Proposed
Chelsea Creek Municipal Harbor Plan and Designated Port Area Master Plan

December 2020

City of Chelsea, Massachusetts

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- Shuvam Bhaumik, City of Chelsea Planning Board
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- Robert Linch, City of Chelsea Conservation Commission
- John DePriest, City of Chelsea Planning & Development Department
- Fidel Maltez, City of Chelsea Public Works Department
- Roseann Bongiovani, GreenRoots
- Hugo Perdomo, Chelsea resident
- Alexandra Christmas, Chelsea resident
- Stephanie Alvarado, Chelsea resident, College student
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Executive Summary

Exploring the banks of Chelsea Creek today, one might not be aware of the area's rich history as an agricultural resource for Native Americans and European settlers, the site of the first naval engagement of the Revolutionary War, or the location of thriving ship-building businesses. Nevertheless, the oil tanks and parking lots that now dominate the Chelsea side of the Creek continue the area's legacy of contributing to the regional economy and culture.

For some, the proximity to deep-water shipping channels, Logan Airport, and the City of Boston makes Chelsea an ideal place to continue to develop industrial uses. For others, the current uses, poorly maintained drainage, sidewalks, crossings, and waterfront paths, limited public space, and legacy contamination are barriers to public access and enjoyment of the Creek.

Recognizing the challenges and opportunities along the Creek, the City of Chelsea and the Commonwealth initiated the development of a Municipal Harbor Plan and Designated Port Area (DPA) Master Plan (see Appendix J for the Notice to Proceed). Building on previous public visioning processes including the 2016 initiative facilitated by the Metropolitan Area Planning Council (MAPC), and several meetings with landowners, city and state officials, residents, businesses, and other stakeholders, this plan is the culmination of years of research and public engagement regarding the uses of, access to, and opportunities along Chelsea Creek.

This plan encompasses only the Chelsea portion of the Chelsea Creek Designated Port Area—a state-level designation intended to protect shorelines for water-dependent industrial uses—as well as a small number of parcels recently removed from the DPA. It also considers the impact upon the DPA of adjacent upland parcels that contribute to the industrial character of the study area. A Municipal Harbor Plan is not an opportunity for the community to envision a future waterfront without industrial uses. Rather, it is a pragmatic plan to build upon existing conditions; leverage prior state, federal, and private investments in the port; and maximize public benefits within the existing regulatory framework.

Part of the value of this plan is that it documents existing conditions on topics including:

- public access,
- land use,
- environmental conditions,
- natural resources,
- dredging,
- transportation,
- the state of shore-side infrastructure,
- regulatory conditions,
- predicted impacts of anthropogenic climate change, and
- economic opportunities.

As such, as the plan is implemented, this document will serve as a benchmark for measuring progress and impacts.

The process of preparing this long-term, comprehensive, municipally-driven plan involved the participation and cooperation of residents, businesses, property owners, and city, state, regional, and federal government officials. This multi-stakeholder engagement process resulted in a municipal harbor plan that balances the multiple objectives of public access, economic development, job growth, improved quality of life, climate change resilience, and environmental protection for the waterfront through a series of strategies intended to advance the following policies covering eight key topics:

- **Public Access*:*** Create and maintain robust physical and visual public access that promotes recreation, relaxation, engagement with the waterfront, and enhances economic development.
- **Public Programming:** Develop, support, and maintain public programming that creates economic and cultural opportunities for the community and expands the locations where this programming can occur along the waterfront.
- **Economic Development:** Encourage uses in the harbor planning area that will create living-wage, local jobs, support the local economy, and contribute to regional growth.
- **City Zoning:** Ensure that the city's land use regulations effectively promote the policies of this plan and align with the relevant policies of MGL Chapter 91, the Public Waterfront Act.
- **Transportation:** Increase opportunities for users of all modes and all abilities for improved transportation to, from, and through the Chelsea Creek waterfront while balancing the legitimate needs of both maritime and land-based users.
- **Infrastructure Improvements:** Ensure that waterfront infrastructure is safe and adequate to accommodate existing and anticipated uses, and ensure that infrastructure improvements address predicted sea-level rise and storm-surge scenarios and eliminate inundation pathways, based upon the best available science.
- **Climate Change:** Minimize economic, social, and environmental impacts of anthropogenic climate-change-related flooding and encourage site and infrastructure improvements that mitigate and adapt to projected flooding and sea-level rise.
- **Pollution:** Encourage waterfront uses in a manner consistent with all state and federal environmental regulations, promote the remediation of contaminated sites, and expand progress in realizing the promise of the Clean Water Act of swimmable and fishable waters in Chelsea Creek and its headwaters.

As a state-approved Municipal Harbor Plan and DPA Master Plan, this document is not only a guide for decision making by the city, it also creates policy for state agency actions—permitting, planning, and

programmatic—in the planning area. In this way, the plan offers several benefits to the city, its residents, businesses, existing and potential land-owners, and others. These benefits include:

- *Improving predictability in decision making* by modifying certain state Chapter 91 standards to meet local planning objectives. Specifically, Chelsea's plan provides for needed flexibility in locating and developing commercial and supporting industrial uses in the Designated Port Area, mitigating flood inundation pathways, and improving public access.
- *Helping to realize economic benefits* by creating clear guidelines on land use standards, policies, and trends which may lead to increased investments and job density along the waterfront.
- *Creating social benefits* by providing a framework for securing increased public access to the waterfront and funds to support public investments in waterfront improvements. The plan will allow for the placement of public access boardwalks over the watersheet where it will not impact maritime activity.

In order to implement this plan, the city will modify its zoning ordinances to explicitly allow for maritime industrial uses within the planning area and to protect the industrial character of the Marginal Street and Eastern Avenue corridors.

As a ten-year planning document, this Municipal Harbor Plan and Designated Port Area Master Plan will improve the ways in which the Creek and its waterfront serve the community, the local economy, and the commonwealth in the years to come.

Chapter 1: Purpose and Authority of the MHP and DPA Master Plan

The Chelsea Creek Municipal Harbor Plan and Designated Port Area Master Plan is a planning tool that sets policies and standards for guiding both public and private uses of the land and water in the planning area in a manner consistent with the community's vision and objectives. As such, the plan sets forth strategies to increase public access to Chelsea Creek, promote economic development and job creation for Chelsea residents, and promote water-dependent use consistent with 310 CMR 9.00, Waterways.

As a state-approved harbor plan and Designated Port Area master plan developed through a robust public process, this document creates policies to inform and guide the actions of state agencies relative to waterway and waterfront development.

This plan is intended to be effective for ten years unless otherwise amended.

The City of Chelsea prepared this Municipal Harbor Plan and Designated Port Area Master Plan pursuant to 301 CMR 23.00, Review and Approval of Municipal Harbor Plans. The City of Chelsea was issued a 'Notice to Proceed' with the development of this Municipal Harbor Plan and Designated Port Area Master Plan on 11 June 2018 (see Appendix J for the text of the Notice to Proceed from the Massachusetts Office of Coastal Zone Management).

On 8 June 2020, Massachusetts Coastal Zone Management granted a six (6) month extension to the submittal deadline for the Municipal Harbor Plan. The deadline was extended to 11 December 2020. On 2 December 2020, Massachusetts Coastal Zone Management granted a second six (6) month extension to the submittal deadline for the Municipal Harbor Plan. The deadline was extended to 11 June 2020. The extensions can be found in Appendix K.

Chapter 2: The Municipal Harbor Plan and DPA Master Plan Planning Area

In order to focus the scope of the Municipal Harbor Plan, the planning area was limited to parcels in the Chelsea Creek Designated Port Area prior to the 2016 boundary review. The planning area extends along Chelsea Creek from the McArdle Bridge to the Mill Creek crossing of the MBTA commuter rail at the Revere city line and also encompasses the land and water portions of the Chelsea Creek Designated Port Area[1] within the city's municipal boundary, as shown in Figure 1. The study area is bounded on the upland side by Pearl Street and the McArdle Bridge, Marginal Street, Eastern Avenue, and the MBTA railroad right-of-way and on the water side by the Chelsea/East Boston/Revere municipal boundary.

The harbor planning area for the Chelsea Municipal Harbor Plan captures diverse land uses with historical, economic, and cultural significance. Since its early days near the site of the first permanent settlement on Boston Harbor and as the site of the first naval engagement and second military battle of the American Revolutionary War, this area has welcomed waves of immigrants and been shaped by its proximity to the water for centuries. Like many industrial urban waterfronts throughout the country, however, the historical and cultural value of this stretch of coastline is difficult to appreciate given the lack of public access and attractions, the safety concerns of mixing industrial and recreational maritime traffic, and the high rates of sedimentation and water pollution. Nevertheless, the community and the city believe the waterfront can become a cultural and economic highlight for the city, its residents, and the region.

[1] The full description of the Chelsea Creek Designated Port Area is available at: https://www.mass.gov/files/documents/2016/08/ri/chelsea-creek-dpa-designation-decision-2016.pdf.

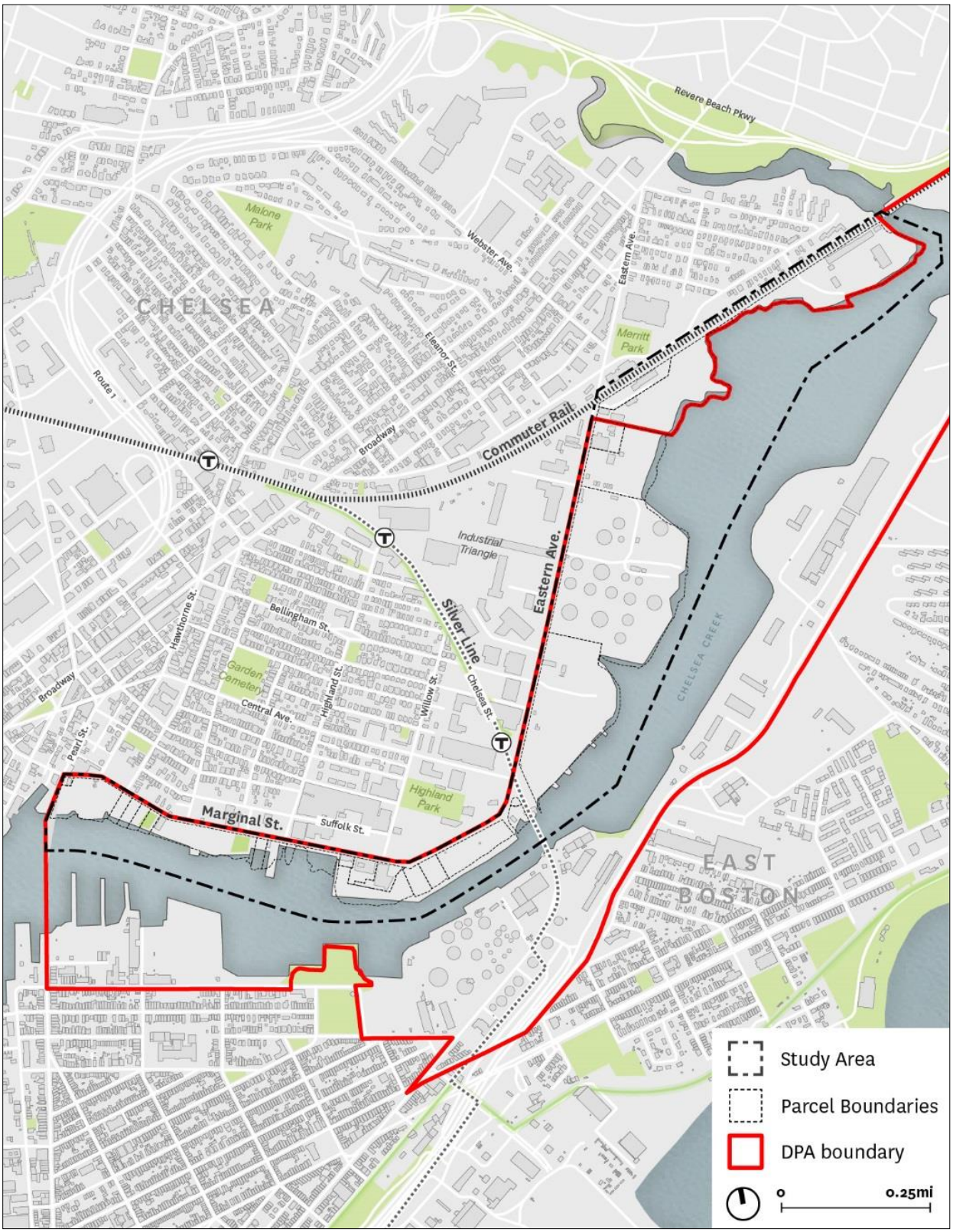

Figure 1: Planning Area Boundary

Chapter 3: Planning Process

The community vision for the Chelsea portion of Chelsea Creek builds upon the area's considerable history as a driver of the local and regional economy while simultaneously addressing the need to increase strategic locations for recreational and cultural uses by residents in nearby neighborhoods. To that end, the Municipal Harbor Plan and Designated Port Area Master Plan presents strategies and guidelines designed to (1) enhance public access, (2) increase the density of quality living-wage jobs for Chelsea residents, (3) preserve the industrial and commercial character of the waterfront and adjacent upland area, and (4) encourage water-dependent industrial uses and opportunities that contribute to the local tax base.

Public Access: More specifically, public access in urban environments such as Chelsea presents opportunities to foster a sense of community through shared space, to reconnect residents with their working waterfront, to develop an appreciation of current and historic land uses and natural resources, and to promote physical activity. Water and sediment pollution, industrial activity, isolation from upland communities, federal policies, and state enforcement of existing regulations and permit conditions have created challenges to securing safe public access within the planning area. This harbor plan builds upon the notion that carefully sited public access and related programming can create many benefits, including bringing positive attention to—and even celebration of— working waterfronts, while allowing waterfront industrial activities to occur safely and efficiently.

Living-Wage Jobs: This plan is developed with the vision that the waterfront can create and sustain local, quality, living-wage jobs and promote affordable living conditions for the existing population of Chelsea. The city is home to a large workforce that is well-positioned to support industrial and commercial operations. The need to preserve and expand the local job market on existing industrial land is critical as the greater Boston area economy continues to add new jobs and faces growing pressure to meet increasing residential demands. Maintaining the waterfront and the adjacent upland for industrial and commercial uses not only has the potential to increase local jobs, but will also to lessen the pressure for gentrification in adjacent neighborhoods.

Industrial Character: Linked to the vision of improving community perception of the working waterfront through increased public access, this Municipal Harbor Plan and DPA Master Plan also recognizes the special role that the Chelsea Creek DPA plays in the state and regional economy. With high-end residential developments, private boating facilities, and other exclusive uses competing for waterfront locations across the commonwealth, the city acknowledges that its waterfront is a unique resource that should be protected for water-dependent and other appropriate industrial uses. This plan does so in a manner that advances the needs and goals of the city and the broader community. While the resource is regional, the burdens of preserving this resource fall disproportionately on this environmental justice community. Areas upland of the DPA will be zoned to minimize conflicts between residential communities and heavy industrial uses. The community envisions a Chelsea Creek where the timing and frequency of disruptions from the lifting of the Chelsea Street and Meridian Street bridges is regulated and maritime vessel traffic coexists equitably with other forms of transportation, including reliable mass transit.

Regulation: This plan recognizes that both zoning and DPA regulations have each separately defined economic development opportunities along the waterfront, and that they are currently unaligned. The city intends to address this challenge by implementing strategies that preserve the potential for water-dependent industrial uses, while also realizing increased jobs and revenue from temporary and supporting uses capable of occupying DPA parcels. More specifically, the community seeks to encourage development that can enable water-dependent uses, especially those with minimal negative environmental impacts, high rates of job creation, and benefits to the local community.

3.1 Informing the Plan

The vision for this harbor plan and DPA master plan draws from many years of community engagement and planning conducted by the City of Chelsea, GreenRoots, the Metropolitan Area Planning Council (MAPC), and others (see Appendix E for a list of recent studies and planning documents). In particular, the planning area and vision are influenced by the outcome of the 2016 DPA Boundary review, which removed the Railroad South and Railroad North planning units from the DPA due to the finding that, "the land areas for these two planning units do not possess a substantially developed shoreline which creates a functional connection to a DPA waterway"[2]. The 2016 decision solidified the DPA boundary for a minimum of five years[3], removed three large properties from the DPA, and provided an opportunity for public discussion about the use of waterfront parcels and the adjacent waterway.

The planning process was also heavily influenced by the 2016 Chelsea Creek Waterfront Visioning effort conducted by MAPC and the City of Chelsea[4], which highlighted the community's interest in public access, water transportation, and economic development. The visioning effort engaged more than 130 community members and other stakeholders through two workshops designed to elicit input on balancing the interests of the community and the needs of the working waterfront.

In addition to the DPA boundary review and the visioning effort, community members attended three public meetings to learn more about this harbor plan and provide input, as described in Table 1. These meetings, which included both English and Spanish content, were announced through press releases, were posted on the city's website, and were listed on the project website hosted by MAPC. The project website also contained handouts and presentations from the meetings, as well as meeting summaries and contact information for those who could not attend the meetings or wanted to learn more.

[2] Executive Office of Energy and Environmental Affairs Office of Coastal Zone Management. 2016. Designation Decision for the Chelsea Creek Designated Port Area Chelsea, MA.

[3] 301 CMR 25.03(2)(a).

[4] Metropolitan Area Planning Council. 2016. A Vision for the Chelsea Waterfront.

Table 1: List of public meetings

Date	# of Participants	Format/Topics
June 11, 2018	32 participants signed in	Presentation included introduction to the harbor and DPA planning process, overview of Chapter 91 and DPA regulations, and opportunity for public comment
August 18, 2018	20 participants signed in	Outdoor drop-in workshop to present information on the process and gather input on community interests such as public access and economic development
November 20, 2018	25 participants signed in	Presentation included an update on the planning process and a review of proposed strategies

A core group of thirteen appointed community members and stakeholders also guided plan development as part of the Harbor Planning Group. The Harbor Planning Group represented a variety of interests including the environment, the local community, industry, and the city. Members met seven times (May 5, 2018; June 5, 2018; July 30, 2018; August 13, 2018; October 10, 2018; November 20, 2018; and February 19, 2019) throughout the planning process to advise on public participation and plan content and format. All meetings were open to the public. Members of the Harbor Planning Group included:

- Shuvam Bhaumik, City of Chelsea Planning Board
- Leo Robinson, Chelsea City Council
- Robert Linch, City of Chelsea Conservation Commission
- John DePriest, City of Chelsea Planning & Development Department
- Fidel Maltez, City of Chelsea Public Works Department
- Roseann Bongiovani, GreenRoots
- Hugo Perdomo, Chelsea resident
- Alexandra Christmas, Chelsea resident
- Stephanie Alvarado, Chelsea resident, College student
- Dan Adams, Landing Studio
- David Cox, Mass Bay Harbor Safety Committee
- Reed Passafaro, Massport
- Patrick Herron, Mystic River Watershed Association

Lastly, the planning team engaged the owners of key properties within the planning area to obtain information about current and future uses. A list of those interviews is contained in Appendix C.

Consistent with the community vision as described above, a summary of stakeholder feedback is presented in Figure 2.

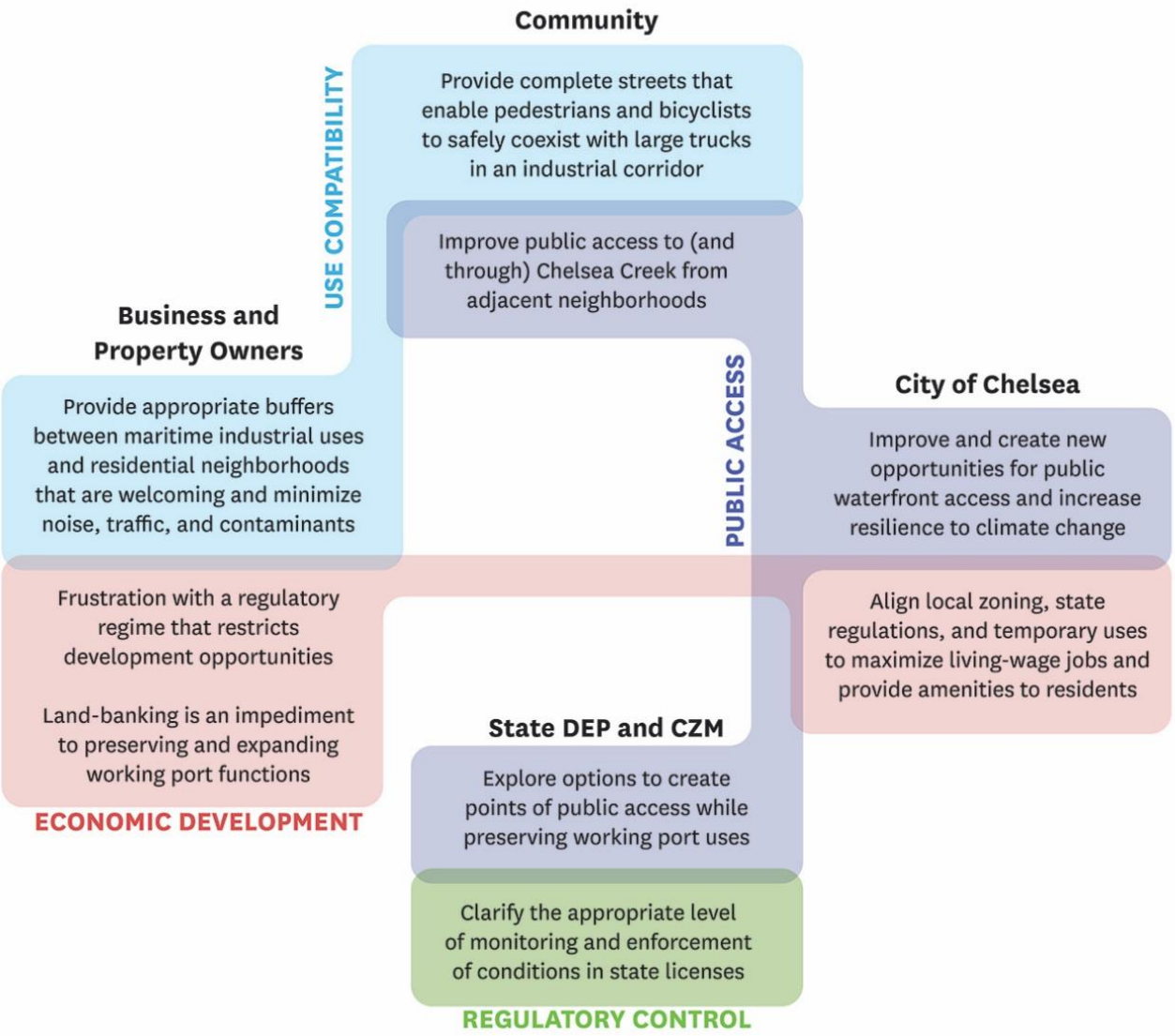

Figure 2: Key Themes from Stakeholders

3.2 Regulatory Framework

This Municipal Harbor Plan and Designated Port Area Master Plan was developed pursuant to 301 CMR 23. (See Figure 3 for a diagram of authorities and regulations pertinent to plan development, approval, and implementation.) The city submitted a Request for Notice to Proceed on March 30, 2018, and the Notice to Proceed was issued by the Massachusetts Office of Coastal Zone Management on June 11, 2018 and published in the Environmental Monitor on June 20, 2018 (see Appendix J). An extension to the submittal deadline until 11 December 2020 was granted on 8 June 2020. A second extension until 11 June 2020 was granted on 2 December 2020 (see Appendix K). Plan development occurred between June 2018 and June 2019. Chelsea City Council authorized submittal of the Plan on 7 December 2020. The Plan received State Approval from the Secretary of Energy and Environmental Affairs on XXXX.

Specific information about the federal, state, and municipal regulations pertaining to the issues identified in the document can be found in Section 4.7, below.

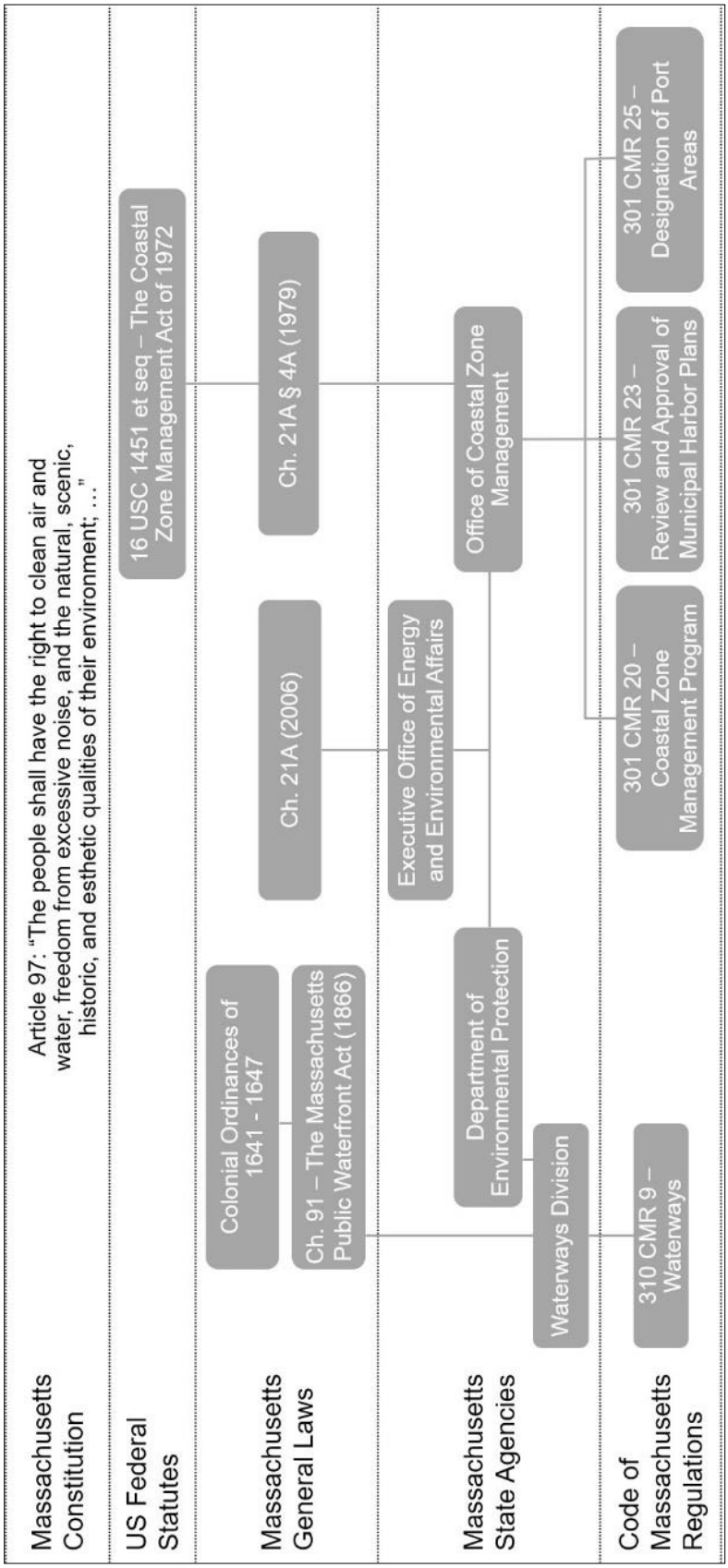

Figure 3: Regulatory Framework for Municipal Harbor Plans and DPA Master Plans

Chapter 4: Historic and Current Conditions

4.1 Public Access

Public access – which includes visual access as well as physical access on, to, and along Chelsea Creek -- has long been important to Chelsea and its residents. Access is limited, however, due to factors such as private ownership of most parcels, congestion from frequent bridge openings, existing infrastructure, and heavy commercial vessel and vehicle traffic. While historic activities such as swimming, fishing, and recreational boating in the Creek are impacted due to past and continuing industrial contamination of the water and the benthos, the community continues to advocate for enhanced public access and for swimmable, fishable waters.

Access to and along Chelsea Creek is also dictated by existing regulations and laws. The Public Trust Doctrine, which is a legal principle dating back two millennia to Roman law, states that "all rights in tidelands and the water itself are held by the state 'in trust' for the benefit of the public."[5] The primary tool in Massachusetts to protect and promote this public use is Massachusetts General Law Chapter 91. According to Chapter 91, the state is responsible for ensuring the public has the right to use and physically access tidelands (defined as "present and former submerged lands and tidal flats lying below the mean high water mark") and waterways.[6] More specifically, commonwealth tidelands, those which have been owned at some point by the public, must be used for a public purpose or be held in trust for the benefit of the public.[7] Additionally, the public's rights to enjoy the environment are protected by Article 97 of the Massachusetts Constitution: "The people shall have the right to clean air and water, freedom from excessive noise, and the natural, scenic, historic, and esthetic qualities of their environment; …". The residents of Chelsea aspire to a harbor that better embodies these rights.

The areas along Chelsea's waterfront which are filled tidelands and subject to Chapter 91 jurisdiction can be found in Figure 4.

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[5] Commonwealth of Massachusetts. Public Rights Along with the Shoreline. Online at: https://www.mass.gov/service-details/public-rights-along-the-shoreline

[6] M.G.L. Chapter 91.

[7] *Ibid.*

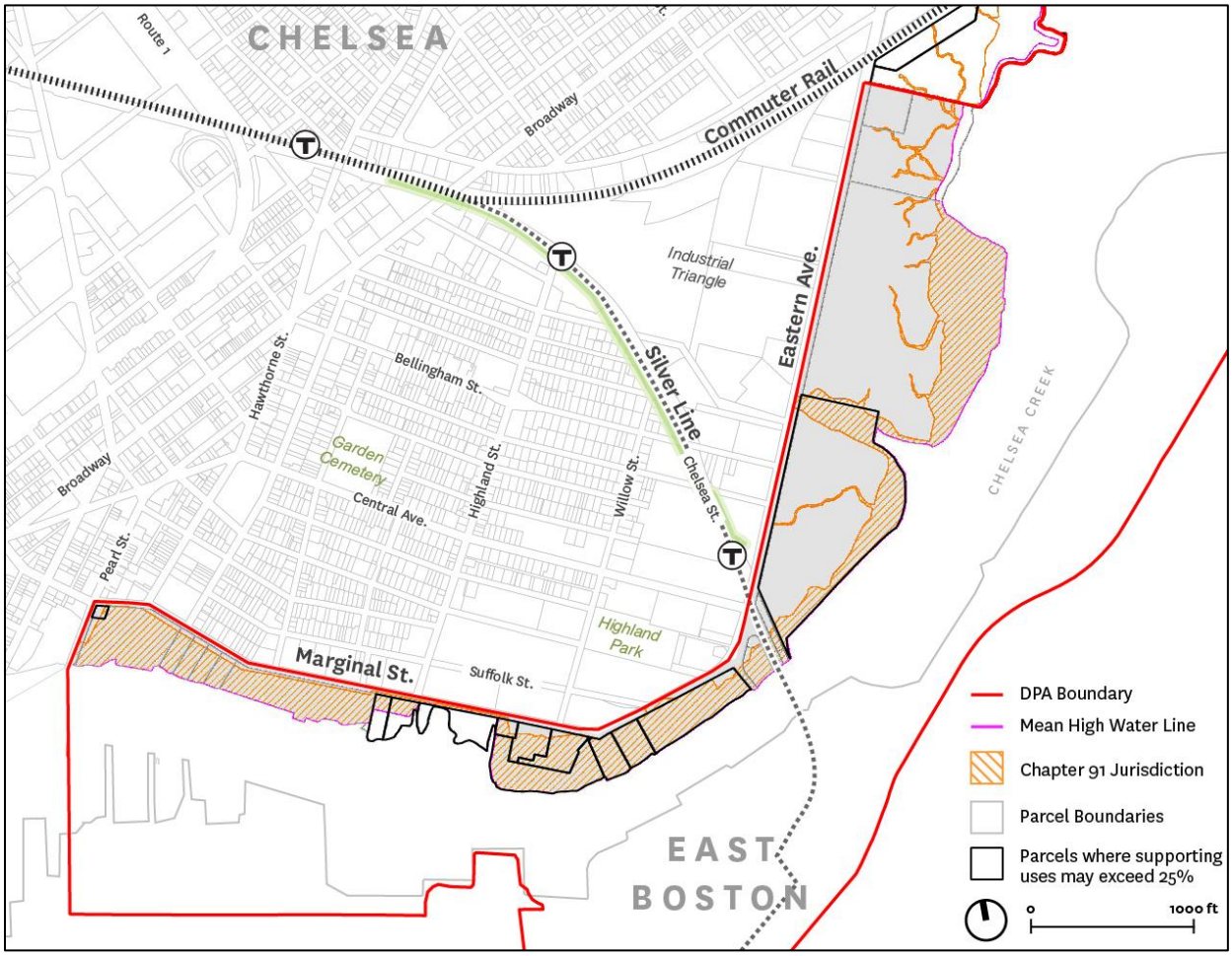

Figure 4: Land subject to Chapter 91 Jurisdiction in Chelsea, MA

In addition to the public tidelands, Massachusetts is one of the few states that has private tidelands. In the 1600s, the Massachusetts Bay Colony legislators transferred ownership of most tidelands to coastal landowners, to encourage the construction of private wharfs.[8] This created "private tidelands", which meant the property owner owned the land to the low water mark.[9] While this changed the ownership of these tidelands from public to private, it did not transfer ownership of the water above the tidelands. Further, the law reserved the public's right to use these private tidelands for fishing, fowling, and navigation, and courts have ruled over the years to also include many of their "natural derivatives".[10]

Filled tidelands, which include "former submerged lands and tidal flats which are no longer subject to tidal action due to the presence of fill"[11], generally belong to the upland property owner, and permission is needed for the public to access that private land above the high water mark.[12] The land areas in the

[8] Commonwealth of Massachusetts. Public Rights Along with the Shoreline. Online at: https://www.mass.gov/service-details/public-rights-along-the-shoreline

[9] *Ibid*.

[10] *Ibid*.

[11] *Ibid*.

[12] *Ibid*.

Chelsea Creek DPA consist mostly of filled tidelands that are privately owned. In DPAs such as Chelsea Creek, state regulations reserve all filled tidelands for water-dependent industrial use along the waterfront and discourage other potentially conflicting uses on tidelands subject to Chapter 91 jurisdiction. While some types of public access are prohibited in DPAs, the regulations do allow for "*compatible public access*".[13] The jurisdictional land along Chelsea Creek is primarily private tidelands with some commonwealth tidelands mostly around the Chelsea Street Bridge and at the northern end of the parcel at 111 Eastern Avenue, where the course of Bass Creek used to run.

In DPAs, lateral public access (*i.e.*, access along the waterfront) is generally not allowed as it is considered an impediment to water-dependent uses. An exception to this is lateral access along the perimeter of a parcel with a *temporary* Chapter 91 license, such as that presently located along the Enterprise Car Rental leased parcels at 245-257 Marginal Street in Chelsea. On the other hand, properly designed point access, such as a path that leads directly to the water's edge coming directly from a public right-of-way, is allowed and can also offer space conducive to public gatherings[14] and enable residents and visitors to view and enjoy the working waterfront and exercise their rights to fish.

Chelsea has a variety of Chapter 91 licenses for projects occurring on the coastal waterfront, some of which have specific public access requirements. Several Chapter 91 licenses were obtained for parcels in the planning area – though records of licenses are incomplete and information about the status of licenses (*e.g.,* if all license conditions have been met or if the license is still in effect) is not available. Though license information may be incomplete, brief summaries of the public access requirements contained in obtained licenses are listed below. More details on the public access requirements are located in Appendix F.

- **245-257 Marginal Street** (DEP License # 4981, issued 10/18/1995): The licensee shall repair and maintain walkway facilities open to the public along the perimeter of the site, and provide parking spaces available to users of the walkway.

- **1 Forbes Street** (DEP license # 13544, issued 7/22/2013): The licensee shall provide public access within the identified areas along the waterfront, including a walkway, public restrooms, signage, trash receptacles, and other amenities.

- **111 Eastern Ave.** (DEP License # 6862, issued 12/11/1997): The licensee shall construct and maintain a publicly accessible waterfront open space to be located at the southern end of the site.

There are several non-regulatory barriers that affect the community's ability to access and use the waterfront, such as the commuter rail tracks at the northern end of the study area, congested intersections, and a lack of safe street crossings, especially at or near the Charles and Willow Streets intersections with Marginal Street.[15]

Despite the existing limitations to public access, a number of stakeholders are working to improve public access to the waterfront. GreenRoots and the Mystic River Watershed Association, community-based organizations, are engaging community members to achieve environmental justice, climate resiliency,

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[13] 301 CMR 25.01(2).

[14] Metropolitan Area Planning Council. 2016. A Vision for the Chelsea Waterfront. Online at: ftp://ftp.mapc.org/Chelsea_Waterfront/Chelsea%20Waterfront%20Vision%202016%20Final%20Report.pdf.

[15] *Ibid.*

and waterfront access. As an example of one project to expand public access, GreenRoots secured riverfront walkways for public access along Mill Creek, which is a headwater to Chelsea Creek and outside of the DPA. GreenRoots also installed bilingual interpretive signage along these walkways.

PORT Park and the pier at 197-201 Marginal Street also provide waterfront access, although residents have noted that it is difficult and potentially unsafe to cross the street to visit these areas[16]. Both of these properties are privately owned and the gates at 197-201 Marginal Street are locked, preventing access except during scheduled activities. That said, open spaces such as these work to balance the district's industrial character and the public's need for physical and visual access.

In addition to access to and along the water, public access *on* the water is also challenging. The large ships that operate on the Creek are difficult to maneuver, and present safety concerns for recreational boaters. Further complicating matters, all recreational vessels on Chelsea Creek must adhere to a moving exclusion zone that extends 1,000 yards ahead of and behind and 100 yards on either side of any designated escorted vessel.[17] These are the same restrictions that apply to all recreational vessels throughout Boston Harbor and Chelsea Creek remains a public waterway.

Fishing in Chelsea Creek is also limited due to water quality issues. In July of 2018, the Massachusetts Department of Public Health (DPH) issued a fish advisory for the Lower Mystic River area in Boston, Chelsea, Everett, Revere, and Somerville. The advisory noted which fish and shellfish are expected to contain contaminants such as polychlorinated biphenyls (PCBs) and arsenic and therefore should not be consumed by anyone, and which fish are considered safe to consume (*i.e.*, bluefish and striped bass, except by pregnant women and children).[18]

4.2 Land Use

The Chelsea waterfront—in its various forms—has continually supported the local community for centuries. The present day industrial activities along Chelsea Creek mask the area's rich agricultural past. The land in and around the Chelsea waterfront was first used by Native Americans who lived near the water during warmer months, where they hunted and harvested fish and shellfish. In the early 1600s, Europeans began to build permanent settlements in the vicinity of the planning area. Throughout the Colonial Period and through the years following the American Revolution, the area was largely farm and pasture land. A tide mill was built near the head of Chelsea Creek in 1721[19] and the

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[16] Hoghaud, B., et al. Promoting Public Uses on the Chelsea Waterfront. Online at: https://web.wpi.edu/Pubs/E-project/Available/E-project-101316-114938/unrestricted/ChelseaWaterfrontUse.pdf.

[17] 33 C.F.R. §165.114 Safety and Security Zones: Escorted Vessels-Boston Harbor, Massachusetts.

[18] Massachusetts Department of Public Health. Department of Public Health issues fish advisory for the Lower Mystic River area in Boston, Chelsea, Everett, Revere, and Somerville. Online at: https://www.mass.gov/news/department-of-public-health-issues-fish-advisory-for-the-lower-mystic-river-area-in-boston.

[19] Tide Mill Institute. https://www.tidemillinstitute.org/slades-spice-mill/. Quoting from: "Tide-Mills in New England." By Alfred Elden. In Old-Time New England, XXV, no. 4, April 1935.

tenant farmers in the area supplied milk and hay to Boston residents and supplied livestock, shellfish, and produce to outgoing vessels.[20]

During the Industrial Period, the Chelsea waterfront supported the growing shipbuilding industry, but shipbuilding was eventually displaced by freight, heavy industry, and warehousing of goods such as lumber and coal as the railroads developed. The industrial, manufacturing, and maritime uses of the waterfront persisted through World War II. With the development and expansion of Logan Airport following World War II, the waterfront also became the site of uses that supported airport operations.[21]

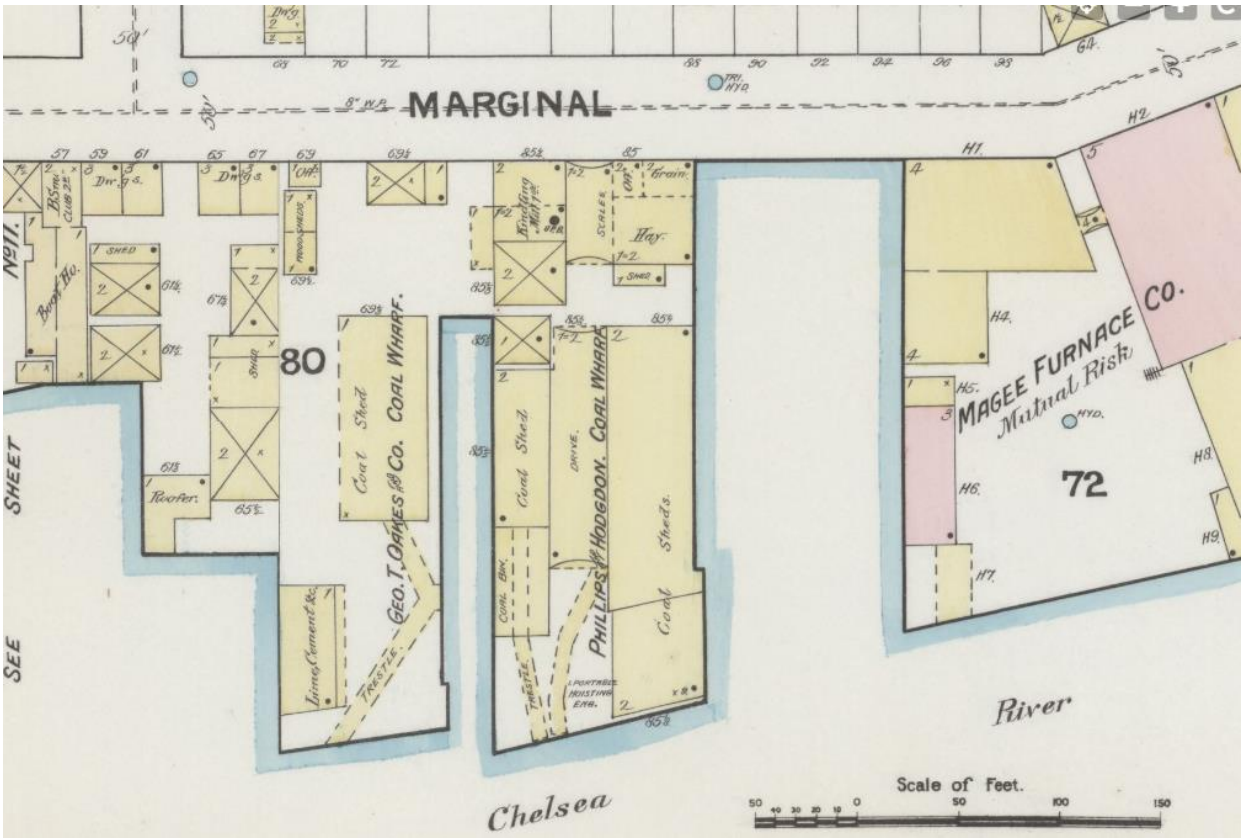

Image: Waterfront uses along Chelsea Creek, 1894[22]

[20] Mastone, V.T., Brown, C., Maio, C. 2011. Chelsea Creek – First Naval Engagement of the American Revolution: Chelsea, East Boston, Revere, and Winthrop Suffolk County Massachusetts. National Park Service American Battlefield Protection Program Grant Agreement No GA-2255-09-018.

[21] *Ibid.*

[22] Sanborn Fire Insurance Map from Chelsea, Suffolk County, Massachusetts. 1894. Sanborn map Company. Library of Congress Geography and Map Division Washington, D.C. 20540-4650 USA.

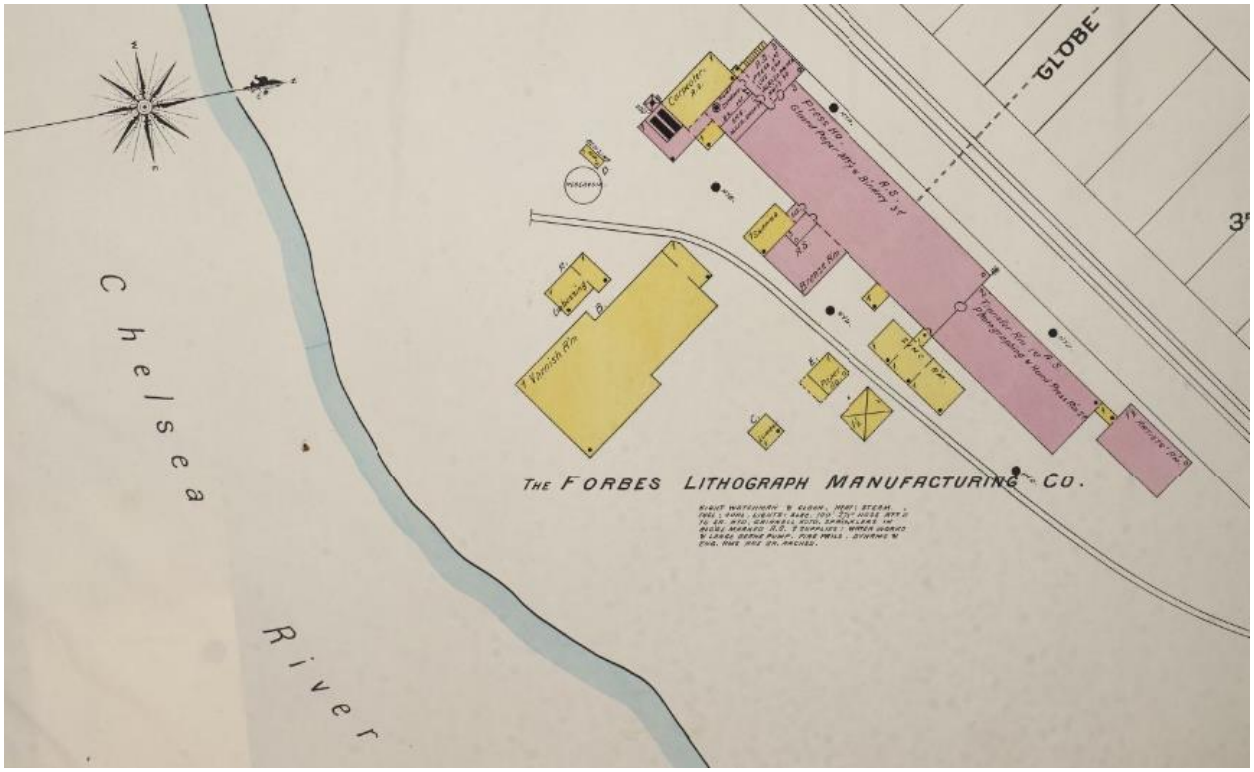

Image: The Forbes Lithograph Manufacturing Company, 1894[23]

Chelsea Creek and its waterfront continue to support industrial, manufacturing, and airport-related uses. Existing state regulations require water-dependent industrial uses throughout much of the planning area, as well as on the East Boston and Revere side of the Creek. As described in greater detail in the section on regulatory conditions, the Commonwealth of Massachusetts, as part of its implementation of the Coastal Zone Management Act, has established ten Designated Port Areas (DPAs) in Massachusetts (see Figure 5), including a significant portion of Chelsea's waterfront and flowed tidelands, which were designated as a DPA in 1978.

