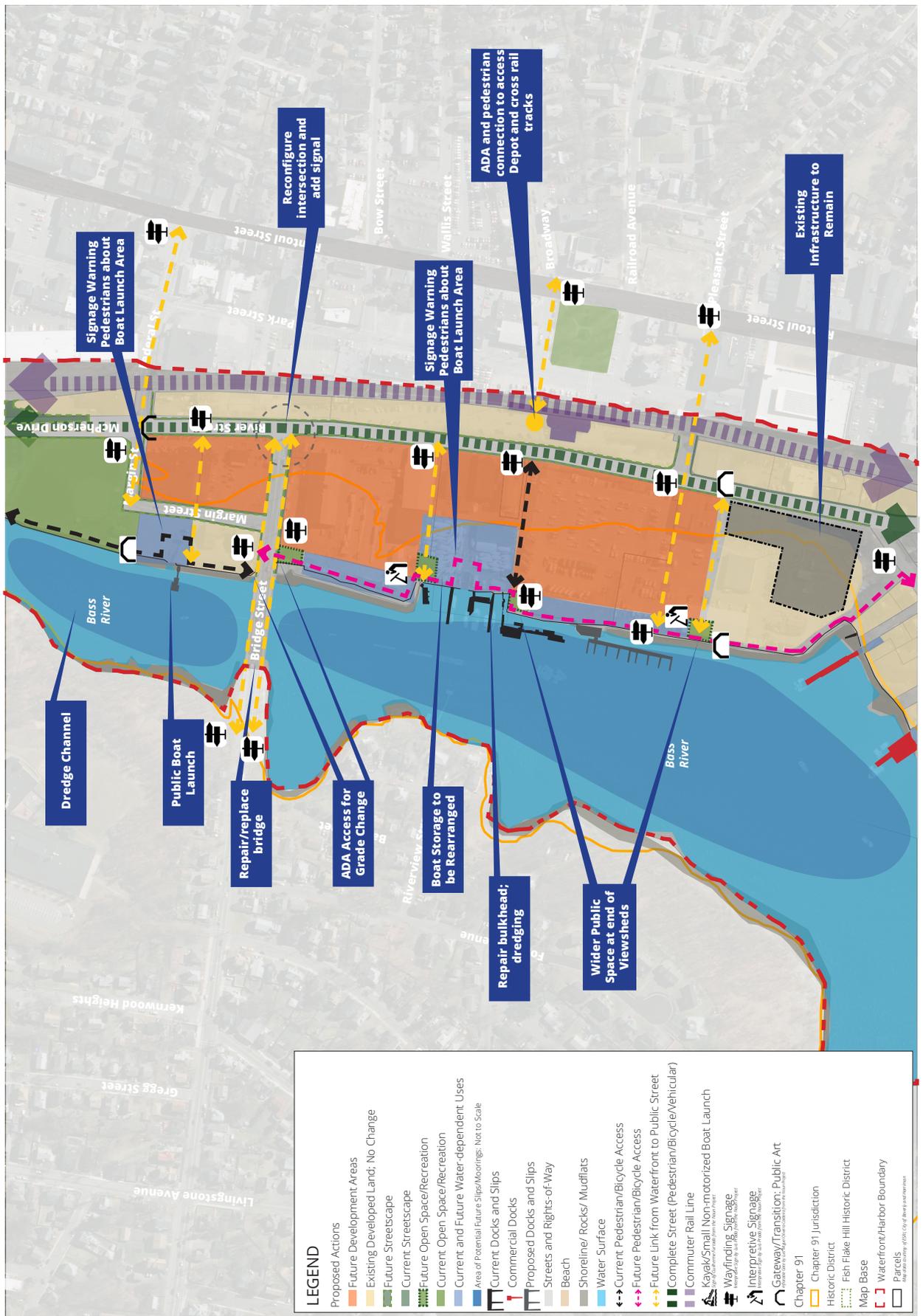


FIGURE 12: CONCEPTUAL PLAN — BASS RIVER (SOUTH)

Conceptual Plan – Goat Hill



FIGURE 13: CONCEPTUAL PLAN — GOAT HILL

Conceptual Plan – Beverly Harbor

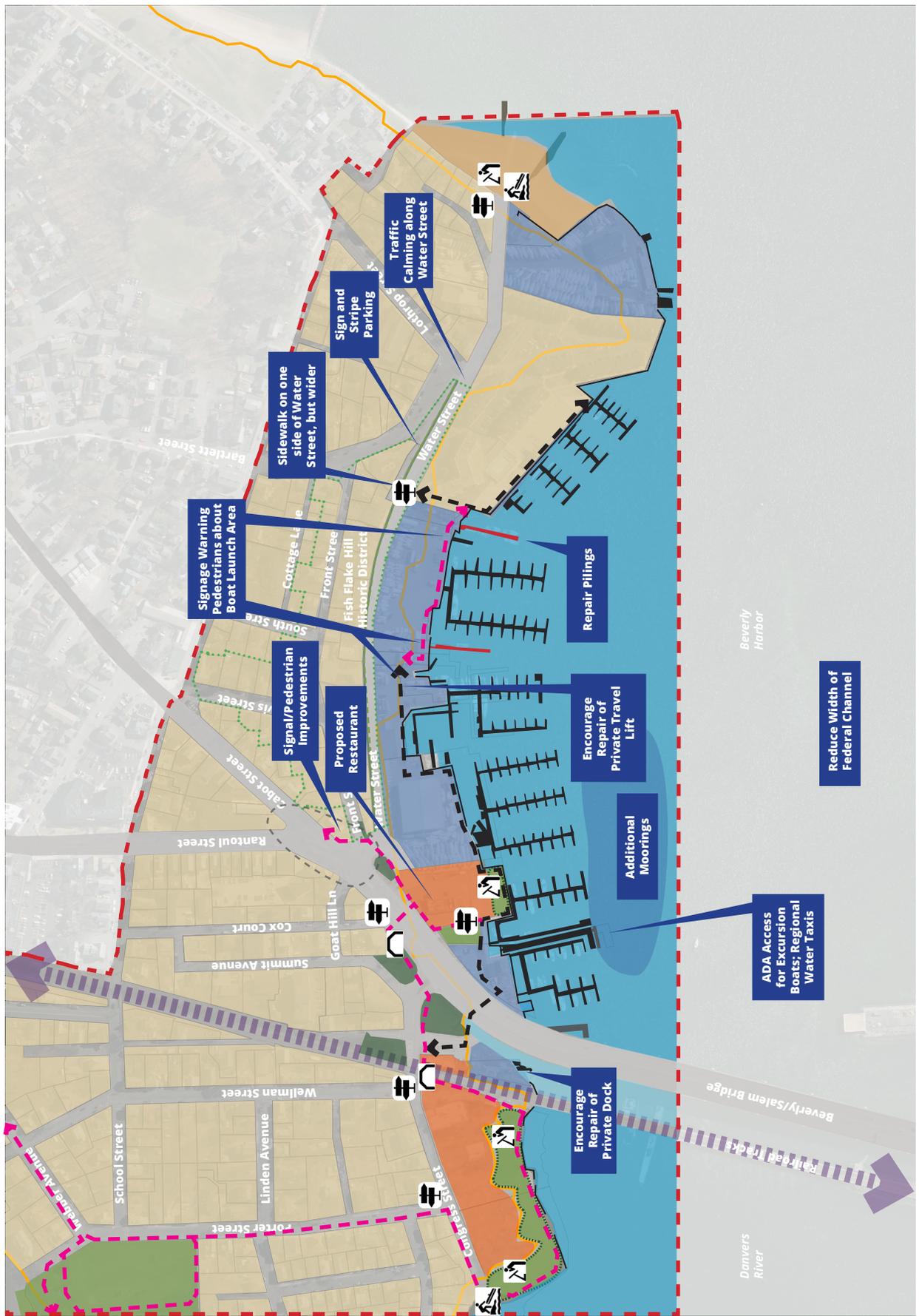


FIGURE 14: CONCEPTUAL PLAN — BEVERLY HARBOR

IMPLEMENTATION PROGRAM

The Implementation Program is an integral component of the *Beverly Harbor/Waterfront Plan* as it outlines the steps the community can take to move toward its vision for the HWA and implement the concept shown in the previous section. The matrix below defines the goals, strategies, and actions required to achieve the vision for the HWA, as well as the roles of responsibility for the implementation of actions, timeframes for completion, and potential resources to fund these measures. Order-of-magnitude costs are identified where appropriate. The information within the matrix will help to inform the City's future planning processes, including the upcoming comprehensive master plan update.