[23] *Ibid.*

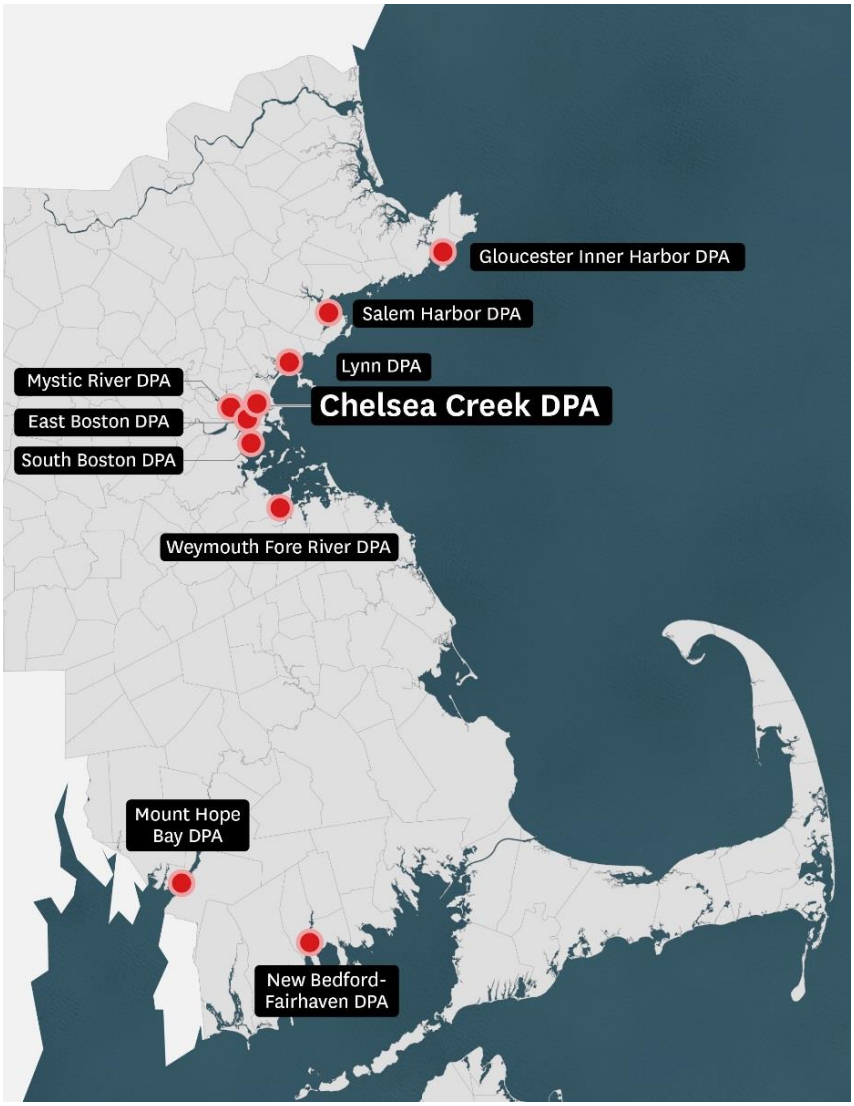

Figure 5: Designated Port Areas in Massachusetts

Within a DPA, state regulations allow for the operation of very specific working-port, industrial uses that require waterfront access and are essential to the economy of Boston, the region, and the state.[24]

The economics of Designated Port Areas are complicated. Limits on allowable uses within a DPA can present challenges for landowners in and around the DPA as well as for the communities and municipalities that host DPAs. For example, when demand for approved uses does not exist in a DPA, a parcel may lay vacant despite the fact that overall demand for waterfront property is high. However, this high demand for waterfront property for uses such as condominiums and marinas is the very reason that DPAs are needed, *i.e.,* to help maintain affordability for water-dependent industrial uses and protect public investments in deep-water navigation channels. To preserve the prior public investments in the deep-water port, uses that are incompatible with future or existing maritime industrial uses are proscribed. This prohibition does not consider the economic impact on the local community nor

[24] Metropolitan Area Planning Council. 2016. A Vision for the Chelsea Waterfront. Online at: ftp://ftp.mapc.org/Chelsea_Waterfront/Chelsea%20Waterfront%20Vision%202016%20Final%20Report.pdf.

compensate it in any way for the decreased valuation of the land in return for the economic benefit it is providing to the region.

Further, the industrial uses in a DPA also have impacts on the adjacent and surrounding areas—in a city such as Chelsea, the DPA may help keep housing prices affordable for current residents as housing prices soar in neighboring communities.

Water-dependent uses on the Creek play a significant regional role in transporting and storing petroleum, home heating oil, gasoline, and deicing salt supplies for New England. Furthermore, all jet fuel for Logan airport is transported via Chelsea Creek. The benefits of these activities accrue to the region, not to the host communities.

On the Chelsea-side of the Creek, examples of DPA-compliant uses include Eastern Mineral's transport and storage of road salt and Gulf Oil's transport and storage of fuel. The Creek is also critical to operations at the Global, Irving, Sunoco, and Coastal terminals on the East Boston and Revere side of the Creek. The three terminals north of the Chelsea Street Bridge alone supply 70-80% of the refined petroleum products in Massachusetts and must be supplied regularly—every two to three days in the winter, and every three to four days in the summer – in order to meet the Commonwealth's and the region's needs.[25]

Approximately 52% of the land area in the DPA within Chelsea is being occupied by water-dependent industrial uses. PORT Park, at the eastern end of 99 Marginal Street is licensed along with the larger parcel and is considered a water-dependent industrial use and is not counted as open space.

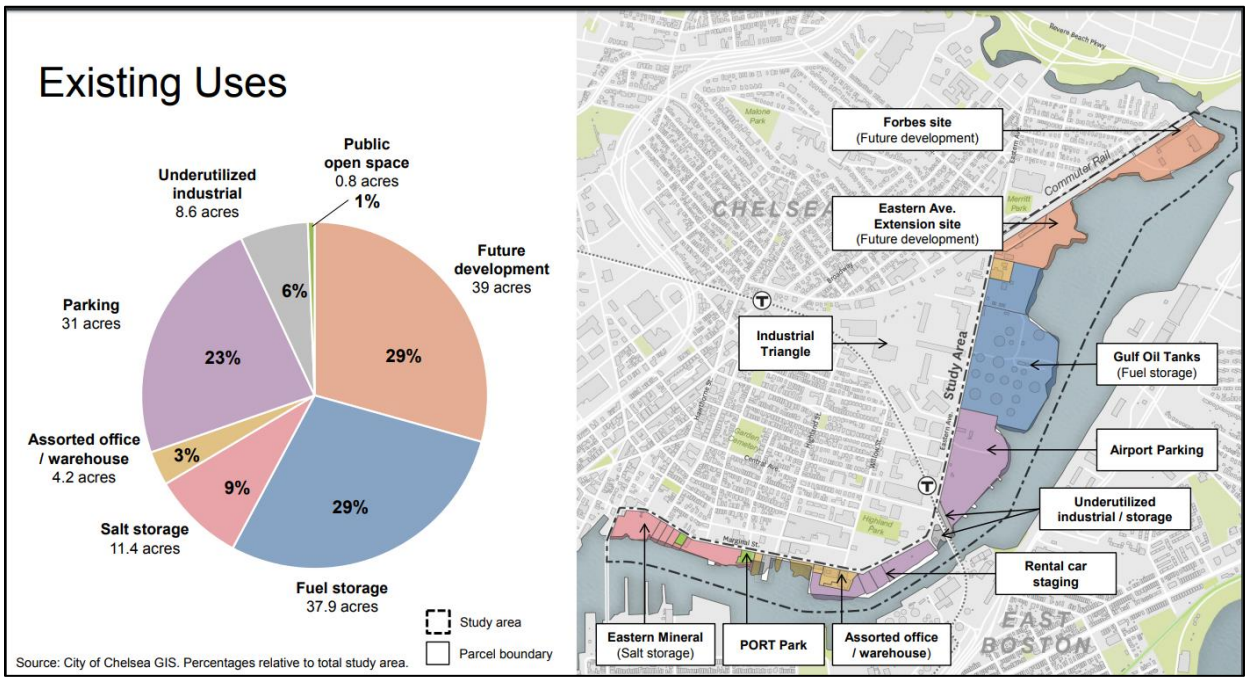

Figure 6: Existing Land Uses within the Study Area

[25] Written comments provided by the Terminal Group (Global Partners, LP; Irving Oil Terminals, Inc.; and Gulf Oil, LP). February 2019.

Surface parking associated with Enterprise Car Rental and InterPark PreFlight Airport Parking are not water-dependent industrial uses, but operate on temporary licenses that may be renewed repeatedly for up to ten years at a time. Two years before the expiration of a temporary license, the holder is required to submit and execute a marketing plan for water-dependent industrial uses. No parcel to date has been converted from a temporary use to a water-dependent industrial use.

Figures 6 and 7 displays the current uses of the Chelsea Creek waterfront.

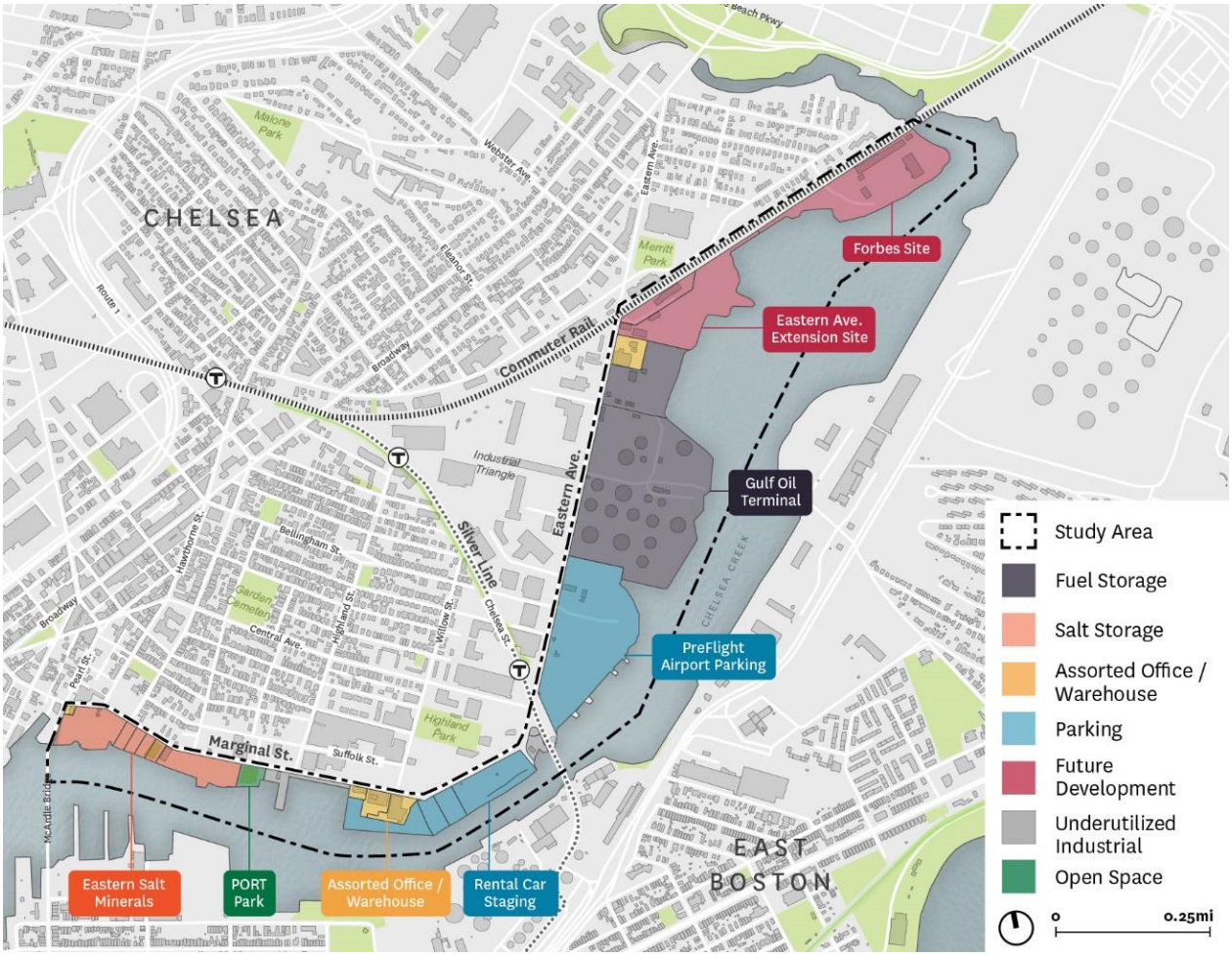

Figure 7: Existing uses in the Planning Area

The northern waterfront area of Chelsea Creek currently contains warehouse and light industrial uses, the MBTA right-of-way, and the Forbes site, which is underutilized and slated for mixed-use development. Just to the south of the Forbes property are the Eastern Avenue Extension sites, the former New England Trawler property, and the Gulf Oil tank farm, which is a marine-dependent fuel storage facility. Opportunities to improve access to the waterfront in front of the Gulf Oil tank farm are limited due to security concerns.

The land located to the south of the Gulf Oil tank farm is primarily comprised of a truck rental facility and long-term parking to support Boston Logan Airport travelers. Adjacent to the surface parking and just to the north of the Chelsea Street Bridge, is an abandoned railroad right-of-way, formally part of the Grand Junction branch, which is owned by the Massachusetts Department of Transportation. The City of Chelsea is seeking a long-term lease on the MassDOT parcel.

Just south of the Chelsea Street Bridge, there are two vacant lots owned by the Commonwealth and the remnants of a public right-of-way where an earlier Chelsea Street Bridge connected to the street grid. The City of Chelsea has submitted a home-rule petition to the legislature to acquire the fee in these three parcels.

The Enterprise rental car business is also located south of the Chelsea Street Bridge on Marginal Street. Enterprise leases three parcels and owns one parcel within the study area, in addition to several leased parcels upland of the study area. Chapter 91 license conditions on the three leased parcels currently require public parking and perimeter access for waterfront viewing.

The Publicly Organized Recreation Territory (PORT) Park, Eastern Minerals business operations, and salt piles are located to the southwest of the rental car facility parking lots. Eastern Minerals, which distributes road salt to communities along the east coast of the U.S., owns a salt dock on the waterfront to allow for ships and barges from overseas to offload salt for road de-icing. Large mounds of salt from these barges accumulate in piles along the waterfront. To allow for public waterfront access, in 2013, Eastern Minerals created the PORT Park community access point near the easternmost salt pile. The area contains a large, publically-accessible, open space for relaxation, events, and theatrical productions, as well as basketball courts and parking. Part of the area is flex-space, used for salt storage in the winter and public space in the summer.

Table 2 contains a more detailed list of parcels in the planning area, along with their primary use(s)). The terms from identified Chapter 91 licenses can be found in Appendix D.

Table 2: Current Land Uses

Address	Primary Use(s)	Classification
1 Forbes Street	Vacant. Anticipated mixed-use development (Outside of DPA)	Future development
305 Eastern Avenue	Glyptal Industrial Paint (Outside of DPA)	Future development
295 Eastern Avenue	Partially vacant. Potential industrial site (Outside of DPA), Atlas Glen-More	Future development
291 Eastern Avenue	Vacant – Former New England Trawler	Assorted office/warehouse
283 Eastern Avenue	Gulf Oil truck depot	Fuel storage
123 Eastern Avenue	Gulf Oil fuel storage	Fuel storage
111 Eastern Avenue	InterPark parking. Potential mixed-use redevelopment	Parking
35 Eastern Avenue	Former CSX parcel / Rail ROW –Mass DOT	Future open space
701 Chelsea Street	City of Boston (Bridge operations)	Transportation
29 Eastern Avenue	State-owned parcel (Vacant)	Future open space
15 Eastern Avenue	State-owned parcel (Vacant)	Future open space
0 Eastern Avenue	City-owned abandoned right-of-way	Future open space
257 Marginal Street	Leased Enterprise rental car staging	Parking
249 Marginal Street	Leased Enterprise rental car staging	Parking
245 Marginal Street	Leased Enterprise rental car staging	Parking
239 Marginal Street	Owned Enterprise parking lot	Parking

235 Marginal Street	Car rental (previously Enterprise repair shop)	Assorted office/warehouse
229 Marginal Street	Harbor Foods	Assorted office/warehouse
227 Marginal Street	Office space	Assorted office/warehouse
215 Marginal Street	Abandoned pile field and floating docks	Underutilized industrial
201 Marginal Street	Pier and ramp to floating docks	Underutilized industrial
197 Marginal Street	Parking associated with Pier	Underutilized industrial
99 Marginal Street	Eastern Minerals salt storage/PORT Park	Salt storage
91 Marginal Street	Open space/easement (MWRA parcel)	Salt storage/open space
71 Marginal Street	Eastern Minerals salt storage	Salt storage
69 Marginal Street	Eastern Minerals salt storage	Salt storage
59 Marginal Street	Eastern Minerals salt storage	Salt storage
13 Marginal Street	Eastern Minerals salt storage	Salt storage
11 Marginal Street	Frank's Auto Shop	Assorted office/warehouse

Despite the activities associated with Gulf Oil and Eastern Minerals, the percent of maritime industrial use in the Chelsea Creek DPA is far lower than that of other Boston-Harbor-area DPAs, while the percent of land used for parking is higher than in other DPAs, as shown in Figure 8.

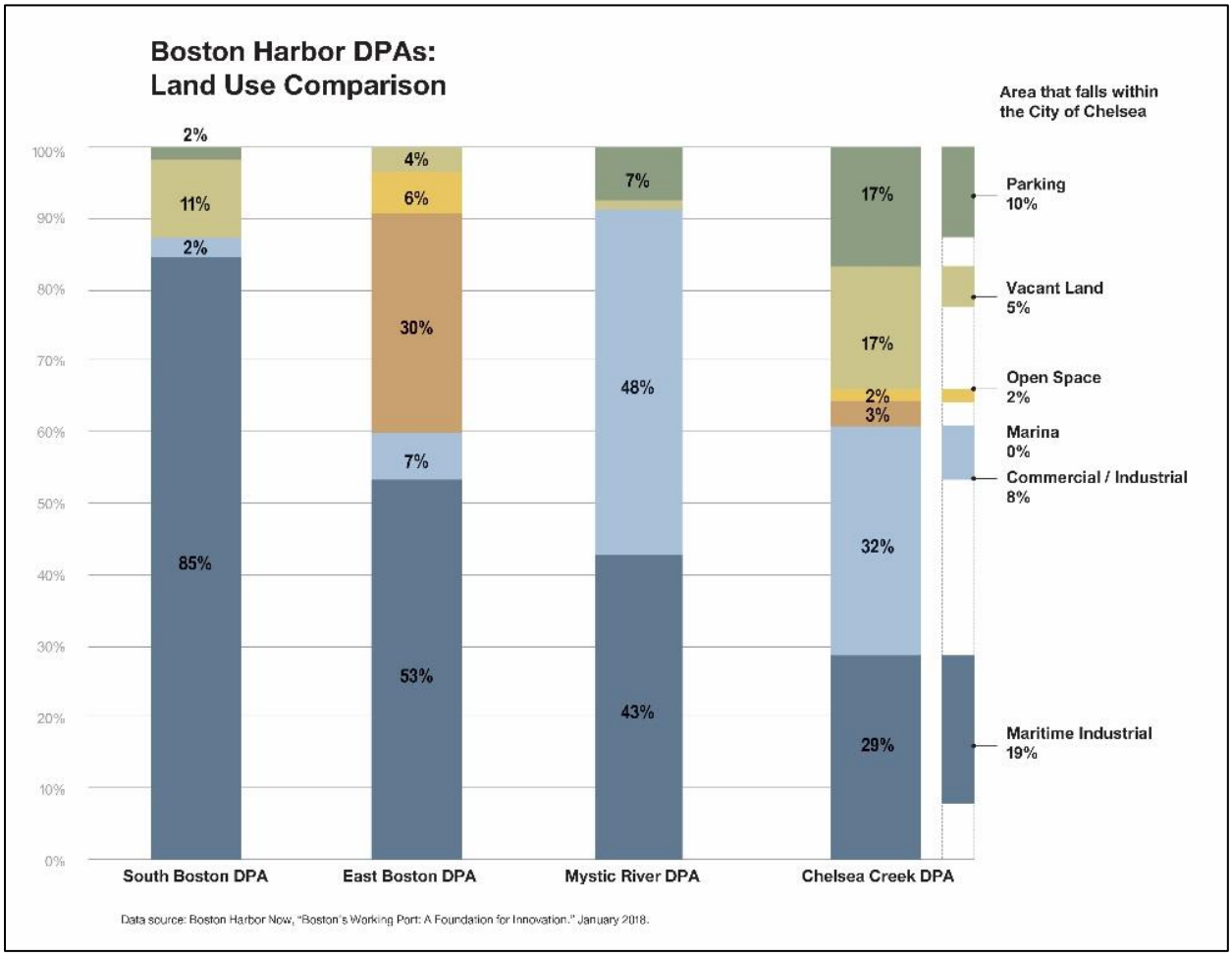

Figure 8: Land Use Comparisons in Boston Harbor Designated Port Areas

4.3 Environmental Conditions/Natural Resources

Chelsea, which used to have extensive salt marshes and other natural resources, has been identified as the third most environmentally-burdened city in Massachusetts[26]. Pollution stems from historic as well as present-day industrial uses that have contributed to the contamination of both the water, the benthos, and the soil[27]. One active contained aquatic disposal (CAD) cell is located in Chelsea Creek. Contaminated dredging spoils continue to be deposited in it. Five additional CAD cells have been permitted within the Chelsea Creek DPA and two additional ones west of the McArdle Bridge at the mouth of the creek. (see Figure 14, below) Chelsea Creek also continues to be burdened by multiple

[26] Charles River Watershed Association, Mystic River Watershed Association, and Chelsea Collaborative. 2013. Urban Green Infrastructure in Mystic River Communities, Subwatershed Plan for Broadway, Chelsea, MA. Online at: https://static1.squarespace.com/static/563d6078e4b0396c216603c8/t/563e151ee4b0f5552f678830/1375112525085/ChelseaSubwatershedPlan2013_Final.pdf.

[27] Dooling, Shannon. 2017. Hit First and Worst: Region's Communities of Color Brace for Climate Change Impacts. WBUR. Online at: http://www.wbur.org/news/2017/07/26/environmental-justice-boston-chelsea.

annual releases of contaminants in exceedance of Clean Water Act NPDES permits. Between 2013 and 2017, there were 66 NPDES violations from the oil facilities along Chelsea Creek[28].

Specifically, Chelsea's industrial activity has resulted in oil, paints, dyes, hydrocarbons, and other hazardous material contamination. Massachusetts General Law, Chapter 21E, also known as the Massachusetts Oil and Hazardous Material Release Prevention Act, is a statute which addresses issues related to the identification and cleanup of property contaminated by releases of oil and/or hazardous material to the environment[29]. Each identified site is assigned a unique Release Tracking Number (RTN).

Sites are categorized based upon whether the solution is permanent, temporary, or ongoing and whether restrictions on the use of the land are required. Most of the parcels in and adjacent to the study area have one or more RTNs associated with them. A list of the major RTNs that are not closed and are within and adjacent to the study area is contained in Table 3, below.

Approximately 48% of the land along the Chelsea waterfront and in the study area has Activity and Use Limitations (AULs), which signify the presence of known oil and/or hazardous material contamination remaining at that location after a cleanup under the Massachusetts Contingency Plan (310 CMR 40). These AULs are a result of the current and historic industrial land uses in Chelsea. Much of the fill along the Chelsea Creek contains coal ash, which, along with wood ash, is exempt from cleanup under the Massachusetts Contingency Plan.

The main purposes of an AUL are to 1) provide information on the presence and location of oil and/or hazardous material remaining at the disposal site and related conditions; 2) identify site uses and activities which maintain "No Significant Risk"; 3) identify site uses and activities which should not occur in the future; and 4) specify site owners' obligations to ensure AUL conditions will be met[30]. Figure 9 displays the locations and reference numbers for AULs within the Chelsea Creek study area.

At many sites, contamination has not been eliminated, but no AUL has been placed on the property.[31] Additionally, there are a number of sites where cleanups were not achieved and periodic evaluations are required. The property at 100 Marginal Street, the former Texaco repair garage, has been classified as being down gradient from the source of contamination. The identified contaminants were consistent with #6 fuel oil for which there is an underground storage tank across Shawmut Street. The two RTNs on this property are classified as having permanent solutions with no conditions, as the contamination is not the result of any activity on the site. The sump where the contamination was found and the test wells that found contamination are adjacent to residential units on Shawmut Street.[32]

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[28] Chemical in the Creek. November 8, 2018. GreenRoots, MIT, and Northeastern University. Funded by CRESSH.
[29] M.G.L. c. 21E. Massachusetts Oil and Hazardous Material Release Prevention and Response Act.
[30] Massachusetts Department of Environmental Protection. 2014. Guidance on Implementing Activity and Use Limitations. Online at: https://www.mass.gov/files/documents/2016/08/xy/14-300prdr.pdf.
[31] https://eeaonline.eea.state.ma.us/portal#!/search/wastesite
[32] Downgradient Property Status Submittal, RTN 3-0022199, October 13, 2003. Online at: https://eeaonline.eea.state.ma.us/EEA/fileviewer/Scanned.aspx?id=223010

Table 3: Active RTNs within and adjacent to the Study Area

RTN	Address	AUL	Status
Permanent Solutions with Conditions			
3-0000821	257-324 Marginal St	Yes	Contamination not reduced to background, implementation in progress
3-0001795	295 Eastern Ave	Yes	Contamination not reduced to background
3-0002298	340 Marginal St	Yes	Oil contamination not reduced to background, implementation in progress
3-0002645	99 Marginal St	No	Contamination not reduced to background
3-0003550	111 Eastern Ave	No	Conditions, but no land use restriction
3-0010478	284 Eastern Ave	No	Contamination not reduced to background
3-0014827	120 Eastern Ave	Yes	Contamination not reduced to background
3-0014846	91 Marginal St	No	Contamination not reduced to background
3-0015330	80 Eastern Ave	No	Contamination not reduced to background
3-0016572	281 Eastern Ave	No	Contamination not reduced to background
3-0019212	298 Eastern Ave	Yes	No significant risk due to AUL
3-0019484	281 Eastern Ave	No	Contamination not reduced to background
3-0022200	99 Marginal St	Yes	Contamination not reduced to background
3-0024230	281 Eastern Ave	No	Comprehensive site assessment
3-0025144	281 Eastern Ave	No	Contamination not reduced to background
3-0025655	281 Eastern Ave	No	Contamination not reduced to background
3-0025814	281 Eastern Ave	No	Contamination not reduced to background
3-0028308	130 Eastern Ave	No	Contamination not reduced to background
3-0032751	311 Eastern Ave	No	Conditions, but no land use restriction
Permanent Solutions with No Conditions			
3-0022199	100 Marginal St	No	Downgradient from source
3-0022385	100 Marginal St	No	Downgradient from source
Temporary Solution			
3-0000291	229 Marginal St	No	No substantial hazard, evaluate every 5 years
3-0001755	1 Forbes St	No	Permanent solution not currently feasible, periodic review
3-0002755	1 Forbes St	No	Permanent solution not currently feasible
3-0011673	257 Marginal St	No	No substantial hazard, evaluate every 5 years
3-0026296	260 Marginal St	No	No substantial hazard, evaluate every 5 years
3-0027122	281 Eastern Ave	No	No substantial hazard, evaluate every 5 years
3-0031365	240 Marginal St	No	No substantial hazard, cleanup options assessed

MassDEP maintains publicly accessible files on each of these RTNs.[33] AULs are also recorded at the Suffolk Registry of Deeds.

[33] https://eeaonline.eea.state.ma.us/portal#!/search/wastesite

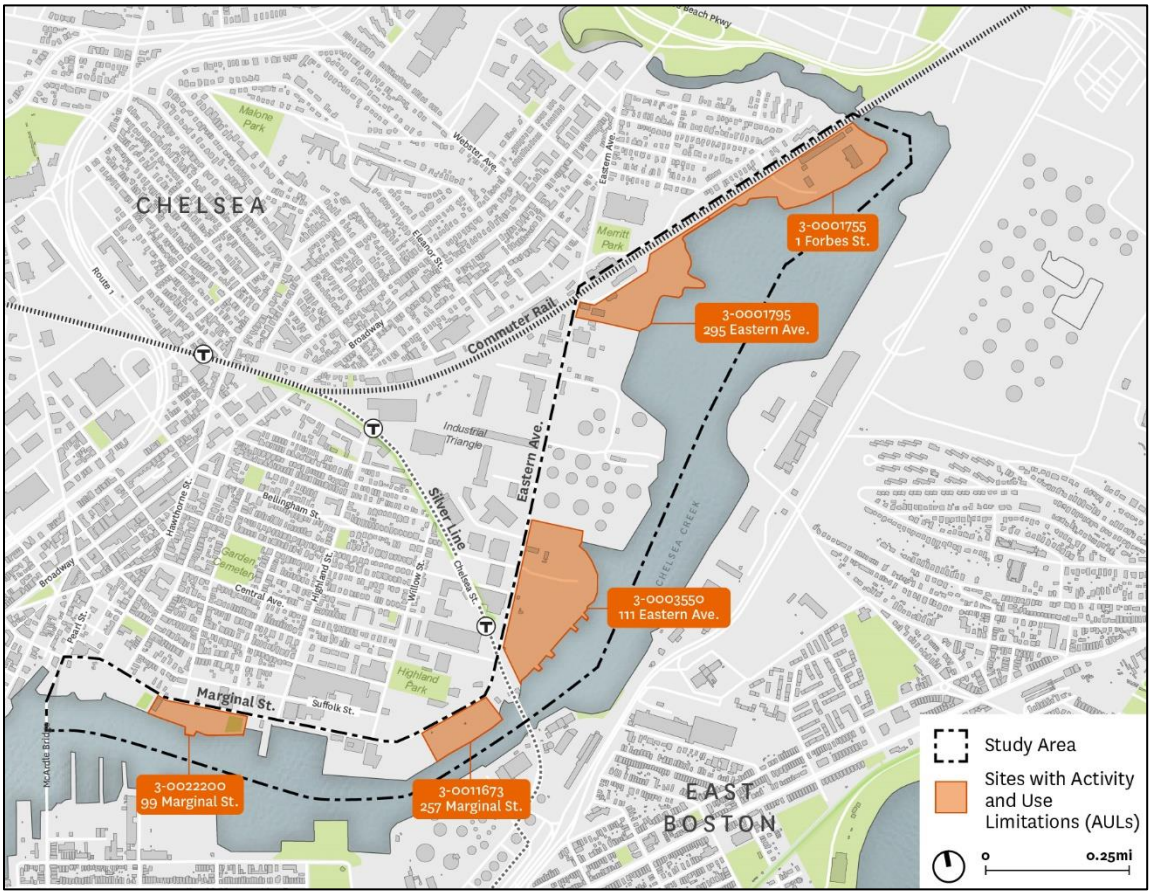

Figure 9: Sites with Activity and Use Limitations (AULs) in the study area.

Chelsea Creek also experiences water quality issues which are the result of runoff, combined sewer overflows, industrial activity, and other sources. The water quality in Chelsea Creek and its headwaters are monitored by the EPA and the Mystic River Watershed Association at two sites: CHR95S (Chelsea Creek at Condor Street Urban Wild in East Boston), and MIC004 (Mill Creek at Broadway in Revere). Specifically, samples at these sites are analyzed for bacteria, suspended solids, nutrients, conductivity, dissolved oxygen, water temperature, and water color and odor. The monitoring does not detect industrial chemical releases or chemicals in stormwater discharged from properties along the Creek.

In 2017, the Mystic River Watershed Report Card (which is based on how frequently the waterbody meets *bacteria* standards for swimming and boating) gave Mill Creek a grade of F, Chelsea Creek an A, and the salt water portion of the Mystic River an A- (Figure 10)[34]. Mill Creek, a small tidal stream that emerges from a wetland, receives a large amount of wastewater contamination from stormwater[35] and is the primary headwater to Chelsea Creek. The Chelsea Creek sampling site is closer to the mouth of the Creek and has more circulation and flushing, resulting in a better water quality score.

[34] Mystic River Watershed Association. 2017 Water Quality Report Card. Online at: https://mysticriver.org/epa-grade

[35] Mystic River Watershed Association. Personal Communication. November 2018.

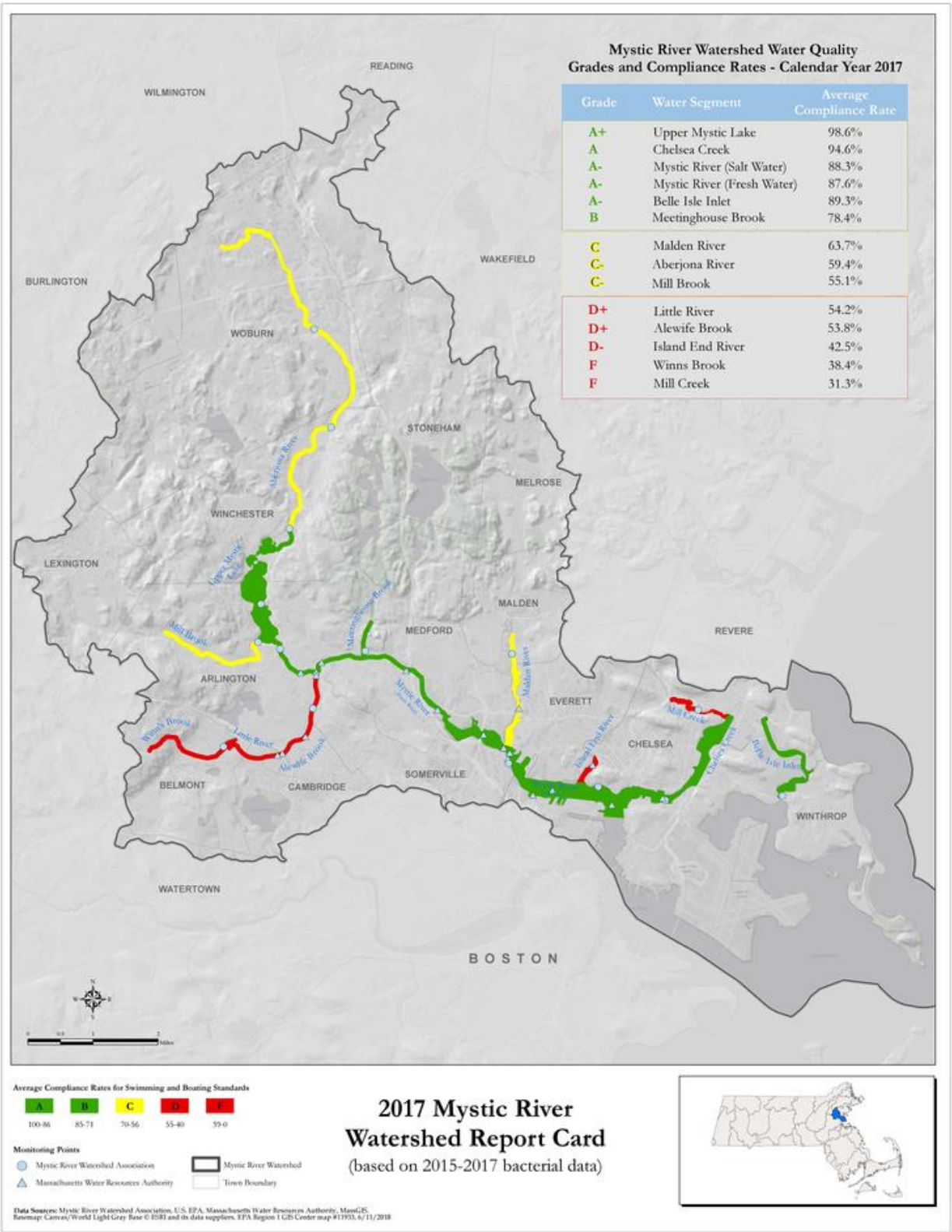

Figure 10: Grades from the 2017 Mystic River Report Card

Despite this high grade, Chelsea Creek still experiences water quality issues, many of which are the result of combined sewer overflows (CSOs). Combined sewers service approximately 70% of Chelsea. Under normal conditions, combined sewers transport waste to Deer Island Treatment Plant for secondary treatment and discharge into Massachusetts Bay.[36] During heavy rainstorms, the volume of liquids and waste can exceed the capacity of the pipes leasing to Deer Island, resulting in the discharge of untreated wastewater and debris into waterbodies through these overflows, creating water quality issues. Were the overflows not to activate, stormwater mixed with sewage would back up into homes, businesses, and streets.

The EPA has provided Chelsea with a permit (Permit number MA0101877) to discharge this overflow from the following CSOs:

- CHE 003 - Located on Winnisimmet Street, discharging to Chelsea Creek
- CHE 004 - Located on Pearl Street, discharging to Chelsea Creek
- CHE 008 - Located on Eastern Avenue, discharging to Chelsea Creek[37]

Discharge volumes are variable each year and are heavily associated with precipitation events and the locations of each CSO. For example, in 2015, CHE003 did not activate, CHE004 activated three times, releasing a total of 551,935 gallons, and CHE008 activated 13 times, releasing a total of 1,181,189 gallons.[38] In 2013, only CHE004 activated, though it activated six times, releasing a total of 256,500 gallons.[39]

In its 2019 Stormwater Management Plan, the City of Chelsea identified 7 outfalls discharging into Chelsea Creek. Identified impairments were: Debris/Floatables/Trash*, Ammonia (un-ionized), Fecal Coliform*, Other, Dissolved Oxygen, PCB in Fish Tissue, Petroleum Hydrocarbons, Sediment Screening Value (Exceedance), Taste and Odor, and Turbidity. Impairments with an asterisk have an approved Total Maximum Daily Load.[40]

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[36] City of Chelsea. 2018. Annual Combined Sewer Overflow Press Release & Report. Online at: https://www.chelseama.gov/public-works/news/annual-combined-sewer-overflow-press-release-report.

[37] *Ibid*.

[38] City of Chelsea. 2016. Combined Sewer Overflow Calendar Year 2015 Annual Report. Online at: https://www.chelseama.gov/sites/chelseama/files/pages/annual_report_2016.pdf.

[39] City of Chelsea. 2014. Combined Sewer Overflow Calendar Year 2013 Annual Report. Online at: https://www.chelseama.gov/sites/chelseama/files/uploads/chelsea_annual_cso_report_-_calendar_year_2013.pdf.

[40] Stormwater Master Plan, City of Chelsea, updated June 2019, p. 1-5. Online at: https://www.chelseama.gov/sites/chelseama/files/uploads/chelsea_swmp_final_-_to_city.pdf.

Table 4: Chelsea CSO Activations, 2015[41]

Chelsea, Massachusetts
CSO Activation Frequency & Volume

Date	CSO Activating	Activation Volume (gal)	Activation Duration (hrs)
3/28/2015	008	3,907	0.083
4/4/2015	008	3,251	0.083
4/21/2015	004	216,448	0.417
4/21/2015	008	117,557	0.583
6/6/2015	008	2,115	0.083
6/21/2015	004	21,377	0.583
6/21/2015	008	223,324	1.250
6/28/2015	008	58,053	0.833
7/10/2015	008	1,358	0.083
7/18/2015	008	129	0.083
8/4/2015	008	56,324	0.333
8/21/2015	008	10,555	0.083
9/11/2015	008	2,412	0.083
9/30/2015	004	314,110	1.000
9/30/2015	008	581,989	3.333
10/29/2015	008	120,214	0.500

Additionally, CSO discharge models suggests that two CSOs in East Boston discharged into the Creek and impacted the water quality, further contributing to the degradation of water quality in Chelsea Creek.

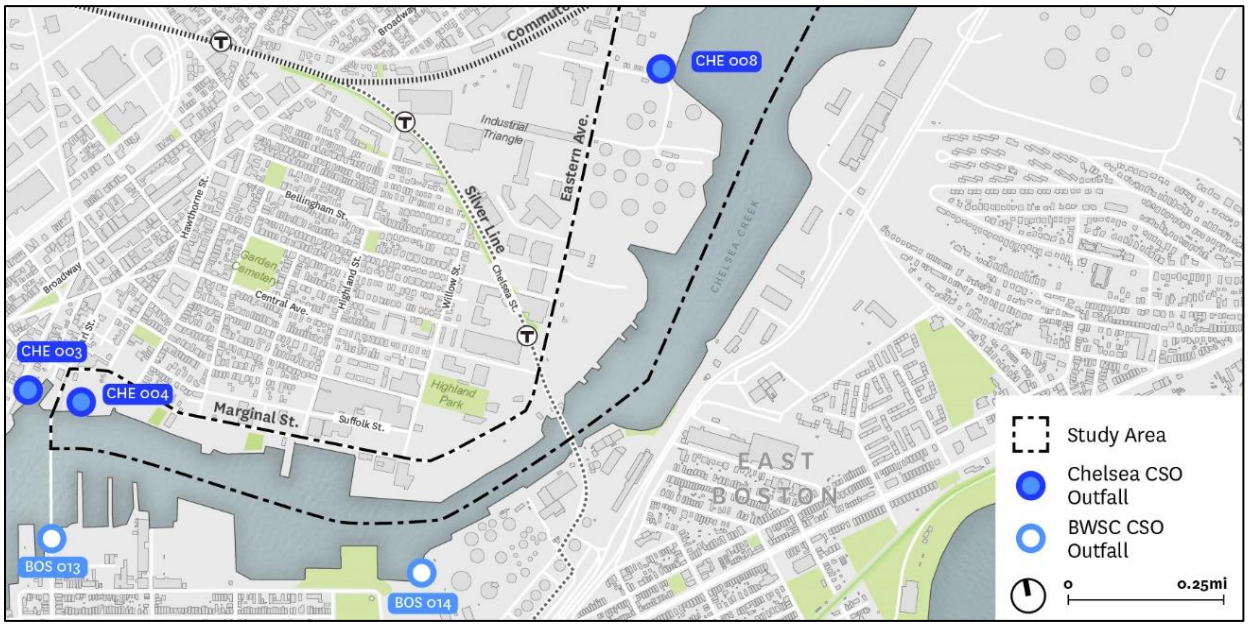

Figure 11: CSO outfalls which discharge into Chelsea Creek

Chelsea is currently working towards separating its combined storm-drains and sewers to reduce the amount of untreated sewage that is discharged from the CSOs during high volume precipitation events,

[41] City of Chelsea. 2016. Combined Sewer Overflow Calendar Year 2015 Annual Report. Online at: https://www.chelseama.gov/sites/chelseama/files/pages/annual_report_2016.pdf.

which will reduce activation frequency and volume, thereby improving water quality.[42] This combined-sewer separation will also decrease the volume of stormwater that does not need treatment that is currently being shipped to Deer Island and for which the city is paying to be treated. This will help decrease the total load placed upon the secondary treatment facility.

The city also has an overall impervious cover of 75% and very little green space. Because of this, Chelsea Creek receives stormwater inputs containing urban contaminants from runoff in Chelsea, East Boston, Revere, and Everett.[43] Stormwater discharges within Chelsea are regulated under Phase II of the NPDES MS4 permit by the EPA and the Chelsea Department of Public Works.

Additionally, plastic bottles, paper/wrapper material, and cigarette butts are commonly found in the waters and shores of the Creek.[44] This litter and trash is washed or blown into the Creek and becomes marine debris, which has been shown to impact water quality. While the direct impact of marine debris on Chelsea's waterways has not been tested, research has shown that harmful chemical compounds can leach from marine debris (primarily plastic), thereby impacting water quality.[45]

[42] City of Chelsea. 2018. Annual Combined Sewer Overflow Press Release & Report. Online at: https://www.chelseama.gov/public-works/news/annual-combined-sewer-overflow-press-release-report.

[43] Charles River Watershed Association, Mystic River Watershed Association, and Chelsea Collaborative. 2013. Urban Green Infrastructure in Mystic River Communities, Subwatershed Plan for Broadway, Chelsea, MA. Online at: https://static1.squarespace.com/static/563d6078e4b0396c216603c8/t/563e151ee4b0f5552f678830/1375112525085/ChelseaSubwatershedPlan2013_Final.pdf.

[44] *Ibid.*

[45] National Oceanic and Atmospheric Administration. 2016. 2016 NOAA Marine Debris Program Report, Habitat. Online at: https://marinedebris.noaa.gov/sites/default/files/publications-files/Marine_Debris_Impacts_on_Coastal_%26_Benthic_Habitats.pdf.

Image: Trash and debris near the derelict piling fields in Chelsea Creek at 215 Marginal Street

It should be noted that while Chelsea's industrial facilities provide regional benefits, these industries in turn expose local residents to a range of environmental pollutants.[46] Specifically, Chelsea residents have high rates of lead poisoning, cancer, asthma, and cardiovascular disease[47], likely in part as a result of poor environmental conditions. Additionally, Chelsea residents are classified as an environmental justice population, meaning that they are most at risk of being unaware of or unable to participate in environmental decision-making or to gain access to state environmental resources.[48] These residents are also often considered a more vulnerable population, as Chelsea has a large amount of poverty, immigrants, and racial diversity.

In March of 2014, the Environmental Protection Agency (EPA) conducted an Environmental Justice Analysis focused on communities that may be affected by the permitting of the seven Chelsea Creek bulk petroleum storage facilities.[49] This analysis identified and addressed, as appropriate, any disproportionately high and adverse environmental or human health effects caused by EPA issuing these permits on minority and low-income populations.[50] The concerns received during this analysis were considered and, where allowable by law, addressed through terms and conditions in the draft NPDES permits.[51] The results of the analysis can be found here: https://www3.epa.gov/region1/npdes/chelseacreekfuelterminals/pdfs/ChelseaBulkTerminalEJA.pdf.

4.4 Dredging

Chelsea Creek is a 1.8-mile long, highly engineered, tidal river lined with industrial uses and under-utilized land contaminated by past industrial uses. The Creek and the related water-dependent activities are an important piece of the regional economy. Chelsea Creek primarily serves commercial needs in Chelsea, East Boston, and Revere and has been experiencing an increase in vessel traffic over the past

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[46] Dooling, Shannon. 2017. Hit First and Worst: Region's Communities of Color Brace for Climate Change Impacts. WBUR. Online at: http://www.wbur.org/news/2017/07/26/environmental-justice-boston-chelsea.

[47] Bongiovanni, R. 2017. How We Are Transforming Contaminated Land into Natural Oasis through Community Engagement. Online at: https://www.nrpa.org/blog/how-we-are-transforming-contaminated-land-into-natural-oasis-through-community-engagement/.

[48] Environment Justice Policy of the Massachusetts Executive Office of Environmental Affairs.

[49] The seven fuel facilities and their NPDES numbers are: Chelsea Sandwich, LLC (MA0003280); Gulf Oil Limited Partnership (MA0001091); Global REVCO Terminal, LLC (MA0003298); Irving Oil Terminal (MA0001929); Global Petroleum Corp., Inc. (MA0003425); Global South Terminal, LLC (MA0000825) Sunoco Logistics East Boston Terminal (MA0004006).

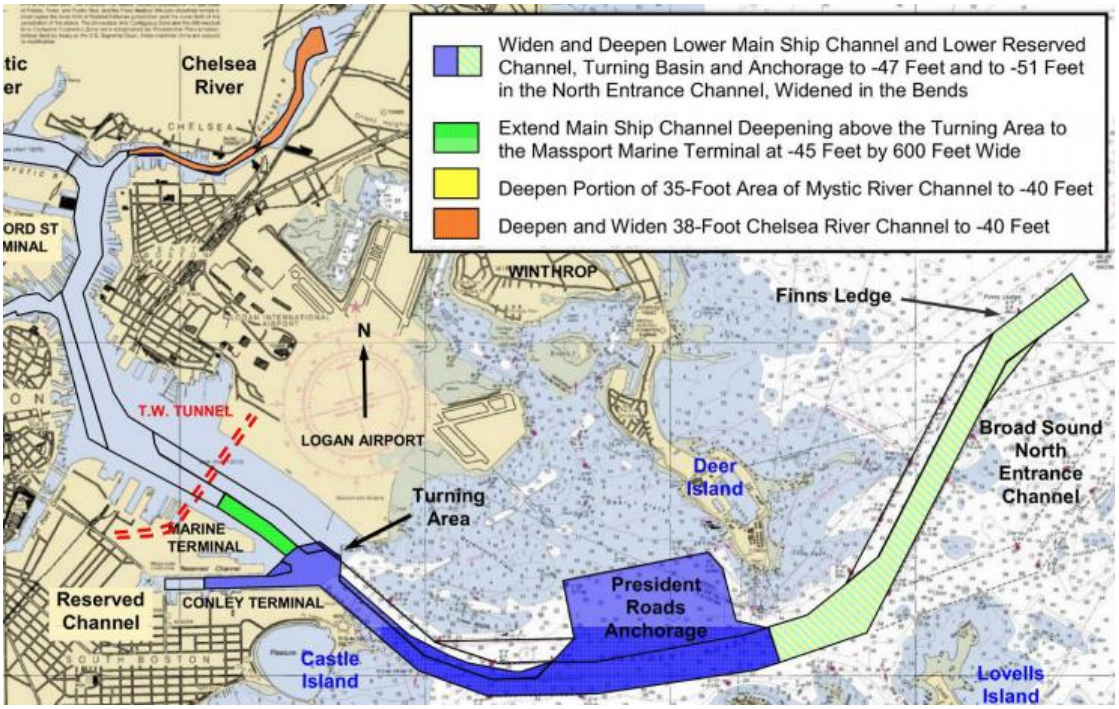
[50] Environmental Protection Agency. Environmental Justice Analysis in Support of the National Pollutant Discharge Elimination System (NPDES) Permits for the Chelsea River Bulk Petroleum Storage Facilities. Online at: https://www3.epa.gov/region1/npdes/chelseacreekfuelterminals/pdfs/ChelseaBulkTerminalEJA.pdf.

[51] *Ibid*.

several years.[52] A recent study estimated that 46% of the traffic in Boston Harbor also utilized Chelsea Creek.[53]

The United States Army Corps of Engineers (USACE) last dredged Chelsea Creek in 2012, with the dredged area extending from the General Andrew P. McArdle Bridge to the end of Chelsea Creek. The channel is currently 38 feet deep and approximately 225-250 feet wide from the McArdle Bridge to the Chelsea Street Bridge.[54] The channel width at the Chelsea Street Bridge was increased to 175 feet with the opening of the new lift bridge in 2012. From the Chelsea Street Bridge to a point near the creek's end, the channel is 250-430 feet wide.[55] The turning basin at the end of the channel is approximately 800 feet wide and 1,000 feet long.[56] Sedimentation has reduced the depth in parts of the channel and at active berths, requiring additional maintenance dredging to be planned in order to maintain the 38-foot deep channel.