RESPONSIBILITIES

The collaborative efforts of City staff and officials, state and federal agencies, community organizations and members, and private property owners are critical to implementation. While the implementation matrix identifies roles, there is flexibility for organizations and individuals to participate outside of the roles listed.

To ensure the *Beverly Harbor/Waterfront Plan* is used and implemented, it is recommended the City Council and Mayor appoint an Implementation Steering Committee to be responsible for the overall implementation, as well as ensuring public outreach and education efforts are continued. Members of the Implementation Steering Committee should be drawn from City departments and boards/committees with responsibilities within the HWA.

SEQUENCE

Action items emerging from the *Beverly Harbor/Waterfront Plan* are to be completed in suggested phases. These four phases are identified as short-term, medium-term, long-term, or ongoing. These timelines are considered as an implementation guide.

The phases may be further defined as: short-term (one to three years), medium-term (three to five years), and long-term (more than five years) phases over the ten-year life of this *Harbor/Waterfront Plan*. Ongoing relates to those actions that should be advanced continuously. Timelines and priorities can change over time and the Implementation Steering Committee can guide decision making in this regard.

RESOURCES

Resources needed to implement the *Harbor/Waterfront Plan* include both time and money. City staff and officials, City boards and commissions, and community and business organizations will need to provide their time, as well as volunteer time from community members. Financial resources for proposed projects can be acquired through grant programs from agencies and departments of the Commonwealth of Massachusetts and the Federal government, as well as donations from foundations and businesses. Any donation program would be set up for specific purposes under appropriate state and federal guidelines. A new organization

such as “Friends of Beverly Harbor/Waterfront” could also be set up as a 501(c)3 to attract and manage donations for specific purposes, such as wayfinding or informational signage.

IMPLEMENTATION MATRIX

- **Goal 1** – Connect the Harbor and waterfront to each other and to the neighborhoods/Downtown by walkways, paths, and public access.
- **Goal 2** – Identify opportunities for increased economic development, including commercial marine activities, throughout the HWA to support a mix of land uses and provide more ways for people to access and enjoy the waterfront.
- **Goal 3** – Support Beverly’s commercial fishing fleet.
- **Goal 4**– Increase public access to the water, including support for and encouragement of recreational boating.
- **Goal 5** – Develop a distinct identity for each of the three sub-areas of the HWA.
- **Goal 6** – Promote the maritime heritage of the City, including cultural, historic, and natural resources.
- **Goal 7** – Increase the resiliency of the HWA given current and projected flooding and the projected impacts of sea level rise.

GOALS/STRATEGIES/ACTIONS	IMPACTED BY CHAPTER 91?	RESPONSIBILITIES	PHASE	FUNDING AND DIRECT TECHNICAL ASSISTANCE SOURCES
Goal 1: Connect Harbor and waterfront to each other and to the neighborhoods/Downtown by walkways, paths and public access.				
Strategy 1.1: Provide waterfront walkways and pedestrian access along Beverly Harbor and the Bass River.				
<i>LANDSIDE</i>				
Connect existing public access and walkways along the water’s edge of the Bass River and Beverly Harbor with new walkways and access as properties are redeveloped over time.	✓	City staff, ConCom, Private	Ongoing	MassTrails Grant Program, Seaport Economic Council Grant, CDBG
Provide pedestrian and bicycle connections to the Bass River and waterfront from abutting waterfront properties to the nearest public right-of-way.	✓	City staff, Private	LT	Chapter 90, MassWorks, CDBG
Connect existing trails in adjacent areas, such as those on Green’s Hill, to the pedestrian walkway along the waterfront.	✓	City staff, ConCom, Private	Ongoing	MassTrails Grant Program, Seaport Economic Council Grant, CDBG