In the spring of 2018, the USACE began the Boston Harbor Improvement Project (Figure 12), which is a $123 million dredging project in Boston Harbor that will deepen the channels to accommodate large container ships. This project proposed work in the Chelsea River Channel, but the work has not been scheduled or funded. Proposals included the deepening of the existing 38-foot channel to -40 feet MLLW and widening the Chelsea River Channel in two turns between the bridges along the East Boston shore (Figure 13).



[52] United States Army Corps of Engineers. Boston Harbor Navigation Project. Online at: http://www.nae.usace.army.mil/Missions/Civil-Works/Navigation/Massachusetts/Boston-Harbor/.

[53] *Ibid*.

[54] *Ibid*.

[55] *Ibid*.

[56] *Ibid*.

Figure 12: Boston Harbor Navigation Improvement Project[57]

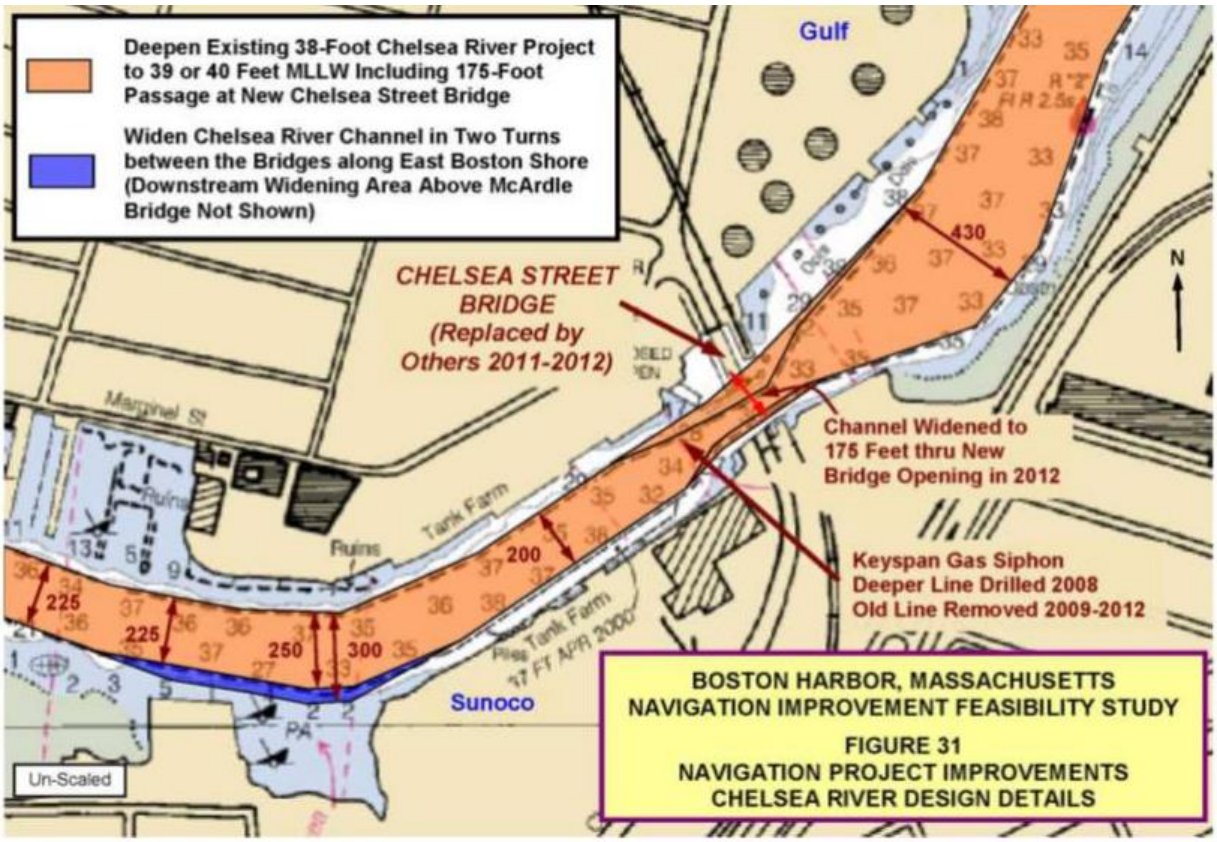


Figure 13: Boston Harbor Navigation Improvement Project, zoomed to Chelsea[58]

Chelsea Creek also has one active Contained Aquatic Disposal (CAD) cell in its waterway. CAD cells are specifically designed holes dug into the harbor floor which are filled with contaminated sediment (normally from dredging work). Chelsea Creek's active CAD cell, C12, was partially filled with contaminated dredge material from the 1998-2001 improvement project and left uncapped. Chelsea Creek also has many approved but unused cell sites and potential areas for additional CAD cells (Figure 14). Dredge spoils from MassPort's maintenance dredging of Berth 12 at the Conley Container Terminal in South Boston were deposited in the Chelsea Creek CAD cell in 2014. "The cell will continue to have capacity, and therefore will not be capped."[59] While the construction of additional CAD cells has been approved in Chelsea Creek and the Mystic River, the community is adamant that the disposal of any contaminated dredging materials should occur far from Chelsea or any other environmental justice community to avoid further contamination. While the benefits of Boston Harbor are enjoyed regionally,

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[57] Metropolitan Area Planning Council. 2016. A Vision for the Chelsea Waterfront. Online at: ftp://ftp.mapc.org/Chelsea_Waterfront/Chelsea%20Waterfront%20Vision%202016%20Final%20Report.pdf.

[58] MassPORT. Boston Harbor Deep Draft Navigation Improvement Project. Presentation on September 15, 2015. Online at: http://aapa.files.cms-plus.com/BostonNavImprovementProj.pdf.

[59] City of Boston Conservation Commission. April 30, 2014. Public Hearing Meeting Minutes. https://www.cityofboston.gov/images_documents/BCC%20Hearing%20Mins%204-30-14_tcm3-45238.pdf

the community feels that the burdens should also be equitably distributed and that future CAD cells could be reasonably cited in suburban harbors as well.

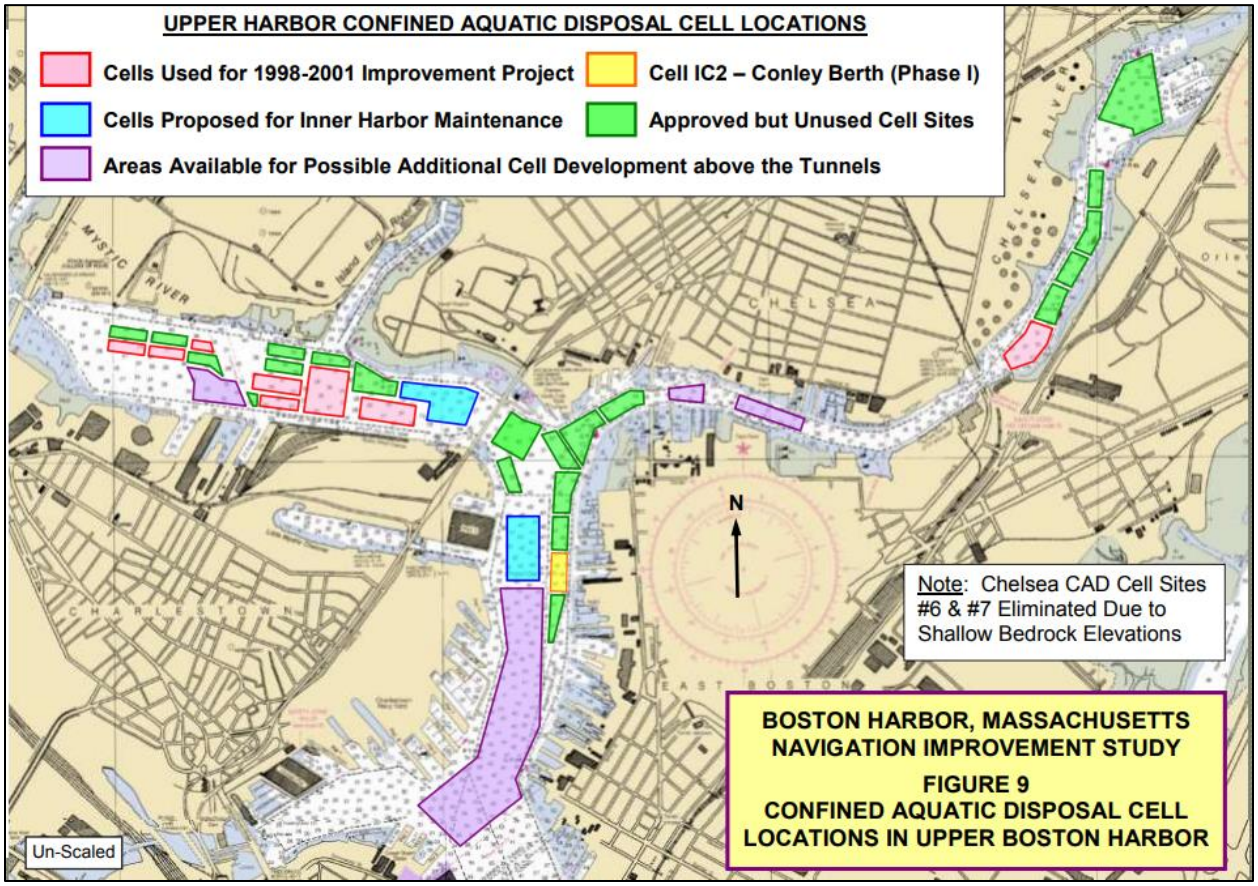

Figure 14: CAD Cell Locations in Upper Boston Harbor[60]

4.5 Transportation

As a large urban center, the City of Chelsea is served by numerous modes of transportation, including several major roadways, five bus routes (connecting Chelsea with Revere, East Boston, downtown Boston, Everett, and Medford), the MBTA Silver Line SL3-Chelsea bus rapid transit (BRT) service, bus service between surface parking lots and the airport, and one commuter rail route (North Station-Newburyport/Rockport).[61] Chelsea has the greatest proportion of transit-dependent residents in greater Boston, making public transportation options critical for work and daily life.[62] However, with the exception of the commuter rail, existing public transit does not offer commuters relief from the traffic and congestion delays they would experience riding in private cars. Further complicating public

[60] MassPORT. Boston Harbor Deep Draft Navigation Improvement Project Presentation. Online at: https://static1.squarespace.com/static/563d6078e4b0396c216603c8/t/585847dcb8a79be1adfbdb8c/1482180577488/Dredge+-+Mystic+RWA+Presentation+6-19-14-for-web.pdf.

[61] City of Chelsea. No date. MBTA Info. Online at: https://www.chelseama.gov/home/pages/mbta-info.

[62] Massachusetts Department of Transportation. No date. Silver Line Gateway: Project Overview. Online at: https://www.massdot.state.ma.us/silverlinegateway/ProjectOverview.aspx.

transportation options, in order to provide ADA-compliant platforms, the commuter rail station in Chelsea is being moved further from the populations that most need it.

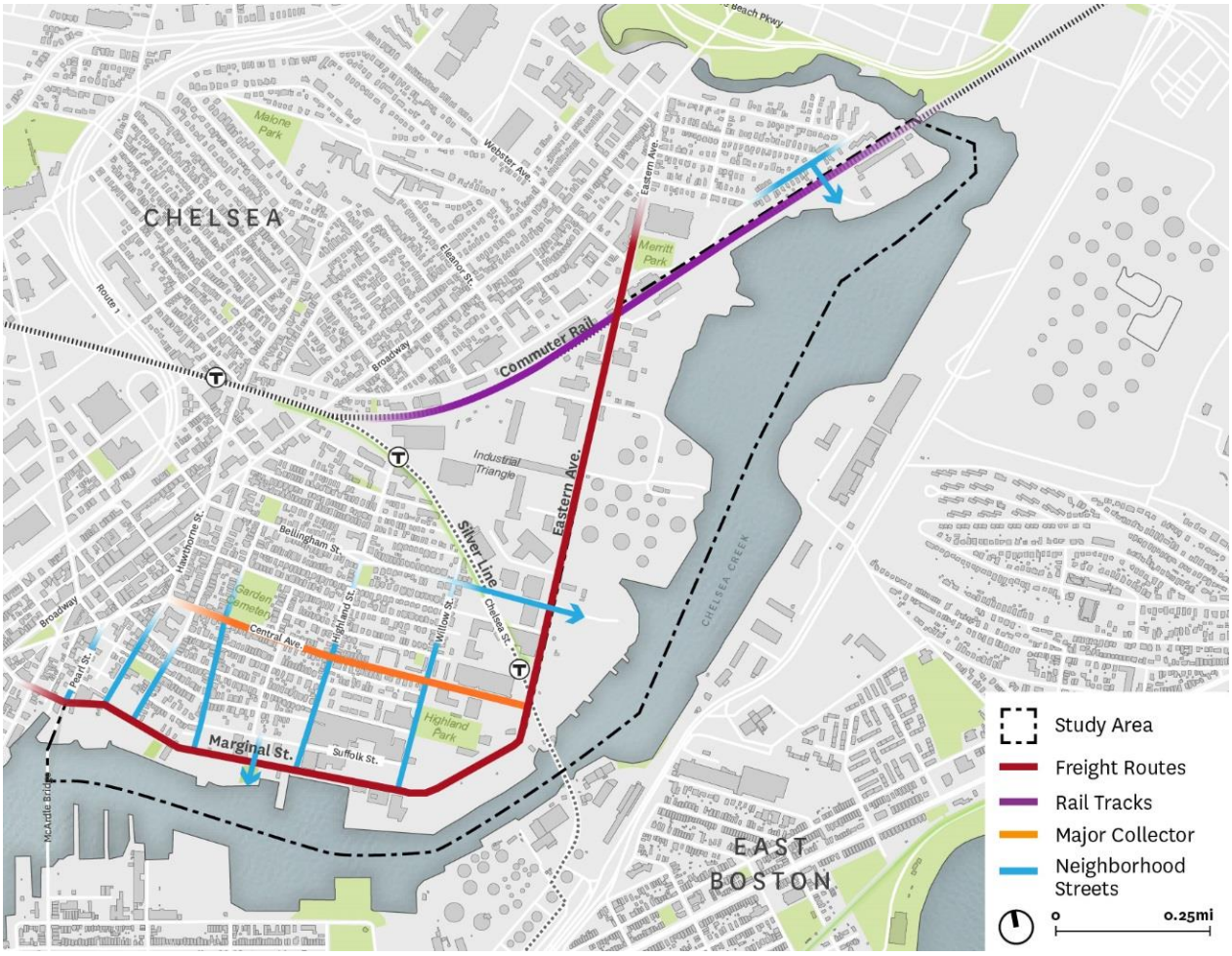

Figure 15: Transportation Features

Bridges and Roadways

Chelsea Street Bridge

Chelsea Street, an urban minor arterial[63], carries traffic between East Boston and Chelsea, crossing Chelsea Creek via the Chelsea Street Bridge. Upon reaching the Chelsea side of the bridge, Chelsea Street diverges into Marginal Street and Eastern Avenue, both urban minor arterials and designated freight routes, and Central Avenue, an urban major collector, all important travel routes through Chelsea.

The previous bascule bridge was originally constructed in 1936, with several major repairs completed over the years, through the mid-1990s. That bridge offered horizontal clearance of only 96 feet between the fenders protecting the bridge piers, resulting in the creation of a unique class of 90-foot

[63] Massachusetts Department of Transportation. No date. Road Inventory. Online at: http://gis.massdot.state.ma.us/maptemplate/roadinventory/.

wide, narrow beam tankers known as "Chelsea Class" or "Boston Beam" tankers.[64] Even with a narrower beam, these "Chelsea Class" tankers had only approximately 3 feet on each side when transiting the bridge opening, creating a precarious navigational situation. As a result of the vessel size restrictions caused by the Chelsea Street Bridge, the Chelsea Creek navigation channel was never widened to the width of 225 feet as authorized by the 1962 Rivers and Harbors Act.[65]

In 1992 the U.S. Coast Guard declared the Chelsea Street Bridge an "unreasonable obstruction to navigation" and issued an Order to Alter the bridge configuration.[66] Adequate funding for the bridge replacement was not available until 2008 when the Massachusetts Department of Transportation and the Federal Highway Administration secured funding through a combination of federal funds under the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU) and state funds.[67]

After several years of construction to remove the old, structurally-deficient, bascule bridge, the replacement bridge opened in 2012 as a new, 400-foot span, vertical lift bridge, with two vehicular travel lanes in each direction.[68] When fully open, the new bridge provides a navigable waterway opening 200 feet wide and 175 high, though for safety reasons, vessels transiting the Creek are still limited in size to a roughly 90 foot beam and a maximum length of just over 660 feet. Protected pedestrian walkways are provided on either side of the bridge with right angle connections to the sidewalks. There are no accommodations for bicycles.

The bridge opens on demand at all times for marine traffic as required by US Coast Guard regulations.[69] When closed, the bridge provides a clearance of 7 feet above mean higher high water and 17 feet above mean lower low water.[70]

The waterway upstream of this bridge is used primarily by commercial oil tankers and barges carrying petroleum products and being towed to and from terminal facilities. Tanker passage is most common during high tide and daylight conditions due to safety concerns (*e.g.*, lack of necessary lighting and

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[64] White, S. 2012. Improving the Waterway While Using the Waterway: The Chelsea Street Bridge Replacement Project. Presentation at the 2012 Joint Conference of Harbor Safety Committees and Area Maritime Security Committees. Online at: http://onlinepubs.trb.org/onlinepubs/conferences/2012/HSCAMSC/Presentations/8-White.pdf.

[65] U.S. Army Corps of Engineers. 2011. Maintenance Dredging of the 38-Foot Deep Navigation Channel in the Vicinity of the Chelsea Street Bridge, Chelsea and Boston, Massachusetts. Online at: http://www.nae.usace.army.mil/portals/74/docs/Navigation/ChesleaChannel31May11.pdf.

[66] White, S. 2012. Improving the Waterway While Using the Waterway: The Chelsea Street Bridge Replacement Project. Presentation at the 2012 Joint Conference of Harbor Safety Committees and Area Maritime Security Committees. Online at: http://onlinepubs.trb.org/onlinepubs/conferences/2012/HSCAMSC/Presentations/8-White.pdf.

[67] *Ibid.*

[68] Massachusetts Department of Transportation. 2012. Chelsea Street Bridge Opens. Online at: https://blog.mass.gov/transportation/massdot-highway/chelsea-street-bridge-opens/.

[69] Chelsea River, 33 C.F.R. §117.593, 2018.

[70] Drawbridge Operation Regulations; Chelsea River, Chelsea and East Boston, MA. 78 Fed. Reg. 34 at 11747 (February 20, 2013). Online at: https://www.federalregister.gov/documents/2013/02/20/2013-03883/drawbridge-operation-regulations-chelsea-river-chelsea-and-east-boston-ma.

fendering), limiting the number of preferred opportunities for safe passage on any given day. Complicating matters, "[t]he three terminals north of the Chelsea Street Bridge supply between 70 and 80 percent of the refined petroleum products consumed in the Commonwealth".[71] This is a limited but critical fuel supply vital to the region. As a result, the bridge and its openings serve an important and necessary role in maintaining the commonwealth's essential fuel supply. "To meet demand for petroleum products, the terminals must be supplied regularly. In the winter, product is delivered approximately every 2 to 3 days to each facility, and in the summer, product is delivered approximately every 3 to 4 days. The terminals have limited storage capacity and cannot build inventories for future use."[72]

Boston Towing & Transportation is the primary marine towing company operating in Boston Harbor, with a fleet of approximately eight tugboats. Due to the high demand for the limited number of tugboats, it is common for tugboats assisting vessels in Chelsea Creek to leave one at a time and as quickly as possible, in order to provide services elsewhere in the Harbor. As a result, the Chelsea Street Bridge is often raised and lowered multiple times in succession as each tugboat travels downstream. This approach to the management of the tug fleet maximizes the utilization of each individual tug and profit for the towing company, but causes a significant cost externality to the public and other enterprises. An analysis of bridge lift statistics from June 2017-June 2018 by MassDOT, the owner of the bridge, showed that lifts for tugs alone comprised 48% of all bridge openings[73].

On average, the bridge opens between five and six times a day.[74] When bridge openings occur during rush hour, they cause significant commuting delays for Silver Line buses, airport shuttles, and other vehicles. In addition to the stoppage when the bridge is up, the resulting backups also take time to clear, causing further delays along the roads leading to the bridge and on neighborhood side streets. These delays also impact the Silver Line commuters who experience random service delays. The petroleum distributors, who require the bridge to open in order to receive their product, are among those hampered as a result of this traffic congestion caused by the frequent bridge openings.

Figure 16 illustrates actual bridge openings over a 40-day period from late August to early October 2018. During this period, the average duration of each bridge opening was 18 minutes, the median opening time was 16 minutes, and there were an average of 5.4 openings per day. Data were collected from the @LoganToChelsea Twitter feed, which provides real-time traffic closure notifications about lifts of the Chelsea Street Bridge to the public. Where up or down notifications were missing, the corresponding time was imputed using the average. These data do not reflect bridge openings during the winter, when fuel is in greater demand and is delivered more frequently (every two to three days in the winter, as opposed to every three to four days in the summer)[75].

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[71] Written comments provided by the Terminal Group (Global Partners, LP; Irving Oil Terminals, Inc.; and Gulf Oil, LP). February 2019.

[72] Ibid.

[73] Massachusetts Bay Transit Authority and Massachusetts Department of Transportation. 2018. Chelsea Street Bridge Proposed Test Deviation from Regulations presentation.

[74] Massachusetts Bay Transit Authority and Massachusetts Department of Transportation. 2018. Chelsea Street Bridge Proposed Test Deviation from Regulations presentation.

[7575] Written comments provided by the Terminal Group (Global Partners, LP; Irving Oil Terminals, Inc.; and Gulf Oil, LP). February 2019.

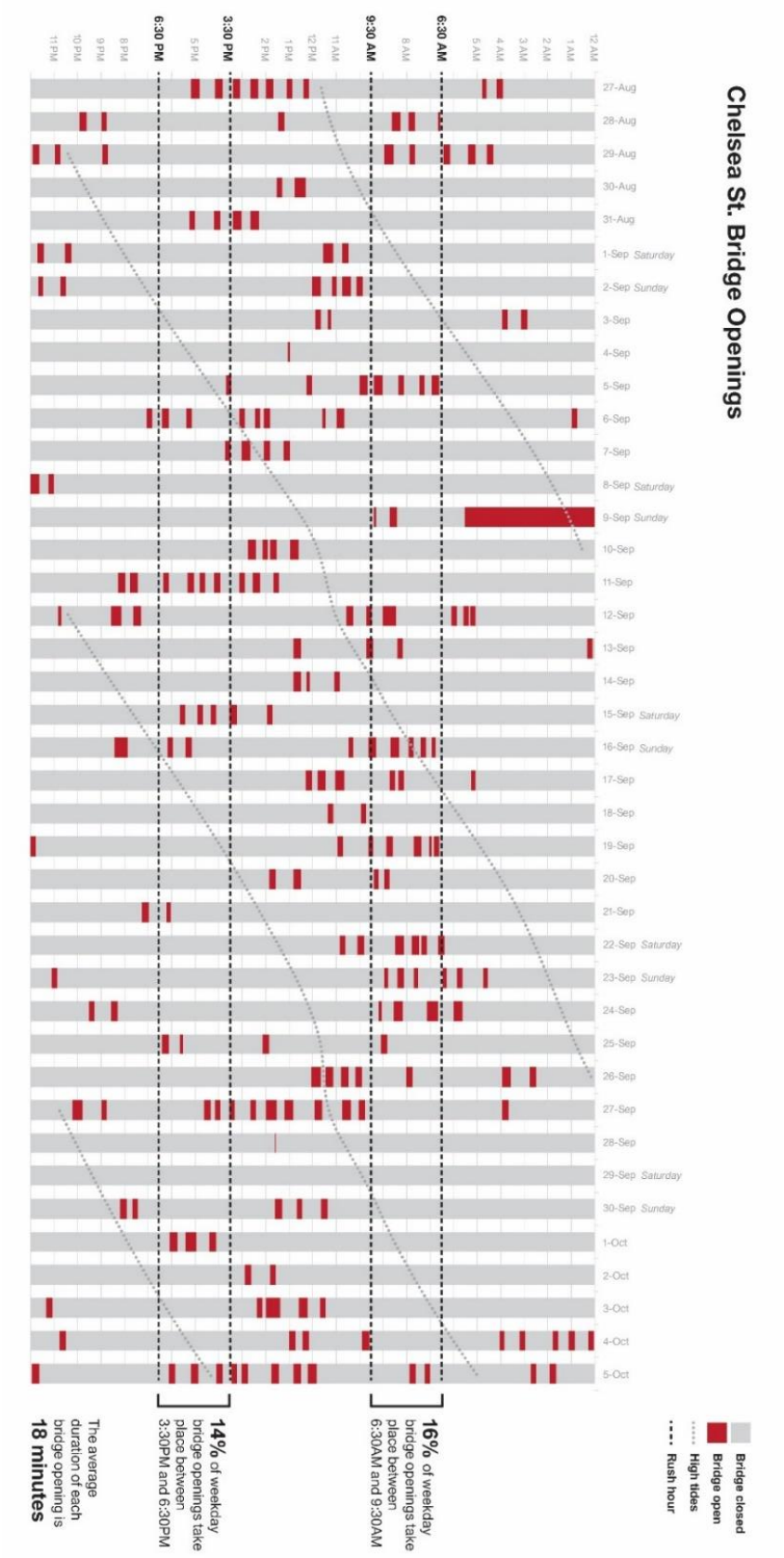

Figure 16: Chelsea Street Bridge Openings - late August to early October 2018

In response to the delays created when the bridge opens, MassDOT and the MBTA created notification systems to warn commuters about the delay and help alleviate traffic congestion. MassDOT implemented a notification system, which uses Intelligent Transportation System (ITS) technology to activate eight roadway signs to read "Chelsea Street Bridge Closed Ahead" when the bridge opens.[76] These eight signs were placed at key locations in Chelsea, East Boston, and Revere to provide drivers with enough time to alter their route if desired.[77] The Massachusetts Port Authority (MassPort) also provides real time information about the Chelsea Street Bridge closures via a Twitter account @LoganToChelsea. Notifications are only sent when the road gates are closed however, so there is no advanced warning provided to allow travelers on their way to the bridge to select an alternate route.

In a related effort, the MBTA implemented a software system that the Chelsea Street Bridge operator will use to notify the MBTA bus dispatch center when the bridge is opening.[78] The software will estimate the projected travel times for two potential detours around the bridge and send those estimates to the bus dispatch center, which then will determine the best route for each bus.[79] The MBTA Bus Operations Division is developing a Standard Operating Procedure for diverting SL3 route buses during a bridge opening.[80]

These solutions are all reactive to on-demand requests for the bridge to open. Publishing a bridge opening schedule a day in advance would allow for users to plan their movements and schedule without placing an undue burden on maritime users.

Given the traffic challenges associated with opening the Chelsea Street Bridge, the Massachusetts Department of Transportation proposed, but subsequently withdrew, a test deviation from existing regulations, recommending weekday restrictions to bridge openings during two-hour windows in the morning and evening rush hours, and weekend restrictions once a day around noon, again for a two-hour period. The restrictions would have applied from late March through mid-September 2019 to maximize daylight hours while avoiding the peak oil demand season. Exceptions were proposed for storms and states of emergency.[81] One factor contributing to the withdrawal of the test deviation was arguments made by businesses along Chelsea Creek which rely on frequent bridge openings. They noted that their businesses will suffer as a consequence of bridge opening restrictions. They advocate that other strategies--such as improved warnings and bridge upgrades--should be implemented instead of placing restrictions on openings.

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[76] Massachusetts Department of Transportation. 2017. New Chelsea Street Bridge Driver Notification System. Online at: https://blog.mass.gov/transportation/massdot-highway/new-chelsea-street-bridge-driver-notification-system.

[77] *Ibid.*

[78] Daniel, S. (2018, March 16). MBTA to implement new software system to avert Chelsea Street Bridge. *Chelsea Record*. Online at: http://www.chelsearecord.com/2018/03/16/mbta-to-implement-new-software-system-to-avert-chelsea-street-bridge/.

[79] *Ibid.*

[80] *Ibid.*

[81] Fichter, K. December 6, 2018. Personal communication.

The terminal operators "strongly oppose any plan to impose restrictions on Bridge openings [believing they] will significantly disrupt the complex petroleum delivery system".[82] Their analysis finds that "restrictions on the operation of Chelsea Street Bridge will in effect lower the average volume of stored petroleum products at the facilities. Such restrictions will create an artificial regional scarcity unrelated to the availability of global or national petroleum supplies. As a result, if restrictions are imposed on vessel movements, consumers will likely see higher volatility in prices. It is difficult to determine the specific cost increase from new and supplemental distribution systems. However, the higher distribution costs will likely result in permanent increases of possibly between from 5 to 10 cents a gallon."[83]

Another potential means by which to reduce the need for bridge openings during rush hour is to improve the fendering and lighting by the bridge. That would potentially allow for the nighttime transit of tankers on the Creek. Fendering and lighting improvements could be costly and difficult to permit, and would likely require financial contributions from the maritime users of the Creek. Though expensive, these modifications would begin to address some of the externalities imposed by current users of the Creek. While the cost would likely be passed on to consumers in the form of higher fuel prices, that cost would be spread regionally while the current costs are imposed only locally.

In November, 2019, The Executive Office of Public Safety and Security, Office of Grants and Research issued a Request for Response for a Chelsea Creek Waterway Risk Assessment Study. This project would investigate and analyze the feasibility of improving the navigational safety along the Chelsea Creek. The contract was awarded to Mabbett & Associates, Inc.

The Chelsea Street Bridge was replaced in 2012 at a high cost to taxpayers. The new bridge promised to remove physical constraints on the channel and allow larger vessels to service the Creek. Larger vessels meant fewer transits. Eight years on, that promise has not been realized nor is there a plan to realize it.

Andrew P. McArdle Memorial Bridge (Meridian Street Bridge)

The McArdle Bridge crosses Chelsea Creek and connects Meridian Street in East Boston with Pearl Street in Chelsea, both urban principal arterials.[84] It is a split, rolling bascule bridge that is 1,075 feet long and 44 feet wide, with one travel lane in each direction. When open, the bridge provides a vertical clearance of 157 feet above mean high water.[85] When closed, the bridge provides a vertical clearance of 21 feet above mean higher high water and 30 feet above mean lower low water.[86] Like the Chelsea Street Bridge, the McArdle Bridge opens on demand at all times for marine traffic as required by US Coast

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[82] Written comments provided by the Terminal Group (Global Partners, LP; Irving Oil Terminals, Inc.; and Gulf Oil, LP). February 2019.

[83] Ibid.

[84] Massachusetts Department of Transportation. No date. Road Inventory. Online at: http://gis.massdot.state.ma.us/maptemplate/roadinventory/.

[85] American Bridge Wiki. No date. Online at: http://americanbridge.wikia.com/wiki/Andrew_P._McArdle_Memorial_Bridge.

[86] Urban Harbors Institute, University of Massachusetts Boston; Apex Companies, LLC.; Tufts University; and Ramboll. 2017. Massachusetts Offshore Wind Ports & Infrastructure Assessment: Existing Conditions Report: 148 Condor Street (former Hess Oil co.), Boston, MA. Online at: http://files.masscec.com/Condor%20Street%20former%20Hess%205-15-17.pdf.

Guard regulations.[87] The waterway is used primarily by commercial vessels, such as tankers, tugboats, and barges. Vessels traveling upstream in Chelsea Creek from Boston Harbor must first pass under or through the McArdle Bridge before reaching the Chelsea Street Bridge.

Similar to the Chelsea Street Bridge, commuting delays are also created when the McArdle Bridge opens for marine traffic. Although the Silver Line bus route does not use the McArdle Bridge, MBTA Bus Routes 116 and 117 do cross the bridge. As a result, both bus passengers and vehicle drivers are impacted by the closure of this bridge, though the duration of each opening is less.

On December 31, 2014, a fatality occurred as the bridge closed on a pedestrian who had been trapped on the open bridge.[88] Operational changes as a result of this accident require the bridge operator to walk the bridge to ensure that it is free of pedestrians.[89] While desperately needed, this new protocol has added additional delays for traffic navigating the bridge.

The McArdle Bridge is owned by the City of Boston and is in need of maintenance repairs. Boston has budgeted $500,000 in FY2019 and $2,500,000 in fiscal years 2020-2023.[90] The Federal Highway Administration's National Bridge Inventory rated the condition of the McArdle Bridge as "poor" based upon an inspection in November 2016 with a structural integrity rating of "[b]asically intolerable requiring high priority of replacement", with a projected cost of $34,286,000.[91]

Roadway Improvements

In addition to serving as travel routes for Chelsea residents and visitors, Marginal Street and Eastern Avenue serve as important freight distribution corridors for the bulk commodities that arrive by vessel on Chelsea Creek. The city has begun several initiatives to improve these multi-use streets. The city currently has a consultant engaged in developing a new pavement marking plan for Marginal Street. In addition, a feasibility study for improvements to the right-of-way is being proposed in the 2019 Capital Improvement Plan.

The city also developed a Complete Streets Prioritization Plan which was completed in the spring of 2019. Corridors such as Marginal Street, Eastern Avenue, and Central Avenue, while important trucking routes, have been identified as important elements in developing a connected network of infrastructure for pedestrians and cyclists as well as vehicles.

Intersection of Chelsea Street, Eastern Avenue, and Central Avenue

The current intersection of Chelsea Street, Eastern Avenue, and Central Avenue on the Chelsea side of the Chelsea Street Bridge creates several layers of transportation challenges. Although this intersection was recently redone, it was not designed to prioritize Silver Line bus service and is also heavily used by MassPort and InterPark shuttle buses. In addition, the intersection does not safely and effectively accommodate pedestrians and bicyclists. As noted previously, when the Chelsea Street Bridge is up and

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[87] Chelsea River, 33 C.F.R. §117.593, 2018.

[88] Excite News, AP. Jan 1, 2014. http://apnews.excite.com/article/20140101/DAB1NKEO1.html

[89] Boston Globe. Feb 22, 2014. https://www.bostonglobe.com/metro/2014/02/22/operators-must-now-walk-east-boston-drawbridge-before-raising/JOR4DtWMWlGcSKsdXI5RJP/story.html

[90] City of Boston. No date. https://budget.boston.gov/capital-projects/public-works-department/mcardle-bridge/

[91] http://bridgereports.com/1234922

closed to vehicles, traffic backs up in all directions on the main streets and continues into the side streets of the surrounding neighborhood. The turning lane, which has been designed with additional width to accommodate trucks exiting Marginal Street, fills with two lanes of vehicles that must then merge onto the bridge, further complicating intersection clearance. Once the bridge reopens to vehicles, bus, truck, and car drivers compete for space as they drive onto the bridge, often blocking the intersection.

Silver Line

Silver Line Gateway Project

The Silver Line Gateway Project is designed to expand and improve public transportation in Chelsea. This project aims to reduce traffic congestion and crowding on Chelsea city buses and provide a direct route to subway lines, the Seaport, and South Station.[92]

Phase One consisted of expanding the Silver Line dedicated bus rapid transit (BRT) service route to four new Silver Line stations in Chelsea at Eastern Avenue, Box District, Bellingham Square (at Arlington Street), and Chelsea (at Everett Avenue) on a new dedicated busway, and the replacement of the Washington Avenue Bridge.[93] Opened in April 2018 and operating 60-foot, high-capacity buses, the new Silver Line 3-Chelsea (SL3-Chelsea) route originates at South Station and follows the existing route through the Seaport District and Ted Williams Tunnel, before providing a new connection to the Blue Line at Airport Station in East Boston, and then continuing on public streets to the four new Chelsea stations on the dedicated busway.

Phase Two consists of converting the existing Chelsea Commuter Rail Station into the Bellingham Square (Downtown Chelsea) Silver Line station and the building of a new, fully-accessible, Chelsea Commuter Rail Station at a new location adjacent to the Mystic Mall at Everett Avenue and the terminus of the Silver Line.[94] This new Commuter Rail Station will have intermodal connections with the nearby Chelsea Silver Line Bus Rapid Transit Station. Other improvements include new traffic signals where the busway intersects with city streets and an updated railroad signal system.[95] Intelligent Transportation System (ITS) equipment will be added to all grade crossings in Chelsea with the exception of the signal at the Chelsea Street Bridge. ITS will prioritize bus traffic through these intersections.

Phase Three, the Chelsea Greenway, is being advanced by the City of Chelsea, in coordination with MassDOT and the Massachusetts Executive Office of Energy and Environmental Affairs, and consists of a shared-use bike and pedestrian pathway between Chestnut Street in downtown Chelsea and Eastern Avenue.[96] The Greenway will continue on-road to Everett Avenue.

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[92] Massachusetts Bay Transit Authority. 2018. New Silver Line 3-Chelsea Service Between Chelsea and South Station. Online at: https://www.mbta.com/news/2018-03-12/new-silver-line-3-chelsea-service-between-chelsea-and-south-station.

[93] Massachusetts Department of Transportation. No date. Silver Line Gateway: About This Project. Online at: http://www.massdot.state.ma.us/silverlinegateway/Home.aspx.

[94] *Ibid*.

[95] Massachusetts Department of Transportation. No date. Silver Line Gateway: Design & Construction. Online at: http://www.massdot.state.ma.us/silverlinegateway/DesignConstruction.aspx.

[96] *Ibid.*

Daily bus commuters on local routes take trips that may require several transfers to travel from Chelsea and East Boston to downtown Boston.[97] In 2014, the MBTA reported average weekday total ridership of the bus routes running through Chelsea as approximately 25,000 riders.[98] The expanded SL-3 Chelsea bus route will give Chelsea residents an additional connection to jobs, businesses, neighborhoods, and opportunities throughout the area, including a simplified and direct connection to South Station in Boston and the Seaport District, one of the largest job growth locations in the region.[99] At the same time, the expanded SL-3 Chelsea bus route and the adjacent Greenway also allow greater access to the Chelsea waterfront for both residents and visitors, for both work and recreation. One-seat connections will be available from Chelsea to both North and South Stations. This improved public transportation will likely be an appealing feature for businesses and will help encourage new types of development and associated new jobs on the waterfront. It will provide the ability for a workforce to more easily commute to the waterfront and increase the number of visitors who would enjoy waterfront public access amenities.

While every new transit option is a welcome improvement in a highly transit-dependent community such as Chelsea, the reality of the new Silver Line 3 has created significant challenges in addition to its many benefits. These challenges stem from delays introduced by the increased frequency and duration of openings of the new Chelsea Street Bridge and the congestion in the Ted Williams Tunnel. These factors often result in unpredictable commute times leading to a late arrival at work that are difficult for any worker and may not be tolerated in many businesses, particularly those employing blue-collar and hourly workers. There is additional concern by some within the community that the new Silver Line route will lead to gentrification. Further work is required to devise mechanisms for mitigating these commuting delays and for prioritizing Silver Line buses through the intersections on both sides of the Chelsea Street Bridge. Silver Line ridership in Chelsea has been increasing since its opening in April 2018, particularly during workdays.

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[97] Massachusetts Bay Transit Authority. 2018. New Silver Line 3-Chelsea Service Between Chelsea and South Station. Online at: https://www.mbta.com/news/2018-03-12/new-silver-line-3-chelsea-service-between-chelsea-and-south-station.

[98] MBTA. 2014. Ridership and Service Statistics, 14th Edition. Online at: https://archives.lib.state.ma.us/bitstream/handle/2452/266319/ocm18709282-2014.pdf.

[99] *Ibid.*

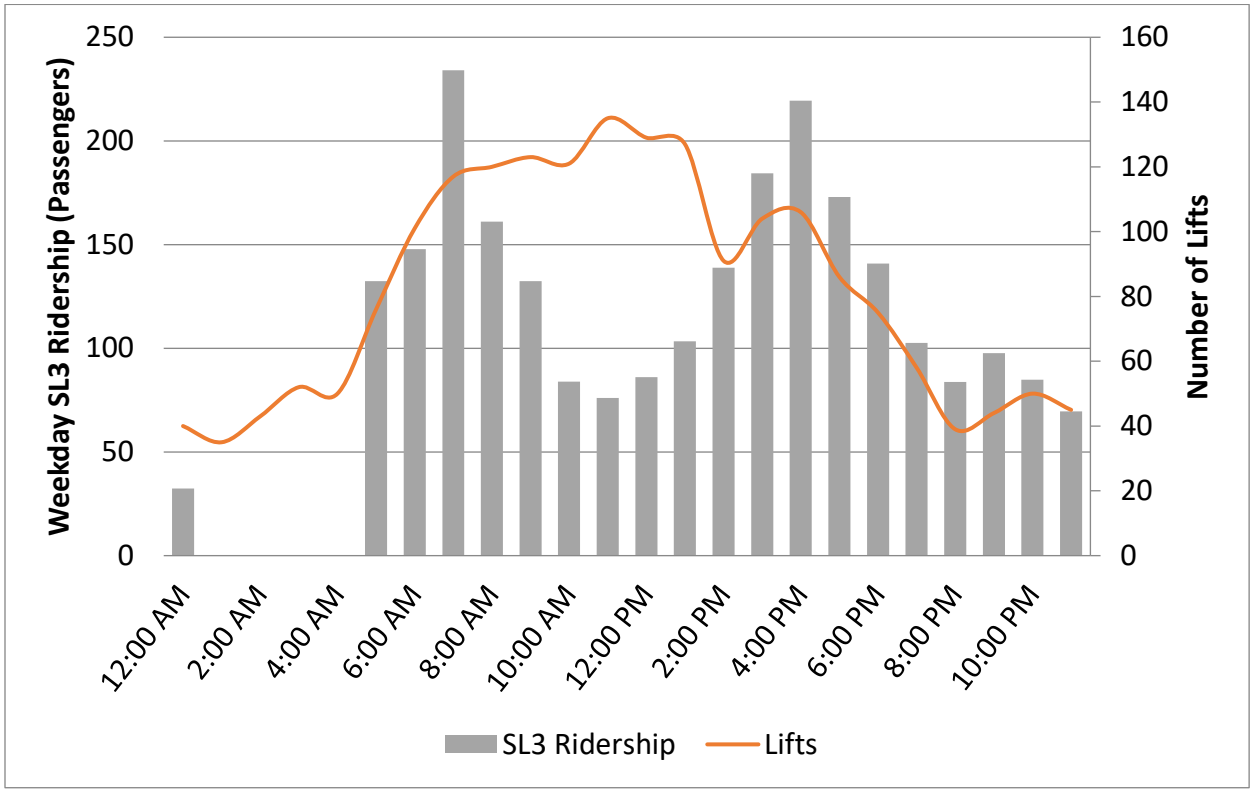

Figure 17: Weekly SL3 ridership data and bridge openings

Vessel-Based Transportation

The majority of vessels using Chelsea Creek are engaged in the transportation of bulk cargo, with little recreational vessel use. Liquid petroleum products are transported by tankers and stored in several tank farms along Chelsea Creek. As described in the section on the Chelsea Street Bridge, the old bridge limited the size of these tankers to "Chelsea Class" vessels, which were at most 90 feet wide and 661 feet long and held approximately 275,000 barrels of petroleum.[100] The promise of the new bridge and the associated dredging projects was to allow the "Chelsea Class" vessels to be phased out and a larger class of vessels, with greater economies-of-scale and fewer trips and associated bridge openings, to carry petroleum products upstream. To date, this has not occurred and "Chelsea Class" vessels and barges are still being used. The other major bulk cargo transported on Chelsea Creek is salt, carried by cargo ships that can hold up to 50,000 tons of material.[101] The salt is transported to Eastern Salt, Co. from mines in various locations, including Chile, Mexico, and Ireland.[102]

In addition to the commercial vessel activity on the Chelsea-side of the Creek, the East Boston and Revere side of the Creek also experiences heavy usage, with regular fuel deliveries to the Sunoco oil terminal and the Global and Irving terminals. Due to the narrow width of the Creek at the Sunoco

[100] Kelley, S. No date. Photographs of Chelsea Creek. Online at: http://users.rcn.com/scott.kelley/gallery.html.

[101] Cook, G. 2015. Where does Boston's road salt come from? A local photographer finds out. Online at: http://www.wbur.org/artery/2015/01/27/boston-road-salt.

[102] *Ibid.*

facility, other vessels are not allowed to pass when a vessel with a beam of 60.5 feet or more is berthed at that facility, further complicating the timing of activity at other locations on the Creek[103].

Though Boston Harbor dredging will allow for safe passage of Panamax vessels (measuring 110 feet in width, 41.2 feet in depth, and 1,050 in length) in the Harbor, it is unlikely that these vessels will ever be able to travel the length of Chelsea Creek, given the depth and width restrictions on the Creek.

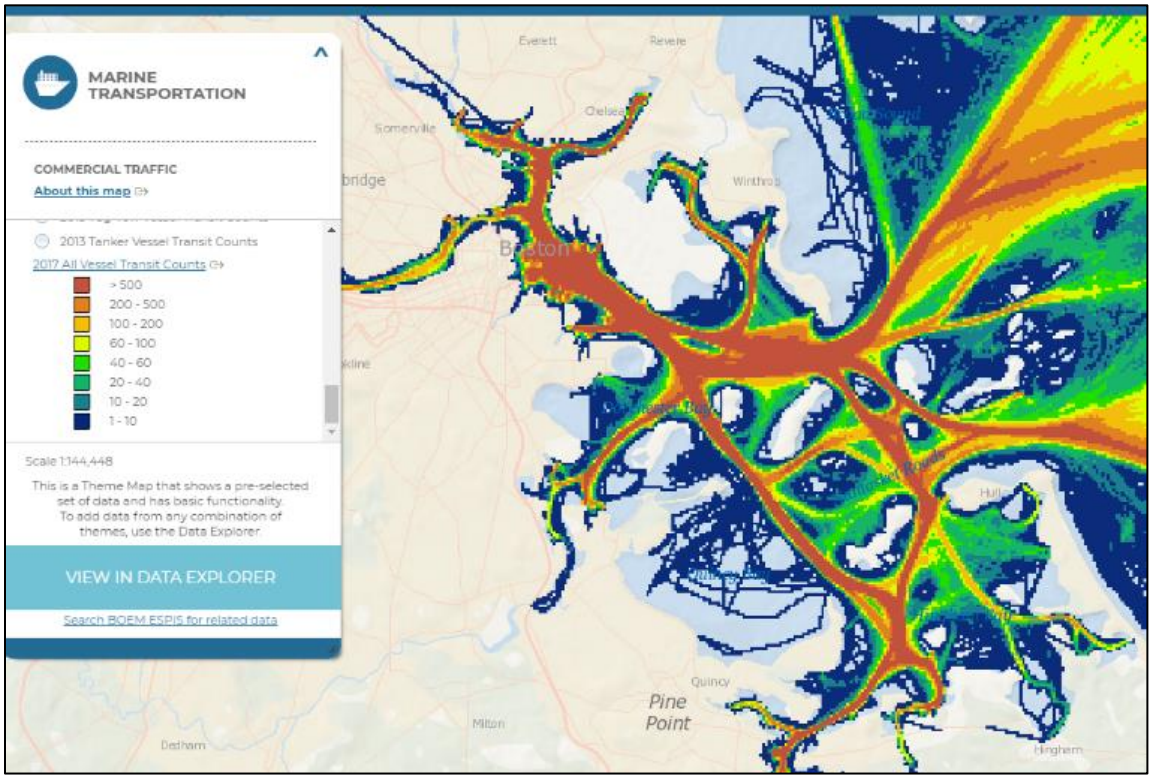

Figure 18: Density of Commercial Traffic in Boston Harbor and Chelsea Creek in 2017. Source: Northeast Ocean Data Portal.

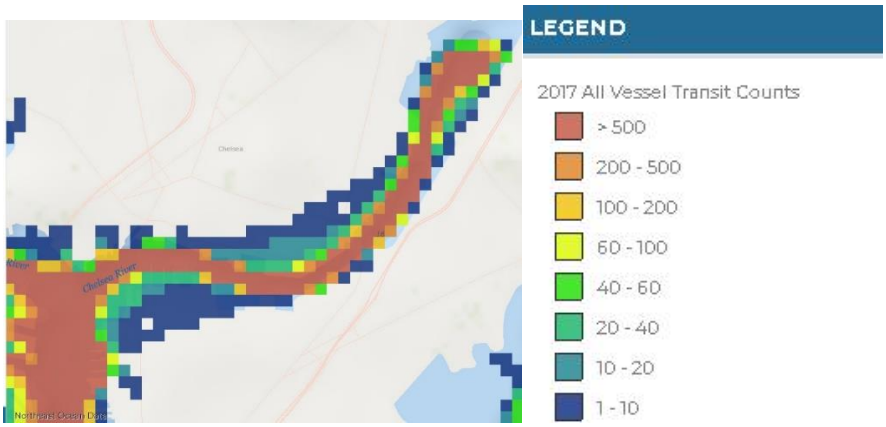

Figure 19: Vessel Traffic Density in Chelsea Creek - 2017[104]

[103] David Cox. December 5, 2018. Personal communication.

[104] Map developed using the Northeast Ocean Data Portal: https://www.northeastoceandata.org/.

MBTA Railroad Bridge

The MBTA railroad bridge (C-09-021) over the mouth of Mill Creek, at the northern limit of the study area, was constructed in 1929. The bridge is a timber pile trestle consisting of nine spans and two tracks and is 98.4 feet in length[105]. It was last rehabilitated in 1986. The MBTA currently rates the bridge as "in good shape at present" and "rates well for vehicle loads". "The MBTA does not have plans to rehabilitate this structure at this time."[106]

The bridge was last inspected on 7 October 2015 and a bridge rating was done in June 2012. One exception was noted in the rating for the types of equipment that the MBTA runs across this bridge: the stringers rated below the statutory requirements at the region of maximum moment. Stringers are the supports that run parallel to the bridge. Additionally, creosote retention samples taken from the timber piles were found to be significantly below current code and at or reaching the level where the creosote would not protect against fungal decay.[107]

The 2015 inspection noted that there were 11 inches (0.91 feet) of minimum vertical clearance under the bridge.[108] The exact elevation of the bridge could not be determined. In Boston Harbor, the North American Vertical Datum of 1988 (the base elevation for USGS maps) is at 5.51 feet above Mean Lower Low Water (MLLW) as measured between 1983 and 2001.[109] Mean Higher High Water (MHHW) in Chelsea is at 10.35 feet and Mean High Water (MHW) is at 9.9 feet.[110] USGS maps have the bridge below the 10 foot contour. The highest recorded tide in Boston Harbor was at 15.17 feet on 4 January 2018.[111] This storm event flooded many streets in Chelsea and likely inundated this bridge. With rising sea levels and increased storm frequency and severity, inundation events are likely to increase and place additional stresses on this bridge. The MBTA right-of-way provides an inundation pathway for stormwater that needs to be mitigated. Strong consideration should be given to raising the track elevation. Modeling by the City of Chelsea shows that even were the entire DPA coastline to be defended against storm surges, this bridge and right-of-way would provide an entry point for water to flood multiple residential and industrial neighborhoods. As the MBTA reconsiders urban rail, this corridor has the potential to provide an alternative alignment for the Grand Junction branch that is not dependent upon the movable Chelsea Street Bridge. Direct service could be provided through the addition of a new spur connecting Suffolk Downs to Kendal Square and the new West Station. Serious consideration should be given to adding an additional stop in Chelsea that would service residents and businesses in the eastern portions of Chelsea.

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[105] Bridge Inspection Report, PRIME AE Group, Inc., 18 December 2017.
[106] Communication with Linda Hager, MBTA, 27 November 2018.
[107] Bridge Rating East Route over Mill Creek, Diversified Technology Consultants, June 2012.
[108] Ibid.
[109] https://tidesandcurrents.noaa.gov/datums.html?id=8443970
[110] https://tidesandcurrents.noaa.gov/datums.html?id=8443725
[111] https://tidesandcurrents.noaa.gov/datums.html?id=8443970

4.6 State of Shore-Side Infrastructure

As part of the Municipal Harbor Plan and Designated Port Area Master Plan, the type(s) and general condition(s) of shore-side infrastructure were observed and documented for a number of parcels within the planning area (see Appendix G).

The findings suggest that portions of the waterfront at 1 Forbes Street, 111 Eastern Avenue, 215 Marginal Street, and 245-257 Marginal Street will likely require improvements due to concerns such as potential structural failure, upland subsidence, observed corrosion and sinkholes (see Figure 20 for a map showing street addresses).

In addition, the report notes some minor loss of fill under the roadway near 215 Marginal Street, and the need to demolish in-water structures in front of 111 Eastern Avenue and 215 Marginal Street.

In keeping with the intent of land uses within a DPA, it is important that repairs to and maintenance of shore-side infrastructure within the DPA are undertaken in a manner that will support water-dependent industrial uses. For example, rip rap such as that found along 239 Marginal Street is typically inconsistent with the needs of water-dependent industrial users.

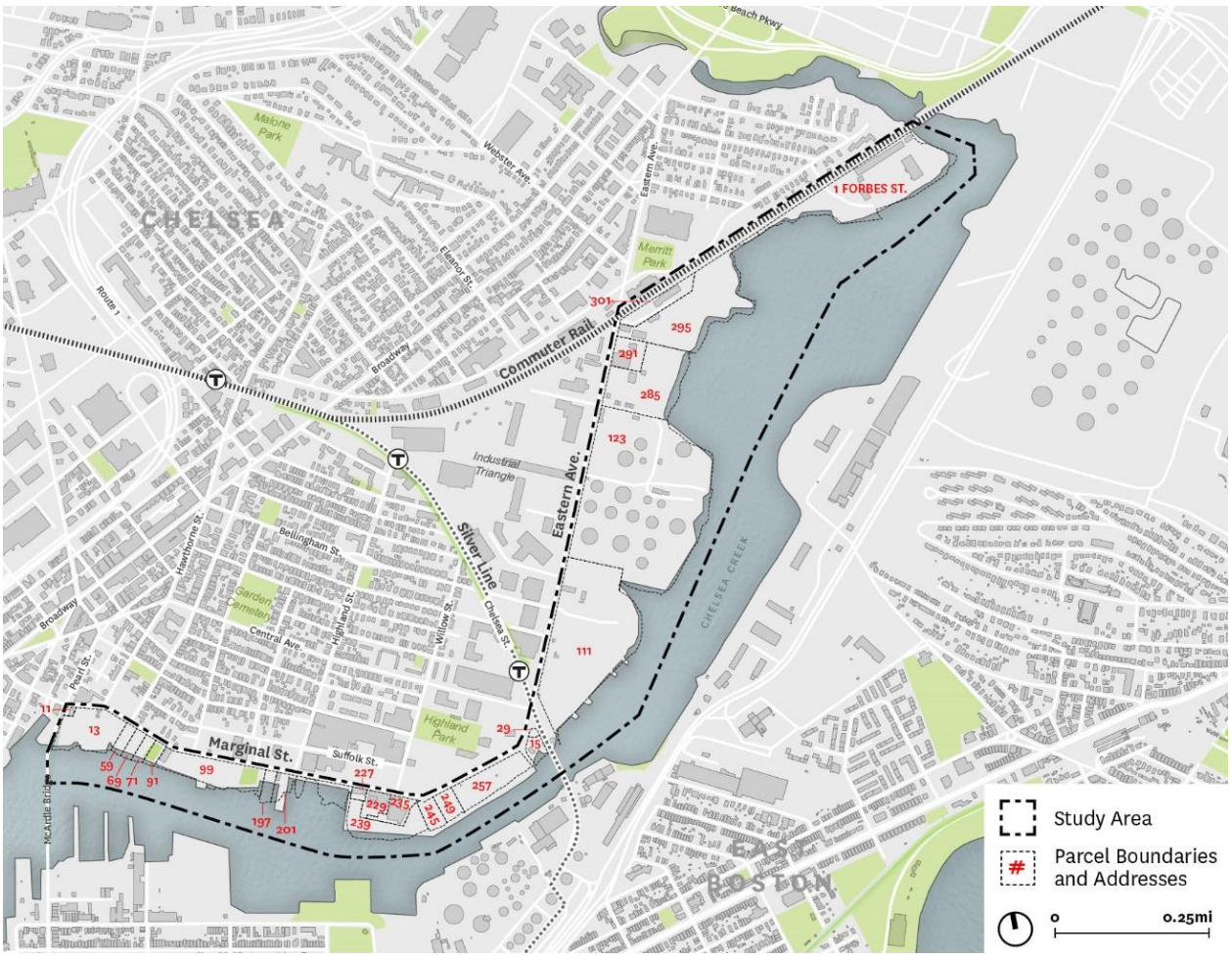

Figure 20: Addresses of Properties in the Planning Area

4.7 Regulatory Conditions

A complex suite of state, federal, and municipal regulations applies to the topics identified in this plan, as described below. See Section 3.3 Regulatory Framework for additional information about these regulatory and planning processes.

Federal Laws and Regulations

National Flood Insurance Program (NFIP), 42 U.S.C. §4011 et seq.

This Federal Emergency Management Agency (FEMA) program seeks to reduce the impact of flooding on both new and improved private and public structures by providing insurance to property owners, renters, and businesses, and by encouraging communities to adopt and enforce floodplain management regulations.[112] In an effort to reduce the socio-economic impacts of disasters, FEMA promotes the purchase and retention of general risk insurance, including flood insurance for property owners located in floodplains.[113] The NFIP produces Flood Insurance Rate Maps (FIRMs), which are official maps of a community that outline special hazard areas and flood plain risk zones.[114]

The most recent FIRMs for Chelsea, produced in 2016, show that portions of the waterfront are located in the "1-percent annual chance floodplain", also called the "100-year floodplain" (See the chapter on climate change for more information and figures). The "100-year floodplain" does not mean a flood will occur once every 100 years, but instead designates a flood of a certain intensity that has a 1-percent chance of occurring or being exceeded each year. Such a flood could occur more than once in a short timeframe or not occur for many years. The probability of a property being inundated by a 100-year flood over a thirty year period is 26%.[115] In 2018, there were three storms that could be characterized as 100-year events. Calculations for areas identified in FIRMs only take into account historical data and do not account for the effects of anthropogenic climate change. Therefore, these maps are quite conservative in their estimation of the floodplain.

The NFIP Floodplain Management Requirements are minimum standards required by FEMA for communities to participate in the NFIP.[116] These standards ensure that new development does not cause increased flooding in other areas and also that new buildings will be protected from base flood

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[112] FEMA. 2018. The National Flood Insurance Program. Online at: https://www.fema.gov/national-flood-insurance-program.

[113] *Ibid.*

[114] FEMA. 2018. Flood Insurance Rate Map (FIRM). Online at: https://www.fema.gov/flood-insurance-rate-map-firm.

[115] FiveThirtyEight. August 30, 2017. It's Time To Ditch The Concept Of '100-Year Floods'. https://fivethirtyeight.com/features/its-time-to-ditch-the-concept-of-100-year-floods/. This number is derived using probability theory. First, we calculate the probability of there not being a flood over a 30-year period. Since for each year, there is a 99 percent chance of there not being a flood, the chance that there is no flood over 30 years is 74 percent (or .99^30). The probability of a house in a 100-year floodplain being inundated at least once, then, is just the complement, so 26 percent.

[116] FEMA. No date. NFIP Floodplain Management Requirements. Online at: https://www.fema.gov/pdf/floodplain/nfip_sg_unit_5.pdf.

levels. See the section on Zoning for information about the City of Chelsea's Floodplain Overlay District, which includes regulations regarding development in the floodplain.

Ports, Waterways and Coastal Security (PWCS)[117]

The Homeland Security Act of 2002 divided the Coast Guard's eleven statutory missions between homeland security and non-homeland security.[118] The Act delineated Ports, Waterways and Coastal Security (PWCS) as the first homeland security mission and the Coast Guard designated PWCS as the service's primary focus alongside search and rescue.[119]

The PWCS mission is to protect U.S. marine transportation waterways and their users from terrorist attacks, sabotage, espionage, and other subversive acts on vessels, critical infrastructure, and key resources, and to respond to acts that do occur. PWCS activities include employment of awareness activities; counterterrorism, antiterrorism, preparedness and response operations; and the establishment and oversight of a maritime security regime.

In Chelsea, the Coast Guard escorts "ships deemed to present or be at significant risk" and enforces "fixed security zones at maritime critical infrastructure" by monitoring the arrival and departure of oil tankers, for the security of both the vessels and local populations.

Rivers and Harbors Act of 1899

This Act gave the U.S. Army Corps of Engineers (USACE) the authority to regulate and protect navigable waters from obstructions in development, construction, and excavation, including dredging to maintain and improve channels for waterway navigation and commercial transportation.[120] Under Section 10, USACE has approval authority over the construction of any structure in or over any navigable water of the United States, or any work affecting the course, location, condition, or capacity of such waters. Activities that require a Section 10 permit include structures, such as piers, wharfs, breakwaters, bulkheads, jetties, and transmission lines, and work, such as dredging, disposal of dredged material, excavation, and filling.

The Act also authorizes the USACE to establish pierhead and bulkhead lines, beyond which no pile structures (piers, wharves, bulkheads) may extend and no solid fill may be placed, unless otherwise approved.

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[117] Homeland Security Act of 2002, Pub. L. No. 107-296, 116 Stat. 2135, enacted November 25, 2002.

[118] United States Coast Guard. Office of Counterterrorism & Defense Operations Policy. Online at: https://www.dco.uscg.mil/Our-Organization/Assistant-Commandant-for-Response-Policy-CG-5R/Office-of-Counterterrorism-Defense-Operations-Policy-CG-ODO/PWCS/.

[119] *Ibid.*

[120] US Army Corps of Engineers. No date. A Brief History. Online at: https://www.usace.army.mil/About/History/Brief-History-of-the-Corps/Environmental-Activities/.

Clean Water Act of 1972 (CWA), 33 U.S.C. 1251 et seq.

The CWA establishes the regulatory structure for regulating the discharge of pollutants into the waters of the United States and regulating water quality standards for surface waters.[121] The declaration of goals and policy for the CWA states in part:

SEC. 101. (a) The objective of this Act is to restore and maintain the chemical, physical, and biological integrity of the Nation's waters. In order to achieve this objective it is hereby declared that, consistent with the provisions of this Act—

(1) it is the national goal that the discharge of pollutants into the navigable waters be eliminated by 1985;

(2) it is the national goal that wherever attainable, an interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and provides for recreation in and on the water be achieved by July 1, 1983;

(3) it is the national policy that the discharge of toxic pollutants in toxic amounts be prohibited;

In particular, this second policy reflects the Clean Water Act's goal to achieve water quality that creates "fishable and swimmable waters."

CWA Section 404 establishes a permit program to regulate the discharge of dredged or fill material into waters of the United States, including wetlands.[122] The USACE enforces environmental regulation through public interest review of permits under Section 404, while the Environmental Protection Agency (EPA) develops policy and guidance for permit evaluation and also reviews and comments on individual permit applications.

The Act also created the National Pollution Discharge Elimination System (NPDES), a permit program designed to address water pollution by regulating point sources that discharge pollutants into waters of the United States.[123] Under the program, EPA authorizes states to perform many of the permitting, administrative, and enforcement actions of the NPDES program, while EPA maintains its oversight responsibility.[124] The NPDES program regulates various categories of pollution sources, including stormwater. One of the stormwater point sources regulated under the NPDES program is municipal separate storm sewer system (MS4). Operators of MS4s may be required to obtain a specific MS4 permit before discharging stormwater. Chelsea is creating a plan to fully separate all remaining combined sewer infrastructure.

Federal Coastal Zone Management Act of 1972 (CZMA), 16 U.S.C. 1451 et seq.

The CZMA created the National Coastal Zone Management Program which is a partnership between the federal government and coastal states to balance the competing demands of coastal resource use,

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[121] Environmental Protection Agency. No date. Summary of the Clean Water Act. Online at: https://www.epa.gov/laws-regulations/summary-clean-water-act.

[122] Environmental Protection Agency. No date. Section 404 Permit Program. Online at: https://www.epa.gov/cwa-404/section-404-permit-program.

[123] EPA. 2018. National Pollution Discharge Elimination System. Online at: https://www.epa.gov/npdes/about-npdes.

[124] *Ibid.*

economic development, and conservation. Massachusetts created the Massachusetts Office of Coastal Zone Management (CZM) as the primary agency to implement the state coastal zone management (MCZM) program, which received federal approval in 1978. It is a networked program in which state programs incorporate the MCZM policies into their regulatory reviews, plans, and programmatic decisions.

In recognition of Massachusetts' established history of maritime industry and trade and of the importance of working waterfronts to all water-dependent commerce, Massachusetts CZM established the Designated Port Area (DPA) program, discussed under state laws and regulations below. The DPA regulations implement CZMA policies, which are further defined and described in the MCZM program.

Federal Consistency Review

By receiving federal approval of its coastal zone management plan, Massachusetts (and other states) gained the authority to conduct "federal consistency review" oversight over federal actions that may impact the land or water resources or the uses of the Massachusetts coastal zone.[125] Federal consistency requires that federal actions, within and outside the coastal zone, which have reasonably foreseeable effects on any coastal use (land or water) or natural resource of the coastal zone be consistent with the enforceable policies of a state's federally approved coastal management program. Federal actions subject to consistency review include license or permit activities and financial assistance activities.

National Environmental Policy Act (NEPA), 42 U.S.C. § 4321 et seq.

NEPA establishes a broad framework for protecting the environment. It requires federal agencies to assess the environmental effects of their proposed actions prior to making decisions.[126] These proposed federal actions include making decisions on permit applications, adopting federal land management actions, and constructing highways and other publicly-owned facilities.[127] Federal agencies must assess the likely impact of their selected action and of alternative courses of action through an Environmental Assessment (EA)/Finding of No Significant Impact (FONSI) or an Environmental Impact Statement (EIS).[128]

State Laws and Regulations

Chapter 91 – The Massachusetts Public Waterfront Act

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

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[125] Mass Office of Coastal Zone Management. 2003. Environmental Permitting in Massachusetts. https://www.mass.gov/files/documents/2017/01/oj/ma-env-permit-guide-2003.pdf.

[126] EPA. 2017. What is the National Environmental Policy Act. Online at: https://www.epa.gov/nepa/what-national-environmental-policy-act.

[127] *Ibid.*

[128] EPA. 2017. National Environmental Policy Act Review Process. Online at: https://www.epa.gov/nepa/national-environmental-policy-act-review-process.

The statute and regulations ensure that tidelands—both presently flowed and previously filled—are utilized only for water-dependent uses or otherwise serve a proper public purpose that provides greater public benefit than detriment to the rights of the public in tidelands. The regulations promote water-dependent use of the shoreline; preserve and promote public access on flowed tidelands; and encourage local involvement in Chapter 91 licensing decisions through Municipal Harbor Plans, which provide harbor-specific guidance to the regulatory decisions of DEP under Chapter 91. Regulations at 301 CMR 23.00 govern the development and approval of Municipal Harbor Plans. Regarding water-dependent uses, the Massachusetts Office of Coastal Zone Management, in its 2011 Policy Guide for the Massachusetts, notes:

In its 1983 amendments to Chapter 91, the legislature established a core mandate that tidelands be "utilized only for water dependent uses or otherwise serve a proper public purpose," and since that time a primary objective of licensing has been to safeguard the waterfront at work.

To this end, the Waterways Regulations contain a variety of explicit provisions that support the following four basic principles:

- *Limited Occupancy - Restrictions must be placed on the spatial extent (amount and/or location) of non-water-dependent uses.*
- *Operational Compatibility - The use type, building scale, and other design and programming aspects of non-water-dependent projects must be compatible with activities characteristic of water-dependent uses along the immediate waterfront.*
- *Shoreline Activation - All non-water-dependent projects at waterfront sites must provide at least one facility that generates water-dependent activity appropriate to the nature of the project, conditions of the waterbody, and other relevant circumstances.*
- *Support through Diversification - Operators of water-dependent uses are afforded certain flexibility to utilize a portion of their waterfront properties for non-water-dependent development that provides economic or operational support, which can be instrumental in helping maritime business thrive and/or remain at high-value shoreline locations.*[129]

Section one of the Chapter 91 waterways regulations also distinguishes between private tidelands and Commonwealth tidelands, as follows:

''Commonwealth tidelands'', tidelands held by the commonwealth in trust for the benefit of the public or held by another party by license or grant of the commonwealth subject to an express or implied condition subsequent that it be used for a public purpose.

''Private tidelands'', tidelands held by a private party subject to an easement of the public for the purposes of navigation and free fishing and fowling and of passing freely over and through the water.

[129] Massachusetts Office of Coastal Zone Management Policy Guide, October 2011. p. 68. https://www.mass.gov/files/documents/2016/08/qc/czm-policy-guide-october2011.pdf

Commonwealth tidelands include all land seaward of mean low water and are held in trust by the state for the public.[130] Private tidelands are the area between mean low and mean high tide.[131] Although private tidelands may be privately owned, they are nonetheless subject to the Public Trust Doctrine, under which the public retains the rights to fish, fowl, and navigate and the natural derivatives thereof in this intertidal area.[132]

Authorization is generally required for any fill, structure, or use in tidelands, including any changes of use and structural alterations in a previously licensed structure. Types of structures include: piers; wharves; floats; retaining walls; revetments; pilings; and waterfront buildings (if located on filled lands or over water). Authorization typically comes in the form of a Chapter 91 license. Prior to January 1, 1984, licenses were not termed but could be revoked by the Commonwealth at any point. Licenses issued after January 1, 1984 are generally for terms of 30 years and cannot be revoked unless there is noncompliance. An applicant can petition for a longer license term, for up to 99 years. Licenses issued to municipalities and public agencies are entitled to be un-termed. Licenses on private land can only be made permanent and irrevocable by an act of the legislature.

In July 2018, the Massachusetts Appeals Court ruled in Commercial Wharf East Condominium Association vs. Boston Boat Basin, LLC that private parties have no authority to seek judicial enforcement of public trust rights through private litigation. "Only the Commonwealth, 'or an entity to which the Legislature has delegated authority expressly, may act to further public trust rights.'"[133] Therefore, only the Department of Environmental Protection has the authority to enforce issues arising from conditions of Chapter 91 permits.

Through a locally-prepared harbor plan, a municipality has the ability to "substitute" local standards for certain state Chapter 91 requirements such as building height limits and setbacks, providing offsets that ensure that the effectiveness of the Waterways regulations are being promoted equally or with greater effectiveness as a result of the substitution. Further, a municipality may "amplify" certain discretionary state standards, for example, by creating design and use standards for areas/parcels. The provisions of a Municipal Harbor Plan can also be effective in providing guidance for DEP in applying the numerous *discretionary* requirements of the Chapter 91 regulations to projects under review.

Massachusetts Coastal Zone Management Program (MCZM)

The Massachusetts Coastal Zone Management Program was first approved by the National Oceanic and Atmospheric Administration in April 1978. The MCZM program seeks to balance the impact of human activities with the protection of coastal and marine resources through planning, public involvement, technical assistance, research, and sound resource management. It is a "networked" program in which the state's coastal policies are directly applied within other state statutory and regulatory authorities, including the Massachusetts Environmental Policy Act, the Public Waterfront Act (Chapter 91), the Review and Approval of Municipal Harbor Plan Regulations, and the Wetlands Protection Act.

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[130] Massachusetts Department of Environmental Protection. 2018. Chapter 91 Frequently Asked Questions. Online at: https://www.mass.gov/guides/chapter-91-frequently-asked-questions.

[131] *Ibid.*

[132] *Ibid.*

[133] Justia US Law. 2018. https://law.justia.com/cases/massachusetts/court-of-appeals/2018/17-p-355.html

The MCZM Policy Guide[134] outlines the policies and principles by which the program is administered. Relevant sections include:

"Ports and Harbors Policy #3 [enforceable]: Preserve and enhance the capacity of Designated Port Areas to accommodate water-dependent industrial uses and prevent the exclusion of such uses from tidelands and any other DPA lands over which an EEA agency exerts control by virtue of ownership or other legal authority." - The key implementation elements of this policy are: control of development on DPA tidelands, maintaining flexible protection for water-dependent industrial uses, operational compatibility, limited occupancy, Designated Port Area Master Plans, and determination of Designated Port Area boundaries.

"Ports and Harbors Policy #4 [enforceable]: For development on tidelands and other coastal waterways, preserve and enhance the immediate waterfront for vessel-related activities that require sufficient space and suitable facilities along the water's edge for operational purposes." - The key implementation elements of this policy are: preventing loss of capacity for water-dependent use, preventing conflicts with existing water-dependent use, and promoting expansion of water-dependent use.

"Ports and Harbors Policy #5: Encourage, through technical and financial assistance, expansion of water-dependent uses in Designated Port Areas and developed harbors, re-development of urban waterfronts, and expansion of physical and visual access."

"Public Access Policy #1 [enforceable]: Ensure that development (both water-dependent or non-water-dependent) of coastal sites subject to state waterways regulation will promote general public use and enjoyment of the water's edge, to an extent commensurate with the Commonwealth's interests in flowed and filled tidelands under the Public Trust Doctrine."

Designated Port Areas

To promote and protect water-dependent industrial uses, the Commonwealth of Massachusetts has established 10 Designated Port Areas (DPAs), including the Chelsea Creek DPA[135], and is one of four DPAs in the immediate Boston Harbor area, as shown in Figure 21.

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[134] Massachusetts Office of Coastal Zone Management Policy Guide, October 2011. https://www.mass.gov/files/documents/2016/08/qc/czm-policy-guide-october2011.pdf

[135] Massachusetts Office of Coastal Zone Management. No date. CZM Port and Harbor Planning Program – Designated Port Areas. Online at: https://www.mass.gov/service-details/czm-port-and-harbor-planning-program-designated-port-areas.

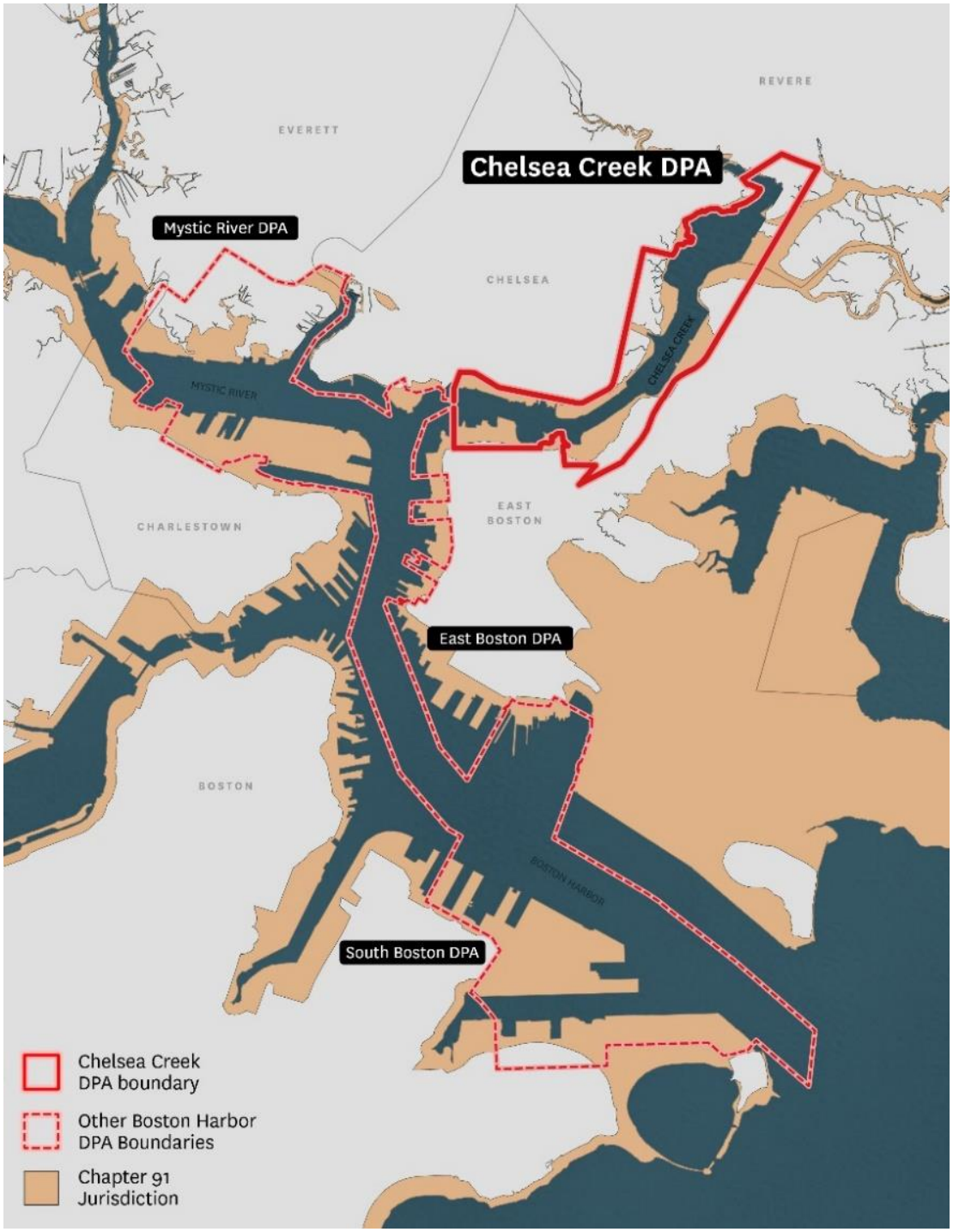

Figure 21: Boston Harbor DPAs

The Chelsea Creek DPA covers the entire water area of the Chelsea River from the Andrew P. McArdle Bridge upstream to the MBTA rail crossing and the adjacent waterfronts of Chelsea, East Boston, and Revere. This DPA Master Plan covers just the land and water portions of the Chelsea Creek DPA within the City of Chelsea's municipal boundaries.

DPAs have particular physical and operational features that are important for (1) water-dependent industrial uses, such as commercial fishing, shipping, and other vessel-related marine commercial

activities, and/or (2) manufacturing, processing, and production activities that require marine transportation or need large volumes of water for withdrawal or discharge.[136]

DPAs are land and water areas with the following characteristics: (1) a waterway and associated waterfront that has been developed for some form of commercial navigation or other direct utilization of the water; (2) backland space that is conducive in both physical configuration and use character to the siting of industrial facilities and operations; and (3) land-based transportation and public utility services appropriate for general industrial purposes.[137] Given the unique requirements for water-dependent industrial uses, Massachusetts policy seeks to preserve and enhance the capacity of the DPAs to accommodate such uses and prevent significant impairment by non-industrial or non-water-dependent types of development, which have fewer unique requirements and therefore a far greater range of siting location options.[138]

In 1979, MassDEP incorporated DPA rules into its Waterways Regulations, with provisions to protect water dependent industrial uses on the water-side areas of DPAs. In 1984, the legislature expanded the Chapter 91 licensing authority to include filled tidelands, and DPA jurisdiction was extended to include upland areas. In 1990, the Chapter 91 regulations were modified to enhance protection of water-dependent industrial uses within DPAs.[139]

Project proposals within DPAs are reviewed by MassDEP under the specific standards of the Chapter 91 regulations, 310 CMR 9.00. To help guide the decisions of MassDEP, municipalities prepare plans for their DPAs as a component of their Municipal Harbor Plan in accordance with the regulations at 301 CMR 23.00.

Massachusetts Wetlands Protection Act (MGL Chapter 131, Section 40)

The Massachusetts Wetlands Protection Act protects wetlands and the public interests they serve, including flood control; prevention of pollution and storm damage; and protection of public and private water supplies, groundwater supply, fisheries, land containing shellfish, and wildlife habitat.[140] The Chelsea Conservation Commission administers the Wetlands Protection Act by implementing regulations found at 310 CMR 10.00. Any project or activity that will remove, fill, dredge, or alter a wetland resource (stream, river, creek, pond, lake, and the banks associated with them, meadows, marshes, swamps, bogs, any land under water, land subject to flooding) or involves work within the 25-foot riverfront protection area or the 100-foot buffer zone associated with a wetland resource area requires a permit from the Commission. Land subject to flooding includes all of the areas identified as potentially subject to inundation in the FEMA flood maps. MassDEP oversee administration of the law, and hears appeals of decisions made by local commissions.

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[136] *Ibid.*

[137] *Ibid.*

[138] *Ibid.*

[139] Massachusetts Office of Coastal Zone Management Policy Guide, October 2011, p.63.

[140] Massachusetts Department of Environmental Protection. No date. Protecting Wetlands in Massachusetts. Online at: https://www.mass.gov/guides/protecting-wetlands-in-massachusetts.

Massachusetts Environmental Policy Act

After the passage of NEPA, many states, including Massachusetts, established state-level or local environmental review requirements. The Massachusetts Environmental Policy Act (MEPA) requires state agencies to study the environmental consequences of their actions, e.g., permitting and financial assistance, and to take all feasible measures to avoid, minimize, and mitigate damage to the environment.[141] MEPA also requires that state agencies study alternatives to a proposed project and develop mitigation requirements to be used by the permitting agency if a permit is issued.[142] MEPA review itself is not a permitting process; instead, it requires public study, disclosure, and development of mitigation requirements for a proposed project before state permitting agencies take action.[143]

City of Chelsea Zoning

Chelsea's zoning regulations are contained in Chapter 34 of the City of Chelsea's Code of Ordinances. Figure 23 displays a zoning map of study area portion of the City of Chelsea.

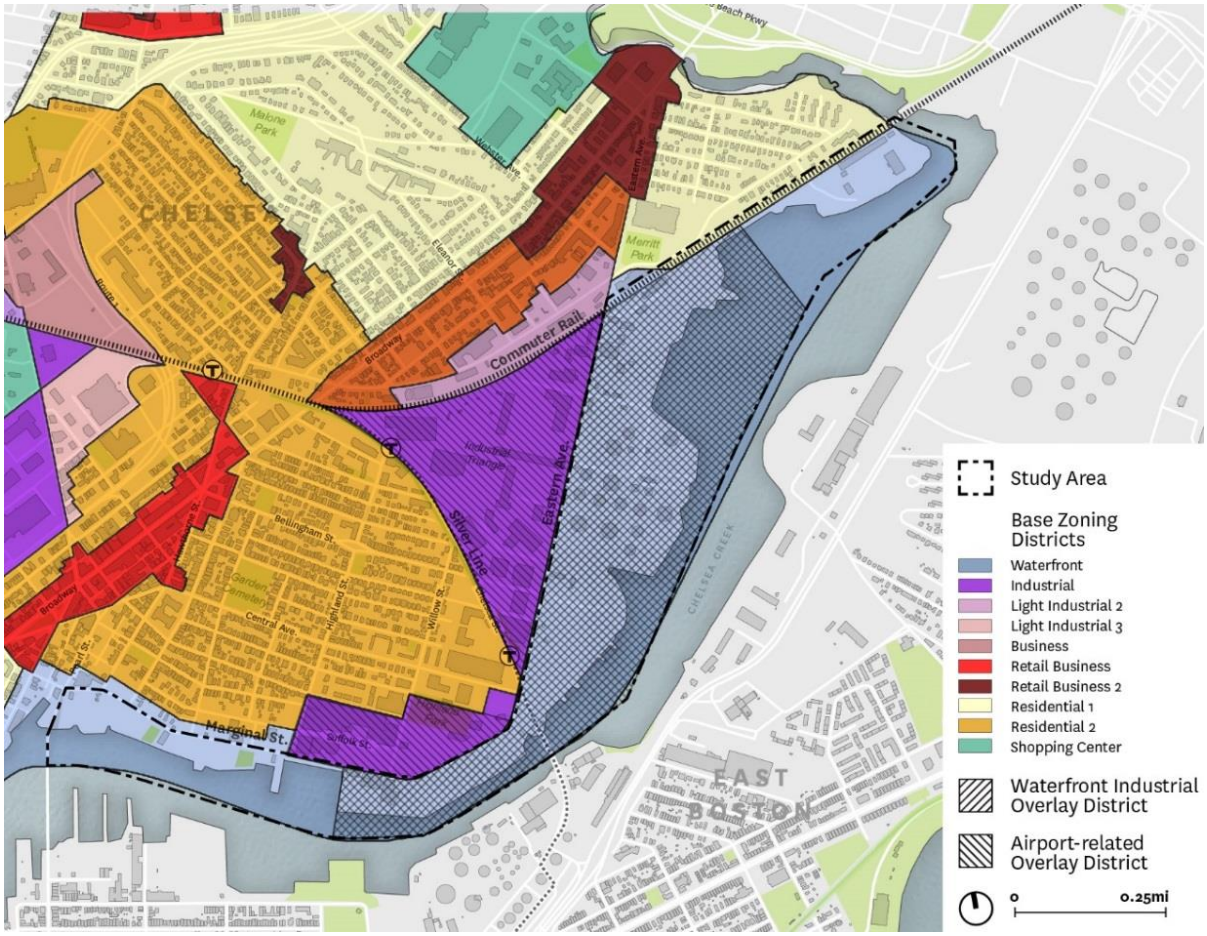

Figure 22: Zoning Base Districts and Overlay Districts

[141] Massachusetts Environmental Policy Act Office. 2018. Purpose and Intent of MEPA. Online at: https://www.mass.gov/service-details/purpose-and-intent-of-mepa.

[142] *Ibid.*

[143] *Ibid.*

Waterfront District (W)[144]

The planning area is entirely within the Waterfront District. The purposes of the W District are:

(1) To provide an area for uses which are water related and/or which benefit from proximity to the airport or the harbor, and

(2) To encourage public access to the waterfront.

Overlay Districts in the Planning Area

The following four overlay districts modify the underlying Waterfront District in the planning area.

Waterfront Industrial Overlay District (WIOD)[145]

The Waterfront Industrial Overlay District (WIOD) covers the majority of the planning area, but does not include the western end of Marginal Street past 227 Marginal Street and does not include the property at 1 Forbes Street. The purposes of the WIOD are:

(1) To promote economic development in the Waterfront (W) and Airport Related Overlay Districts (AROD);

(2) To enhance the working waterfront;

(3) To preserve adequate areas for deep-water shipping and other water dependent industrial uses consistent with the state policy on designated port areas (DPAs);

(4) To allow compatible commercial and general industrial supporting uses in the Waterfront District;

(5) To provide for continuous public access along the water's edge, as appropriate, to, from, and within the Chelsea Creek DPA;

(6) To prevent soil and groundwater pollution and to encourage appropriate interim uses consistent with necessary cleanups; and

(7) To allow certain commercial, general industrial and water-dependent industrial uses by special permit to ensure more effective environmental protection.

Airport Related Overlay District (AROD)[146]

The Airport Related Overlay District (AROD) covers the majority of the planning area, but does not include the western end of Marginal Street past 227 Marginal Street and does not include the property at 1 Forbes Street. The purpose of the AROD is to provide areas for airport related uses in locations with suitable access to the airport and where such activities can occur without adverse impact upon residential areas.

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[144] City of Chelsea. No Date. Zoning Ordinances Chapter 34, Sec. 34-27. Online at: https://library.municode.com/ma/chelsea/codes/code_of_ordinances.

[145] City of Chelsea. No Date. Zoning Ordinances Chapter 34, Sec. 34-179 Waterfront Industrial Overlay District (WIOD). Online at: https://library.municode.com/ma/chelsea/codes/code_of_ordinances.

[146] City of Chelsea. No Date. Zoning Ordinances Chapter 34, Sec. 34-180 Airport Related Overlay District (AROD). Online at: https://library.municode.com/ma/chelsea/codes/code_of_ordinances.

Wireless Communication Overlay District (WCFOD)[147]

The Wireless Communication Overlay District (WCFOD) covers the entire planning area, as it includes all zoning districts except for the Residential R1 and Residential R2 Districts. The purposes of the WCFOD are:

(1) To provide for safe and appropriate siting of wireless communications facilities consistent with the Telecommunications Act of 1996; and

(2) To minimize visual impacts from such facilities on residential districts and scenic areas.

Floodplain Overlay District (FOD)[148]

The Floodplain Overlay District (FOD) covers portions of nearly all properties in the planning area and corresponds with the FEMA 100-Year Floodplain boundary. The purposes of the FOD are:

(1) To ensure public safety through reducing the threats of life and personal injury;
(2) To eliminate new hazards to emergency response officials;
(3) To prevent the occurrence of public emergencies resulting from water quality, contamination, and pollution due to flooding;
(4) To avoid the loss of utility services which if damaged by flooding would disrupt or shut down the utility network and impact regions of the community beyond the site of flooding;
(5) To eliminate costs associated with the response and cleanup of flooding conditions; and
(6) To reduce damage to public and private property resulting from flooding waters.

[147] City of Chelsea. No Date. Zoning Ordinances Chapter 34, Sec. 34-182 Wireless Communications Facilities Overlay District (WCFOD). Online at: https://library.municode.com/ma/chelsea/codes/code_of_ordinances.

[148] City of Chelsea. No Date. Zoning Ordinances Chapter 34, Sec. 34-184 Floodplain Overlay District (FOD). Online at: https://library.municode.com/ma/chelsea/codes/code_of_ordinances.

Chapter 5: Climate Change

As a vital engine for sustaining the nation's economy, the northeast is disproportionately exposed to the effects of the changes in our climate. According to the Fourth National Climate Assessment (2018)[149], the northeast region will become increasingly stressed, due to experiencing the impacts of climate change far earlier and at a greater magnitude than other regions. In the northeast, this will be primarily due to sea level rise and the increased frequency and severity of heat events.

An increase in storm frequency, ocean temperatures, ocean acidification, and sea level rise portend a degradation of coastal ecosystems and economies. Regionally, changes in the ocean temperature and acidity will yield unstable fishing conditions and price volatility, hurting New England's fishing sector. Sea level rise and more frequent storms, leading to increased flooding, will damage property and interrupt coastal port operations, depressing economic activity. Due to the region's historic settlement patterns along the coast, as well as its antiquated combined sewer systems, flood events will also lead to negative environmental and public health outcomes, such as increases in coastal pollution.

Increasing temperatures are also a concern for human health. The Fourth National Climate Assessment projects that a striking growth of northeastern temperatures will result in longer, hotter heatwaves in a region predominantly dependent on older housing stock, which retains heat and provides poor ventilation. Coupled with regional carbon emissions, the increase of heat-related events will directly result in harm to local communities, due to an increase in negative public health outcomes, such as asthma and cardiovascular disease.

Collectively, the socioeconomic and spatial impacts of the risks associated with anthropogenic climate change exacerbates displacement in coastal cities, such as Chelsea, that are presently grappling with market pressures relative to rapid, luxury development. According to preeminent academic literature, environmental justice communities, such as Chelsea, will disproportionately shoulder the negative effects of climate change.[150] Consequently, the city has prioritized projects and initiatives to strengthen community preparedness and mitigate the realities of flooding, extended heatwaves, and other natural disasters.

5.1 Current Conditions and Projected Mapping of Flooding Vulnerability

With approximately 60% of its municipal boundary bordering tidally influenced waterways and its generally low-lying area—on average less than 10 feet above sea level—Chelsea is particularly vulnerable to coastal flooding.[151] Comprising a group of drumlins surrounded by low-lying areas, a sizeable share of the city's land area was developed by filling salt marshes. Sitting at low elevations, these coastal areas are tidally influenced, with high groundwater tables and poorly draining soil. Along the coast, environmental pollution has degraded the remaining marsh areas. As a result, the city lacks the natural ability to alleviate flooding. During precipitation-driven inland flooding events, the city's

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[149] USGCRP, 2017: *Climate Science Special Report: Fourth National Climate Assessment, Volume I* [Wuebbles, D.J., D.W. Fahey, K.A. Hibbard, D.J. Dokken, B.C. Stewart, and T.K. Maycock (eds.)]. U.S. Global Change Research Program, Washington, DC, USA, 470 pp., doi: 10.7930/J0J964J6.
[150] EPA, *Climate Change, Health, and Environmental Justice,* 2016. https://www.cmu.edu/steinbrenner/EPA%20Factsheets/ej-health-climate-change.pdf. Accessed 1/6/19.
[151] Stantec, Woods Hole Group, and City of Chelsea. 2017. Designing Coastal Community Infrastructure for Climate Change. Online at: https://www.chelseama.gov/sites/chelseama/files/uploads/20170215_chelsea_va.pdf.

drainage infrastructure is ill-equipped to handle the excess water in certain locations. During the winter storms of 2018, which occurred simultaneous to high tides, flooding occurred along Beacham St., Williams St., Marginal St., and Eastern Ave., as well as other inland locations. Between January of 1978 and September 20, 2018, the number of property losses reported by the Federal Flood Insurance Program was 27, amounting to a total of $83,549.97 in payments[152]. Overall, the city's vulnerability will continue to increase under present and future climate change conditions.

A recent study developed the Boston Harbor Flood Risk Model (BH-FRM) to assess the effects of climate change on the Central Artery Tunnel System.[153] This dynamic model incorporates increases in water levels; physical processes associated with storm events, e.g., waves, winds, tides, and storm surge; future sea level rise projections; and a range of potential future storm events.[154] This model is also used by other metropolitan Boston municipalities and state agencies, including the Massachusetts Department of Transportation (MassDOT) and the Massachusetts Port Authority (MassPort).[155]

Coastal Community Resiliency Vulnerability Assessment Maps[156]

The BH-FRM was used to determine which areas of the city are most vulnerable to coastal flooding, including identifying inundation pathways where coastal flood waters are likely to flow into the city.[157] These flooding vulnerability assessment maps display data for the present day, 2030, and 2070 time periods and show either the probability of flooding or the depth of flooding.[158] The depth of flooding data are further categorized into a display of flooding depths at the 100-year flood level (1% probability of occurrence each year) and the 1,000-year flood level (0.1% probability of occurrence each year).[159]

Thirty-six percent of Chelsea lies within a flood risk area under present day conditions, 42% in 2030, and 49% in 2070 (as shown in Figure 22).[160] The vast majority of the study area for this Municipal Harbor Plan is included in these flood risk areas under both present and future conditions.

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[152] FEMA. Undated. Policy and Claim Statistics for Flood Insurance. Online at: https://www.fema.gov/policy-claim-statistics-flood-insurance#.

[153] Bosma, K., Douglas, E., Kirshen, P., McArthur, K., Miller, S., and C. Watson. 2015. MassDOT-FHWA Pilot Project Report: Climate Change and Extreme Weather Vulnerability Assessments And Adaptation Options for the Central Artery. Online at: https://www.mass.gov/files/documents/2018/08/09/MassDOT_FHWA_Climate_Change_Vulnerability_1.pdf.

[154] *Ibid.*

[155] *Ibid.*

[156] MassDOT. 2016. Online at: https://www.chelseama.gov/sites/chelseama/files/pages/boston_harbor_model_flood_vulnerability_maps.pdf.

[157] Stantec, Woods Hole Group, and City of Chelsea. 2017. Designing Coastal Community Infrastructure for Climate Change. Online at: https://www.chelseama.gov/sites/chelseama/files/uploads/20170215_chelsea_va.pdf.

[158] *Ibid.*

[159] *Ibid.*

[160] *Ibid.*

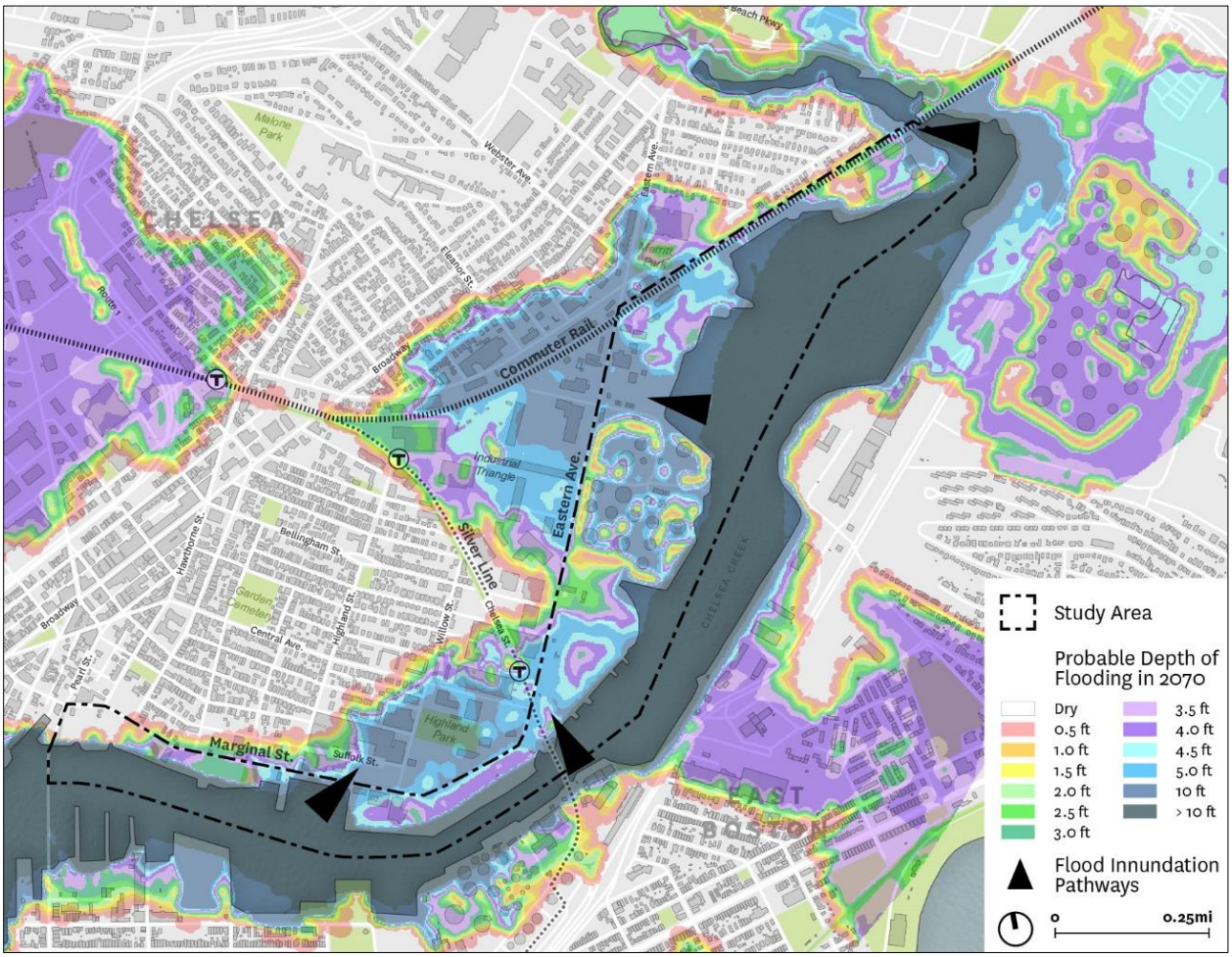

Figure 23: Probable Flooding Depths in 2070[161]

2016 FEMA Flood Maps for Suffolk County[162]

In 2016, the Federal Emergency Management Agency issued newly revised Flood Insurance Rate Maps (FIRMs) and a Flood Insurance Study (FIS) for Suffolk County, including the City of Chelsea. As mandated by the National Flood Insurance Program (NFIP), the City of Chelsea modified its floodplain regulations in the City Zoning Ordinance to reflect this revised information. Figure 25 below shows the updated 100-year flood zone for Chelsea. Notably, FIRMs depict flood risk by utilizing only historical data, which do not account for the climactic and hydrological transformation the region is now experiencing, due to anthropogenic climate change. FEMA flood areas are defined based only on historical flooding data; data pertaining to sea level rise, local drainage systems, and other environmental conditions are not factored in their calculation. Therefore, the city estimates that the frequency, extent, and magnitude of inundation events are likely to be greater than what is documented on the Suffolk County FIRMs.