GOALS/STRATEGIES/ACTIONS	IMPACTED BY CHAPTER 91?	RESPONSIBILITIES	PHASE	FUNDING AND DIRECT TECHNICAL ASSISTANCE SOURCES
Review existing Chapter 91 licenses for compliance. Work with MassDEP and property owners to inform them of their obligations under Chapter 91 and bring properties that are noncompliant or that have no license into compliance with Chapter 91.	✓	City staff	MT	
Establish development incentives for expanded public access, including walkways, landscape elements, and public amenities. Specify low-impact development strategies to address stormwater management and green infrastructure improvements to address flooding.		City staff, Planning Board, City Council, Private	ST	
Connect Independence Park with the boat launch at Water Street via wayfinding.		City staff	ST	
Strategy 1.2: Increase the safety and usability of the transportation network within the HWA.				
<i>LANDSIDE</i>				
Evaluate the condition of sidewalks throughout the HWA and repair as needed.		City staff, HMA, ConCom, Private	ST	Chapter 90, MassWorks, CDBG
Connect new bicycle lanes to existing bicycle lanes.		City staff	Ongoing	CDBG, Complete Streets
Create a bike and pedestrian map of the HWA to promote use of the connected facilities.		City staff	Ongoing	Complete Streets
Create strong lateral connections for pedestrians and bicyclists to the Downtown and adjacent areas from the Harbor and Bass River.		City staff	Ongoing	CDBG, Complete Streets
Facilitate discussion among business owners within the HWA to explore options for a private shuttle or trolley.		City staff, Private	MT	Private sources
Evaluate City's Complete Streets Program with respect to McPherson Drive, River Street, and Water Street.		City staff	ST	
Redesign the intersection of Bridge Street and River Street to address concerns about pedestrian and vehicle safety and the turning radii of large trucks.		City staff, MassDOT	ST	

GOALS/STRATEGIES/ACTIONS	IMPACTED BY CHAPTER 91?	RESPONSIBILITIES	PHASE	FUNDING AND DIRECT TECHNICAL ASSISTANCE SOURCES
Strategy 1.3: Eliminate flooding in roadways and sidewalks.				
<i>LANDSIDE</i>				
Encourage businesses to create additional landscaped areas and green roofs (consider zoning requirement paired with a development incentive).		City staff, Planning Board, City Council, Private	MT	
Install planting bioswales along public sidewalks as a buffer between pedestrians and traffic and to encourage water capture and infiltration.		City staff, Private	ST	CZM Coastal Pollutant Remediation Grant
Adopt new zoning incentives and/or regulations for low-impact development to manage stormwater on-site.		City staff, ConCom, Planning Board, City Council	MT	
Encourage land owners and developers to create a wide riparian buffer along the Bass River waterfront to improve flood management.	✓	City staff, ConCom, Private	MT	
Goal 2: Identify opportunities for increased economic development throughout the HWA to support a mix of land uses and provide more ways for people to access and enjoy the waterfront.				
Strategy 2.1: Leverage the proximity to the Beverly Depot and the Downtown to encourage new transit-oriented projects.				
<i>LANDSIDE</i>				
Update the zoning regulations within the HWA to be consistent with the goals of this Plan.		City staff, Planning Board, City Council	ST	
Explore additional off-street parking locations to support retail, public access to the waterfront, and recreational boating, such as the proposed boat launch on Congress Street.		City staff	ST	
Identify regional and state partners to market the HWA to businesses looking to move into the region.		City staff	ST	Community Development Block Grant Program Economic Development Fund
Coordinate placemaking, regulatory, and infrastructure recommendations, including implementation of Complete Streets policy, to support employment growth, business attraction and retention.		City staff	ST	

GOALS/STRATEGIES/ACTIONS	IMPACTED BY CHAPTER 91?	RESPONSIBILITIES	PHASE	FUNDING AND DIRECT TECHNICAL ASSISTANCE SOURCES
Integrate the recommendations of this Plan into a city-wide economic development plan or comprehensive plan.		City staff	ST	
Goal 3: Support Beverly's commercial fishing fleet.				
Strategy 3.1: Maintain facilities for Beverly's commercial fishing fleet				
<i>LANDSIDE</i>				
Create "Right-to-Fish" regulatory protection/support for commercial fishing.		City staff	ST	
Use properties that are near or adjacent to the commercial marina to support the land-based operations of commercial fishermen on a shared basis with recreational and other activities, as appropriate.	✓	City staff, HMA, Private	ST	
Reconstruct the Commercial Fishing Pier, replacing the existing pier with a steel pile-supported concrete pier and new hoist, to better serve the commercial fishing fleet.	✓	City staff, HMA	LT	MassWorks, Seaport Economic Council
<i>WATERSIDE</i>				
Add a larger float to existing City pier to accommodate commercial vessel loading and unloading.	✓	City staff, HMA, ConCom	LT	MassWorks, Seaport Economic Council
Add dock space for the most active uses, including commercial boating, at the City landing.	✓	City staff, HMA, ConCom	MT	MassWorks, Seaport Economic Council
Goal 4: Increase public access to the water, including support for and encouragement of recreational boating.				
Strategy 4.1: Maximize additional recreational boating and the potential use of small, non-motorized watercraft.				
<i>LANDSIDE</i>				
Designate areas where small, non-motorized watercraft can safely launch (see concept plan). Coordinate accommodations for storage at the launch locations, as feasible.	✓	City staff, HMA, ConCom	ST	
Evaluate a boat launch ramp at the end of Congress Street, adjacent to the 10 Congress Street development.	✓	City staff	MT	USFWS Boating Access Program
Add kayak/paddleboard launch at Pleasant View Beach.	✓	City staff, HMA	ST	