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[161] Bosma, K., Douglas, E., Kirshen, P., McArthur, K., Miller, S., & Watson, C. (2015). Climate Change and Extreme Weather Vulnerability Assessments and Adaptation Options for the Central Artery. MassDOT, Boston MA.

[162] FEMA. 2016. Flood Insurance Rate Maps. Online at: https://www.chelseama.gov/sites/chelseama/files/uploads/merged_reduced_file_size.pdf and https://msc.fema.gov/portal/home.

Chelsea is not a member of the Community Rating System under which municipal efforts to mitigate flooding and educate the public result in reductions of flood insurance premiums.

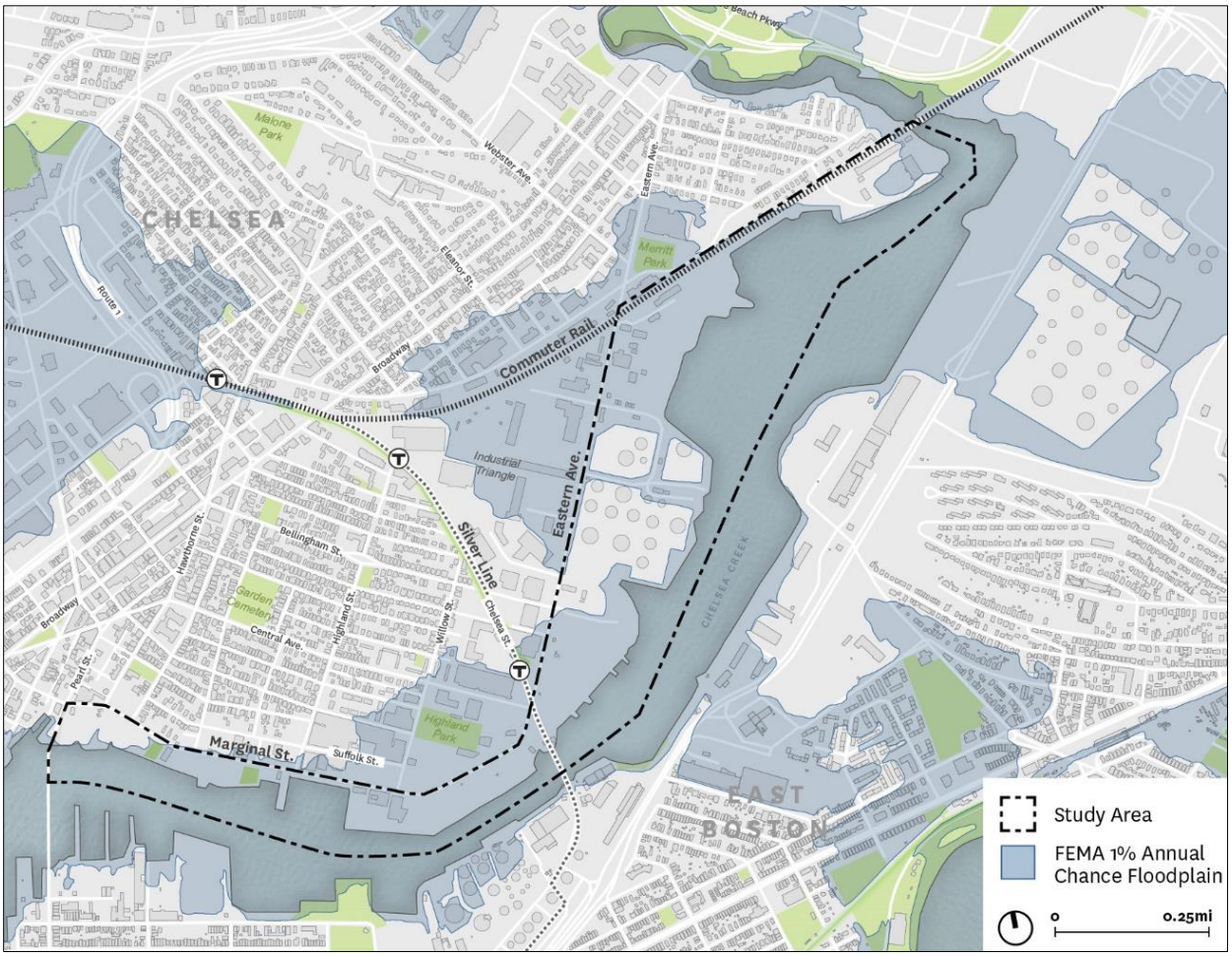

Figure 24: The 100-Year Flood Zone, 2016 FEMA Flood Insurance Rate Maps

5.2 City of Chelsea Climate Change Adaptation and Resilience Initiatives

Similar to coastal municipalities throughout the Commonwealth, Chelsea is beginning to prepare for the anticipated impacts of climate change – hotter temperatures, inland flooding, storm surge, and rising sea levels. Over the past several years, the City of Chelsea has conducted and collaborated on many local climate change adaptation and resiliency initiatives, including projects undertaken in conjunction with state agencies, neighboring municipalities, the private sector, and community groups. The following is a summary of some of these efforts.

Municipal Vulnerability Preparedness (MVP) Program

The Municipal Vulnerability Preparedness (MVP) Program[163] provides grants to municipalities in Massachusetts to encourage them to begin planning for climate change resiliency and implementing

[163] Massachusetts Executive Office of Energy and Environmental Affairs. No date. Municipal Vulnerability Preparedness (MVP) Program. Online at: https://www.mass.gov/municipal-vulnerability-preparedness-mvp-program.

priority projects. State funding allows communities to complete vulnerability assessments and develop action-oriented resiliency plans. Through the planning process, communities learn to define extreme weather and natural and climate related hazards, understand how their community may be impacted by climate change, identify existing and future vulnerabilities and strengths, develop and prioritize community actions, identify opportunities to reduce risk and build resilience, and implement key actions identified through the planning process.[164] Communities who complete the MVP program are certified as MVP communities and are then eligible for various opportunities, including MVP Action Grant funding.

In May 2018, Chelsea completed a community-based planning workshop led by the Metropolitan Area Planning Council (MAPC) and GreenRoots as part of the MVP program. Participants learned about Chelsea's climate risks including issues such as sea level rise, flooding, heat islands, and vulnerable populations; discussed options for resilience; and identified priority actions the city should take to be more prepared for climate change. The final report summarized the information reported by workshop participants including identification of top hazards and vulnerable areas, current strengths and assets, and top recommendations to improve resilience.[165]

Climate Change Vulnerability Assessment

Through the FY16 Coastal Community Resilience Grant Program, the City of Chelsea received funding from the Massachusetts Office of Coastal Zone Management (CZM). This grant program provides financial and technical resources for local efforts to increase awareness and understanding of climate impacts, identify and map vulnerabilities, conduct adaptation planning, redesign vulnerable public facilities and infrastructure, and implement green infrastructure approaches to enhance natural resources and provide storm damage protection.[166]

The final report, *Designing Coastal Community Infrastructure for Climate Change*, is a climate change vulnerability assessment designed to (1) identify vulnerable areas of the city at risk of coastal flooding under present day and projected future climate change conditions, (2) assess flood risk and depth, (3) prioritize critical infrastructure at risk, and (4) recommend adaptation and mitigation measures of varying scale, complexity, and cost.[167] More recently, the city has assiduously advanced elements of the recommended adaptation measures and begun to take steps to integrate resilient approaches into future planning efforts. Recently completed efforts include storm water system rehabilitation in the Everett Avenue Urban Renewal Area and the fortification of the city's sole storm water pumping station, located at Carter and Second Streets, through the encasement of the station in a protective flood barrier and the modernization of the station's supporting infrastructure, including emergency electrical generators.

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[164] *Ibid.*

[165] Metropolitan Area Planning Council. 2018. City of Chelsea Municipal Vulnerability Preparedness Program. Community Resilience Building Workshop Summary of Findings. Chelsea, Massachusetts.

[166] Massachusetts Office of Coastal Zone Management. No date. Coastal Resilience Grant Program. Online at: https://www.mass.gov/service-details/coastal-resilience-grant-program.

[167] Stantec, Woods Hole Group, and City of Chelsea. 2017. Designing Coastal Community Infrastructure for Climate Change. Online at: https://www.chelseama.gov/sites/chelseama/files/uploads/20170215_chelsea_va.pdf.

Resilient Mystic Collaborative

Convened in late 2018 by the Mystic River Watershed Association, the Resilient Mystic Collaborative is an interdisciplinary taskforce composed of municipal, private sector, and nonprofit members that are within the Mystic River Watershed Area. The purpose of the task force is to strengthen collaboration and information sharing, advocate at the state and local level, devise and carry out replicable mitigation/adaptation projects, and increase the visibility and understanding of climate-related issues through strategic communications. As a member, the city has worked to illuminate the susceptibility of the lower Mystic region, which encompasses regional energy, food systems, utility, and transportation infrastructure, such as the New England Produce Center, road salt stockpiles, and fuel and heating oil supply chains.

Metro Mayors Climate Preparedness Commitment and Task Force

Created in 2001, the Metro Mayors Coalition (MMC) is a coalition of mayors and managers from 15 communities in Greater Boston, including Chelsea, which serves as a voluntary forum where members can exchange information and create solutions to common problems.[168] In 2015, the MCC held a summit where they signed a Climate Preparedness Commitment in which they pledged to work together to prepare the region for climate change and to reduce greenhouse gas emissions.[169]

Simultaneously, the MMC created the Metro Mayors Climate Preparedness Task Force to coordinate a regional and multi-governmental effort to protect critical infrastructure and other important resources, as well as to make policy recommendations and set regional priorities based on the goals of the Climate Preparedness Commitment. The Task Force is comprised of the 15 MMC municipalities and other state and federal agencies including the U.S. Environmental Protection Agency (EPA), Massachusetts Executive Office of Energy and Environmental Affairs (EOEEA), Massachusetts Department of Transportation (MassDOT), Massachusetts Bay Transportation Authority (MBTA), Massachusetts Water Resources Authority (MWRA), Massachusetts Clean Energy Center (MassCEC), and the Massachusetts Port Authority (MassPort).

In 2016, the MMC signed a second agreement, the Metro Mayors Climate Mitigation Commitment.[170] In this agreement, which was inspired by the Paris Climate Agreement, the members agreed that by 2020 each municipality would develop or update a local climate mitigation plan and implement at least three climate mitigation actions from an established list and by 2050 the region would achieve net zero/carbon-free status.[171] After the U.S. withdrew from the Paris Climate Agreement in 2017, the MMC

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[168] MAPC. No date. Metro Mayors Climate Preparedness Task Force. Online at: https://www.mapc.org/our-work/expertise/climate/mmc/.

[169] MAPC. 2015. Metropolitan Boston Climate Preparedness Commitment. Online at: http://www.mapc.org/wp-content/uploads/2017/09/Metro-Boston-Climate-Preparedness-Commitment-2015.pdf.

[170] MAPC. 2016. Metro Mayors Climate Mitigation Commitment. Online at: http://www.mapc.org/wp-content/uploads/2017/09/FINAL-Metropolitan-Mayors-Climate-Mitigation-Commitment.pdf.

[171] *Ibid.*

released a statement of strong support for that agreement and reaffirmed its dedication to the net zero goals of the Metro Mayors Climate Mitigation Commitment.[172]

Today, the MMC continually meets to monitor vulnerability, conduct state-level lobbying relative to funding and policy, advance replicable projects and initiatives, and foster collaboration amongst its municipal members. The Island End River, New England Produce Terminal, Marginal Street, and Mill Creek are all areas with critical resources and infrastructure that are subject to flooding through inundation pathways. The city has prioritized these areas and is planning on addressing the vulnerabilities over the next 5 years, in conjunction with its regional partners.

Climate Smart Cities, Boston Metro Mayors

The MMC partnered with the Trust for Public Land (TPL) and MAPC to bring the Climate Smart Cities program to the Boston metro area.[173] This initiative provides key planning and decision-making support to help communities achieve their regional resilience goals by utilizing open space and green infrastructure solutions. An important element of this decision-making support is a GIS mapping tool to identify the potential impacts of climate change.

Climate Ready Boston

Climate Ready Boston is an initiative created by the City of Boston to develop resilient solutions to prepare the city for climate change.[174] Boston released a comprehensive report in 2016 that addresses the challenges of a changing climate in the following four components: (1) updated climate projections for extreme temperatures, sea level rise, extreme precipitation, and storms; (2) a vulnerability assessment of current and potential future risks associated with extreme heat, storm-water flooding, and coastal and riverine flooding for people, buildings, infrastructure, and the economy; (3) eight focus areas that illustrate local risks; and (4) a summary of policy, planning, programmatic, and financial initiatives that address the risks identified in the vulnerability assessment.

Although Chelsea is not included in this planning initiative, it shares Chelsea Creek with East Boston and Revere. Rising waters are opportunistic in finding inundation pathways. Decisions made on each side of the creek affect the other. This underscores the importance of understanding other local planning efforts and aligning goals and policies as much as possible. The climate risks Boston and Chelsea face are the same and therefore the communities should work together as much as possible.

City of Chelsea Hazard Mitigation Plan 2014 Update

The City of Chelsea Hazard Mitigation Plan 2014 Update advances the progress made in the 2008 Hazard Mitigation Plan.[175] Planning for the 2014 update was led by the Chelsea Local Hazard Mitigation Planning Committee, which included staff from several city government departments. The committee

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[172] MAPC. No date. Metro Mayors Climate Preparedness Task Force. Online at: https://www.mapc.org/our-work/expertise/climate/mmc/.

[173] The Trust for Public Land. 2018. Climate Smart Cities Boston Metro Mayors. Online at: https://web.tplgis.org/metromayors_csc/.

[174] City of Boston. 2018. Climate Ready Boston. Online at: https://www.boston.gov/departments/environment/climate-ready-boston.

[175] MAPC. 2014. City of Chelsea Hazard Mitigation Plan 2014 Update. Online at: https://www.chelseama.gov/sites/chelseama/files/uploads/cityreviewchelsea_draft_plan_update_5-16-14.pdf.

discussed the locations of greatest impacts from natural hazards, goals for addressing these impacts, and beneficial hazard mitigation measures. The plan update provides risk assessment for the following natural hazards in Chelsea: flooding; dam failure; wind hazards including hurricanes and tropical storms, tornados, and Nor'easters; severe winter weather including snow and blizzards; geologic hazards including earthquakes and landslides; and other natural hazards including wildland/brush fires, urban fires, drought, extreme temperatures, and tsunamis.

5.3 Research Partnerships with Academic Institutions

The City of Chelsea has partnered with several local academic institutions, such as the University of Massachusetts Boston (UMB) and Worcester Polytechnic Institute (WPI), and their associated project partners on climate change and adaptation related research projects, including the following:

Engineering Coastal Roadway and Storm Water Infrastructure for Marginal St. in Chelsea (2019)

Commencing in early 2019, this project will be performed by civil and environmental engineering students and faculty at WPI. The purpose of this project is to evaluate alternatives for storm barrier design, pavement and construction materials, and attendant storm water infrastructure.

Evaluating the Vulnerability of Boston's Inner Harbor Designated Port Areas to Sea Level Rise and Coastal Storms (2017)[176]

This project by WPI assessed the vulnerability of four Designated Port Areas (DPAs) in Boston's Inner Harbor, including the Chelsea Creek DPA, to sea level rise and coastal storms. Three aspects of vulnerability (exposure to a threat, sensitivity to a threat, and ability to cope with a threat and its impacts) were evaluated on 18 representative parcels. The report highlights the need for more systematic evaluation and planning by stakeholders to mitigate the risks associated with flooding due to sea level rise and coastal storm surge.

Assessing Heat Risks to Prepare Chelsea for a Changing Climate (2017)[177]

This project, performed by WPI civil and environmental engineering students and faculty, identified the extent of heat related impacts on Chelsea and its vulnerable populations and reviewed and identified adaptation strategies to address heat impacts.

Flood Vulnerability Assessment of Food Distribution Centers in Chelsea and Everett (2016)[178]

This project, performed in conjunction with UMB, created a flood vulnerability assessment of food distribution centers in Chelsea and Everett to illustrate the larger regional implications of climate

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[176] Worcester Polytechnic Institute. 2017. Evaluating the Vulnerability of Boston's Inner Harbor Designated Port Areas to Sea Level Rise and Coastal Storms. Online at: https://web.wpi.edu/Pubs/E-project/Available/E-project-101217-101744/unrestricted/BostonHarborNow_FINAL_REPORT.pdf.

[177] Worcester Polytechnic Institute. 2017. Assessing Heat Risks to Prepare Chelsea, Massachusetts for a Changing Climate. Online at: https://wp.wpi.edu/boston/projects/projects-2017/2017-heat-risks-in-chelsea/.

[178] Watson, C., Douglas, E., and A. Teferra. 2016. Assessing Climate Vulnerabilities of Food Distribution Center Sites in Greater Boston: Climate Adaptation Planning in Practice. Online at: https://thrivingearthexchange.org/wp-content/uploads/2016/03/Paper_164721_handout_10473_0.pdf.

impacts on food distribution in the Greater Boston area and guide the development of site-specific strategies for addressing identified vulnerabilities.

Creation of Flood Risk Adaptation Measures for Critical Public Facilities in Chelsea, Massachusetts (2015)[179]

This project, performed by WPI civil and environmental engineering students and faculty, provided flood adaptation strategy recommendations and relative cost estimates for public facilities critical to the City of Chelsea. Five public facilities within the city were evaluated to determine the structural and geographical characteristics that cause them to be at risk from coastal flood events, as well as their probability for current and future flooding.

Preparing the City of Chelsea, Massachusetts to Better Adapt to Climate Change (2014)[180]

This project, performed by WPI civil and environmental engineering students and faculty, identified potential impacts of flooding and prepared guidance documents for city permitting boards (Planning Board, Zoning Board, and Conservation Commission) to inform them about climate change and its impacts, provide a list of physical and socioeconomic vulnerabilities in the city, provide questions to ask developers, and highlight mitigation and adaptation strategies.

[179] Worcester Polytechnic Institute. 2015. Creation of Flood Risk Adaptation Measures for Critical Public Facilities in Chelsea, Massachusetts. Online at: https://web.wpi.edu/Pubs/E-project/Available/E-project-101515-172600/unrestricted/Boston15MIT_FinalReport.pdf.

[180] Worcester Polytechnic Institute. 2014. Preparing the City of Chelsea, Massachusetts to Better Adapt to Climate Change. Online at: https://web.wpi.edu/Pubs/E-project/Available/E-project-101614-174110/unrestricted/Boston_Climate_IQP-_final_report.pdf.

Chapter 6: Economic Analysis

6.1 Chelsea Economic Baseline Conditions

In 2017, 965 business, industry, and government establishments were located within the City of Chelsea. They employed approximately 16,000 people, paying wages of over $821 million for an average annual salary of approximately $51,000.[181]

Employment growth has recovered from the great recession but appears to have reached a plateau. Since 2008, 266 new establishments have been created in the city. Weekly wages have increased at an annualized rate of 1.8% from $846 in 2008 to $985 in 2017.[182]

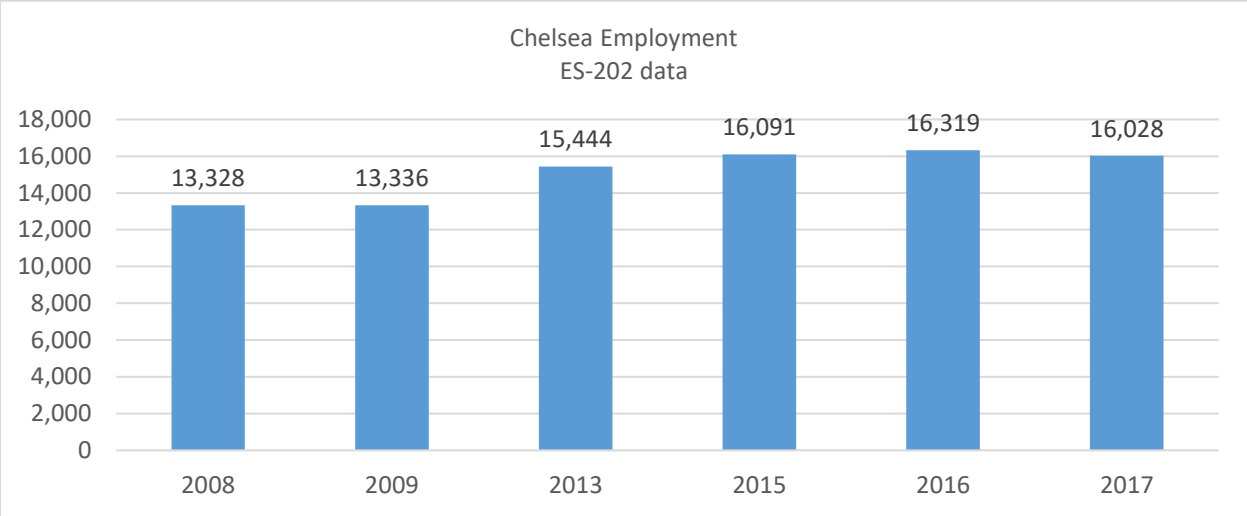

Figure 25: Chelsea Employment figures from 2008-2017

Key industry clusters are listed below in Table 5.

With respect to commercial and industrial activities that include activities consistent with potential DPA uses, 28% of the city's employment base and 34% of the wage base is tied to logistics, wholesale activities, and manufacturing. Ensuring these industries have the opportunity to grow and thrive are critical to the economic wellbeing of Chelsea.

[181] NP analysis of Massachusetts LMI ES-202 data.

[182] *Ibid.*

Table 5: Top Ten Industries in Chelsea[183]

Top 10 Industries	Employees
Health Care and Social Assistance	2,240
Retail Trade	1,828
Public Administration	1,827
Wholesale Trade	1,680
Administrative and Waste Services	1,652
Transportation and Warehousing	1,489
Manufacturing	1,290
Educational Services	1,242
Accommodation and Food Services	992
Other Services not professional	475

6.2 Industry Growth Potential

While the land side along Chelsea Creek is limited, it is strategically located to be a major benefit to businesses supporting Logan Airport or needing waterside access.

The amount of available existing land zoned industrial within the immediate vicinity of Boston (Boston, Everett, Chelsea) is limited. Approximately 1,700 acres are vacant or underutilized[184]. By contrast, there are 10,000 businesses in Middlesex and Suffolk counties that require industrial zoned land.

The limited availability of industrial land has put substantial pressure on real estate pricing in this market segment. Based on broker reports, the industrial market in Boston and the immediate vicinity is highly active. Vacancy levels are at 6.6%, well below the historic average of 9.3%. This has caused rents to increase by 30% with flex space asking rents of over $17 NNN[185] per square foot and warehousing rents of $12 NNN per square foot. In response to the improved economics of industrial and warehousing space, 70,000 square feet of new building capacity was being added in the urban core in 2017.

Suburban markets are adding capacity to meet the excess demand generated in the urban core. The overall greater Boston suburban industrial market is approximately 145 million square feet of space. Three million square feet of additional capacity was being added in 2017. Rents in the suburbs are substantially below those paid in the urban core. By comparison, suburban flex space rents are 42% below Boston rents and warehousing rents are 50% below Boston rents.[186] This differential clearly identifies the premium that industrial and warehousing users are willing to pay for "last mile" access to Boston and its transportation centers.

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[183] *Ibid.*

[184] Raymond Flynn Marine Industrial Park Study, 2017.

[185] NNN is triple net lease – tenant pays maintenance, utilities and taxes.

[186] Cushman Wakefield Q2 2018 Industrial market report.

6.3 Water Dependent Industries

There are over 10,000 industrial, logistics, and industrial service-type businesses in Suffolk County and Middlesex County.[187] By comparison, there are only 118 water-dependent businesses—as defined by the DPA regulations—located in the 2 counties – 1.1% of all industrial-type businesses. Fifty-eight percent of these businesses are related to the seafood industry as processors or wholesalers with wholesaling representing 64% of these businesses. From prior work for the Boston Marine Industrial Park (BMIP) plan, these businesses are located exclusively in Boston and the BMIP due to the proximity to Logan Airport in order to receive or send shipments of seafood via air cargo with minimal delay. (Due to the limited number of companies, a great deal of information, *e.g.,* employment and wage data, was suppressed, making it impossible to provide a breakdown of specific businesses and the associated job densities for each.)

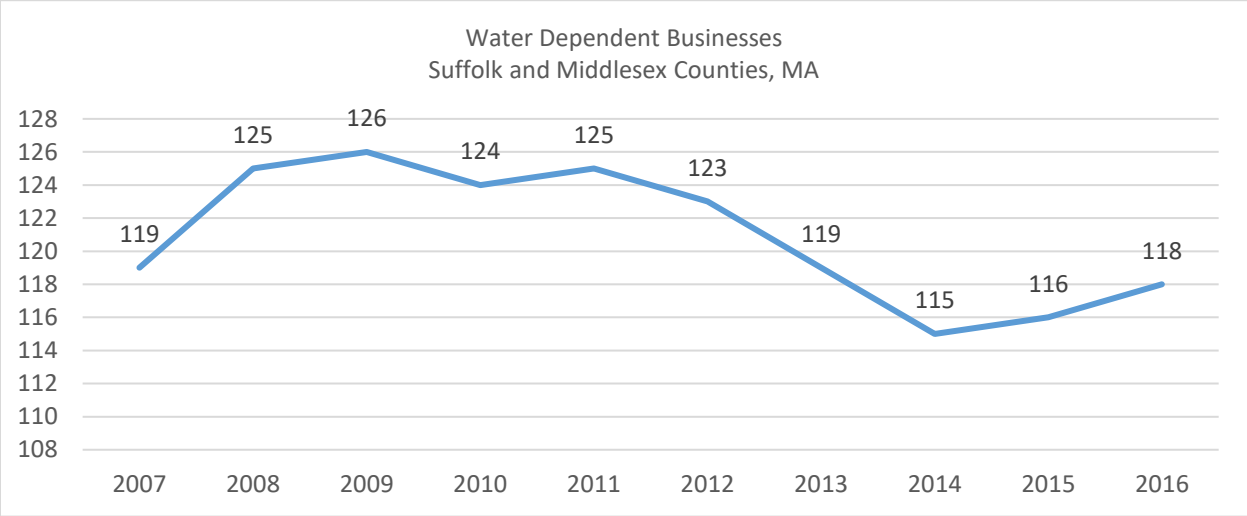

Figure 26: Count of Water Dependent Businesses in Suffolk and Middlesex Counties[188]

6.4 Freight & Cargo Analysis

A broad range of commodities, 19 million tons by weight, are shipped into Massachusetts through a variety of modes. Eighteen percent of these commodities are non-metallic mineral products. This category includes salt, sand, gravel, and clay. This category of freight is shipped primarily by ship or rail[189].

[187] BLS ES 202 data.

[188] NP analysis of Massachusetts LMI ES-202 data.

[189] Massachusetts 2017 Freight Plan.

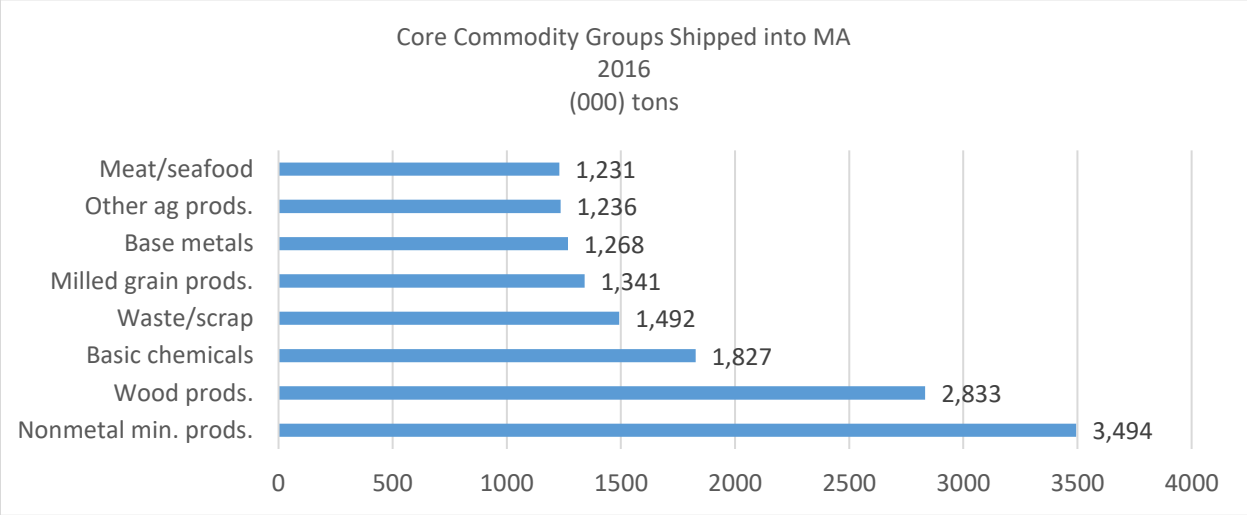

Figure 27: Core Commodity Groups Shipped into Massachusetts

The Massachusetts 2017 Freight Plan forecast shows increased freight traffic by air and water. Waterborne freight is projected to increase by 1 million tons from the 2016 base year to 2045. The level of increase is roughly 35k tons per year. Depending on the cargo type and the size of the vessel, this equates to an additional 1 to 2 ship calls each year or an additional 58 ship dockings per year by 2045. Most of these additional vessels would not be docking in Chelsea Creek given the current land use patterns.

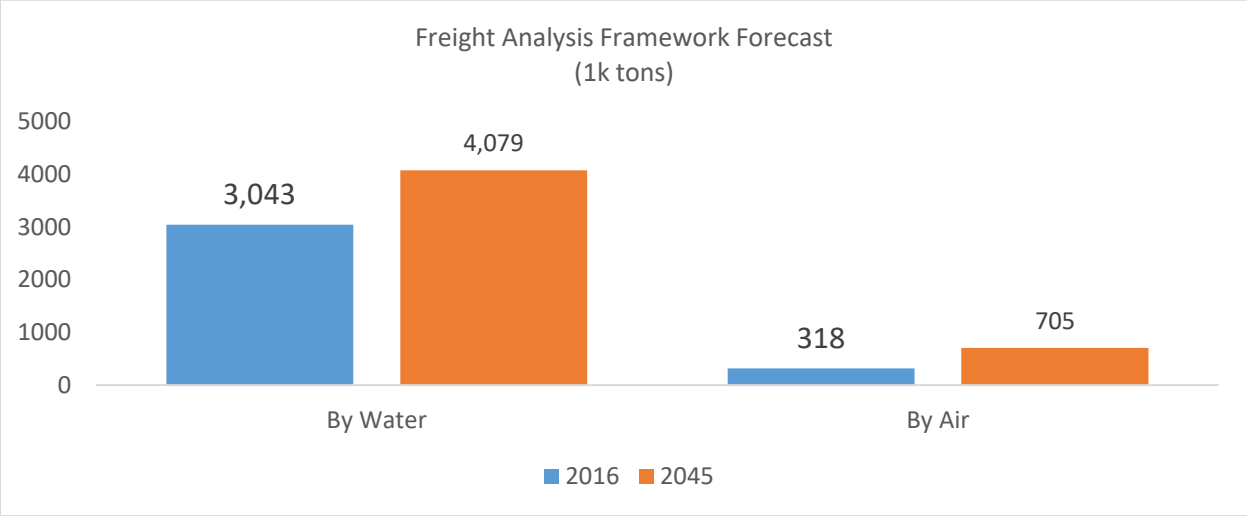

Figure 28: Freight Analysis Framework Forecast

Air cargo is projected to increase by 121% by 2045, although it will still be under 1 million tons. Air cargo tends to fall into one or more categories including high value to weight, just-in-time, or perishable. Proximity to the airport matters because it reduces the drayage costs for distributors.

Role of Logan Airport in Driving Demand

While Logan Airport is part of the Port of Boston, it is also a major competitor for space around Boston Harbor. Airport uses can typically afford to pay higher rents than maritime industrial uses, putting additional pressures on DPA land-owners to continue to license temporary uses that support airport

activities. Continued growth at Logan Airport will continue to put pressure on nearby available land to serve the logistical requirements of the airport. This includes cargo movement, parking, overnight stays, and staging areas. MassPort's midterm goal is to achieve 45 million passengers supported by terminal modernization and additional gates for both domestic and international travelers.[190] Forty-five million passengers represents a 13% increase in passenger traffic through Logan's terminals, though a timeframe was not provided for these numbers.

One area to monitor going forward is the status of petroleum product storage along Chelsea Creek. The overall U.S. oil storage industry is expected to continue to grow by an annual rate of 4.8% a year.[191] However, the majority of this growth is expected for crude oil storage. Less clear is the amount of gasoline and diesel storage required for New England over time based upon the electrification of the transportation network. Massachusetts ranks 7th in terms of electric vehicle (EV) car sales[192], with southern New England selling approximately 8,000 cars. However, this equates only to approximately 1.5% to 2.0% of the total auto market. The International Energy Administration (IEA) expects EV sales to reduce oil demand in 2040 by 2.3%. If Massachusetts and southern New England continue to adopt EVs at a higher rate than the U.S. overall, there will likely correspond to a greater reduction in demand for petroleum products.

6.5 Opportunities for Chelsea Creek

As one of the few remaining industrial areas near Boston, Chelsea Creek has several development opportunities to take advantage of its first mile / last mile position with respect to key transportation hubs. The demand for industrial and logistics type space is likely to continue in the future as the Airport continues to grow and the last mile connections for e-commerce grow in importance. What role water dependent industries will play in driving this demand is unclear but based on the trend-line of the number of operating companies, it will more likely be driven by growth of existing companies needing additional space.

One of the key issues will be balancing, protecting, and enabling "water-dependent" uses while supporting the critical logistical requirements of a major global city. A form-based, typology-centric model that does not preclude water dependent industrial uses, rather than an industry-use defined model, would enhance Chelsea Creek's opportunity for physical and job development consistent with the requirements of the DPA. A form-based typology would define industrial building forms, size, and scale that have broad application to a range of industrial uses including marine industrial uses that require physical indoor facilities. Pursuing this type of approach provides a broader potential tenant mix to make industrial development more viable while not conflicting with marine uses.

In 2017, the City of Chelsea commissioned a hotel market study. The study determined that the city could support another nationally branded 125 to 150 room hotel. Potential locations for the hotel site were identified as the Mystic Mall area and Chelsea River East. Several regulatory issues were identified including the need to adjust height limits upward to accommodate the hotel.

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[190] Massport Feb 2018 Board meeting staff presentations.

[191] Allied Market Research, 2017

[192] EVAdoption. Online at: http://evadoption.com/ev-market-share/ev-market-share-state/.

Chapter 7: Policies and Strategies of the Municipal Harbor Plan

This chapter presents the policies and related strategies intended to achieve the plan's vision beyond, and consistent with, the parameters of the DPA Master Plan. The policies and strategies are broken down by topic and the ordering and organization of topics reflects the city's priorities.

7.1 Public Access

Policy: Create and maintain physical and visual public access within the harbor planning area that promotes recreation, relaxation, engagement with the waterfront, and economic development.

Strategies:

A. Generate standardized public access signage requirements that will clearly identify access opportunities to and/or along the waterfront.

B. Develop robust point access on either side of the Chelsea Street Bridge for all segments of the community. Point access at these sites should be designed as a gateway to Chelsea and should accommodate public programming in a manner consistent with the water-dependent industrial and supporting uses of the DPA.

C. Require that permitted development in the DPA provide some form of robust point access, along the property lines, from the public right-of-way to the water's edge, at the following prioritized sites:

1. 15 and 29 Marginal Street and at the old Chelsea Street Bridge alignment
2. On the former Grand Junction Railroad right-of-way north of the Chelsea Street Bridge
3. 215 Marginal Street
4. 111 Eastern – including to the mouth of Bass Creek
5. 257 Marginal Street
6. Between and along the shorelines of the parcels at 295 Eastern Avenue and 1 Forbes Street
7. 239 Marginal Street
8. 201 Marginal Street
9. 197 Marginal Street

Robust point access means a corridor at least 15 feet wide, without gates, that is lit and landscaped. Additionally, if point access exists on the edge of an abutting property, efforts should be made to locate any new point access in a manner that is directly adjacent to the existing access and without any physical barriers between them. Any point access should be designed so as to not conflict with DPA uses.

D. Provide lateral pedestrian and bicycle access on any waterfront parcel, city-wide, that is not in a DPA, with connections to the public rights-of-way. Linkage should be coordinated and made contiguous over time, without gates or other barriers, and with appropriate signage to identify connections.

E. When applicable, Chapter 91 license and city permit conditions should require payments to support the development, maintenance, and programming of public access in a manner that does not interfere with water-dependent industrial uses. As part of this, the city should establish a Waterfront Improvement Fund to receive these payments. Specific details are available in Appendix H.

F. Ensure that Ch. 91 licenses include appropriate public access conditions aligned with the municipal requirements stated in any special permit or

variance. Coordinate permit language so that identical language appears in both city and state permits, allowing either to enforce those conditions.

G. Provide public access over tidelands in instances where said tidelands (1) cannot be used for commercial navigation and (2) directly abut a sidewalk, road, or railroad.

H. Continue to provide for responsible use of the watersheet by small craft while encouraging more public education about safety considerations including the moving exclusion zone around vessels under tow.

7.2 Public Programming

Policy: *Develop, support, and maintain public programming that creates economic and cultural opportunities for the community in a way that is compatible with water-dependent industrial uses.*

Strategies:

A. Utilize the point access on either side of the Chelsea Street Bridge for public art and seasonal, temporary retail and public programming purposes. Examples of programming include pop-up markets, seasonal retail, outdoor movies and entertainment, and food trucks. Ensure that programming is consistent with, and not in conflict with DPA uses.

B. Develop signage requirements and best practices throughout the planning area and abutting neighborhoods to highlight the area's history and existing uses. As part of this, consider designs that highlight the evolution of the parcel, including historical photographs and maps when available.

C. With redevelopment, promote the installation of public art and programmable open space as appropriate.

D. When applicable, Chapter 91 license and city permit conditions should require payments to support public programming. The city should establish a Waterfront Improvement Fund to receive these payments (see Appendix H).

E. Promote the inclusion of community amenities within new developments in the planning area. Community amenities include, but are not limited to: public restrooms, public parking, passive and active recreation opportunities, and meeting spaces that could be used for community meetings and events.

7.3 Economic Development

Policy: *Encourage uses in the harbor planning area that will create living-wage, local jobs and support the local economy and municipal tax base.*

Strategies:

A. Support the redevelopment of waterfront properties to generate economic opportunities and increase job density—especially for blue-collar, living-wage jobs that would be appropriate for the demographics that live in Chelsea.

B. Facilitate the strategic siting and development of supporting uses through the reallocation of percentages of supporting and water-dependent industrial uses allowable within Chapter 91 jurisdiction (see DPA Master Plan, Chapter 8 for details).

C. Explore opportunities to develop a marine technology cluster, capitalizing on the area's access to employees and local colleges and universities.[193]

D. Where feasible, coordinate the terms of temporary Chapter 91 license renewals on abutting parcels in order to facilitate more competitive marketing of parcels for sale to or use by water-dependent industrial users.

E. For temporary licenses and renewals thereof, include a license condition requiring payment into the Waterfront Improvement Fund for the duration of the temporary licenses and any subsequent renewals (See Appendix H).

F. Promote the use of temporary and/or seasonal structures and activities (*e.g.*, food service, outdoor theatre) associated with public access and public programming to create new economic and cultural opportunities.

G. As appropriate, ensure that revised street layouts within the planning area will be configured to facilitate safe use by tractor trailers (such as the WB-67 trucks) and other vehicles accessing local commercial and industrial properties.

7.4 City Zoning

Policy: *Ensure that the city's land use regulations effectively promote the policies of this plan and align with the relevant policies of MGL Chapter 91, the Public Waterfront Act.*

Strategies:

A. Create a new zone consisting of the waterfront sides of Marginal Street and Eastern Avenue from Pearl Street to the railroad crossing of Eastern Avenue that will allow maritime industrial uses and preclude residential uses.

B. Create a new zone comprised of the existing Waterfront zoned parcels on the upland side of Marginal Street, east of Pearl Street, with the intent to preserve and promote economic development, preserve the industrial character of the corridor, preclude residential uses, and minimize conflicts in the area between the waterfront and upland residential neighborhoods.

Additional zoning strategies relevant to the DPA can be found in the DPA Master Plan (Chapter 8 of this document). Broadly speaking, the strategies include:

1. Preserve the industrial character of Marginal Street and Eastern Avenue.
2. Preclude residential development that is incompatible with the industrial character of the area.
3. Revise the allowed uses table.
4. Redefine "Lot Area" to exclude land under water.

[193] Boston Harbor Now. 2017. Boston's Working Ports: A foundation for Innovation. Online at: http://www.bostonharbornow.org/wp-content/uploads/2017/12/FOR-RELEASE-Bostons-Working-Port-A-Foundation-for-Innovation-v1-24.pdf.

7.5 Transportation

Policy: *Increase opportunities for users of all modes and all abilities for improved transportation to, from, and through the Chelsea Creek waterfront.*

Strategies:

A. Work with the U.S. Coast Guard, the Massachusetts Department of Transportation, and others to reduce impacts related to the opening of the Chelsea Street Bridge and the Andrew McArdle Bridge. Examples include promoting efforts to improve lighting and fendering that would allow for nighttime vessel passage, providing input on improved processes and procedures such as minimizing bridge openings for each tug leaving the upper Creek independently, and retrofitting the bridge to allow for partial openings to reduce impacts to traffic while maintaining safe and efficient vessel traffic. Encourage the prior-day publication of all non-emergency bridge opening times to allow for better logistical planning by all users of the bridges.

B. Improve non-vehicular access along Eastern Avenue and Marginal Street through the widening of sidewalks, installation of new signaled crossings, use of traffic calming devices, and development of bike lanes. Ensure that these new measures provide improved visual access to the Creek and accommodate industrial uses such as truck traffic.

C. Reconfigure the intersections and roadways on both sides of the Chelsea Street Bridge to prioritize Silver Line traffic and safely accommodate pedestrians and bicyclists.

D. Make efforts to ensure that permitted uses of the waterfront and watersheet do not significantly increase the number of openings of the Chelsea Street Bridge.

E. Explore the potential for a ferry dock and/or water taxi stop at 197-201 Marginal Street. As part of this effort, conduct potential ridership studies.

F. Recommend a new bridge crossing at Mill Creek to provide direct vehicle or transit access from the vicinity of the Forbes site to Route 16 and/or Route 1A in Revere with potential connections to Suffolk Downs. Investigate the possibility of developing this new crossing in conjunction with the future repair or replacement of the current rail crossing of Mill Creek.

G. Improve the intersection of Chelsea Street, Eastern Avenue, Marginal Street, and Central Avenue. This intersection should be redesigned to achieve several important goals: (1) give priority to the Silver Line buses, (2) reduce crossing distances for pedestrians, (3) allow sufficient time for pedestrians of all abilities to cross, (4) accommodate cyclists traveling in all four directions, (5) allow for continued traffic flow between Marginal Street and Eastern Avenue when the bridge is up and closed to vehicles, and (6) provide for the orderly clearing of traffic backups caused by the bridge closure. Further consideration should be given to the possible reconfiguration of the current lanes on the bridge itself. One possible reconfiguration could reserve one lane as a dedicated guideway for the Silver Line with directionality to be controlled by signals on both ends of the bridge, reserve a second lane for a mixed-use path connecting the Chelsea Greenway to East Boston and eventually the East Boston Greenway, and use the remaining two lanes for mixed traffic, with one lane of travel in each direction. Another alternative to consider is shared, dedicated bicycle and bus lanes in both directions.

7.6 Infrastructure Improvements

Policy: *Ensure that waterfront infrastructure is safe and adequate to accommodate existing and anticipated uses, and ensure that infrastructure improvements address predicted sea level rise and storm surge scenarios based on the best available science.*

Strategies:

A. Require non-water-dependent uses within the DPA to contribute to a Waterfront Improvement Fund. Contributions to this fund would also allow any use not categorically excluded to become a supporting use. Contributions would also be required for temporary uses.

B. Require waterside infrastructure assessments and, when appropriate, shadow studies for each parcel/property that seeks a license renewal or for redevelopment projects.

C. Establish baseline expectations for waterside improvements depending on the use of the waterfront property.

D. Mitigate for shadow impacts on Chapter 91 jurisdictional land with new construction through payment into the Waterfront Improvement Fund.

E. Integrate flood prevention/mitigation measures into redesign or improvements for waterside infrastructure. Require all property owners to remove all existing and projected inundation pathways.

7.7 Climate Change

Policy: *Minimize economic, social, and environmental impacts of anthropogenic climate-change-related flooding.*

Strategies:

A. Seek grant funds and utilize existing resources and the best available science to conduct a comprehensive planning effort to understand the vulnerabilities and potential approaches to address anthropogenic climate change risks within the planning area – as well as along all of the city's waterfront. As part of this:

1. Identify potential economic impacts under current flooding projections – both during a storm as well as in the days and weeks following a storm (e.g., disruption of fuel service to Logan Airport for several weeks). Use the planning process for the Port of Providence, Rhode Island as a potential model for stakeholder engagement.[194]

2. Explore opportunities to protect against, retreat from, and/or accommodate flooding. Example strategies include:

a. Aggressively mitigate all identified inundation pathways.

b. Create vertical barriers that can also facilitate enhanced public access, such as raising the sidewalk along Marginal Street.[195] These measures should be designed to accommodate continued industrial uses (*e.g.,* curb cuts and sidewalk crossings should not create challenges for turning trucks).

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[194] Hurricane Resilience Long Range Planning for the Port of Providence. Online at: https://www.portofprovidenceresilience.org/

[195] Stantec, Woods Hole Group, and City of Chelsea. 2017. Designing Coastal Community Infrastructure for Climate Change. Online at: https://www.chelseama.gov/sites/chelseama/files/uploads/20170215_chelsea_va.pdf.

c. Elevate waterfront properties in a way that minimizes flooding but maintains access for water-dependent industrial uses and protects public point access.

d. Develop berms or other infrastructure designed to both contain products stored along the waterfront (*e.g.,* salt, cars, and fuel) in the event of a spill/flood and to prevent flooding from sea level rise and storm surge.

e. Develop in-water nature-based solutions such as floating reefs. These water-dependent projects would be sited in a way that maximizes protection against flooding without introducing navigational hazards or impairments to existing and future water-dependent industrial uses.

f. Require structures in flood areas to be elevated and that no mechanical systems be placed on the ground floor.

g. Identify infrastructure improvements on Marginal Street to address anthropogenic climate change impacts, building on previous studies.

h. Conduct environmental site assessments of contaminated properties to obtain information about the potential risks associated with flooding, and explore options for minimizing potential environmental impacts.

i. Ensure that measures taken to improve resiliency and mitigate impacts of anthropogenic climate change and sea level rise do not preclude access for water-dependent industrial uses.

j. Review and modify existing zoning in the city to address anthropogenic climate change. As part of this, consider building elevation requirements.

B. Ensure that all Chapter 91 licenses issued for the Chelsea waterfront consider projected anthropogenic climate change impacts.

1. Require that permitted projects identify and mitigate inundation pathways and protect the public infrastructure.

2. Require that permitted projects actively prevent pollution contained on the site from travelling beyond the site for the duration of the permitted use, using the best available science to understand flood risks over the permitted time period.

7.8 Pollution

Policy: *Encourage waterfront uses in a manner consistent with all state and federal environmental regulations, promote the remediation of contaminated sites, and expand progress in realizing the promise of the Clean Water Act of swimmable and fishable waters.*

Strategies:

A. Require on-site remediation as part of any redevelopment projects.

B. Identify and eliminate sources of contamination into the Creek, including CSOs.

C. Improve monitoring of water quality and notify the public of events which compromise water quality.

7.9 Substitutions

Policy: *Provide the City, property owners, developers, and businesses with sufficient flexibility and clarity to successfully redevelop and enhance employment and business opportunities within the Designated Port Area.*

Strategies: Substitute local standards for certain dimensional requirements of the state Waterways Regulations, 310 CMR 9.00. The text of the substitutions can be found in section 8.6, Guidance to DEP, below.

A. Allow for the reconfiguration of the Water Dependent Use Zone with no net loss of area within land subject to Chapter 91 jurisdiction.

B. Allow for heights of up to 85 feet outside of a Water Dependent Use Zone.

C. Allow for payments in lieu of providing the required public point access outlined in this plan.

D. Allow for any use not categorically precluded by state regulation and permitted by right or special permit in the municipal zoning ordinance to be allowed within the DPA while ensuring that no more than 25% of the total area of the DPA within Chapter 91 jurisdiction is devoted to supporting uses. Businesses would become supporting uses and contribute to the maritime industrial infrastructure through making annual payments to the city's Waterfront Improvement Fund.

Chapter 8: DPA Master Plan

This chapter of the City of Chelsea Municipal Harbor Plan is prepared as the Master Plan for the city's portion of the Chelsea Creek Designated Port Area (DPA) (Figure 30).

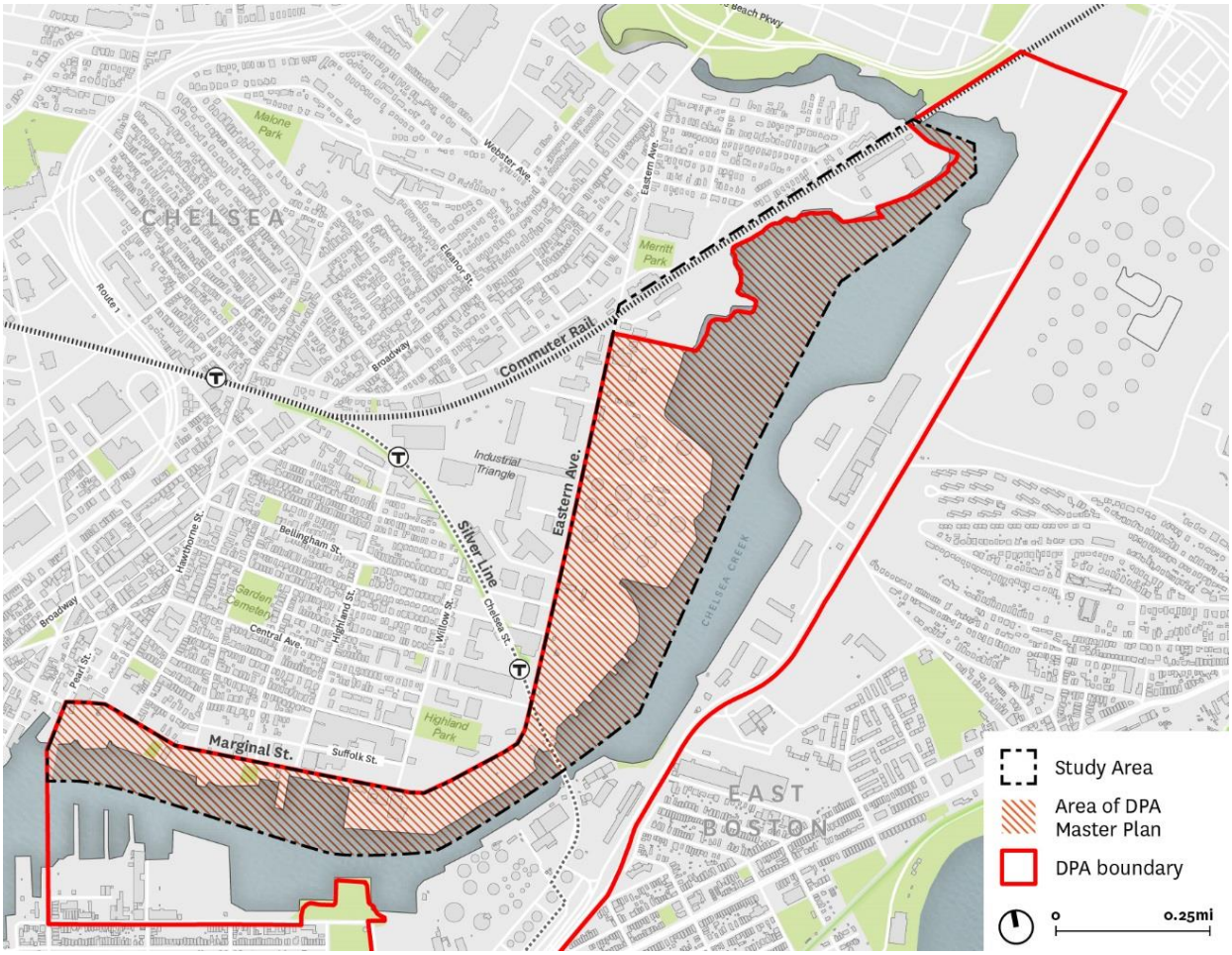

Figure 29: Designated Port Area Master Plan planning area

The Chelsea Creek DPA covers the entire watersheet within the city's jurisdiction in the river, including flowed tidelands, and most of the adjacent land area and piers from the Andrew P. McArdle Bridge upstream to the MBTA rail crossing of Mill Creek. The upland portions of several parcels at the northern end of the DPA, the Forbes parcel (18 acres) and the parcels on which Glyptal and Atlas Glen-More companies are located (22 acres), were removed from the original DPA boundary on April 6, 2016, following a formal boundary review process by the Massachusetts Office of Coastal Zone Management.

The Chelsea Municipal Harbor Plan and DPA Master Plan set forth the city's vision and the implementing mechanisms for guiding public and private decision-making over the use of the land and water areas within the planning area. Upon approval of the plan by the state, projects seeking a Chapter 91 license must be in conformance with the plan.

8.1 Goals and "Vision"

This plan fully endorses water-dependent industrial uses on an extensive amount of the DPA land area in close proximity to the water, provides guidance for improving community access to the waterfront in ways compatible with industrial uses, and presents a strategy for accommodating supporting commercial and industrial uses and related adjacent development in ways that maximize the waterfront's economic development potential and job creation.

The city's goals for the Chelsea Creek DPA are to:

1. Maintain and support existing water-dependent industrial uses, and encourage new and expanded uses in suitable locations.

2. Provide flexibility in permitting and licensing of commercial and industrial supporting uses to encourage their siting in areas where they will neither alter nor introduce incompatibilities in areas of predominantly marine industrial use.

3. Encourage and manage, through the city's Zoning Ordinance, the use of DPA land area outside of Chapter 91 jurisdictional land (flowed and filled tidelands) for commercial and industrial development for purposes of expanding the city's economy, tax base, and job opportunities.

4. Promote increased public access to Chelsea Creek by:

a) Incorporating requirements into the permitting and licensing of all development and redevelopment in the DPA to contribute to increasing or improving public access.

b) Designing and locating perpendicular and point access to the waterfront to serve Chelsea neighborhoods. Where appropriate, perpendicular access will be along the public right-of-way or the shorefront and point access will be along property lines.

b) Improving publicly-owned property to enhance access from city neighborhoods to the waterfront.

The Chelsea Creek Municipal Harbor Plan and DPA Master Plan both support the following on property in the DPA:

- Water-dependent industrial uses on filled tidelands, pile-supported structures, and upland areas with accessory uses thereto outside of the water-dependent use zone.
- Water-dependent and non-water-dependent commercial and industrial uses as supporting uses on filled tidelands (prohibited on pile-supported structures by 310 CMR 9.02) in an amount not to exceed 25 percent of the total area of filled tidelands within the DPA.
- Commercial and industrial uses on upland portions of properties within the DPA, sited and designed so as not to diminish the total area of the water-dependent use zone, nor conflict with, preempt, or discourage water-dependent activity or public use and enjoyment of the water-dependent use zone.

The plan recommends revisions to the city's Zoning Ordinance (Ch. 34 of the Chelsea Code of Ordinances) which support these objectives. See Section 7.4 above, Section 8.6 below, and Appendix I.

8.2 Strategies

The DPA Master Plan proposes a regulatory framework and detailed implementation measures to ensure that extensive areas of the DPA within Chapter 91 jurisdiction are reserved for water-dependent industrial uses, and puts forward limits on commercial uses to prevent incompatibility with marine industry while continuing to provide flexibility in the density and location of allowable DPA supporting uses. The Chelsea Creek DPA Master Plan does this by:

- Promoting, preserving, and ensuring the active use of the shorefront of each property. Access to the shorefront shall either be by water-dependent industrial users, or by point access or walkways, as appropriate.
- Working with owners of existing water-dependent industrial businesses to expand their investments, jobs, and operations and to attract new maritime uses to the waterfront.
- Encouraging supporting and related commercial uses that strengthen the economic viability of waterfront property and its ability to maintain important shore-side and water-side infrastructure.
- Providing flexibility in the amount, distribution, and locations of supporting commercial uses to encourage reinvestment in waterfront property and in both public and private infrastructure.
- Promoting active public access in specific areas along the waterfront to enable community members improved access to the waterfront in ways that will build community support for and neither limit nor interfere with water-dependent industrial operations.
- Recommending revisions to both the city zoning ordinances and specific modification of state regulations to codify the plan's recommendations.

As part of the implementation of this plan, the city will establish a Waterfront Improvement Fund. This fund will receive monies related to any payments for relief and mitigation granted in special permits and licenses issued by the city or DEP. Every effort shall be made to coordinate the language for conditions in the special permits and licenses so that identical text will appear in each, so that both the city and DEP have independent authority to enforce the provisions.

The Waterfront Improvement Fund will receive monies that are related to impacts on the maritime-industrial character of the DPA. This will include payments by a supporting use to fulfill the requirement to provide "direct economic support" to water-dependent industrial use in the DPA, and other impacts such as net new shadows on the watersheet. Payments will also be required for licensed temporary uses and failure to meet public access requirements. This fund will be used to support projects within the harbor that improve navigation, address inundation pathways, mitigate flooding, improve habitat, reduce industrial conflicts, and promote activities consistent with a working waterfront. No funds will be used to support any dredging where spoils will be disposed of in Chelsea Creek or the Mystic River.

8.3 DPA Land Use Context and Calculations

The Chelsea Creek DPA consists of: flowed tidelands, including present submerged lands and tidal flats and the area of pile-supported piers; filled tidelands, which are subject to Chapter 91 jurisdiction; and upland areas that have always been landward of normal tidal action and are not within the jurisdiction of Chapter 91.

Table 6: Area of the Chelsea Creek DPA within and outside of Chapter 91 jurisdiction (not including flowed tidelands)

	Acres	Percent
Total area of filled and pile-supported piers	42.3	43%
Total area outside of jurisdiction	56.3	57%
Total land area within the DPA	98.6	100%

One of the DPA Master Plan approval standards (301 CMR 23.05(e)(1)) is that the plan shall ensure that an extensive amount of the total DPA land area in close proximity to the water will be reserved for water-dependent industrial uses and, further, that commercial uses and any accessory uses thereto will not, as a general rule, occupy more than 25 percent of the total DPA land area within jurisdiction.

8.4 Water-Dependent Industrial Uses, Accessory Uses, and Temporary Uses

DPA Master Plans must ensure that 75 percent of the area within Chapter 91 jurisdiction is occupied by and/or reserved for these uses. Water-dependent industrial uses are defined in the state's Waterways Regulations (310 CMR 9.12(2)(b)). Generally, these are *industrial* uses that require direct access to or location in tidal waters and therefore cannot be located away from such waters, such as marine terminals, storage for materials and goods transported in waterborne commerce, commercial passenger vessel operations, commercial fishing, boatyards, facilities for vessels engaged in ports operations, etc. Included as water-dependent industrial uses are accessory uses, i.e., those uses that are customarily associated with, integral in function to, commensurate in scale with the water-dependent industrial use, operate at similar hours, and do not require significant additional investment in infrastructure (see 301 CMR 9.21(3)(a)and (b)).

Temporary Uses include warehousing, trucking, parking, and other industrial and transportation uses which occupy vacant space or facilities in a Designated Port Area, for a maximum term of ten years and without significant structural alteration of such space or facilities (310 CMR 9.02).

8.5 Supporting DPA Uses

Any industrial or commercial use, other than those posing a severe conflict with port operations, is eligible for licensing as a supporting DPA use. Examples of supporting commercial uses are small businesses, retail, and service facilities; shops of tradespersons, eating and drinking establishments with limited seating, and small offices as examples of supporting commercial uses compatible with the DPA. The Chapter 91 regulations (310 CMR 9.02) categorically exclude from eligibility as a supporting DPA use hotels/motels, nursing homes, hospitals, recreational boating facilities, entertainment facilities, and new buildings devoted predominantly to office use.

Within the Chelsea Creek DPA, the combined area of filled tidelands and pile-supported piers is 42.3 acres. To ensure that no more than twenty-five percent of the area within jurisdiction is occupied by supporting commercial uses, 75 percent, or 31.7 acres must be reserved for water-dependent industrial uses. This leaves 10.6 acres that could be occupied by supporting commercial uses.

Table 7: Properties that are currently and will likely remain as water-dependent industrial uses

Address	Use	Acres within Jurisdiction
123 and 281 Eastern Avenue	Gulf Oil	11.79
99 Marginal Street	Eastern Minerals salt storage	4.26
91 Marginal Street	Commonwealth of Mass; MWRA	.45
257 Marginal Street	Eastern Minerals, currently permitted as a temporary use	3.17
249 Marginal Street	Eastern Minerals, currently permitted as a temporary use	1.03
245 Marginal Street	Eastern Minerals, currently permitted as a temporary use	0.98
71 Marginal Street	Eastern Minerals salt storage	0.47
69 Marginal Street	Eastern Minerals salt storage	0.54
59 Marginal Street	Eastern Minerals salt storage	0.56
13 Marginal Street	Eastern Minerals salt storage	3.91
Eastern Avenue, Marginal Street, and Chelsea Street and McArdle Bridges to the city line in Chelsea Creek	ROW	1.97
701 Chelsea Street	City of Boston bridge footing	.08
Subtotal		29.21
Temporary license pending		
239 Marginal Street	Enterprise parking	3.10
TOTAL		**32.31**

The parcels above, prioritized for water-dependent industrial uses are, with the exception of one long-term water-dependent industrial user (Gulf Oil at 123 and 281 Eastern Avenue), those properties with the highest percentage (at or close to 100 percent) of filled tidelands.

Table 8: DPA properties not limited entirely to water-dependent industrial uses under this plan and temporary uses that are permitted but may change during the term of this plan.

Address	Current use	Acres within Jurisdiction
201, 197 Marginal Street	Pile supported pier and floating docks, storage building, and surface parking	.85
291 Eastern Avenue	Warehouse and manufacturing	.01
111 Eastern Avenue	Surface parking (temporary license DEP006862A expired 18 April 2018)	5.78
143 Eastern Avenue	MassDOT, former railroad ROW	0.12
29 Eastern Avenue	Commonwealth of Mass, vacant	.02
15 Eastern Avenue	Commonwealth of Mass, vacant	.66
0 Eastern Avenue	Former bridge ROW	.13
235 Marginal Street	Storage of vehicles for hire	1.18
229 Marginal Street	Commercial supply warehouse and showroom	0.75
227 Marginal Street	Office space	0.19
11 Marginal Street	Auto repair shop	.06
TOTAL		**9.75**

The total acreage of the parcels in Table 8 that could be available for licensing as supporting uses will be less than the total of 9.75 acres shown because portions of these properties will be within the water-dependent use zone and subject to the open space requirements of the Waterways Regulations and dimensional requirements of the Chelsea Zoning Ordinance.

The properties in Table 8, on which this plan anticipates the continuation or future siting of commercial or industrial supporting uses are, for the most part, those with either smaller percentages of area within jurisdiction or those that are non-waterfront. These characteristics contribute to ensuring that siting of supporting uses will not conflict with, preempt, or discourage water-dependent industrial uses on filled tidelands. In general, the city's goal for siting supporting uses in the DPA is to allow only the amount necessary to optimize site development in furtherance of the city's economic development objectives and the goals of this plan.

The area total for parcels in Table 7 reveal that 32.3 acres are currently used for and/or protected by this plan for water-dependent industrial use. This is slightly more (+0.6 acres) than the minimum of 31.7 acres that the DPA Master Plan approval standards require to be reserved for water-dependent industrial use.

Table 9: Summary of uses of filled tidelands within the Chelsea Creek DPA.

Chelsea Creek DPA	**Acres**	**Percent**
Acres within Chapter 91 jurisdiction (Table 5)	42.3	100%
Minimum area required to be water-dependent industrial uses (75% of total)	31.7	75%
Area of parcels committed to water-dependent industrial uses (Table 6)	32.3	76.4%
Maximum area that may accommodate supporting commercial uses (25% of total)	10.6	25%
Area used or available for supporting commercial or industrial uses (Table 7)	9.75	23.0%

8.6 Guidance to DEP

The Plan proposes guidance that will have a direct bearing on DEP licensing decisions within the harbor planning and DPA Master Plan area. Included in this proposed guidance are:

- Provisions for substitution of certain specific minimum numerical standards in the regulations;
- Provisions that amplify certain discretionary requirements of the Waterways Regulations; and
- Proposed revisions to Article II, Zoning Districts, Sec. 34-27 Specific districts, Sec. 34-300 Table of principal use regulations, Sec. 34-155 Planned development, Sec. 34-215 Site plan review, and Article X Sec. 34-241 Definitions in the city's Zoning Ordinance. These revisions:

- Establish a new Port zoning district that limits uses to water-dependent industrial, general industrial uses, commercial uses, and accessory uses on properties within the DPA.

- Establish a new Waterfront Upland district on the upland side of Marginal Street consisting of land that was previously in the Waterfront zone that creates a commercial and light industrial buffer between the DPA and adjacent residential neighborhoods.

These zoning designations address the MHP approvability standard of 301 CMR 23.05(2)(e)(4)(c), which states that the plan set forth a strategy that commits to maintaining "…a surrounding land development pattern that provides an appropriate buffer between industrial uses in the DPA and community uses that require separation therefrom in order to avoid significant operational conflict.

- Precludes the use of planned development as a vehicle for residential development in the Marginal Street and Eastern Avenue waterfront and upland parcels.

- Establishes additional standards for site plan review of new or expanded uses in the Port district to ensure consistency with this plan's goals, the standards for Municipal Harbor Plan approval, and with Chapter 91 licensing requirements.

- Modifies the definition of Land Area to include only the portion of a parcel that is above mean higher high water.

These additional criteria help to ensure that no more than 25 percent of the filled tidelands within the DPA will be used for commercial supporting uses and accessory uses thereto. The plan does anticipate and enables flexibility in the amount of supporting use on individual parcels, as long as the total across all DPA filled tidelands does not exceed 25 percent.

Substitutions

Through an approved DPA Master Plan, a municipality has the ability to "substitute" local standards for certain dimensional requirements of the state Waterways Regulations, such as for the water-dependent use zone, building height, and setbacks for non-water-dependent uses.

Table 10: Proposed substitutions of minimum use limitations or numerical standards of 310 CMR 9.00.

Regulatory Provision	Chapter 91 Standard	Substitution	Offsetting Measure
310 CMR 9.51(3)(c) Establishment of a Water Dependent Use Zone	"…along portions of a project shoreline other than edges of piers and wharves, the zone extends for the lesser of 100 feet or 25% of the weighted average distance from the present high water mark to the landward lot line of the property, but no less than 25 feet…" and "…along the ends of piers and wharves, the zone extends for the lesser of 100 feet or 25% of the distance from the edges in question to the base of the pier or wharf, but no less than 25 feet" and "…along all sides of piers and wharves, the zone extends for the lesser of 50 feet or 15% of the distance from the edges in question to the edges immediately opposite, but no less than ten feet."	The required WDUZ dimensions may be modified on any property as long as a minimum width of 25 feet is maintained along the project shoreline and the ends of piers and wharves, and a minimum of 10 feet along the sides of piers and wharves, and as long as the modification results in no net loss of WDUZ area within jurisdiction.	Substitution provision can only be applied to those project sites where it is shown that application of the Chapter 91 standard would result in an inefficient siting of uses in the WDUZ, and where the resultant reconfiguration achieves greater effectiveness in the use of the water's edge for water-dependent industrial use. The reconfigured zone must be adjacent to the waterfront and within jurisdiction. In no case will a reconfigured WDUZ result in an area separated from the waterfront or in a net loss of WDUZ. The displaced area of WDUZ would be added on-site in an area of greater utility and value.
310 CMR 9.51(3)(e) 55-foot height	New or expanded buildings for non-water-dependent use shall not exceed 55 feet in height if located over the water or within 100 feet of the high water mark; for every foot beyond 100 feet from the high water	111 Eastern Avenue: at the northern end of the site in the area where the WDUZ is reduced, allow building height of 85 feet within 100 feet of the high water mark, but outside the	Current ground-level parking would be consolidated into a garage on a far smaller footprint. The size, siting, and height of the structure will provide visual and sound screening of the

	mark, the height of the building can increase by 0.5 feet.	reconfigured water-dependent use zone.	adjacent oil terminal operation as well as provide potential capacity to support water-dependent industrial uses. It is anticipated that any impacts of the increase in height, including shadows, will be mitigated by contributions to the Waterfront Improvement Fund (see Appendix H). The fund contributions will be calculated as a function of revenue.
310 CMR 9.52(1)(b)	Project sites with WDU zone require pedestrian access network.	As may be necessary or desirable, the city may allow a contribution to the Waterfront Improvement Fund in lieu of an applicant providing the point access delineated in this plan for the DPA or the other public access required of waterfront properties. Fee will be the equivalent cost of constructing and maintaining the point access over the duration of the license. Funds collected should be devoted to areas where public access is available.	Substitution provision can only be applied to those project sites where it is determined by the city that provision of public access in accordance with the plan would not be as effective for or as desirable to the community as that which could be created with the assets of the fund.

<u>Supporting Uses</u>

In accordance with the authorization in the regulations for Review and Approval of Municipal Harbor Plans (301 CMR 23.00), and as consistent with the definitions in 310 CMR 9.02, the Chelsea Municipal

Harbor Plan and DPA Master Plan endorses as supporting uses in the DPA those non-water-dependent industrial and commercial uses not precluded by state regulations and allowed in the city's zoning code.

Chapter 91 licenses issued for properties listed in Table 8 may include supporting commercial uses in an amount to be determined during the city's permitting processes under Chapter 34 of the city's Code of Ordinances. This amount may exceed the 25 percent of the project site allowance per the Chapter 91 regulations, up to an amount limited only by the siting and dimensional policies and standards of applicable regulations (e.g., setbacks, open space). For properties receiving city and DEP approval of supporting uses in excess of 25 percent of the area of filled and pile-supported structures, the approvals will be conditioned on annual payments to the city's Waterfront Improvement Fund. Payments will be calculated based on the amount of internal floor area and external site area dedicated to supporting use that exceeds the 25 percent available on that parcel by right. Permitted uses that do not provide adequate "economic or operational support" directly to a water-dependent industrial use may, through this plan, meet this requirement as a supporting use through contributions to the city's Waterfront Improvement Fund in amounts that "adequately compensates for the reduced amount of tidelands on the project site that will be available for water-dependent industrial use during the term of the license".

Chapter 91 licenses issued for properties listed in Table 7 of this chapter, i.e. properties that are currently and will likely remain as water-dependent industrial uses, are prioritized for water-dependent industrial uses, except that public access designed in accordance with the guidance in this plan may be included. Further, this plan allows for the possibility of a supporting use being approved for these properties, but only in an amount not to exceed 25 percent of the area of filled tidelands on the property.

In accordance with 310 CMR 9.32(1)(b)4, this plan endorses the siting of supporting DPA uses on pile-supported piers. Any such uses will conform to the requirements detailed and referenced in that section.

To ensure that supporting commercial uses and any accessory uses thereto will not, in the aggregate, occupy more than 25 percent of the area of filled tidelands and pile-supported piers in the DPA, the director of the City of Chelsea Housing and Community Development Department shall maintain an accounting of the supporting commercial uses permitted and licensed within the Chelsea Creek DPA Master Plan planning area and provide this information to MassDEP and MCZM upon the filing of any application for a Waterways license in the Chelsea Creek DPA.

In order to support the implementation of this DPA Master Plan, several changes to the city's zoning ordinance are required. They are summarized above and available in Appendix I.

Amplifications

<u>Public Pedestrian Access</u>

Improving public access to the waterfront is identified as the community's number one priority for this plan. As described in section 4.5 of this plan, the city is pursuing several initiatives to improve movement and safety for all users of Marginal Street and Eastern Avenue. Both roadways are key freight distribution corridors for industrial uses in this region and also carry large numbers of passenger vehicles daily. Proposed near-term activities include new pavement markings and, eventually, potential improvements to the right-of-way to better accommodate pedestrians and cyclists along with the

vehicular traffic, in accordance with the city's adopted Complete Streets Policy. To safely and adequately accommodate the requirements of these multiple users consistent with state and city design standards, it may be beneficial to expand the right-of-way wherever feasible. In the longer term, the city and this plan contemplate mitigating inundation pathways within the planning area. Wherever possible, these efforts will be combined with enhanced visual and physical access by the public.

The area at 251 Marginal Street

In the area of 251 Marginal Street, the street right-of-way closely parallels the high water mark, bordered by a narrow strip of eroding fill and an adjacent pile field. Among the projects eligible for licensing in a DPA (310 CMR 9.32(1)(b)8) are "structures to accommodate public pedestrian access, provided that such structures are located above the high water mark or within the footprint of existing pile supported structures or pile fields, wherever feasible."

This harbor plan anticipates that it may be necessary and desirable for the future sidewalk along this stretch of Marginal Street to be built in part on a structure extending below the mean high water mark and within a derelict pier field. This appears both to be the only feasible way to accommodate a sidewalk designed to city standards in this area and consistent with the provisions of the above-cited section of the Waterways Regulations. It is further consistent with 310 CMR 9.32(2)(c) which allows DEP to license fill or structures for "improvement or rehabilitation of existing public roadways". Any structure would be designed for minimal encroachment into flowed tidelands and, due to surrounding conditions, have no negative impact on the future use of the area for water-dependent industrial use while providing an excellent opportunity for pedestrians to view the river and nearby waterfront activities and provide access to the lateral public walkway to be built at 239 Marginal Street.

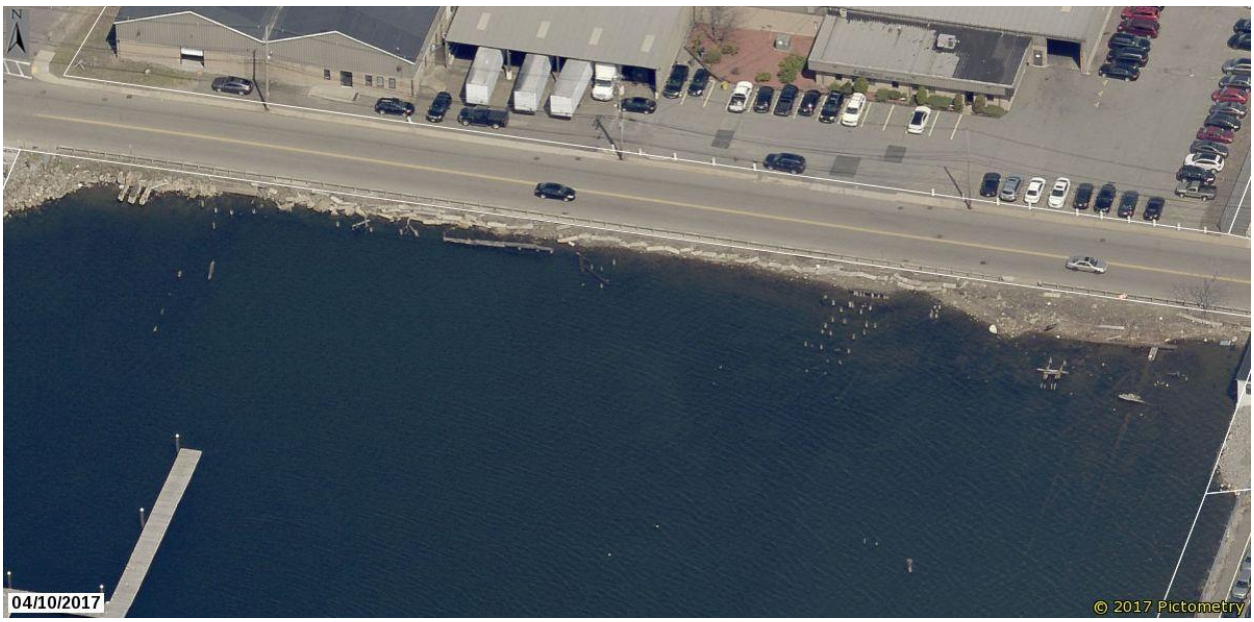

Figure 30: Oblique View from the South of the Shoreline at 239 Marginal Street

Additionally, the city is interested in fortifying this area to eliminate an existing inundation pathway for floodwaters. No design work for a possible barrier has been completed, but the design would be done consistent with 310 CMR 9.32(2)(a) which authorizes the licensing of fill or structures for “shoreline stabilization or the rehabilitation of an existing shore protection structure, irrespective of the uses

proposed landward of such fill or structure". Due to a lack of sufficient width in the right-of- way, future pedestrian lateral access along the roadway may be constructed on an elevated boardwalk within the tidal flats that contain a derelict pier field. Any proposed fortification may also include habitat restoration.

This amplification is consistent with and necessary for the realization of the public access and climate change objectives of this plan as outlined in chapter 7.

The area connecting 295 Eastern Avenue and 1 Forbes Street

The two properties known as 295 Eastern Avenue (assessor's parcel 50-7) and 1 Forbes Street (assessor's parcel 69-22) are at the northern and easternmost end of the study area. The parcels adjoin along a thin strip of flowed land and are backed by the MBTA right-of-way. Both parcels have extensive frontage on the Chelsea River with varying amounts of filled tidelands. The upland areas of these parcels were removed from the Chelsea Creek DPA through a boundary modification by MCZM in April 2016. The river itself, fronting these parcels, inundates the property at high tide, reaching the MBTA right-of-way. As the watersheet remains in the DPA, there is no possibility to connect the parcels, mitigate the inundation pathway, and create a continuous harbor walk along the edge of the properties without this requested amplification.

Figure 30: 295 Eastern Avenue and 1 Forbes Street parcels with DPA boundary (red) and presumptive historic high water line (yellow).

It was noted in both the boundary review and decision documents that the land area of these properties (referred to as the Railroad South and Railroad North Planning areas) do not possess a substantially developed shoreline which creates a functional connection to DPA waters. Because this condition likely

precludes or significantly limits future development of traditional water-dependent use along this portion of the river, this plan supports, at a minimum, the provision of lateral public access along the entire riverfront of these two properties and connecting with public rights-of-way consistent with 310 CMR 9.52(1)(b). DEP license # 13544 (7/22/2013) contains such conditions for the Forbes Parcel and this plan supports a similar and complementary requirement in any DEP licensing and city permitting on the 295 Eastern Avenue property. The city has already permitted a 590-unit, mixed-use development for the parcel at 1 Forbes Street that includes the requirement to build a lateral public path along the waterfront to the property line with 295 Eastern Avenue with connection to the public right-of-way.

In the narrow segments where these properties meet, there is insufficient space to accommodate a pedestrian walkway above the high water line as the contemporary high water line is on the MBTA right-of-way. Where it is not feasible to locate the access-way above mean high water in this area, this plan supports the use of a pile supported structure or fill below mean high water to accommodate public pedestrian access, as provided for in 310 CMR 9.32.1.(b)8.

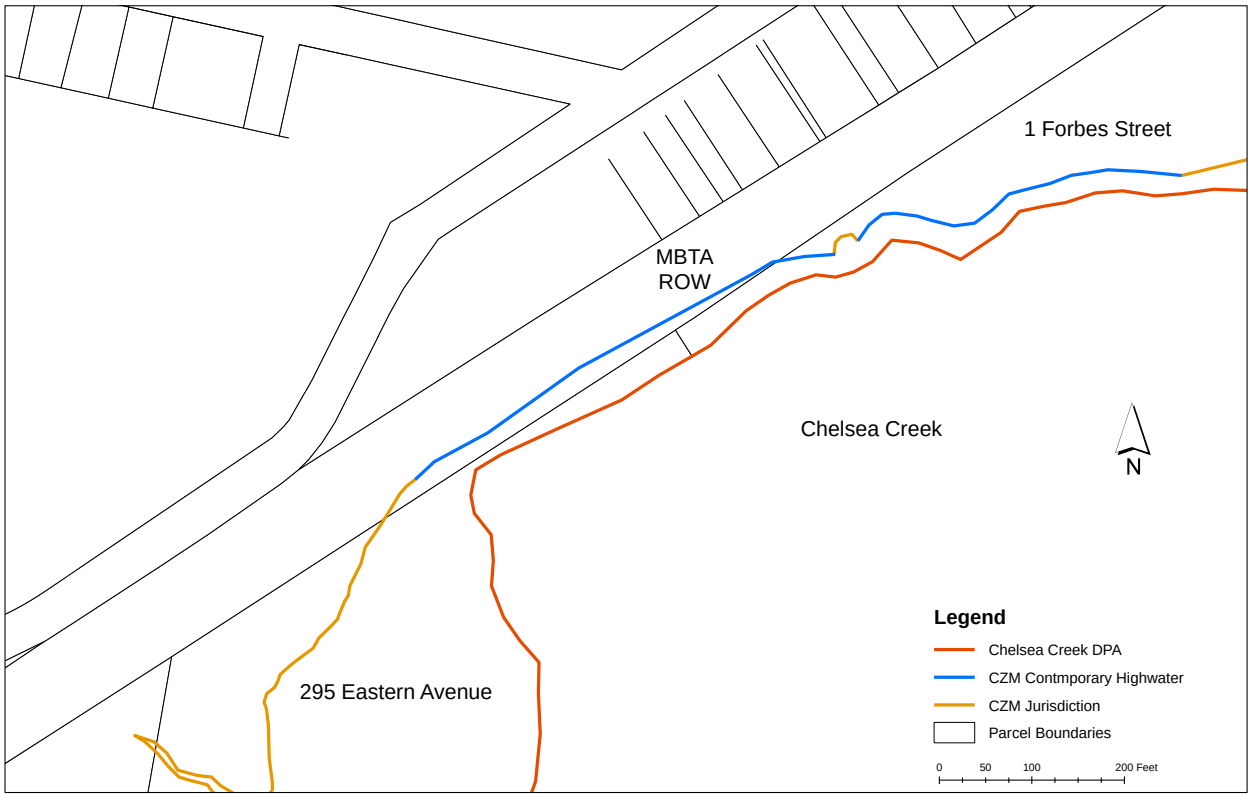

Figure 31: DPA, Jurisdictional, and Property Lines along MBTA ROW

Figure 32: Arial Photo of Area along MBTA ROW with City Parcel Lines

Any such structure or fill would be designed for minimal encroachment into flowed tidelands and, due to surrounding conditions (as established during the DPA boundary review), would have no negative impact on the future use of the area for water-dependent industrial use while providing an excellent opportunity for pedestrians to access the river, experience the riverine environment, engage in passive recreation, and view nearby waterfront activities. Habitat restoration would also be considered.

The area adjacent to and under the Chelsea Street Bridge

The city is currently in discussions with the commonwealth to acquire ownership or long-term leases to the parcels on either side of the Chelsea Street Bridge in order to create new public open space as robust point access at an important gateway to Chelsea that would connect the new Chelsea Greenway to the waterfront. These parcels include 35 Eastern Avenue (assessor's parcel 15-3), 29 Eastern Avenue (assessor's parcel 15-5), 15 Eastern Avenue (assessor's parcel 15-4), and the abandoned stub of Eastern Avenue that was the former bridge alignment (no assessor’s parcel, ownership uncertain). It is envisioned that this may include public access to the intertidal zone inside the fendering that separates maritime traffic from the bridge abutments.

Figure 33: Arial View of Parcels Adjacent to the Chelsea Street Bridge

As part of the design of this point access, the city wishes to explore improvements to the intertidal zone within the DPA, including habitat restoration and boardwalks, as well as inundation defenses, such as berms. These proposed improvements are consistent with the definition of water-dependent use contained in 310 CMR 9.12(2)(a)4, but are not explicitly water-dependent-industrial uses as defined in 310 CMR 9.12(2)(b). This harbor plan anticipates that it may be necessary and desirable for these improvements to occur within the DPA and seeks an amplification that would include habitat restoration, berms, and other natural defenses to infrastructure inundation as shore protection structures under 310 CMR 9.12(2)(a)11, which would then be categorized as water-dependent-industrial use under 310 CMR 9.12(2)(b)7, as it is protecting the upland portion of the DPA, including Marginal Street and Eastern Avenue, from flooding. Further, 310 CMR 9.32(2)(a) authorizes the licensing of fill or structures for "shoreline stabilization or the rehabilitation of an existing of an existing shore protection structure, irrespective of the uses proposed landward of such fill or structure". All proposed activity would occur within the pierhead and bulkhead lines.

This amplification is consistent with and necessary for the realization of the public access and climate change objectives of this plan as outlined in chapter 7.

List of Appendices:

A. Implementation Strategies
B. Consistency with CZMP Policies and State Tideland Policy Objectives
C. List of Stakeholders Interviewed
D. Table of Chapter 91 Licenses
E. Recent Studies and Planning Documents Related to the Chelsea Creek Municipal Harbor Plan and DPA Master Plan
F. List of Public Access Requirements in existing Chapter 91 Licenses
G. Infrastructure Inventory
H. Waterfront Improvement Fund
I. Proposed revisions to the City of Chelsea Zoning Ordinance that support implementation of this DPA Master Plan
J. Notice to Proceed, Massachusetts Office of Coastal Zone Management
K. Municipal Harbor Plan and DPA Master Plan Extensions of Deadline for Submission, Massachusetts Office of Coastal Zone Management
L. Secretary of Energy and Environmental Affairs' Decision on the City of Chelsea's Request for Approval of the Chelsea Creek Municipal Harbor Plan and DPA Master Plan Pursuant to 301 CMR 23.00

Appendix A: Implementation Strategies

Implementation Strategies

Pursuant to 301 CMR 23.05(4), the Plan must, "include enforceable implementation commitments to ensure that, among other things, all measures will be taken in a timely and coordinated manner to offset the effect of any [Municipal Harbor Plan] requirement less restrictive than that contained in 310 CMR 9.00".

As such, the following section describes the ways in which the plan will be implemented, primarily through a combination of municipal and state process.

1. City zoning will be changed to support the city's goals of (1) Maintaining and supporting existing water-dependent industrial uses, and encouraging new and expanded uses in suitable locations; (2) Providing flexibility in permitting and licensing of commercial and industrial supporting uses to encourage their siting in areas where they will neither alter nor introduce incompatibilities in areas of predominantly marine industrial use; and (3) Encouraging and managing the use of DPA land area outside of Chapter 91 jurisdictional land (flowed and filled tidelands) for commercial and industrial development for purposes of expanding the city's economy, tax base, and job opportunities.
2. Allocations of percentages of supporting uses on a DPA parcel will be recorded and maintained by the city's Planning Department.
3. Improvements to public access and development of new public access will be required as part of the city's permitting process and the DEP licensing process.
4. Disbursement of money in the Waterfront Improvement Fund will be overseen by the City Manager.
5. Under the Waterways regulations (310 CMR 9.00), DEP's Chapter 91 licensing process will implement portions of this plan associated with:

a. reallocating percentages of supporting uses on a parcel within the DPA
b. securing additional funding for waterfront infrastructure improvements, public access, and appropriate amenities, as appropriate
c. aligning the timeframes for temporary licenses within the DPA, as appropriate
d. promoting water-dependent industrial uses on tidelands
e. modifying the dimensions of the WDUZ, as appropriate
f. enforcing offsetting measures relative to the height of structures, as appropriate

Appendix B: Consistency with CZM Policies and State Tideland Policy Objectives

In accordance with 301 CMR 23.05, Standards for Municipal Harbor Plan Approval, this document presents the ways in which the Chelsea Creek Municipal Harbor Plan and Designated Port Area Master Plan is consistent with the policies of the Office of Coastal Zone Management as well as the state's tidelands policy objectives as stated in 310 CMR 23.05(2)(a). The content contained herein is based on the overall intent of the plan's goals, objectives, and recommendations.

State Tideland Policy Objectives

This section identifies the state tideland policies (as articulated in 310 CMR 9.00: Waterways) applicable to the Chelsea Creek Municipal Harbor Plan and describes how the plan is consistent with those policies. Policies are identified in italics, with consistency explanations below each policy.

1. to ensure that development of all tidelands complies with other applicable environmental regulatory programs of the Commonwealth as provided in 310 CMR 9.33: Environmental Protection Standards, and is especially protective of aquatic resources within coastal Areas of Critical Environmental Concern, as provided in 310 CMR 9.32(1)(e): Areas of Critical Environmental Concern (ACECs)

Nothing in this plan precludes development of tidelands in a manner that complies with the applicable environmental regulatory programs of the Commonwealth such as MEPA, the Wetlands Protection Act, the Massachusetts Clean Waters Act, and Marine Fisheries Laws. There is no ACEC in the planning area.

2. to preserve any rights held by the Commonwealth in trust for the public to use tidelands for lawful purposes, and to preserve any public rights of access that are associated with such use, as provided in 310 CMR 9.35: Standards to Preserve Water-related Public Rights

This plan includes several measures intended to not only preserve, but also to enhance the public use of tidelands for lawful purposes. In particular, the plan includes strategies that will improve public access signage, result in additional opportunities for appropriate public access to and/or along tidelands, encourage and educate regarding responsible public use of the watersheet, and allow for the collection of funds dedicated to maintaining maritime infrastructure and improving public access to and along tidelands.

3. to preserve the availability and suitability of tidelands that are in use for water-dependent purposes, or that are reserved primarily as locations for maritime industry or other specific types of water-dependent use, as provided in 310 CMR 9.32(1)(b): Tidelands Within Designated Port Areas (DPAs) and 9.36: Standards to Protect Water-dependent Uses

This plan advances the objective of preserving the availability and suitability of tidelands in use for water-dependent purposes, or that are reserved primarily as locations for maritime industry or other specific types of water-dependent use. More specifically, a Waterfront Improvement Fund will be established to receive money that can be used to ensure suitability of tidelands for water-dependent uses. Further, the plan incentivizes the conversion of temporary uses to water-dependent industrial uses by requiring payments to the Waterfront Improvement Fund for the duration of temporary licenses, and by promoting the coordination of the terms of temporary licenses to enable more competitive marketing of DPA parcels for water-dependent industrial uses.

4. to ensure that all licensed fill and structures are structurally sound and otherwise designed and built in a manner consistent with public health and safety and with responsible environmental engineering practice, especially in coastal high hazard zones and other areas subject to flooding or sea-level rise, as provided in 310 CMR 9.37: Engineering and Construction Standards

Nothing in this plan contradicts the policy objective that all licensed fill and structures meet the engineering and construction standards identified in 310 CMR 9.37. In fact, the plan recognizes the need for properly designed and maintained fill and structures – as reflected in the potential uses of the Waterfront Improvement Fund money. The plan also highlights the potential effects that climate change may have on coastal infrastructure, which would impact the economy, environment, and local community. As such, the plan recommends improved planning, research, and stakeholder engagement to minimize impacts (see policy 7.7).

5. to ensure patronage of public recreational boating facilities by the general public and to prevent undue privatization in the patronage of private recreational boating facilities, as provided in 310 CMR 9.38: Use Standards for Recreational Boating Facilities; and to ensure that fair and equitable methods are employed in the assignment of moorings to the general public by harbormasters, as provided in 310 CMR 9.07: Activities Subject to Annual Permit

Recreational boating facilities and moorings do not exist within the planning area and are not addressed or contemplated by this plan.

6. to ensure that marinas, boatyards, and boat-launching ramps are developed in a manner that is consistent with sound engineering and design principles, and include such pumpout facilities and other mitigation measures as are appropriate to avoid or minimize adverse impacts on water quality, physical processes, marine productivity, and public health, as provided in 310 CMR 9.39: Standards for Marinas/Boatyards/Boat Ramps

Marinas, boat yards, and boat ramps do not exist within the planning area and, as such, are not specifically addressed or contemplated in this plan.

7. to ensure that dredging and disposal of dredged material is conducted in a manner that avoids unnecessary disturbance of submerged lands and otherwise avoids or minimizes adverse effects on water quality, physical processes, marine productivity, and public health, as provided in 310 CMR 9.40: Standards for Dredging and Dredged Material Disposal

Dredging of Chelsea Creek is anticipated as part of the Boston Harbor Improvement and Deepening Project, and the Plan does not advocate for any additional dredging that would be inconsistent with this policy.

Further, the Creek contains one un-capped CAD cell, with the potential for additional CAD cells. With public and environmental health in mind, the plan notes that the community does not wish to see additional CAD cells developed or additional contaminated dredged material deposited in the Creek or the Mystic River. As part of this, the uses of the Waterfront Improvement Fund specifically states that the city will not use the funds to support dredging where spoils will be disposed of in Chelsea Creek or the Mystic River. There are many other waterfront communities that shared the benefits of this channel, the burdens should also be shared.

8. to ensure that nonwater-dependent use projects do not unreasonably diminish the capacity of any tidelands to accommodate water-dependent use, as provided in 310 CMR 9.51: Conservation of Capacity for Water-dependent Use;

This plan ensures that structures for nonwater-dependent uses be developed in a manner that does not diminish a site's ability to accommodate or support water-dependent uses. The plan does allow for a substitution to a WDUZ, but does so in a way that calls for no net loss of WDUZ area within jurisdiction, and promotes greater effectiveness in the use of the water's edge for water-dependent industrial uses. The plan also allows for an increase in allowable height at 111 Eastern Avenue, but does so in an effort to consolidate the footprint of a parking structure that would be designed to provide visual and sound

screening of the adjacent oil terminal operation as well as provide potential capacity to support water-dependent industrial uses.

9. to ensure that nonwater-dependent use projects on any tidelands devote a reasonable portion of such lands to water-dependent use, including public access in the exercise of public rights in said lands, as provided in 310 CMR 9.52: Utilization of Shoreline for Water-dependent Purposes

For nonwater-dependent uses on tidelands outside of the DPA, the plan promotes lateral public access along the length of the shoreline. Should any public access linkages of non-DPA parcels necessitate connections made within DPA tidelands, those linkages will be designed to avoid impacts to water-dependent industrial uses. Within the DPA, the plan promotes water-dependent industrial use within tidelands and point access where appropriate.

10. to ensure that nonwater-dependent use projects on Commonwealth tidelands, except in DPAs, promote public use and enjoyment of such lands to a degree that is fully commensurate with the proprietary rights of the Commonwealth therein, and that ensures that private advantages of use are not primary but merely incidental to the achievement of public purposes, as provided in 310 CMR 9.53: Utilization of Shoreline for Water-dependent Purposes.

As noted above, the plan does call for public use and enjoyment of the shoreline in a manner that connects the parcels outside of the DPA. The plan also extends the concept of public use and enjoyment to select sites within the DPA where carefully designed point access would provide the opportunity for people to safely experience the natural and economic features of their riparian community without negative impacts to water-dependent industrial uses.

CZM Policies

The following describes the CZM policies relevant to the June 2019 Chelsea Creek Municipal Harbor Plan and Designated Port Area Master Plan. The following policies are not directly relevant and are not addressed in this document:

- Coastal Hazards policy 3
- Energy policy 2
- Habitat policy 2
- Ocean Resources policies 1, 2, and 3
- Protected Areas policies #1, 2, and 3
- Water Quality policies 2 and 3

Coastal Hazards:

Policy #3: Ensure that state and federally funded public works projects proposed for location within the coastal zone will:

• Not exacerbate existing hazards or damage natural buffers or other natural resources.

• Be reasonably safe from flood and erosion-related damage.

• Not promote growth and development in hazard-prone or buffer areas, especially in velocity zones and Areas of Critical Environmental Concern.

• Not be used on Coastal Barrier Resource Units for new or substantial reconstruction of structures in a manner inconsistent with the Coastal Barrier Resource/Improvement Acts.

The nature of the DPA is such that it encourages the placement of infrastructure in flood-prone areas. Recognizing the risks associated with this, the plan promotes development that includes measures to minimize risk/damage. Examples include:

- eliminating inundation pathways for coastal flooding to protect critical land-side resources that the DPA depends upon with benefits to the broader community
- raising bulkheads and creating berms to contain coastal flooding while also accommodating ship and vehicle traffic integral to the activities associated with water-dependent industrial uses
- requiring the elevation and thoughtful design of structures to minimize risk and damage
- using the best available science to set design standards

Energy:

Policy #1: For coastally dependent energy facilities, assess siting in alternative coastal locations. For non-coastally dependent energy facilities, assess siting in areas outside of the coastal zone. Weigh the environmental and safety impacts of locating proposed energy facilities at alternative sites.

The plan is consistent with this policy, and reflects the city's interest in ensuring that coastally-dependent energy facilities such as fuel storage tanks – and other non-energy uses as well – are sighted in a manner that minimizes impacts to natural resources and public health.

Growth Management:

Policy #1: Encourage sustainable development that is consistent with state, regional, and local plans and supports the quality and character of the community.