GOALS/STRATEGIES/ACTIONS	IMPACTED BY CHAPTER 91?	RESPONSIBILITIES	PHASE	FUNDING AND DIRECT TECHNICAL ASSISTANCE SOURCES
Improve the Hall-Whittaker bridge for traffic, pedestrians, and fishing access.		City staff, HMA	LT	USDOT Transportation Improvement Program
Support development of new recreational boating facilities on the Bass River.	✓	City staff, HMA, ConCom, Private	ST	USFWS Boating Access Program
<i>WATERSIDE</i>				
Encourage areas where small, non-motorized watercraft can safely operate.		City staff, HMA	ST	
Upgrade waterside and landside facilities at the marinas and public pier.	✓	City staff, HMA	MT	MassWorks, USFWS Boating Access Program
Conduct dredging and maintenance dredging of the upper and lower Bass River, as needed, to support expanded boating activities.	✓	City staff, HMA, Private	LT	MassWorks
Create additional slips and/or moorings in the Bass River and at the city marinas, as feasible (subject to review by the Harbormaster).	✓	City staff, HMA, Private	LT	Massachusetts Boating Infrastructure Grant
Establish conditions of approval by the local land use boards for new slips constructed by private entities to ensure an equitable distribution of a portion of the slips to the general public.	✓	City staff, Planning Board, Zoning Board of Appeals, HMA, ConCom, Private	LT	
Strategy 4.2: Provide facilities for larger boats to support commercial activities.				
<i>LANDSIDE</i>				
Confirm sufficient loading and unloading space is provided at commercial docks for fishing activities.	✓	City staff, HMA, ConCom, Private	MT	
<i>WATERSIDE</i>				
Add short-term docking facilities.	✓	City staff, HMA, ConCom, Private	LT	Massachusetts Boating Infrastructure Grant, USFWS Boating Access Program
Add long-term mooring facilities.	✓	City staff, HMA, ConCom, Private	LT	USFWS Boating Access Program
Update the public pier to ADA standards for docking cruise, charter, tour, and taxi vessels.	✓	City staff, HMA, ConCom	LT	MassWorks

GOALS/STRATEGIES/ACTIONS	IMPACTED BY CHAPTER 91?	RESPONSIBILITIES	PHASE	FUNDING AND DIRECT TECHNICAL ASSISTANCE SOURCES
Capitalize on the Federal Channel to bring tour boats and smaller cruise boats to the public pier.	✓	City staff, HMA	LT	
Investigate consequences of narrowing the Federal Channel	✓	City staff, HMA, US Army Corps of Engineers	LT	
Enforce existing regulations to prevent encroachment of slips and moorings into the Federal Channel and protect the Channel for navigation.	✓	City staff, HMA	ST	
Add dock space for the most active uses, including commercial boating, at the City landing.	✓	City staff, HMA, ConCom	MT	MassWorks
Goal 5: Develop a distinct identity for each of the three sub-areas of the HWA.				
Strategy 5.1: Foster landside development along Beverly Harbor and the Bass River that incorporates public access amenities and retail businesses that attract the public.				
<i>LANDSIDE</i>				
Create and support identities for sub-areas within the HWA. Implement wayfinding and gateway treatments at the entrances to a sub-area and along the public access walkway.		City staff, Historic Beverly, Civic Associations, Arts Organizations, Private	MT	Mass Cultural Council, Massachusetts Historic Commission, Preservation Mass, MassDevelopment, Private sources, CDBG
Review and update City's Zoning Ordinances along the waterfront areas. Consider artist live/work, maker, and co-working spaces along the Bass River and Harbor.	✓	City staff, Planning Board, City Council	ST	
Consider design standards for private development. Incorporate design standards into the City's Zoning Ordinances.		City staff, Planning Board, City Council	ST	
Encourage continued development of marinas and activities such as boating, public access, tourism (potential whale watch, harbor tours).	✓	City staff, HMA	MT	