The plan promotes pedestrian-friendly improvements in the planning area as part of the city's Complete Streets efforts and makes recommendations to improve public transportation as well. The plan also prioritizes development that will create living-wage jobs appropriate for the members of the community.

Policy #2: Ensure that state and federally funded infrastructure projects in the coastal zone primarily serve existing developed areas, assigning highest priority to projects that meet the needs of urban and community development centers.

An already highly developed coastal zone, redesign of roadways and intersections in the planning area are recommended in order to promote safety and alternatives to cars while also meeting the needs of the local industrial and commercial uses.

Policy #3: Encourage the revitalization and enhancement of existing development centers in the coastal zone through technical assistance and financial support for residential, commercial, and industrial development.

As a DPA Master Plan, this document is consistent with CZM's policies to maintain opportunities for water-dependent uses. Further, changes in municipal zoning will prevent conflicts between uses in the coastal zone and uses in the adjacent upland areas.

Habitat:

Policy #1: Protect coastal, estuarine, and marine habitats—including salt marshes, shellfish beds, submerged aquatic vegetation, dunes, beaches, barrier beaches, banks, salt ponds, eelgrass beds, tidal flats, rocky shores, bays, sounds, and other ocean habitats—and coastal freshwater streams, ponds, and wetlands to preserve critical wildlife habitat and other important functions and services including nutrient and sediment attenuation, wave and storm damage protection, and landform movement and processes.

The plan is consistent with Habitat policy #1. The Creek is a relatively degraded system with a highly engineered shoreline, however the plan stresses the importance of avoiding additional pollution of the sediments and water column through encouraging on-site remediation, eliminating sources of pollution into the Creek (such as CSOs), and improving water quality monitoring. Further, the plan promotes attracting water-dependent businesses that do not further degrade local natural resources, and raises the issue of depositing contaminated dredge spoils in the Creek. The plan also calls for an improved understanding of potential pollution relative to flooding of contaminated sites.

Ports and Harbors:

Policy #1: Ensure that dredging and disposal of dredged material minimize adverse effects on water quality, physical processes, marine productivity, and public health and take full advantage of opportunities for beneficial re-use.

Dredging of Chelsea Creek is anticipated as part of the Boston Harbor Improvement and Deepening Project, and the Creek is also the site of one active CAD cell, with the potential for additional CAD cells in the future. This plan aims to minimize the adverse effects of dredging and disposal activities on Chelsea Creek, highlighting the need to consider alternate sites for disposal of contaminated dredge material outside of Chelsea Creek and the Mystic River.

Policy #2: Obtain the widest possible public benefit from channel dredging and ensure that Designated Port Areas and developed harbors are given highest priority in the allocation of resources.

Though not addressed directly, the plan recognizes the importance of maintaining a dredged waterway to accommodate the safe and efficient transport of goods on the Creek.

Policy #3: Preserve and enhance the capacity of Designated Port Areas to accommodate water-dependent industrial uses and prevent the exclusion of such uses from tidelands and any other DPA lands over which an EEA agency exerts control by virtue of ownership or other legal authority.

This policy is central to the plan, and is reflected in the community's vision relative to preserving the industrial and commercial character of the waterfront and adjacent upland area, and encouraging water-dependent industrial uses and opportunities that contribute to the local tax base. Zoning, street and sidewalk modifications, siting of public access, and preparations relative to climate change are some of the key areas where the plan preserves and enhances the capacity of the DPA. Where the plan recommends substitutions and amplifications, it does so in a manner that does not detract from the area's ability to accommodate water-dependent industrial uses.

Policy #4: For development on tidelands and other coastal waterways, preserve and enhance the immediate waterfront for vessel-related activities that require sufficient space and suitable facilities along the water's edge for operational purposes.

Examples of ways in which this plan preserves and enhances the capacity for vessel-related activities along the waterfront include:

- the establishment of the Waterfront Improvement Fund, which can be used to make investments that will promote water-dependent industrial uses;
- changes to the zoning code to preserve and promote economic development in a way that reduces potential conflict with vessel-related, water-dependent industrial uses; and

- understanding and planning for the impacts of climate change in a manner that promotes resiliency along the waterfront, maintains operational access, and protects the community and public and private assets.

Policy #5: Encourage, through technical and financial assistance, expansion of water-dependent uses in Designated Port Areas and developed harbors, re-development of urban waterfronts, and expansion of physical and visual access.

One way that the plan is consistent with this policy is through its establishment of the Waterfront Improvement Fund. That fund will be used to maintain and improve waterfront infrastructure that can benefit water-dependent industrial users.

Further, this plan identifies specific locations where physical and visual access to the waterfront can exist without interfering with port operations.

Public Access:

Policy #1: Ensure that development (both water-dependent or non-water-dependent) of coastal sites subject to state waterways regulation will promote general public use and enjoyment of the water's edge, to an extent commensurate with the Commonwealth's interests in flowed and filled tidelands under the Public Trust Doctrine.

This plan promotes the general public's use and enjoyment of the water's edge on those waterfront properties outside of the DPA. Within the DPA, the plan promotes strategically located point access that will allow members of the public to enjoy the waterfront in ways that will not interfere with port operations.

Policy #2: Improve public access to existing coastal recreation facilities and alleviate auto traffic and parking problems through improvements in public transportation and trail links (land- or water-based) to other nearby facilities. Increase capacity of existing recreation areas by facilitating multiple use and by improving management, maintenance, and public support facilities. Ensure that the adverse impacts of developments proposed near existing public access and recreation sites are minimized.

Though recreation areas are not necessarily encouraged in a DPA, the City does benefit from PORT Park, and intends to implement its Complete Streets program, which will improve safety along the major roads paralleling the waterfront. These improvements to the local roads and sidewalks will also enhance the public's ability to access future point access areas as those are developed. The Waterfront Improvement Fund established in this plan can also be used to enhance access along the shore (outside of the DPA) and to the shore (within the DPA).

The plan further provides for the continuation of the Chelsea Greenway to the waterfront with recommendations to link this multi-use path over the Chelsea Street Bridge to the East Boston greenway network.

Policy #3: Expand existing recreation facilities and acquire and develop new public areas for coastal recreational activities, giving highest priority to regions of high need or limited site availability. Provide technical assistance to developers of both public and private recreation facilities and sites that increase public access to the shoreline to ensure that both transportation access and the recreation facilities are compatible with social and environmental characteristics of surrounding communities.

This plan does not seek to expand existing recreational facilities, as those are limited in the planning area. However, the plan does call for new point access through Chapter 91 licensing and City permitting, as well as linked lateral access outside of the DPA. The plan further contemplates the creation of new public open space on either side of the Chelsea Street Bridge.

Water Quality:

Policy #1: Ensure that point-source discharges and withdrawals in or affecting the coastal zone do not compromise water quality standards and protect designated uses and other interests.

This plan promotes water quality improvements through measures such as eliminating remaining CSOs and enhancing water quality monitoring.

The plan also requires the on-site remediation of pollutants as part of any redevelopment project.

Appendix C: List of Stakeholders Interviewed

As part of the stakeholder engagement work to develop this plan, we conducted a number of interviews and meetings with landowners, businesses, non-profit organizations, and state and federal entities. Additionally, other stakeholders were engaged through the various public meetings that were held. A list of those stakeholders engaged during plan development include:

Businesses / Land owners:
Marginal St. Development LLC
Enterprise Rent-a-Car
InterPark
Eastern Minerals
Owners of 1 Forbes St.
Owners of 295 Eastern Avenue
Harold Kalick
Gulf Oil
Coastal Oil
Port Operators Group
MassPort
Non-profits:
ECO Youth (ECO Coordinator)
Healthy Chelsea (Ron Fishman & Jen Kelly)
Chelsea Collaborative
GreenRoots (Rosanne Bongiovanni)
Churches (Rev Whitley – AME)
Chelsea Restoration (Helen Zucco)
ROCA
Chamber of Commerce (Rich Cuthie)
Mystic River Watershed Association
Boston Harbor Now (Alice Brown)
The Neighborhood Developers (Aaron Wasserman)
Other stakeholders:
U.S. Coast Guard
Massachusetts Department of Transportation
Massachusetts Office of Coastal Zone Management
Massachusetts Department of Environmental Protection

Appendix D: Chapter 91 Licenses

The table below includes known chapter 91 licenses for the City of Chelsea. The data were compiled from the City of Chelsea and the Massachusetts Department of Environmental Protection. In some cases, license information did not include sufficient detail to associate a license with a specific property.

As part of the harbor planning process, the City of Chelsea received more complete information about each of these licenses, including the details of the licensed project, the public access conditions, and the time period for which the license is/was valid, assuming all conditions were met and no renewals/modifications occurred.

Parcel #	Address	Issuing Agency	License #	Date	License still in effect?	Applicant	Project summary	Public access requirements description	License term limits and expiration	Other referenced licenses and conditions
	Marginal Street	DPW	37	5/10/1920	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Richard T. Green Company	To build and maintain a pile wharf and bulkhead and to dredge in Chelsea Creek			
	Marginal Street	HLC	147	4/9/1873	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Magee Furnace Company	To extend an existing wharf on Chelsea Creek, partly solid and partly on piles. The solid filling shall be enclosed by a substantial sea wall.			
	Marginal Street	HLC	943	7/15/1886	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Samuel Cabot	To build and extend a wharf, partly solid and partly on piles, in and over the tide-waters of Chelsea Creek.			
	Marginal Street	HLC	1075	5/24/1888	Pre-1984 - not termed but can be revoked by Commonwealth at any point	James Brooks	To construct a wharf, partly solid and partly on piles, in and over the tidewaters of Chelsea Creek			
	Marginal Street	HLC	1082	6/21/1888	Pre-1984 - not termed but can be revoked by Commonwealth at any point	George E. Phillips and John K. Hodgdon, copartners of the firm Phillips and Hodgdon	To construct an extension to this wharf, on piles, in and over the tide-waters of Chelsea Creek			
	Marginal Street	HLC	1089	7/12/1888	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston Water Board	To construct a retaining wall and solid filling, for protecting a water pipe, in and over the tide-waters of Chelsea Creek			
11-71, 12-3A	13 and 59 Marginal Street	DEP	5800	7/30/1996	Assuming all license conditions have been met, yes	SMP Trust	To maintain steel sheet pilings, seawalls, piers, riprap slipes, dolphin and fill in and over the waters of the Chelsea River	See Note 1	The license will expire 99 years from the date of the license issuance.	This license supersedes H&L License No. 2008 and DPW Licenses Nos. 4534 and 4734.
12-3A	59 Marginal Street	DPW	1237	12/2/1930	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Joseph A. Maynard Oil Corporation	To build and maintain a relieving platform and a bulkhead to fill solid in Chelsea Creek			
12-3	69 Marginal Street	HLC	863	3/26/1885	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Annie M. Oakes	To construct an extension to her wharf, on piles, in and over the tide-waters of Chelsea Creek			
12-2	71 Marginal Street	HLC	867	4/30/1885	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Phillips, Taylor and Company	To construct an enlargment of its wharf, on piles, in and over the tidewaters of Chelsea Creek			
12-2A	91 Marginal Street	DPW	2021	11/7/1938	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan District Commission, Water Division	To maintain an existing bulkhead and to make repairs to said structure in Chelsea Creek			
12-2A	91 Marginal Street	DPW	5557	6/4/1969	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Edison Company	To install five 4 inch armored cables in the Chelsea River			

Parcel #	Address	Issuing Agency	License #	Date	License still in effect?	Applicant	Project summary	Public access requirements description	License term limits and expiration	Other referenced licenses and conditions
6-11	249-257 Marginal Street	DPW	996	4/2/1929	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Jenney Manufacturing Company	To build and maintain a bulkhead, to fill solid and to dredge in Chelsea Creek			This license is referenced on the Site Plan for DPW License No. 1481 5/9/1933
6-10	249-257 Marginal Street	DPW	996	4/2/1929	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Jenney Manufacturing Company	To build and maintain a bulkhead, to fill solid and to dredge in Chelsea Creek			This license is referenced on the Site Plan for DPW License No. 1481 5/9/1933
12-1	99 Marginal Street	DPW	5016	1/19/1966	Pre-1984 - not termed but can be revoked by Commonwealth at any point	New England Telephone and Telegraph Company	To place and maintain seven submarine telephone cables in the Chelsea River			
12-1	99 Marginal Street	DPW	5017	1/19/1966	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston Fire Department	To place and maintain one submarine cable for fire alarm service in the Chelsea River			
12-1	99 Marginal Street	DPW	6046	12/20/1972	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Edison Company	To install a pipe sleeve fender attached to a steel bulkhead in the Chelsea River			
5-2	215 Marginal Street	HLC	3254	1/20/1908	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Richard T. Green Company	To build a marine railway and pile platform, and to dredge, on Chelsea Creek			
5-2	215 Marginal Street	DPW	4751	10/29/1963	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Harbor Transmission Corporation	To build steel bulkhead and place fill with riprap side slopes in the Chelsea River			
6-15	229 Marginal Street	DEQE	832	4/1/1982	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Edison Company	To install and maintain a buried electrical duct bank under Chelsea River			
6-13	239 Marginal Street	POB	59	4/17/1913	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Samuel Cabot, Inc.	To strengthen its timber bulkhead, built a timber fender and to dredge in Chelsea Creek			Referenced as an existing license on the Site Plan for DEP License No. 2010 9/5/1989
6-13	239 Marginal Street	DPW	947	9/11/1928	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Samuel Cabot, Inc.	To build and maintain a pile and timber wharf and bulkhead and to fill solid in Chelsea Creek			Referenced as an existing license on the Site Plan for DEP License No. 2010 9/5/1989
6-13	239 Marginal Street	DEP	2010	9/5/1989	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Marginal Street Cruise Terminal, Inc.	To construct and maintain pier, gangway and floating dock; and construct and maintain a shelter area and parking area		This License shall be in effect for a fixed term of 20 years from the date of issuance. Upon Expiration and written application by the licensee a renewal may be granted for a term not to exceed 20 years.	Site Plan lists existing licenses: Year Number 1894 HLC 1707 1906 HLC 3039 1908 HLC 3239 1908 HLC 3294 1910 HLC 3519 1913 PofB 59 1928 DPW 947 1952 PBA 196

Parcel #	Address	Issuing Agency	License #	Date	License still in effect?	Applicant	Project summary	Public access requirements description	License term limits and expiration	Other referenced licenses and conditions
6-12	245 Marginal Street	HLC	3311	7/20/1908	Pre-1984 - not termed but can be revoked by Commonwealth at any point	J.W. Stickney	To build a bulkhead to replace burned bulkhead and fill solid on Chelsea Creek			
6-12	245 Marginal Street	DPW	1481	5/9/1933	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Jenney Manufacturing Company	To remove an existing wharf, to build and maintain a bulkhead and to fill solid in Chelsea River			
6-10, 6-11, 6-12	245-257 Marginal Street	DPW	1593	5/29/1934	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Jenney Manufacturing Company	To construct and maintain a pile and timber wharf, dolphins and walkways, and to dredge in Chelsea River			
6-12	245 Marginal Street	HLC	785	12/6/1883	Pre-1984 - not termed but can be revoked by Commonwealth at any point	J.W. Stickney	To construct dolphins in and over the tide-waters of Chelsea Creek			
6-12	245 Marginal Street	HLC	979	2/24/1887	Pre-1984 - not termed but can be revoked by Commonwealth at any point	J.W. Stickney	To construct a wharf, partly solid and partly on piles, in and over the tidewaters of Chelsea Creek			
6-12	245 Marginal Street	POB	148	10/13/1915	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Joseph W. Stickney Estate	To extend pile wharf to a depth of twenty (20) feet at mean low water an area in Chelsea Creek			
6-10, 6-11, 6-12	245-257 Marginal Street	DPW	4528	12/19/1961	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Jenney Manufacturing Company	To construct a wharf and bulkhead, to dredge and erect a new fender system in the Chelsea River			
6-10	257 Marginal Street	DEP	2891	1/31/1992	Assuming all license conditions have been met, yes	Northeast Petroleum, Division of Cargill, Inc.	To maintain granite and concrete riprap and to remove tanks			
6-10, 6-11, 6-12	245-257 Marginal Street	DEP	4981	10/18/1995	Assuming all license conditions have been met, yes	Northeast Petroleum	To construct and maintain a temporary airport related parking lot including guard booth, bus shelters, lighting standards, fencing, catch basins, storm water drainage lines, oil/water separator, and outfall in and over filled tidelands of Chelsea Creek	See Note 2 and Note 4	The term of this license shall be limited to ten (10) years.	See Note 14
6-10, 6-11, 6-12	245-257 Marginal Street	DEP	4981 Amendment	9/5/2006	Assuming all license conditions have been met, yes	JAB Realty, Inc	To extend the term of the existing temporary license for this Temporary Airport-related Parking Facility		Special Condition #1: This Amended Temporary License will expire ten (10) years from the date of issuance.	See Note 15
6-10	257 Marginal Street	DPW	1041	7/16/1929	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Shell Eastern Petroleum Products, Inc.	To build a bulkhead and fill solid in Chelsea Creek			
6-10	257 Marginal Street	HLC	3471	5/16/1910	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan Water and Sewerage Board	To lay a 36-inch main for the improvement of the supply of the East Boston district of the city of Boston, in and across Chelsea Creek			

Parcel #	Address	Issuing Agency	License #	Date	License still in effect?	Applicant	Project summary	Public access requirements description	License term limits and expiration	Other referenced licenses and conditions
69-22	1 Forbes Street	DEP	13544	7/22/2013	Assuming all license conditions have been met, yes	Forbes Park LLC, c/o Blair Galinsky, manager	To maintain an existing wind turbine foundation and bulkhead with associated fill, paved roadway and publicly accessible open space; and to construct and maintain a wind turbine operations and maintenance building	See Note 5	See Note 16	Referenced Licenses: PoB 151 (10/21/1915); PoB 91 (10/5/1948); DPW 667 (6/10/1926); DPW 2657 (5/16/1944); DPW 2687 (9/12/1944); DPW 4633 (10/23/1962).
69-22	1 Forbes Street	DPW	667	6/10/1926	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Forbes Lithograph Mfg. Company	To build and maintain a bulkhead and intake well in Chelsea Creek			
69-22	1 Forbes Street	DPW	2657	5/16/1944	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Forbes Lithograph Manufacturing Co.	To build and maintain a bulkhead and to fill solid in Chelsea River			
69-22	1 Forbes Street	DPW	2687	9/12/1944	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Forbes Lithography Manufacturing Company	To build and maintain a bulkhead and to fill solid in Chelsea River			
11-80, 11-80F	1 Winnisimmet St #1 and #2, 1A Winnisimmet St, and 1C Winnisimmet St	DPW	1956	5/11/1938	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Kaler Processing Company	To build and maintain two piers in Boston Harbor at its property in the city of Chelsea			
		DPW	362	9/6/1923	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan Filling Stations, Inc.	To build a bulkhead, pile wharves and dolphins, to fill solid and dredge, in Chelsea Creek			
23-7	111 Eastern Avenue	DEP	4629	5/24/1995	Assuming all license conditions have been met, yes	Amoco Oil Company	To demolish structures and regrade to a uniform level. The activities authorized shall be limited to the following uses: to close an outdated fuel oil bulk facility and environmental remediation.	See Note 3		Existing structures previously licensed under DPW licenses Nos. 4899 & 5303 shall be maintained in accordance with the conditions of said licenses and plans. See Note 12
23-7	111 Eastern Avenue	DEP	6862	12/11/1997	No. 10-year term expired	Chelsea Creek Redevelopment, LLC	To construct and maintain a parking facility, stormwater management system, and public access facilities in and over Chelsea Creek and Bass Creek. The structures and fill shall be limited to the following uses: parking, stormwater management, and public access to waterfront open space for passive recreational purposes.	See Note 6	The temporary licenses will expire 10 years from the date of license issuance.	DPB 203; DPB 212; WPL 178; WPL 205; DPW50; DPW 1924; PBA 4; DPW 4988; DPW 5303; DPW 6118; DEP 4629. See Note 13
23-7	111 Eastern Avenue	DPW	1924	12/29/1937	Pre-1984 - not termed but can be revoked by Commonwealth at any point	American Oil Company	To build and maintain eight dolphins in Chelsea Creek			

Parcel #	Address	Issuing Agency	License #	Date	License still in effect?	Applicant	Project summary	Public access requirements description	License term limits and expiration	Other referenced licenses and conditions
23-7	111 Eastern Avenue	DPW	4988	10/27/1965	Pre-1984 - not termed but can be revoked by Commonwealth at any point	American Oil Company	To construct mooring dolphins, hose platform with tower, pipes, pipe trestle and bulkhead, and to dredge in the Chelsea River			
23-7	111 Eastern Avenue	DPW	5303	9/27/1967	Pre-1984 - not termed but can be revoked by Commonwealth at any point	American Oil Company	To construct pipe trestle, walkway, hose platform and breasting dolphin in the Chelsea River			
23-7	111 Eastern Avenue	DPW	6118	4/11/1973	Pre-1984 - not termed but can be revoked by Commonwealth at any point	American Oil Company	To reconstruct sections of existing bulkhead and remove two existing piers in Chelsea River			4988 - Original license for bulkhead
32-4	120 Eastern Avenue	DPW	5074	6/8/1968	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Maco Development Company, Inc.	To maintain existing fill in Bass Creek		See Note 7	
32-6	8 Griffin Way	DPW	5074	6/8/1968	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Maco Development Company, Inc.	To maintain existing fill in Bass Creek		See Note 7	
32-4A	128 Eastern Avenue	DPW	5074	6/8/1968	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Maco Development Company, Inc.	To maintain existing fill in Bass Creek		See Note 7	
32-5	130 Eastern Avenue	DPW	5074	6/8/1968	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Maco Development Company, Inc.	To maintain existing fill in Bass Creek		See Note 7	
41-4	140 Eastern Avenue	DPW	5074	6/8/1968	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Maco Development Company, Inc.	To maintain existing fill in Bass Creek		See Note 7	
41-1	150 Eastern Avenue	DPW	5074	6/8/1968	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Maco Development Company, Inc.	To maintain existing fill in Bass Creek		See Note 7	
40-6	2 Griffin Way	DPW	5074	6/8/1968	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Maco Development Company, Inc.	To maintain existing fill in Bass Creek		See Note 7	
41-2	280 Eastern Avenue	DPW	5074	6/8/1968	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Maco Development Company, Inc.	To maintain existing fill in Bass Creek		See Note 7	
41-3	123 Eastern Avenue	DPW	1066	8/20/1929	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Intercontinental Pipe and Lining Company	To build and maintain a pile and timber wharf and bulkhead, and earth dikes, to fill solid and to dredge in Chelsea Creek			
41-3	123 Eastern Avenue	DPW	1244	12/17/1930	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Intercontinental Pipe and Lining Company	To build and maintain a pile and timber wharf and bulkhead, to fill solid and to dredge			

Parcel #	Address	Issuing Agency	License #	Date	License still in effect?	Applicant	Project summary	Public access requirements description	License term limits and expiration	Other referenced licenses and conditions
41-3	123 Eastern Avenue	DPW	5305	11/22/1967	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Gulf Oil Corporation	To dredge, place rip rap, build dolphins and wharf at existing sheet steel piling bulkhead and to maintain an existing pier			1066 - license for steel sheet piling bulkhead
41-3	123 Eastern Avenue	DEQE	824	1/26/1982	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Gulf Oil Co., US	To rehabilitate and maintain the existing commercial oil transfer terminal in and over the waters of the Chelsea River			Existing bulkhead -Port of Boston Authority License 112; DPW License # 1066
50-12C	287 Eastern Avenue	DEQE	824	1/26/1982	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Gulf Oil Co., US	To rehabilitate and maintain the existing commercial oil transfer terminal in and over the waters of the Chelsea River			Existing bulkhead -Port of Boston Authority License 112; DPW License # 1066
	Eastern Avenue. Right-of-way between 15 Eastern Ave and 257 Marginal St	DPW	4915	3/31/1965	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Gas Company	To construct a 24-inch gas pipeline under and across the Chelsea River			DPW License No.270 - a portion of this pipeline is removed as part of this new project
	Eastern Avenue. Right-of-way between 15 Eastern Ave and 257 Marginal St	DPW	5900	6/2/1971	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan District Commission, Water Division	To construct a 36-inch water main in the Chelsea River			
50-12C	287 Eastern Avenue	POB	166	1/10/1916	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Revere Rubber Company	To fill in Chelsea River			
50-7	295 Eastern Avenue	DPW	4121	7/14/1958	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Spartan Oil Company	To construct timber pier, pipe trestle, berthing dolphins, and place solid fill in the Chelsea River			
50-7	295 Eastern Avenue	DPW	4634	10/23/1962	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Northeast Petroleum Corporation	To place solid fill with riprap slopes in the Chelsea River			
50-7	295 Eastern Avenue	DPW	5986	3/29/1972	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Northeast Petroleum Corporation	To place earth and rock fill with riprap slopes in the Chelsea River			
	Eastern Avenue	DPW	308	5/3/1923	No	Merritt-Chapman & Scott Corporation	To build and maintain a temporary pile wharf in Chelsea Creek, westerly of and near the Boston and Albany Railroad bridge, subject to the consent of the owner or owners of the flats where said structure is to be built		See Note 8	
23-7	111 Eastern Avenue	DPW	5577	7/23/1969	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Humble Pipe Line Company	To construct two pipelines for the transportation of petroleum products in Chelsea Creek			

Parcel #	Address	Issuing Agency	License #	Date	License still in effect?	Applicant	Project summary	Public access requirements description	License term limits and expiration	Other referenced licenses and conditions
	Eastern Avenue	POB	203	6/28/1916	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Mexican Petroleum Corporation	To construct a pile trestle to carry oil pipes at the head of Bass Creek in the city of Chelsea			
	Eastern Avenue	POB	212	8/1/1916	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Mexican Petroleum Corporation	To construct piers, bulkhead, dolphins, tie piles, and do filling in the tidewaters of Chelsea River			
	Broadway	HLC	1014	8/11/1887	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston	To build a water pipe box and fender at Chelsea Bridge in and over the tidewaters of Mystic River			
10-102	1 Broadway	DEP	2150	1/30/1990	Assuming all license conditions have been met, yes	Chelsea Yacht Club	To maintain existing floats and piles; and to construct and maintain piles, ramps and floats in and over the waters of Mystic River	See Note 9		
10-102	1 Broadway	DPW	733	11/4/1926	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Eastern Massachusetts Street Railway Company	To lay and maintain six submarine cables in Mystic River at Chelsea Bridge North			
10-102	1 Broadway	DPW	1114	1/22/1930	Pre-1984 - not termed but can be revoked by Commonwealth at any point	New England Telephone and Telegraph Company	To maintain two existing cables and to lay and maintain a third submarine cable in and across the north channel of Mystic River at Chelsea Bridge North			
10-102	1 Broadway	DPW	4006	8/26/1957	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Chelsea Yacht Club	To construct and maintain a pier from its clubhouse to the shore of Broadway in the City of Chelsea, and to drive piles and to support said clubhouse as may be necessary beyond the established harbor line			
10-100	11 Broadway	DPW	1693	7/9/1935	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan Coal Company	To build and maintain a bulkhead and fill solid in Boston Harbor at its property on Mystic River			
10-100	11 Broadway	DPW	1884	9/1/1937	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan Coal Company	To build and maintain two pile dolphins and four pile fenders in Mystic River			
10-100	11 Broadway	DPW	4242	8/17/1959	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan Coal and Oil Company	To build a sheet pile bulkhead in Boston Inner Harbor, at its property in the city of Chelsea			
10-100	11 Broadway	HLC	1040	12/22/1887	Pre-1984 - not termed but can be revoked by Commonwealth at any point	George D. Emery	To maintain the wharves here-tofore known as Gerrish's Wharf and Black's Wharf, situated in Chelsea in said County, in the waters of Boston Harbor, at or near the junction of Chelsea Creek with Mystic River			
10-100	11 Broadway	POB	19	4/4/1912	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan Coal Company	To build a pile platform on Mystic River			

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	Campbell's Wharf	POB	55	2/20/1913	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Trustees of the Metropolitan Wharf Trust	To repair Campbell's Wharf in the City of Chelsea and to dredge the dock in front of the same			
	Chelsea Bridge	HLC	556	8/12/1880	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Chelsea	To rebuild that part of Chelsea Bridge which lies between the northeasterly draw and the Chelsea end of said bridge, partly solid and partly on piles			
	Chelsea Bridge North	DPW	1621	10/2/1934	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston, Commissioner of Public Works	To repair and strengthen Chelsea Bridge North, over Mystic River			
	Chelsea Bridge North	DPW	1698	7/23/1935	Pre-1984 - not termed but can be revoked by Commonwealth at any point	New England Telephone and Telegraph Company	To lay and maintain a submarine cable in, under and across the north channel of Mystic River on the upstream side of Chelsea Bridge North, and to remove certain existing cables crossing said channel southerly and northerly of the draw pier in said bridge			
	Chelsea Bridge North	HLC	2267	8/1/1899	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston	To widen the draw opening of Chelsea Bridge North, on Mystic River			
	Chelsea Bridge North	HLC	2375	6/1/1900	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston	To extend the draw pier of Chelsea Bridge North on Mystic River			
	Chelsea Bridge North	POB	160	11/16/1915	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Bay State Street Railway Company	To place and maintain eleven (11) submarine electric cables in trench in Mystic River			
	Chelsea Creek	HLC	703	10/12/1882	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston and Hingham Steamboat	To construct a dolphin in Chelsea Creek			
	Chelsea Creek	HLC	723	3/30/1883	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Montgomery and Howard	To construct a launching way of piles for temporary use in and over the tidewaters of Chelsea Creek			
	Chelsea Street Bridge	DPW	1736	12/3/1935	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston, Commissioner of Public Works	To rebuild the bridge over Chelsea Creek at Chelsea Street and to lay and maintain a submarine cable across the channel at the drawway of said bridge			
	Chelsea Street Bridge	DPW	1753	2/4/1936	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston, Commissioner of Public Works	To construct and maintain a fender guard and to extend the fender pier on the westerly side of Chelsea Street Bridge over Chelsea Creek			

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	Chelsea Street Bridge	DPW	1815	10/13/1936	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Elevated Railway Company	To lay and maintain four submarine cables in Chelsea Creek on the southerly side of Chelsea Street Bridge			
	Chelsea Street Bridge	DPW	1832	11/17/1936	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Consolidated Gas Company	To extend a fender pier and to build and maintain a fender guard in Chelsea Creek on the westerly side of Chelsea Street Bridge			
	Chelsea Street Bridge	DPW	1844	2/16/1937	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Consolidated Gas Company	To build a temporary timber fender guard in Chelsea Creek on the westerly side of Chelsea Street Bridge			
	Chelsea Street Bridge	DPW	2031	12/13/1938	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Elevated Railway Company	To lay and maintain four submarine cables in Chelsea Creek on the southwesterly side of Chelsea Street Bridge			
	Chelsea Street Bridge	DPW	2033	1/4/1939	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan District Commission, Sewerage Division	To construct and maintain a sewer siphon in, under and across Chelsea Creek southwesterly of the Chelsea Street Bridge			
	Chelsea Street Bridge	DPW	2602	6/1/1943	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Edison Company	To lay and maintain a submarine cable in, under and across Chelsea Creek			
	Chelsea Street Bridge	DPW	4087	4/28/1958	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Gas Company	To construct a timber fender guard in the Chelsea River at the Chelsea Street Bridge			
	Chelsea Street Bridge	DPW	4089	4/28/1958	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston, Public Works Department	To make fender alterations for the widening of drawway at Chelsea Street Bridge in the Chelsea River			
	Chelsea Street Bridge	DPW	4357	8/22/1960	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston, Public Works Department	To make fender alterations to the Chelsea Street Bridge over Chelsea River			
	Chelsea Street Bridge	HLC	3313	7/20/1908	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Consolidated Gas Company	To lay and maintain conduits and pipes in, over and under Chelsea Creek at Chelsea Street Bridge			
26-1	305 Commandant's Way	DEQE	1212	4/17/1985	Uncertain. Assuming they have a 30-year term, their existing license would have expired in 2015. Files do not include information about whether or not a license has been renewed.	Barnegat Development Associates	To construct and maintain pile-held piers, ramps, bottom-anchored floats, straddle hoist piers, steel sheet pile bulkheads, fender piles, fuel pumps, pile supported gangways and a riprap revetment. The structures and fill authorized hereby are limited to the following use: to provide commercial recreational marina facilities			

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	Crescent Avenue, at Boston and Maine Corporation's Railroad Bridge	DPW	5095	7/20/1966	Pre-1984 - not termed but can be revoked by Commonwealth at any point	New England Power Company	To construct and maintain a power transmission line over and across the Chelsea River at the Boston and Maine Corporation's Railroad Bridge			
60-1	315 Crescent Avenue	DEP	3848	6/15/1994	Assuming all license conditions have been met, yes	City of Chelsea	To construct and maintain a waterfront park and parking facilities, to relocate Crescent Avenue and to maintain an existing utility corridor on existing fill	See Note 10 and Note 11		
	Island End River	DPW	1262	3/3/1931	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Consolidated Gas Company	To lay and maintain a gas main in, under, over and across Island End River			
	Island End River	DPW	2224	8/14/1940	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Eastern Gas and Fuel Associates	To fill solid in the tide waters of Island End River. Plan shows area at the upriver tide gate of the Island End River as it existed in 1940		Irrevocable Chap. 785 Acts of 1963	Plan references Licenses 2087 and 1908 (no dates or agencies included)
	Island End River	DPW	2790	8/14/1945	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Eastern Gas and Fuel Associates	To fill solid in the tide waters of Island End River		Irrevocable Chap. 785 Acts of 1963	Plan references Licenses Nos. 1490, 2087, 1908 (no dates or agencies included), and License No. 2224 (DPW 8/14/1940)
	Island End River	DPW	4622	9/25/1962	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Massachusetts Trustees of the Eastern Gas and Fuel Associates	To fill solid in Island End River. Fill may be placed upstream from existing fill placed under license No. 2790 of the Department of Public Works and adjacent to fill placed under other licenses of said Department and of the Port of Boston Authority		Irrevocable Chap. 785 Acts of 1963	Plan references DPW Licenses 2087, 1908, 2224, 2790; Port of Boston Authority License No. 162; and other license No. 1490
	Island End River	DPW	4962	8/11/1965	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Eastern Gas and Fuel Associates	To fill solid an existing drainage ditch and to place fill, pipe drains and structures in Island End River		Made irrevocable Chap. 569 Acts 1966	Plan references Public Works License 4622, LCC No. 22029
	Island End River	DPW	5159	11/16/1966	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Advisory Realty Corporation	To maintain existing solid fill in Island End River		Made iIrevocable by Chap. 584 Acts of 1967	Plan references License No. 5161
	Island End River	DPW	5161	11/16/1966	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Massachusetts Trustees of the Eastern Gas and Fuel Associates	To maintain existing solid fill in Island End River		Made iIrevocable by Chap. 584 Acts of 1967	Plan references License No. 5159
	Island End River	HLC	3492	7/29/1910	Pre-1984 - not termed but can be revoked by Commonwealth at any point	New England Gas and Coke Company	To build bulkheads and supporting pile structures, to fill solid and dredge in Island End River			

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	Meridian Street Bridge	HLC	3554	2/24/1911	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston, Commissioner of Public Works	To widen the draw-ways in Meridian Street Bridge, construct fender guards and draw landings, drive piles within the present lines of said bridge and fender pier, and to dredge on Chelsea Creek			
	Meridian Street Bridge	HLC	3591	5/31/1911	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston, Board of Public Works	To widen the southerly channel of Meridian Street Bridge on Chelsea Creek			
	Mill Creek	DPW	242	7/21/1922	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Eastern Massachusetts Electric Company	To lay and maintain a submarine cable in Mill Creek			
	Mill Creek	DOW	590	9/25/1925	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Eastern Massachusetts Electric Company	To lay and maintain a submarine cable in Mill Creek			
	Mill Street Bridge	DPW	1861	5/4/1937	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Chelsea and the City of Revere	To build and maintain a suspension footbridge, to replace the present trestle bridge, in and over the tide waters of Mill Creek			
	Mystic River	DPW	87	10/15/1920	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan Coal Company	To remove material and rebuild a portion of its sea wall in a dock adjoining Mystic River			
	Mystic River	HLC	544	6/10/1880	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Lynn and Boston Railroad Co.	To build a temporary bridge in Mystic River			
	Meridian Street Bridge	DPW	2065	4/17/1939	Pre-1984 - not termed but can be revoked by Commonwealth at any point	New England Telephone and Telegraph Company	To maintain eight submarine cables as now laid in, under and across the channel of Chelsea Creek at Meridian Street Bridge			
	Meridian Street Bridge	DPW	2066	4/17/1939	Pre-1984 - not termed but can be revoked by Commonwealth at any point	New England Telephone and Telegraph Company	To lay and maintain three submarine cables in, under and across the channel of Chelsea Creek at Meridian Street Bridge			
		POB	26	5/9/1912	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Revere Rubber Company	To build and maintain a pile and timber flume and to dredge a channel in Chelsea Creek			POB License No. 166 for Revere Rubber Company was located at 287 Eastern Avenue. No plans included for POB License No. 26, cannot determine address
	1094 Revere Beach Parkway	DPW	4198	3/5/1959	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Robert W. Green and James Green, doing business as United States Realty Exchange	To place four pipe culverts and fill in Mill Creek			

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	Railroad Bridge No. 10, on Mill Creek	DPW	166	10/3/1921	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston and Maine Railroad	To repair and strengthen its bridge No. 10 on Mill Creek			
	Mill Creek	DPW	1197	8/26/1930	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Eastern Massachusetts Electric Company	To lay and maintain a submarine cable in Mill Creek			Plan references existing cable authorized in this location by license No. 242, granted July 21, 1922, which may be entirely removed from tide water
	Railroad Bridge G. J. 7.43, at Chelsea Street Bridge	DPW	1970	6/14/1938	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston and Albany Railroad	To alter and extend the fender pier at Bridge G. J. 7.43 over Chelsea Creek			This license was substituted by license No. 2010, dated October 19, 1938, for purpose of allowing a change in the proposed fender.
	Railroad Bridge G. J. 7.43, at Chelsea Street Bridge	DPW	2010	10/19/1938	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston and Albany Railroad	To alter and extend the fender pier at Bridge G. J. 7.43 over Chelsea Creek			This license is issued in substitution for license No. 1970, dated June 14, 1938, for the purpose of allowing a change in the proposed fender.
	Railroad Bridge No. 335, over Chelsea Creek	HLC	3291	5/25/1908	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston and Albany Railroad and the New York Central and Hudson River Railroad Company	To rebuild a portion of its bridge on piles, on Chelsea Creek			
	U.S. Government Wharf	HLC	647	12/8/1881	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Montgomery and Howard, lessees of the U.S. Government Wharf at Chelsea	To drive piles in front of the U.S. Government Wharf toward the Harbor Line			
		HLC	1157	4/18/1889	Pre-1984 - not termed but can be revoked by Commonwealth at any point	George D. Emery	To drive piles to enclose an area of tidewater and build a pile platform at or near the junction of Mystic River and Chelsea Creek			
		HLC	1212	11/21/1889	No	West End Street Railway Company	To dump snow and ice from bridges and wharves into tide-waters		This license shall expire by limitation on the 30th day of April, 1890	
		HLC	1316	2/5/1891	Pre-1984 - not termed but can be revoked by Commonwealth at any point	George D. Emery	To build a timber dock, pile piere and pile platforms, at his premises Mystic River			
		HLC	1321	2/19/1891	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Board of Metropolitan Sewerage Commissioners	To construct, maintain and operate such main sewers and other works as are required for the system of sewage disposal authorized in said Chapter, in and over the tide-waters of Chelsea Creek			

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		HLC	1379	8/27/1891	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston	To build an addition to the draw pier of the north draw of Chelsea Bridge			
		HLC	1499	9/29/1892	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Board of Metropolitan Sewerage Commissioners	To construct, maintain and operate such main sewers and other works as are required for the system of sewage disposal authorized in said Chapter, in and over the tide-waters of Chelsea Creek			
		HLC	1553	3/30/1893	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Annie M. Oakes	To widen and extend her wharf, on piles, in and over the tide-waters of Chelsea Creek			
		HLC	1591	7/12/1893	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Lorenzo Richardson and Company	To fill solid and build a pile wharf in and over the tide-waters of Chelsea Creek			
		HLC	1628	1/4/1894	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston, City Engineer	To rebuild Chelsea Street Bridge, in and over the tide-waters of Chelsea Creek			
		HLC	1703	9/5/1894	Pre-1984 - not termed but can be revoked by Commonwealth at any point	White, Holman and Company	To fill solid in and over the tide-waters of Chelsea Creek			
		HLC	1707	9/13/1894	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Samuel Cabot	To widen his wharf on piles, to construct a dolphin and to repair said wharf by driving additional piles, in and over the tide-waters of Chelsea Creek			
		HLC	1771	5/9/1895	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Lynn and Boston Railroad Company	To build a temporary pile bridge adjoining Chelsea Bridge on Mystic River			
		HLC	1778	5/30/1895	Pre-1984 - not termed but can be revoked by Commonwealth at any point	City of Boston	To rebuild the draw foundations and to extend the draw piles of Chelsea Bridge on the north channel of Mystic River			
		HLC	1808	7/10/1895	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston Rubber Company	To build a pile structure on Chelsea Creek			
		HLC	1862	12/3/1895	No	Lynn and Boston Railroad Company	To dump snow and ice into the tidewaters of Mystic River from Chelsea Bridge over the north channel of said river		This license shall expire on the 30th day of April, 1896	
		HLC	1901	4/29/1896	Pre-1984 - not termed but can be revoked by Commonwealth at any point	John D. W. French, Trustee	To build a pile wharf and erect a building thereon, to fill solid and to dredge in and over the tide-waters of Chelsea Creek			

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		HLC	1988	1/27/1897	No	Lynn and Boston Railroad Company	To dump snow and ice into the tidewaters of Mystic River from Chelsea Bridge over the north channel of said river		This license shall expire on the 30th day of April, 1897	
		HLC	2008	5/5/1897	Pre-1984 - not termed but can be revoked by Commonwealth at any point	J. E. Lewis and Company	To extend said wharf on piles, owned by the United States on Chelsea Creek easterly of Meridian Street Bridge			
		HLC	2106	3/3/1898	No	City of Chelsea	To dump snow and ice into tide-waters		This license shall expire by limitation on the 30th day of April, 1898	
		HLC	2107	3/3/1898	No	Lynn and Boston Railroad Company	To dump snow and ice into the tidewaters of Mystic River from Chelsea Bridge over the north channel of said river		This license shall expire on the 30th day of April, 1898	
		HLC	2202	12/7/1898	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Montgomery and Howard	To construct a launching-way, on piles, for temporary use, in Chelsea Creek			
		HLC	2299	10/16/1899	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Charles A. Campbell	To build pile wharves and to dredge in Mystic River			
		HLC	2379	6/1/1900	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan Water Board	To lay and maintain pipes in, over and under the tide-waters of Chelsea Creek			
		HLC	2383	6/15/1900	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston and Albany Railroad Company	To rebuild its bridge across Chelsea Creek			
		HLC	2400	7/24/1900	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan Water Board	To lay and maintain pipes in, over and under the tide-waters of Mystic River			
		HLC	2416	10/9/1900	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Henry W. Smith	To build a bulkhead and fill solid in Chelsea Creek, adjoining Marginal Street			
		HLC	2421	10/23/1900	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Richard T. Green and John C. Harrington, co-partners under the firm name of Green and Harrington	To build a pile wharf on Chelsea Creek			
		HLC	2443	1/7/1901	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Henry W. Smith	To build a bulkhead and fill solid in Chelsea Creek, adjoining Marginal Street			
		HLC	2457	3/7/1901	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Massachusetts Pipe Line Gas Company	To lay and maintain conduits and pipes in, over and under Island End River			

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		HLC	2418	5/10/1901	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Alfred S. Sorensen	To build a wharf, partly solid and partly on piles, in Chelsea Creek, adjoining Marginal Street			
		HLC	2585	2/17/1902	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Joseph W. Stickney	To build a bulkhead and fill solid in Chelsea Creek			
		HLC	2593	2/24/1902	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Richard T. Green and John C. Harrington, co-partners under the firm name of Green and Harrington	To build a pile wharf and marine railway and to dredge in Chelsea Creek adjoining Marginal Street			
		HLC	2688	12/16/1902	No	Boston and Northern Street Railway Company	To dump snow and ice into the tidewaters of Mystic River from Chelsea Bridge over the north channel of said river		This license shall expire on the 30th day of April, 1903	
		HLC	2697	1/2/1903	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Henry W. Smith and Edwin G. Smith	To build a pile and timber boom in Chelsea Creek at their premises adjoining Marginal Street			
		HLC	2713	2/10/1903	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Burton M. Lawler and William J. Lawler	To fill solid, build a pile wharf, and to dredge, on Chelsea Creek, adjoining Marginal Street			
		HLC	2753	6/23/1903	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Boston and Northern Street Railway Company	To rebuild its present wharf and to extend the same, on piles, on Chelsea Creek			
		HLC	2765	7/14/1903	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Metropolitan Water and Sewerage Board	To construct a main sewer by laying two 36-inch cast iron pipes across Mill Creek			
		HLC	2774	7/30/1903	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Joseph W. Stickney	To build a bulkhead and fill solid on Chelsea Creek			
		HLC	2780	9/16/1903	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Massachusetts Pipe Line Gas Company	To lay and maintain conduits and pipes in, over and under Chelsea Creek at Chelsea Street Bridge			
		HLC	2835	4/26/1904	Pre-1984 - not termed but can be revoked by Commonwealth at any point	J. E. Lewis and Company	To extend a wharf on piles, owned by the United States on Chelsea Creek easterly of Meridian Street Bridge			
		HLC	3036	3/6/1906	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Henry W. Smith and Edwin G. Smith	To build bulkheads, fill solid, and to dredge in Chelsea Creek			
		HLC	3056	5/2/1906	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Alfred Sorensen	To widen his wharf on Chelsea Creek, on piles, adjoining Marginal Street and opposite Highland Street			

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		HLC	3101	9/7/1906	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Joseph W. Stickney	To build a pile wharf on Chelsea Creek			
		HLC	3134	1/4/1907	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Henry W. Smith and Edwin G. Smith	To fill solid and to dredge on Chelsea Creek			
		HLC	3186	6/21/1907	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Richard T. Green	To build and maintain a marine railway, pile structures, bulkhead, and other structures, and ot fill solid and dredge, on Chelsea Creek			
		HLC	3239	12/18/1907	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Samuel Cabot, Incorporated	To widen a wharf, partly solid and partly on piles, on Chelsea Creek			
		HLC	3254	1/20/1908	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Richard T. Green	To build a marine railway and pile platform, and to dredge, on Chelsea Creek			
		HLC	3294	6/1/1908	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Samuel Cabot, Incorporated	To build a bulkhead and pile platform, and to fill solid, on Chelsea Creek			
		HLC	3311	7/20/1908	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Joseph W. Stickney	To build a bulkhead and fill solid on Chelsea Creek			
		HLC	3422	12/6/1909	Pre-1984 - not termed but can be revoked by Commonwealth at any point	Edison Electric Illuminating Company of Boston	To lay cables for electrical purposes in Chelsea Creek at Meridian Street Bridge			
	Meridian Street Bridge and Chelsea Street Bridge	CWPL	26	11/6/1916	No	Boston Elevated Railway Company	To dump snow and ice into tidewater...into Chelsea Creek from Meridian Street Bridge and Chelsea Street Bridge		This license shall expire on the 30th day of March, 1917	
	Meridian Street Bridge and Chelsea Street Bridge	DPW	1086	10/29/1929	No	Board of Trustees of the Boston Elevated Railway Company	To dump snow and ice into tidewater...into Chelsea Creek from Meridian Street Bridge and Chelsea Street Bridge		This license shall expire on the 30th day of March, 1930	
	Meridian Street Bridge and Chelsea Street Bridge	DPW	1240	12/2/1930	No	Public Trustees of the Boston Elevated Railway	To dump snow and ice into the tide waters of Boston Harbor in the cities of Boston, Cambridge, Chelsea and Quincy…into Chelsea Creek from Meridian Street Bridge and Chelsea Street Bridge		Said license shall expire on the 30th day of April, 1931	

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	Meridian Street Bridge and Chelsea Street Bridge	DPW	1362	10/20/1931	No	Public Trustees of the Boston Elevated Railway	To dump snow and ice into the tide waters of Boston Harbor in the cities of Boston, Cambridge, Chelsea and Quincy…into Chelsea Creek from Meridian Street Bridge and Chelsea Street Bridge		Said license shall expire on the 30th day of April, 1932	
	Meridian Street Bridge and Chelsea Street Bridge	DPW	1438	10/11/1932	No	Public Trustees of the Boston Elevated Railway	To dump snow and ice into the tide waters of Boston Harbor in the cities of Boston, Cambridge, Chelsea and Quincy…into Chelsea Creek from Meridian Street Bridge and Chelsea Street Bridge		Said license shall expire on the 30th day of April, 1933	
	Meridian Street Bridge and Chelsea Street Bridge	DPW	1537	10/31/1933	No	Public Trustees of the Boston Elevated Railway	To dump snow and ice into the tide waters of Boston Harbor in the cities of Boston, Cambridge, Chelsea and Quincy…into Chelsea Creek from Meridian Street Bridge and Chelsea Street Bridge		Said license shall expire on the 30th day of April, 1934	
	Meridian Street Bridge and Eagle Street Carhouse	DPW	1628	10/30/1934	No	Public Trustees of the Boston Elevated Railway	To dump snow and ice into the tide waters of Boston Harbor in the cities of Boston, Cambridge, Chelsea and Quincy…into Chelsea Creek from Meridian Street Bridge and from the rear of Eagle Street Carhouse		Said license shall expire on the 30th day of April, 1935	
	Meridian Street Bridge and Eagle Street Carhouse	DPW	1728	10/29/1935	No	Public Trustees of the Boston Elevated Railway	To dump snow and ice into the tide waters of Boston Harbor in the cities of Boston, Cambridge, Chelsea and Quincy…into Chelsea Creek from Meridian Street Bridge and from the rear of Eagle Street Carhouse		Said license shall expire on the 30th day of April, 1936	
	Meridian Street Bridge and Eagle Street Carhouse	DPW	1817	10/20/1936	No	Public Trustees of the Boston Elevated Railway	To dump snow and ice into the tide waters of Boston Harbor in the cities of Boston, Cambridge, Chelsea and Quincy…into Chelsea Creek from Meridian Street Bridge and from the rear of Eagle Street Carhouse		Said license shall expire on the 30th day of April, 1937	
	Meridian Street Bridge and Eagle Street Carhouse	DPW	2008	10/11/1938	No	Boston Elevated Railway Company	To dump snow and ice into the tide waters of Boston Harbor in the cities of Boston, Cambridge, Chelsea and Quincy…into Chelsea Creek from Meridian Street Bridge and from the rear of Eagle Street Carhouse		Said license shall expire on the 30th day of April, 1939	

Parcel #	Address	Issuing Agency	License #	Date	License still in effect?	Applicant	Project summary	Public access requirements description	License term limits and expiration	Other referenced licenses and conditions
	Meridian Street Bridge and Eagle Street Carhouse	DPW	2124	10/25/1939	No	Boston Elevated Railway Company	To dump snow and ice into the tide waters of Boston Harbor in the cities of Boston, Cambridge, Chelsea and Quincy…into Chelsea Creek from Meridian Street Bridge and from the rear of Eagle Street Carhouse		Said license shall expire on the 30th day of April, 1940	
	Meridian Street Bridge and Eagle Street Carhouse	DPW	2260	10/16/1940	No	Boston Elevated Railway Company	To dump snow and ice into the tide waters of Boston Harbor in the cities of Boston, Cambridge, Chelsea and Quincy…into Chelsea Creek from Meridian Street Bridge and from the rear of Eagle Street Carhouse		Said license shall expire on the 30th day of April, 1941	
	Meridian Street Bridge and Eagle Street Carhouse	DPW	2419	10/15/1941	No	Boston Elevated Railway Company	To dump snow and ice into the tide waters of Boston Harbor in the cities of Boston, Cambridge, Chelsea and Quincy…into Chelsea Creek from Meridian Street Bridge and from the rear of Eagle Street Carhouse		Said license shall expire on the 30th day of April, 1942	
	Meridian Street Bridge and Eagle Street Carhouse	DPW	2804	10/9/1945	No	Boston Elevated Railway Company	To dump snow and ice into the tide waters of Boston Harbor in the cities of Boston, Cambridge, Chelsea and Quincy…into Chelsea Creek from Meridian Street Bridge and from the rear of Eagle Street Carhouse		Said license shall expire on the 30th day of April, 1946	
		HLC	1042	12/29/1887	No	West End Street Railway Company	To dump snow and ice from certain bridges into tide-waters		Said license shall expire on the 30th day of April, 1888	
		HLC	1043	12/29/1887	No	City of Boston	To dump snow and ice into tide waters		Said license shall expire on the 30th day of April, 1888	
	Meridian Street Bridge	HLC	2899	11/17/1904	No	Boston Elevated Railway Company	To dump snow and ice into tide waters…into Chelsea Creek from Meridian Street Bridge		Said license shall expire on the 30th day of April, 1905	

NOTES	
Note 1:	This License authorizes structure(s) and/or fill on: Private Tidelands. In accordance with the public easement that exists by law on private tidelands, the licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof. Commonwealth Tidelands. The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, upon lands lying seaward of the low water mark. Said lands are held in trust by the Commonwealth for the benefit of the public. No restriction on the exercise of these public rights shall be imposed unless otherwise expressly provided in this license. Unless otherwise expressly provided by this license, the licensee shall not limit the hours of availability of any areas of the subject

	property designated for public passage, nor place any gates, fences, or other structures on such areas in a manner that would impede or discourage the free flow of pedestrian movement thereon.
Note 2:	Special Condition 6: (A) The Licensee shall construct, landscape and maintain in good repair temporary walkway facilities open to the public, totaling no less than 0.5 acres in size along the westerly, southerly, and easterly perimeter of the site in the locations specified [in the license plan]...Said walkway facilities shall...include the following components: (a) the entire walkway, including the stone dust portion along the waterfront, shall have a minimum width of 10 feet clear with a hand rail or other appropriate measure along the entire waterfront to promote safe viewing opportunities of the water; (b) two attractively designed entryways to said walkway facilities shall be constructed along Marginal Street containing decorative posts and signage in accordance with Special Condition 11; (c) one shade structure with associated bench shall be constructed at the easterly plaza; (d) landscaping including trees shall be located along the walkway facilities and Marginal Street and not within the parking lot area enclosed by said fence, with the canopy of said trees to be generally no more than 30 feet in width when mature; (e) landscaping generally along the stone dust pathway shall consist of vegetation no larger than low-lying shrubs, except in those locations noted on the "Proposed Site Plan" where trees shall be planted in accordance with (d) above; (f) trash receptacles shall be provided; and (g) an appropriate number of ornamental lighting standards shall be constructed. (B) No gates shall be erected across or along the walkway facilities. If repeated incidents of vandalism occur that can be well document and all other reasonable security measures to cure the problem are unsuccessful, then the Department may consider gates or limiting the hours of access to the walkway as an amendment of the public access rules that may be established pursuant to Special Condition 11. (C) The walkway including the stone dust portion and plaza shall be designed to also accommodate police and ambulance vehicles. The shade structures, benches, and ornamental light standards shall be constructed from vandal and fire resistant materials. The ornamental lighting standards as well as the light standards specified in Special Condition 2 shall not shed light onto the Chelsea Creek to ensure there is no interference with the night vision of vessel operators navigating the Chelsea Creek. Landscaping shall include a subsurface sprinkler system to ensure adequate watering of the vegetation. Said walkway facilities shall be completed and open to the public within 60 days of the commencement of parking on the site.
Note 3:	The licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof. The licensee shall not limit the hours of availability of any areas of the subject property designated for public passage, nor place any gates, fences, or other structures on such areas in a manner that would impede of discourage the free flow of pedestrian movement thereon.