GOALS/STRATEGIES/ACTIONS	IMPACTED BY CHAPTER 91?	RESPONSIBILITIES	PHASE	FUNDING AND DIRECT TECHNICAL ASSISTANCE SOURCES
Create a year-round program of after-work and weekend activities that draw employees and community members to the waterfront areas.		City staff, Historic Beverly, Civic Associations, Arts Organizations, Private	Ongoing	Mass Cultural Council, Massachusetts Historic Commission, Preservation Mass, MassDevelopment, Private sources, CDBG
Investigate the redevelopment of Ferry Landing that would incorporate public access and amenities that attract the public.	✓	City staff, HMA, ConCom	MT	Seaport Economic Council
Connect 10 Congress Street via direct pedestrian access to city-owned property east of Veteran's Memorial Bridge.	✓	City staff, HMA, ConCom	LT	MassDOT; Seaport Economic Council Grant; Land and Water Conservation Fund
Provide periodic walking tours focused on the natural and historic resources and open houses of historic buildings	✓	City staff, Historic Beverly, Civic Associations, Arts Organizations, Private	MT	Mass Cultural Council, Massachusetts Historic Commission, Preservation Mass, MassDevelopment, Private sources, CDBG
Ensure existing and new development provides adequate parking.	✓	City staff	ST	
<i>WATERSIDE</i>				
Require close coordination between the Harbormaster and the Harbor Authority on access to the waterfront, moorings, safety and expansion of waterside facilities within the harbor area.	✓	City staff, HMA	LT	
Strategy 5.2: Revitalize the city-owned parcels at the Veteran's Memorial Bridge.				
<i>LANDSIDE</i>				
Create public amenities and waterfront access.	✓	City staff, ConCom, Private	Ongoing	MassTrails Grant Program, Seaport Economic Council Grant, Land and Water Conservation Fund, MassDevelopment Commonwealth Places, CDBG

GOALS/STRATEGIES/ACTIONS	IMPACTED BY CHAPTER 91?	RESPONSIBILITIES	PHASE	FUNDING AND DIRECT TECHNICAL ASSISTANCE SOURCES
<i>WATERSIDE</i>				
Add a float dedicated for public access and fishing.	✓	City staff, HMA, ConCom	LT	Massachusetts Division of Marine Fisheries Marine Recreational Fisheries Development Fund
Goal 6: Promote the maritime heritage of the City, including cultural, historic, and natural resources.				
Strategy 6.1: Engage the community through wayfinding and public art installations.				
<i>Landside</i>				
Distribute wayfinding and informational signage about environmental and historical points of interest throughout the public access and walkways.		City staff, ConCom, Historical Society, Private	MT	Mass Cultural Council, Massachusetts Historic Commission, Preservation Mass, MassDevelopment, Private sources
Provide opportunities for the local arts community to create temporary and permanent art installations at specific gateway points and along public walkways.		City staff, BAD	Ongoing	Mass Cultural Council, MassDevelopment Commonwealth Places, Private sources, CDBG
Strategy 6.2: Preserve the City's historic resources as a link to its heritage and as a part of the community's identity.				
<i>LANDSIDE</i>				
Explore the possibility of creating a Washington's Naval Base museum and visitor center on City property adjacent to the Veteran's Memorial Bridge.	✓	City staff, HMA, Historic Beverly, Private	LT	Mass Cultural Council, Massachusetts Historic Commission, Preservation Mass, MassDevelopment, Private sources
<i>WATERSIDE</i>				
Explore the possibility of providing docking facilities for a replica of the armed schooner Hannah, once the vessel is completed.	✓	City staff, HMA, Historic Beverly, Private	LT	Mass Cultural Council, Massachusetts Historic Commission, Preservation Mass, MassDevelopment, Private sources

GOALS/STRATEGIES/ACTIONS	IMPACTED BY CHAPTER 91?	RESPONSIBILITIES	PHASE	FUNDING AND DIRECT TECHNICAL ASSISTANCE SOURCES
Goal 7. Increase the resiliency of the HWA given current and projected flooding and the projected impacts of sea level rise.				
Strategy 7.1: Create new zoning regulations to promote resilient development.				
<i>LANDSIDE</i>				
Evaluate an Incentive-based Overlay District to promote resilient building practices for new development along the Bass River.	✓	City staff, Planning Board, City Council	ST	
Evaluate a Flood-Fringe Overlay District to address resilient development for flood-prone areas throughout the City.		City staff, Planning Board, City Council	ST	
Ensure future planning studies address resiliency or mitigations needed for sea level rise and/or climate change impacts.		City staff	Ongoing	
Strategy 7.2: Evaluate the impact of current and future flooding on future development.				
<i>LANDSIDE</i>				
Conduct additional hydrologic modeling for proposed new development to gauge the impact of anticipated flooding on proposed projects.	✓	City staff, Developer of property in question	MT	CZM Coastal Resilience Grant Program
<i>WATERSIDE</i>				
Conduct additional hydrologic modeling to understand the impact of scenario-based planning on salt marsh, shoreline, sea walls, and dock structures.	✓	City staff, Developer of property in question	MT	CZM Coastal Resilience Grant Program
Strategy 7.3: Upgrade public infrastructure throughout the HWA to address current and future flooding scenarios.				
<i>LANDSIDE</i>				
Replace the Hall-Whittaker Bridge. The redesign should consider sea level rise.		City staff	LT	MassWorks, US DOT Transportation Improvement Program
Investigate methods to protect the Margin Street Stormwater Pump Station building from water intrusion, such as a water-tight door or deployable flood barrier.		City staff	MT	CZM Coastal Resilience Grant Program

GOALS/STRATEGIES/ACTIONS	IMPACTED BY CHAPTER 91?	RESPONSIBILITIES	PHASE	FUNDING AND DIRECT TECHNICAL ASSISTANCE SOURCES
Explore elevating the Margin Street Stormwater Pump Station outfall pipe.		City staff	LT	CZM Coastal Resilience Grant Program
Install a naturalized berm along the southern side of Elliott Street and a living shoreline along the marsh abutting the street.	✓	City staff, ConCom	ST	EEA Municipal Vulnerability Preparedness Program Action Grant, CZM Coastal Resilience Grant Program
Conduct a culvert assessment for the culvert and piping system on Elliott Street to support minimization of salt water intrusion and maximal stormwater drainage.	✓	City staff	ST	
Explore both natural and traditional engineered methods of mitigating the impact of flooding along Elliott Street		City staff	MT	
Install a deployable flood barrier in the vulnerable portion of Federal Street.		City staff	ST	
Undertake a study to determine the flood risk to Elliott Street based on current conditions and future projections for increased precipitation events and examine possible mitigation options.		City staff	LT	CZM Coastal Resilience Grant Program
Explore temporary deployable flood barriers, such as AquaFence or similar, at the end of Water Street to prevent storm surge		City staff	ST	
<i>WATERSIDE</i>				
Evaluate solid bulkheads, seawalls, pile systems and timber structures for their ability to withstand major wave exposure and projected wave loading.	✓	City staff	MT	EEA Dam and Seawall Removal or Repair Program, CZM Coastal Resilience Grant Program
Design deck systems for fixed open pile supported structures with enough freeboard above peak crests or incorporate systems with wave pressure release.	✓	City staff	LT	CZM Coastal Resilience Grant Program
Evaluate installation of tidal control measures below the superstructure of the Hall-Whittaker Bridge. Consider an environmental impact study at the same time.	✓	City staff	MT	CZM Coastal Resilience Grant Program

GOALS/STRATEGIES/ACTIONS	IMPACTED BY CHAPTER 91?	RESPONSIBILITIES	PHASE	FUNDING AND DIRECT TECHNICAL ASSISTANCE SOURCES
Consider requiring a perimeter wave attenuation system at recreational marinas	✓	City staff, HMA, ConCom, Private	LT	
Ensure that commercial boat marinas have commercial grade float systems and moorings to withstand year-round activity.	✓	City staff, HMA, ConCom, Private	MT	