Note 4:	Special Condition 9: The Licensee shall provide a minimum of seven (7) contiguous parking spaces exclusively available to users of the walkway or nearby public park facilities. Said spaces shall be located on the site in the location shown on...the license plan. The Licensee shall mark the 7 parking spaces by signage or other means as being solely available to members of the public who wish to use the walkway or nearby park facilities. These 7 parking spaces shall be designated by the Licensee and marked by signage in accordance with Special Condition 11 or other means within 60 days of the commencement of airport-related parking on the site. Special Condition 10: The walkway facilities specified in Special Condition 6 and associated parking shall be available to the general public, free of charge, 24 hours a day, unless the Department approves in writing other hours of operation, subject to reasonable rules as described in Special Condition 11. Special Condition 11: The Licensee may adopt rules governing the walkway facilities on the site, subject to prior review and written approval by the Department, as are necessary for the protection of public health and safety and private property, and to ensure their use and enjoyment by minimizing conflicts between user groups. No amendment to said rules shall be made without written approval by the Department, which approval shall not be unreasonably withheld. Special Condition 12: Upon completion of the walkway facilities, the Licensee shall place and maintain in good repair appropriate signage of an adequate size to be clearly visible to pedestrians along the Marginal Street. Said signage shall be consistent with all local laws, regulations and any design guidelines that may be specified by the Department or its designee. Said signage shall be placed at both Marginal Street entryways to the walkway facilities, encourage public patronage of the walkway facilities, state the hours of public access and any reasonable rules for their use in accordance with Special Condition 11. At least one sign shall be placed in a prominent location stating the walkway facilities were required by the Department of Environmental Protection, the waterways license number of the project, and the location on the site where a copy of the license may be inspected by the public. Special Condition 13: Said walkway facilities specified in Special Condition 6 are an interim use during the ten (10) year term of this license. The intent of this license is that the walkway facilities shall remain as part of the site and the Licensee shall not take any action to legally subdivide said walkway facilities from the parking area so as to create additional parcels beyond those that exist presently. If at the end of the license term, the marketing plan identifies a future water-dependent-industrial user of the site, then the walkway and associated amenities may be modified or eliminated if necessary to accommodate the water-dependent-industrial use. If a user other than water-dependent industrial is identified, then the walkway and associated amenities should remain publicly accessible or enhanced, as appropriate. Standard Waterways License Condition 9 regarding public access on Private Tidelands and Filled Tidelands
Note 5:	Special Condition 1: In partial compensation for private use of structures on tidelands, which interferes with the rights of the public to use such lands, the Licensee shall allow the public to pass on foot, for any purpose and from dawn to dusk, within the area of the subject property lying seaward of the mean high water mark on the eastern and western ends of the property and along the existing bulkheads on the approximately 2 acre area labeled "public access area" [on the License Plan]...(b) The Licensee shall provide a public access route to connect the adjacent public way, Forbes Street, with the full length of the waterfront for public pedestrians, bicyclists, and state and local emergency vehicles that is clearly delineated with way-finding signage. (c) The Licensee shall landscape and maintain in good repair this public access area for public access along, and enjoyment of, the waterfront. The public access area shall include, but not be limited to, the following pedestrian amenities: a walkway that shares the vehicular drive but is at least 10 feet wide through the full length of the public access area; fully accessible public restroom facilities and at least two bike racks located near the wind turbine; lighting that does not reflect on to the waters of Chelsea Creek; at least two groups of seating including one with clear views of the

	confluence of the Chelsea Creek and Mill Creek; at least two trash receptacles located by the restroom facility and by the seating area in the east end of the project site; and landscaping that complements but does not obstruct public access. No gates or other barriers shall be installed to impede pedestrian circulation in the areas designated for public access. Interpretative plaques shall be installed at the wind turbine operations building to explain wind energy, as described in Special Condition #3, below, and also along the bulkhead and east end of the property to address the Chelsea Creek and Mill Creek environment and its significance in U.S. History. (d) The Licensee shall place and maintain, in good repair, a public access sign near the western and northern property lines adjacent to the mean high water shoreline as well as in a prominent location adjacent to the wind turbine authorized herein. These three signs, shall be designed in accordance with the Department's signage requirements, attached hereto, and shall be posted within 3 months of license issuance. The sign adjacent to the wind turbine shall include a statement that the walkway facilities were required by the MassDEP, the waterways license number of the project, and the location where the public may inspect a copy of the license. (e) The Licensee may adopt reasonable rules, subject to prior review and written approval by the Department, as are necessary for the protection of public health and safety and private property, and to ensure public use and enjoyment by minimizing conflicts between user groups. The exercise by the public of free-on-foot passage in accordance with this condition shall be considered a permitted use to which the limited liability provisions of M.G.L. c.21, s. 17c shall apply. (f) The public access area shall be completed and available for safe pedestrian use by the date the first Certificate of Occupancy is issued for the Project Site except for landscaping and other matters... Special Condition 3: The Licensee shall construct and maintain the 1-story wind turbine operations and maintenance building...in a manner that does not disrupt or interfere with public access along the bulkhead. The Licensee shall install at least one interpretative plaque on or near the building on the functionality of the wind turbine and provide an instrument display that provides information to the public related to power consumption, power generation, wind patterns and wind generation. Such information shall be available from dawn to dusk, the hours of public access. Special Condition 4: The license for any structure authorized herein shall expire if the structure is not completed or is abandoned and not used for the purpose for which it was licensed for a period of five consecutive years or more in accordance with 310 CMR 9.25(1)... Special Condition 6: The Licensee shall maintain the structures and uses authorized in this license in a manner that shall not prevent the commitment of space or significantly discourage future water-dependent industrial activity on the property or elsewhere within the Chelsea Creek Designated Port Area in accordance with 310 CMR 9.15(1)(d) and 310 CMR 9.36(5)... Standard Waterways License Conditions: (9) This License authorizes structure(s) and/or fill on: Private Tidelands. In accordance with the public easement that exists by law on private tidelands, the licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof.
Note 6:	Special Condition 4: Licensee shall construct and maintain a publicly accessible waterfront open space to be located at the southern end of the site…. Said open space shall include the following amenities: seating, shade structure, lighting, walkway, and landscaping. Said walkway shall extend to Eastern Ave. near the intersection of Central Ave. in order that pedestrians may utilize the existing traffic signal to cross Eastern Ave. A 25-ft wide grassy swale shall be located immediately north of the proposed open space.... Parking on the site shall not commence until the publicly accessible open space is made open to the public. The walkway facilities shall be available free of charge, 24 hours a day, unless the Dept. approves in writing other hours of operation. Licensee may adopt rules governing the walkway facilities on the site, subject to prior review and written approval of the Dept. as are necessary for protection of public health and safety and private property, and to ensure their use and enjoyment by minimizing conflicts between user groups. Licensee shall place and maintain in good repair appropriate signage of adequate size to be clearly visible to pedestrians along Eastern Ave..... Signage shall be placed at the Eastern Ave. entryway to the open space facility, encourage public patronage of the waterfront walkway,

	state the hours of public access and any reasonable rules for their use.... The licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof.
Note 7:	See legislation CH 145 of 1968 for corrective failure to register within 1-year period. Made irrevocable by Ch 594 Acts of 1966 (but not recorded)
Note 8:	This license is granted upon the express condition…that said structure hereby licensed is of a temporary character, and is for temporary use and maintenance only, and for such period of time as said Corporation is engaged in the construction of a gas siphon in said Chelsea Creek for the Boston Consolidated Gas Company. Said Corporation shall remove all of said structure to the satisfaction of the Division upon the completion of the construction of said siphon.
Note 9:	Special Condition 1: (a) The document entitled: ,"Agreement Between the Chelsea Yacht Club and the City of Chelsea, Acting By and Through the Office of Community Development", dated December 13, 1989, is incorporated into this License by reference. Except as provided in paragraph (b), the obligations incurred by the Chelsea Yacht Club as set forth in said Agreement take effect on the effective date of this License. (b) WIthin three (3) years from the effective date of this License, the pedestrian walkway called for by said Agreement shall be constructed, in accordance with the terms thereof; in the event that within the said three years, such constructions has not commenced, or a contract to perform such construction has not been awarded, the Licensee, in consultation with the City of Chelsea and the Metropolitan District Commission, shall propose an alternative public benefit to the waterfront, in accordance with Paragraph 4 of said Agreement, said benefit to be equal or greater value than that called for in the Agreement.
Note 10:	Special Condition 4: The Licensee shall construct and maintain, in good repair, a public interactive water viewing area with a permanent interpretive plaque. The plaque and viewing area shall be constructed as described in a letter from Linda Snyder, Director, Chelsea Schools Project, dated May 9, 1994, and located on the plan entitled "Exhibit A." Both the letter and "Exhibit A" are on file with the Department. The interactive water viewing area shall be constructed such that the waters of the Chelsea Creek are visible from the viewing area. The design of said plaque shall be consistent with all local laws, regulations and any design guidelines that may be specified by the Department or its designee. Said interactive water viewing area shall be constructed and open to the public within three (3) years of the issuance of the license. Special Condition 5: The Licensee shall construct and maintain in good repair open space facilities, including public sidewalks and associated parking area(s), for use by the general public as located and described on the license plans. The open space facilities and associated parking shall be available to the general public, free of charge, 24 hours a day, unless the Department approves reasonable fees and other hours of operation as described in Special Condition 8. Said park and parking lot shall be completed and made open to the public within three (3) years of the issuance of this license. Special Condition 6: Upon completion of the public open space facilities, the Licensee shall place and maintain in good repair appropriate signage of an adequate size to be clearly visible to pedestrians along Eastern and Crescent Avenues. Said signage shall be consistent with all local laws, regulations and any design guidelines that may be specified by the Department or its designee. Said signage shall be placed at all entryways to the open space facilities along Eastern and Crescent Avenues, encourage public patronage of the facilities, state the hours of public access and any reasonable rules for their use in accordance with Special Condition 8. At least one sign shall be placed in a prominent location stating the open space facilities were required by the Department of Environmental Protection, the waterways license number of the project, and the location on the site where a copy of the license may be inspected by the public.

Note 11:	Special Condition 7: The Licensee shall mark the parking areas specified in Special Condition 5 by signage or other means as being available to members of the public who wish to use the open space facilities. These parking areas shall be marking by signage or other means within three (3) years of the issuance of this license. Special Condition 8: The Licensee may adopt rules governing the publicly accessible areas of the site, subject to review and written approval by the Department, as are necessary for the protection of public health and safety and private property, and to ensure public use and enjoyment by minimizing conflicts between user groups. No amendment to said rules shall be made without written approval by the Department. Standard Waterways License Conditions: 9. This License authorized structure(s) and/or fill on: Commonwealth Tidelands. The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, upon lands lying seaward of the low water mark. Said lands are held in trust by the Commonwealth for the benefit of the public.
Note 12:	Includes following provision: Any future use of the site or structural alterations thereon will require additional authorization pursuant to MGL CH 91 and its Regulations 310 CMR 9.00, including, as applicable, the requirements concerning the promotion of marine industrial uses in a Designated Port Area.
Note 13:	Special Condition #3: Licensee shall prepare a marketing plan subject to the prior review and written approval of the Dept. to advertise the availability of the site for water-dependent-industrial use. Said plan shall include a list of the types of businesses which will be solicited and the means by which the site will be advertised. Such advertising shall include at a minimum: direct contact; advertising in local newspapers and maritime or other trade journals; and written notification to MassPort-Maritime Division. A draft copy shall be submitted for review at least 48 months prior to termination of the temporary license. The final plan shall be completed no later than 40 months prior to the termination of the temporary license. Advertising of the availability of the space for water-dependent-industrial use shall commence no later than 36 months prior to the termination of the temporary license and continue until the end of the license term or until a water-dependent industrial user is found for the site, whichever is sooner.
Note 14:	Fill and bulkhead previously authorized pursuant to the following licenses shall be maintained in accordance with the conditions of this license: License Numbers 142 (HL), 785 (HL), 979 (HL), 2368 (HL), 2416 (HL), 2443 (HL), 2585 (HL), 2697 (HL), 2774 (HL), 3036 (HL), 3101 (HL), 3134 (HL), 3311 (HL), 148 (DPB), 362 (PW), 996 (PW), 1041 (PW), 1481 (PW), 1593 (PW), 4528 (PW), 77 (PBA), and 2891 (DEP)
Note 15:	Special Condition #2: The Licensee shall market this property for water-dependent-industrial use in the manner and to the degree specified in Special Condition #5 of the underlying Temporary License but Licensee will substitute the termination date of this Amended Temporary License for the termination date of the underlying Temporary License. Special Condition #3: All other conditions in the underlying Temporary License No. 4981 shall remain in full force.
Note 16:	This License shall be valid for thirty (30) years from the date of license issuance. By written request of the Licensee for an amendment, the Department may grant a renewal for the term of years not to exceed that authorized in the original license.

Appendix E: Recent Studies and Planning Documents Related to the Chelsea Creek Municipal Harbor Plan and DPA Master Plan

Annual Combined Sewer Overflow Press Releases and Reports
Developed by: City of Chelsea

Annual Water Quality Report Cards
Developed by: Mystic River Watershed Association

Assessing Heat Risks to Prepare Chelsea, Massachusetts for a Changing Climate
Date: 2017
Developed by: Worcester Polytechnic Institute
Online at: https://wp.wpi.edu/boston/projects/projects-2017/2017-heat-risks-in-chelsea/

A Vision for the Chelsea Waterfront
Date: October, 2016
Developed by: Metropolitan Area Planning Council (MAPC)
Online at:
ftp://ftp.mapc.org/Chelsea_Waterfront/Chelsea%20Waterfront%20Vision%202016%20Final%20Report.pdf

Boston Harbor Deep Draft Navigation Improvement Study, Final Feasibility Report
Date: April, 2013
Developed by: The US Army Corps of Engineers and the Massachusetts Port Authority
Online at:
https://www.nae.usace.army.mil/Portals/74/docs/topics/BostonHarbor/DeepDraftFeasibilityStudy2013.pdf

Chelsea Creek Community Vision Plan
Date February, 2003
Developed by: Chelsea Creek Action Group, TerraSphere, and BSC Group

Chelsea Open Space & Recreation Plan Update, 2017-2024
Date: June, 2017
Developed by: Metropolitan Area Planning Council
Online at: https://www.chelseama.gov/sites/chelseama/files/uploads/chelseaosrp_august29.pdf

City of Chelsea Community Development Plan
Date: June, 2004
Developed by: Taintor & Associates
Online at: https://www.chelseama.gov/sites/chelseama/files/uploads/chelseacdp.pdf

City of Chelsea Hazard Mitigation Plan 2014 Update
Date: 2014
Developed by: Metropolitan Area Planning Council

Online at:
https://www.chelseama.gov/sites/chelseama/files/uploads/cityreviewchelsea_draft_plan_update_5-16-14.pdf

City of Chelsea Municipal Vulnerability Preparedness Program: Community Resilience Building Workshop Summary of Findings
Date: 2018
Developed by: Metropolitan Area Planning Council
Online at: Unknown

Designation Decision for the Chelsea Creek Designated Port Area, Chelsea, MA.
Date: April 6, 2016
Developed by: Executive Office of Energy and Environmental Affairs, Massachusetts Office of Coastal Zone management.
Online at: https://www.mass.gov/files/documents/2016/08/ri/chelsea-creek-dpa-designation-decision-2016.pdf

Designing Coastal Community Infrastructure for Climate Change
Date: January 2017
Developed by: Stantec, Woods Hole Group, and City of Chelsea with grant assistance by Massachusetts Office of Coastal Zone Management.
Online at: https://www.chelseama.gov/sites/chelseama/files/uploads/20170215_chelsea_va.pdf

Environmental Justice Analysis in Support of the National Pollutant Discharge Elimination System (NPDES) Permits for the Chelsea River Bulk Petroleum Storage Facilities
Date: March, 2014
Developed by: Environmental Protection Agency
Online at:
https://www3.epa.gov/region1/npdes/chelseacreekfuelterminals/pdfs/ChelseaBulkTerminalEJA.pdf

Preparing the City of Chelsea, Massachusetts to Better Adapt to Climate Change
Date: 2014
Developed by: Worcester Polytechnic Institute
Online at: https://web.wpi.edu/Pubs/E-project/Available/E-project-101614-174110/unrestricted/Boston_Climate_IQP-_final_report.pdf

Promoting Public Uses on the Chelsea Waterfront
Date: Unknown
Developed by: Hoghaud, B., et al.
Online at: https://web.wpi.edu/Pubs/E-project/Available/E-project-101316-114938/unrestricted/ChelseaWaterfrontUse.pdf

Urban Green Infrastructure in Mystic River Communities, Subwatershed Plan for Broadway, Chelsea, MA
Date: June, 2013
Developed by: Charles River Watershed Association, Mystic River Watershed Association, and Chelsea Collaborative
Online at:
https://static1.squarespace.com/static/563d6078e4b0396c216603c8/t/563e151ee4b0f5552f678830/1375112525085/ChelseaSubwatershedPlan2013_Final.pdf

Appendix F: List of Public Access Requirements in existing Chapter 91 Licenses

Those parcels, including their public access requirements, are as follows:

- **13 and 59 Marginal Street** (DEP License # 5800, issued 7/30/1996): In accordance with the public easement that exists by law on private tidelands, the licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof. Commonwealth Tidelands. The Licensee shall not restrict the public's right to use and to pass freely, for any lawful purpose, upon lands lying seaward of the low water mark. Said lands are held in trust by the Commonwealth for the benefit of the public. No restriction on the exercise of these public rights shall be imposed unless otherwise expressly provided in this license. Unless otherwise expressly provided by this license, the licensee shall not limit the hours of availability of any areas of the subject property designated for public passage, nor place any gates, fences, or other structures on such areas in a manner that would impede or discourage the free flow of pedestrian movement thereon.

- **245-257 Marginal Street** (DEP License # 4981, issued 10/18/1995): Special Condition 6: (A) The Licensee shall construct, landscape and maintain in good repair temporary walkway facilities open to the public, totaling no less than 0.5 acres in size along the westerly, southerly, and easterly perimeter of the site in the locations specified [in the license plan]...Said walkway facilities shall...include the following components: (a) the entire walkway, including the stone dust portion along the waterfront, shall have a minimum width of 10 feet clear with a hand rail or other appropriate measure along the entire waterfront to promote safe viewing opportunities of the water; (b) two attractively designed entryways to said walkway facilities shall be constructed along Marginal Street containing decorative posts and signage in accordance with Special Condition 11; (c) one shade structure with associated bench shall be constructed at the easterly plaza; (d) landscaping including trees shall be located along the walkway facilities and Marginal Street and not within the parking lot area enclosed by said fence, with the canopy of said trees to be generally no more than 30 feet in width when mature; (e) landscaping generally along the stone dust pathway shall consist of vegetation no larger than low-lying shrubs, except in those locations noted on the "Proposed Site Plan" where trees shall be planted in accordance with (d) above; (f) trash receptacles shall be provided; and (g) an appropriate number of ornamental lighting standards shall be constructed.

(B) No gates shall be erected across or along the walkway facilities. If repeated incidents of vandalism occur that can be well document and all other reasonable security measures to cure the problem are unsuccessful, then the Department may consider gates or limiting the hours of access to the walkway as an amendment of the public access rules that may be established pursuant to Special Condition 11.

(C) The walkway including the stone dust portion and plaza shall be designed to also accommodate police and ambulance vehicles. The shade structures, benches, and ornamental light standards shall be constructed from vandal and fire resistant materials. The ornamental lighting standards as well as the light standards specified in Special Condition 2 shall not shed light onto the Chelsea Creek to ensure there is no interference with the night vision of vessel operators navigating the Chelsea Creek. Landscaping shall include a subsurface sprinkler system to ensure adequate watering of the vegetation. Said walkway facilities shall be completed and open to the public within 60 days of the commencement of parking on the site.

Special Condition 9: The Licensee shall provide a minimum of seven (7) contiguous parking spaces exclusively available to users of the walkway or nearby public park facilities. Said spaces shall be located on the site in the location shown on...the license plan. The Licensee shall mark the 7 parking spaces by signage or other means as being solely available to members of the public who wish to use the walkway

or nearby park facilities. These 7 parking spaces shall be designated by the Licensee and marked by signage in accordance with Special Condition 11 or other means within 60 days of the commencement of airport-related parking on the site.

Special Condition 10: The walkway facilities specified in Special Condition 6 and associated parking shall be available to the general public, free of charge, 24 hours a day, unless the Department approves in writing other hours of operation, subject to reasonable rules as described in Special Condition 11.

Special Condition 11: The Licensee may adopt rules governing the walkway facilities on the site, subject to prior review and written approval by the Department, as are necessary for the protection of public health and safety and private property, and to ensure their use and enjoyment by minimizing conflicts between user groups. No amendment to said rules shall be made without written approval by the Department, which approval shall not be unreasonably withheld.

Special Condition 12: Upon completion of the walkway facilities, the Licensee shall place and maintain in good repair appropriate signage of an adequate size to be clearly visible to pedestrians along the Marginal Street. Said signage shall be consistent with all local laws, regulations and any design guidelines that may be specified by the Department or its designee. Said signage shall be placed at both Marginal Street entryways to the walkway facilities, encourage public patronage of the walkway facilities, state the hours of public access and any reasonable rules for their use in accordance with Special Condition 11. At least one sign shall be placed in a prominent location stating the walkway facilities were required by the Department of Environmental Protection, the waterways license number of the project, and the location on the site where a copy of the license may be inspected by the public.

Special Condition 13: Said walkway facilities specified in Special Condition 6 are an interim use during the ten (10) year term of this license. The intent of this license is that the walkway facilities shall remain as part of the site and the Licensee shall not take any action to legally subdivide said walkway facilities from the parking area so as to create additional parcels beyond those that exist presently. If at the end of the license term, the marketing plan identifies a future water-dependent-industrial user of the site, then the walkway and associated amenities may be modified or eliminated if necessary to accommodate the water-dependent-industrial use. If a user other than water-dependent-industrial is identified, then the walkway and associated amenities should remain publicly accessible or enhanced, as appropriate. Standard Waterways License Condition 9 regarding public access on Private Tidelands and Filled Tidelands.

- **1 Forbes Street** (DEP license # 13544, issued 7/22/2013): Special Condition 1: In partial compensation for private use of structures on tidelands, which interferes with the rights of the public to use such lands, the Licensee shall allow the public to pass on foot, for any purpose and from dawn to dusk, within the area of the subject property lying seaward of the mean high water mark on the eastern and western ends of the property and along the existing bulkheads on the approximately 2 acre area labeled "public access area" [on the License Plan]...(b) The Licensee shall provide a public access route to connect the adjacent public way, Forbes Street, with the full length of the waterfront for public pedestrians, bicyclists, and state and local emergency vehicles that is clearly delineated with way-finding signage. (c) The Licensee shall landscape and maintain in good repair this public access area for public access along, and enjoyment of, the waterfront. The public access area shall include, but not be limited to, the following pedestrian amenities: a walkway that shares the vehicular drive but is at least 10 feet wide through the full length of the public access area; fully accessible public restroom facilities and at least two bike racks located near the wind turbine; lighting that does not reflect on to the waters of Chelsea Creek; at least two groups of seating including one with clear views of the confluence of the Chelsea Creek and Mill Creek; at least two trash receptacles located by the restroom facility and by the seating area in the east end of the project site; and landscaping that complements but does not obstruct

public access. No gates or other barriers shall be installed to impede pedestrian circulation in the areas designated for public access. Interpretative plaques shall be installed at the wind turbine operations building to explain wind energy, as described in Special Condition #3, below, and also along the bulkhead and east end of the property to address the Chelsea Creek and Mill Creek environment and its significance in U.S. History. (d) The Licensee shall place and maintain, in good repair, a public access sign near the western and northern property lines adjacent to the mean high water shoreline as well as in a prominent location adjacent to the wind turbine authorized herein. These three signs shall be designed in accordance with the Department's signage requirements, attached hereto, and shall be posted within 3 months of license issuance. The sign adjacent to the wind turbine shall include a statement that the walkway facilities were required by the MassDEP, the waterways license number of the project, and the location where the public may inspect a copy of the license. (e) The Licensee may adopt reasonable rules, subject to prior review and written approval by the Department, as are necessary for the protection of public health and safety and private property, and to ensure public use and enjoyment by minimizing conflicts between user groups. The exercise by the public of free-on-foot passage in accordance with this condition shall be considered a permitted use to which the limited liability provisions of M.G.L. c.21, s. 17c shall apply. (f) The public access area shall be completed and available for safe pedestrian use by the date the first Certificate of Occupancy is issued for the Project Site except for landscaping and other matters...

Special Condition 3: The Licensee shall construct and maintain the 1-story wind turbine operations and maintenance building...in a manner that does not disrupt or interfere with public access along the bulkhead. The Licensee shall install at least one interpretative plaque on or near the building on the functionality of the wind turbine and provide an instrument display that provides information to the public related to power consumption, power generation, wind patterns and wind generation. Such information shall be available from dawn to dusk, the hours of public access.

Special Condition 4: The license for any structure authorized herein shall expire if the structure is not completed or is abandoned and not used for the purpose for which it was licensed for a period of five consecutive years or more in accordance with 310 CMR 9.25(1)...

Special Condition 6: The Licensee shall maintain the structures and uses authorized in this license in a manner that shall not prevent the commitment of space or significantly discourage future water-dependent industrial activity on the property or elsewhere within the Chelsea Creek Designated Port Area in accordance with 310 CMR 9.15(1)(d) and 310 CMR 9.36(5)...

Standard Waterways License Conditions: (9) This License authorizes structure(s) and/or fill on: Private Tidelands. In accordance with the public easement that exists by law on private tidelands, the licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof.

- **111 Eastern Ave.** (DEP License # 4629, issued 5/24/1995): The licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof. The licensee shall not limit the hours of availability of any areas of the subject property designated for public passage, nor place any gates, fences, or other structures on such areas in a manner that would impede of discourage the free flow of pedestrian movement thereon.

- **111 Eastern Ave.** (DEP License # 6862, issued 12/11/1997): Special Condition 4: Licensee shall construct and maintain a publicly accessible waterfront open space to be located at the southern end of the site…. Said open space shall include the following amenities: seating, shade structure, lighting, walkway, and landscaping. Said walkway shall extend to Eastern Ave. near the intersection of Central

Ave. in order that pedestrians may utilize the existing traffic signal to cross Eastern Ave. A 25-ft wide grassy swale shall be located immediately north of the proposed open space.... Parking on the site shall not commence until the publicly accessible open space is made open to the public. The walkway facilities shall be available free of charge, 24 hours a day, unless the Dept. approves in writing other hours of operation. Licensee may adopt rules governing the walkway facilities on the site, subject to prior review and written approval of the Department as are necessary for protection of public health and safety and private property, and to ensure their use and enjoyment by minimizing conflicts between user groups. Licensee shall place and maintain in good repair appropriate signage of adequate size to be clearly visible to pedestrians along Eastern Ave..... Signage shall be placed at the Eastern Ave. entryway to the open space facility, encourage public patronage of the waterfront walkway, state the hours of public access and any reasonable rules for their use.... The licensee shall allow the public to use and to pass freely upon the area of the subject property lying between the high and low water marks, for the purposes of fishing, fowling, navigation, and the natural derivatives thereof.

Appendix G: Infrastructure Inventory

11/9/18

Moffatt & Nichol

City of Chelsea Inspections

295 Eastern Ave

This parcel is comprised of an approximately 1,306-ft of natural shoreline, 262-ft of staggered granite blocks, and 130-ft of marsh. The topside consists of a marshy area with shrubbery. This parcel is outside the DPA, and the city wants a continuous harbor walk connecting the Forbes site to Eastern Avenue. This location has grassy and soft ground, with marsh-like uplands. The conditions given below move in a south to north direction.

Typical observed conditions:

1. The waterfront has a typical mix of cobbles, medium sized rocks (6" diameter), with large rocks up to 1.5'x1.5' in size
a. Slope is typically 4:1 to 5:1
b. See Photo 1 for typical waterfront
2. At the north corner shoreline, there's a collection of large rocks up to 3'x3' in size.
3. After this corner, there's an area where concrete, rebar, and bricks have been dumped
a. Slope is 6:1 in this area
b. See Photo 2 for concrete, rebar, and brick debris
4. At the inner corner before the RR tracks, the waterfront is a gravel slope with grass in the upland area.
a. Slope is 10:1 in this area
b. See Photo 3
5. Large granite blocks are stacked along the train tracks from the northern part of 295 Eastern Avenue parcel to the 1 Forbes Street parcel.

No existing condition rating is applicable to this parcel based on natural shoreline and lack of marine structures.

The reuse potential rating is **Medium**. The site itself has significant potential for development, however, there are no existing shoreline structures that will retain fill. It is likely that any development will require installation of these types of structures at significant cost.

1 Forbes Street

This parcel is comprised of approximately 1,540-ft of steel sheet pile bulkhead and concrete cap, 468-ft of natural shoreline, and 370-ft of marsh. The northern corner of the site contains a stormwater overflow basin. The topside consists of a grassy area and concrete walkway. This parcel is outside of the DPA.

Typical observed conditions:

1. North of the train tracks this area contains small gravel with scattered medium to large rocks
a. 10:1 slope
b. Grassy/marsh uplands
2. Steel sheet pile bulkhead with concrete cap
a. South face
i. Does not appear to have coating

ii. Major corrosion at the top of sheet to estimated mean low water, with pitting, flaking and peeling
iii. See Photos 4 and 5 for typical conditions

b. Double channel wale
1. Major corrosion, pitting, flaking and peeling
2. Tie-rod exhibits minor corrosion, but no bending
3. Wale seats exhibit severe corrosion, 100% section-loss
4. See Photo 6 for wale condition
5. See Photo 7 for typical wale seat
c. Concrete cap exhibits minor cracks in isolated locations
d. East face
1. Visible sections of sheet pile wall exhibits corrosion
e. Wale exhibits major corrosion, pitting, flaking and peeling
1. Wale is misaligned due to potential overstressing of structure
2. Possible deflection of wall most of the length to the notch
3. See Photo 8
f. Concrete cap exhibits isolated minor cracks, see Photo 9
g. Topside behind cap exhibits sinkholes

i. Sinkhole at the notch area appears to have been previously repaired, see Photo 10
ii. Sinkholes typical for length of sheet pile wall from notch to north end

1. Some areas repaired with concrete or bricks

iii. At the north end, the bulkhead heads west and the sheeting appears to be in good condition

1. The sheeting in this location is set back with a marsh area between it and water, see Photo 11

The existing condition rating of the shoreline structures at 1 Forbes Street is in overall **Poor** condition due to significant corrosion of the sheeting (no coating), major deterioration of the wale, and the widespread sinkholes behind the concrete cap.

The reuse potential rating is **Medium** due to significant repairs required to prevent further upland material subsidence and repairs to bulkhead and hardware.

<u>InterPARK (111 Eastern Avenue)</u>

This parcel is comprised of an approximately 520-ft concrete gravity wall with timber piles, 1,052-ft of concrete panels with steel soldier H-piles and concrete gravity wall, a 120-ft steel sheet pile bulkhead, and 133-ft of natural shoreline. The topside consists of a grass strip followed by a paved parking lot. There are 11 seaward structures for vessel berthing (3 with access). The concrete gravity wall appears to be the original earth retaining structure which has been supplemented with the soldier pile/concrete panel wall. The conditions given below move in a north to south direction.

<u>Typical observed conditions:</u>

1. Concrete gravity wall
a. Typical vertical cracks every 4’ to 6’, typical areas of honeycombing, rust stains, see Photo 12
b. Severe cracking with exposed rebar, see Photo 13
c. Severe full vertical height cracking with exposed rebar
2. H-piles (soldier piles) with concrete panels
a. There is a 150’ stretch of H-piles and concrete panel wall before sheet pile wall, see Photo 14
b. Concrete panels are just below water line at time of inspection, appear to be in good condition.
c. H-piles exhibit coating failure, corrosion from estimated high water level down to mean low water
d. Wale appears to be in good condition
e. Tie-backs exhibit minor corrosion

f. Front bearing plates and tie-rods exhibit moderate corrosion, coating failure, pitting, flaking and peeling
3. Steel sheet pile wall
a. Typical coating failure and corrosion, see Photo 15
b. Wale appears to be in good condition
c. Tie-rod and bearing plate exhibit minor corrosion, coating failure, pitting, flaking and peeling
4. Green (fusion bonded epoxy coating) H-piles and concrete panel
a. Piles exhibit minor corrosion and coating loss, see Photo 16
b. Wale, bearing plates, and tie-rods exhibit major corrosion, pitting, flaking and peeling
c. Concrete gravity wall exhibits 20' section with severe spall with exposed rebar, up to 70% section-loss, see Photo 17
d. Piles and concrete panel extend to bridge

The area at InterPARK is given various existing condition ratings. The H-pile /concrete panel walls are in **Fair** condition due to minor to moderate corrosion of the H-piles and wale. The steel sheet pile wall is in **Fair** condition due to minor to moderate corrosion to the sheeting and hardware. The concrete gravity wall is in **Poor** condition due to typical major cracking in addition to isolated areas of severe cracks and severe spalling with exposed rebar. The seaward berthing structures are in **Critical** condition.

The reuse potential rating is **Medium.** The concrete gravity wall will likely require significant repairs prior to site development. The berthing structures in critical condition, seaward of the bulkhead, require demolition prior to future development.

CSX Parcel/ROW (143 Eastern Avenue)

This parcel is comprised of an approximately 20-ft of natural shoreline. The topside consists of the bridge foundation.

Not accessible.

State Owned Parcel (15 Eastern Avenue)

This parcel is comprised of an approximately 226-ft of natural shoreline and an upland rip rap revetment. The topside consists of a concrete walkway, shrubs, grass, a small building, and an access road.

Not accessible.

Marginal Street Development, LLC (245-257 Marginal Street)

The parcel at 245 Marginal Street is comprised of approximately 230-ft of steel sheet pile wall. The topside contains a grass strip and concrete area followed by a paved parking lot. The parcel at 249 Marginal Street is comprised of an approximately 200-ft rip rap revetment with refurbished concrete caps. The topside contains a grass strip followed by a paved parking lot. The parcel at 257 Marginal Street is comprised of an approximately 577-ft rip rap revetment, 42-ft stacked concrete beam wall, and a 135-ft rip rap section with steel sheet pile toe. The topside contains a grass strip backed by a paved parking lot. The conditions given below move in a south to north direction.

Typical observed conditions:

1. Topside consists of benches, light poles, concrete panels and a grass strip
a. Concrete panels are uneven, area needs to be re-graded
b. See Photo 18
2. Sinkholes are typical behind the steel sheeting
3. Steel sheet pile wall

a. Waterside face is inaccessible
b. Exhibits moderate corrosion, pitting, flaking and peeling
c. Deflects up to 4' most of wall length, see Photo 19
d. See Photo 20 for view of sheeting from Enterprise Lot
4. Wale exhibits moderate corrosion, pitting, flaking and peeling
a. Most of wall length wale is missing or collapsed, see Photo 21
b. 20' section of cave-in
5. Sheeting ends and a steep slope with concrete caps and rip rap takes its place
a. Typically, 2:1 slope with rip rap up to 2'x2' with cobbles mixed in
b. Cap behind rip rap, leaning towards water
c. See Photo 22 for typical view
d. Large sinkhole under concrete panels near end of sheeting, see Photo 23
6. Slope changes from 2:1 to 1:1
a. Cap failure approximately 40 LF, area is roped off, uplands subsidence, see Photo 24
7. Sheet pile wall at toe of rip rap slope, see Photo 25
a. Begins just after failed cap area
b. Wale inaccessible for inspection
c. Major corrosion noted
d. After approximately 120' of sheeting, it extends out into the water at a 90-degree angle. Sheeting ends here.

The existing condition rating of the shoreline structures at the Rental Car Staging is **Poor/Serious** due to widespread structural member failures and upland material subsidence.

The reuse potential rating is **Low** due to the significant deterioration and likelihood of a complete rebuild of these structures.

Enterprise Parcel (239 Marginal Street)

This parcel is comprised of an approximately 1,091-ft rip rap revetment and a paved parking lot behind it. The conditions given below move in a north to south direction.

Typical observed conditions:

1. Typical 2:1 slope with rip rap up to 10" diameter with gravel mixed in, see Photo 26
a. Rip rap appears to be of newer vintage
2. After approximately 200', the slope changes to 3:1
3. Parking lot shows signs of settlement and slope begins to dip towards shoreline, noted from back edge of rip rap to approximately 20' back and into the parking lot
a. Rip rap now above pavement
b. See Photo 27

No existing condition rating is applicable to this parcel based on natural shoreline and lack of marine structures.

The usability is **Medium** due to the good condition of existing lot for the current usage. If upland surcharge loading increases, then cost implications will be significant. Additionally, the site has significant potential for development, however, there are no existing shoreline structures that will retain fill. It is likely that any development will require installation of these types of structures at significant cost.

Kalick Waterfront Parcels (197-215 Marginal Street)

The parcel at 197 Marginal Street is comprised of an approximately 235-ft rip rap revetment with a paved parking lot behind it. The use of the docks is restricted to non-recreational functions. The parcel at 201 Marginal Street is comprised of an approximately 190-ft rip rap revetment, a 12,000-sq. ft. concrete pier, and a 841-ft floating dock. The topside consists of a paved parking lot and a building. The use of the docks is restricted to non-recreational functions. The parcel at 215 Marginal Street is comprised of an approximately 1,100-ft of abandoned timber piles and mudflats (470-ft along the shore) and a 128-ft timber soldier wall with staggered concrete beams. The topside consists of a small natural shoreline strip immediately followed by a paved roadway. The conditions given below move in a north to south direction.

<u>Typical observed conditions:</u>

1. Remaining timber members are severely deteriorated, see Photo 28
2. Mostly 1:1 slope through middle stretch of roadway, 2:1 at limits

a. Small concrete caps at top of slope

i. Stacked
ii. Displaced, rotated towards waterline
iii. Fill loss under roadway, two 50’ sections

b. See Photo 29

3. Slope 3:1 to 4:1 on north side of pier
4. Pier at 201 marginal Street appears to be of newer vintage

a. Pier inaccessible
b. See Photo 30

5. Rip rap slope 2:1, stones up to 1.5’x1.5’ in size, see Photo 31
6. Upland gravel appears to be washing away over top of rip rap

The shoreline structures at Kalick Pier are given two existing conditions rating ratings. Parcels at 197 and 201 Marginal Street are in **Good** condition due to apparent recently constructed pier as well as stable sloped rip rap. Parcel at 215 Marginal Street is in **Critical** condition due to uplands subsidence, displaced concrete caps along edge of water, and severely deteriorated and/or broken timber elements.

The reuse potential rating is **High** for the 197 and 201 Marginal Street parcels based on its good condition and apparent recent upgrades. The reuse potential rating is **Low** for the 215 Marginal Street parcel. The existing marine structures are non-usable and will likely require a full rebuild.

01_295 TYPICAL WATERFRONT.JPG

295 EASTERN AVE

Photo 1

02_CONCRETE AND REBAR.JPG

295 EASTERN AVE

Photo 2

moffatt & nichol

295 EASTERN AVE 03_GRAVEL AREA 10 TO 1 SLOPE.JPG

Photo 3

1 FORBES ST 04_FORBES STREET BULKHEAD.JPG

Photo 4

05_FORBES STREET BULKHEAD.JPG

1 FORBES ST

Photo 5

06_FORBES STREET WALE.JPG

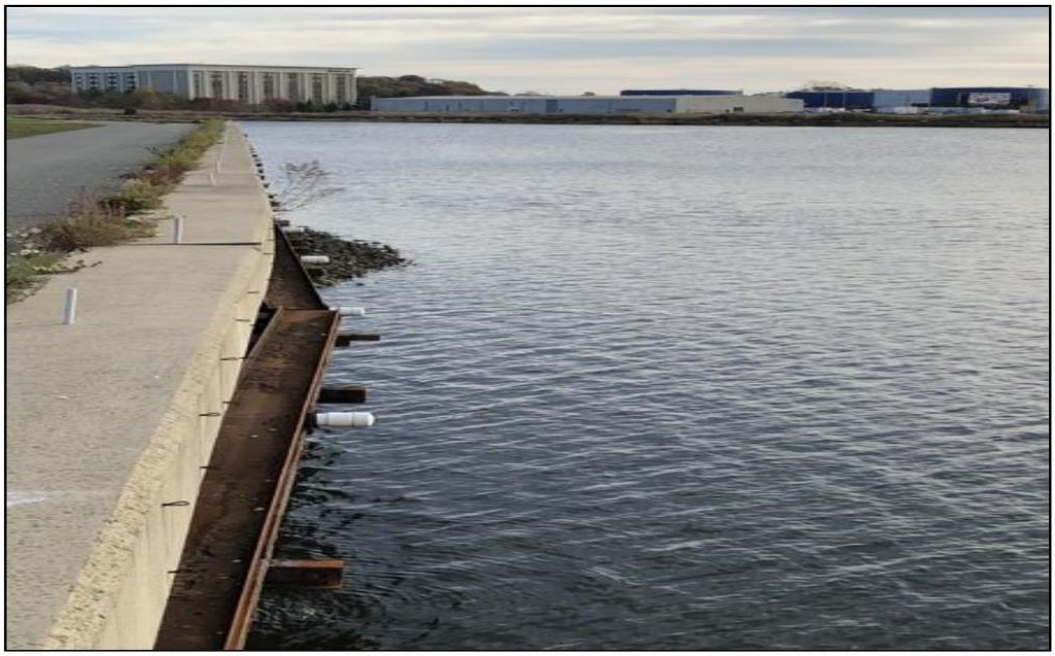
1 FORBES ST

Photo 6

07_FORBES WALE SEAT.JPG

1 FORBES ST

Photo 7



08_FORBES WALE MISALIGNED.JPG

1 FORBES ST

Photo 8

09_FORBES CONCRETE CAP.JPG

1 FORBES ST

Photo 9

10_SINKHOLE AT NOTCH.JPG

1 FORBES ST

Photo 10

1 FORBES ST 11_FORBES GOOD SHEETING AND MARSH.JPG

Photo 11

INTERPARK 12_INTERPARK_CONCRETE WALL TYPICAL.JPG

Photo 12

13_INTERPARK WALL SPLIT.JPG

INTERPARK

Photo 13

14_CONCRETEP PANEL WALL.JPG

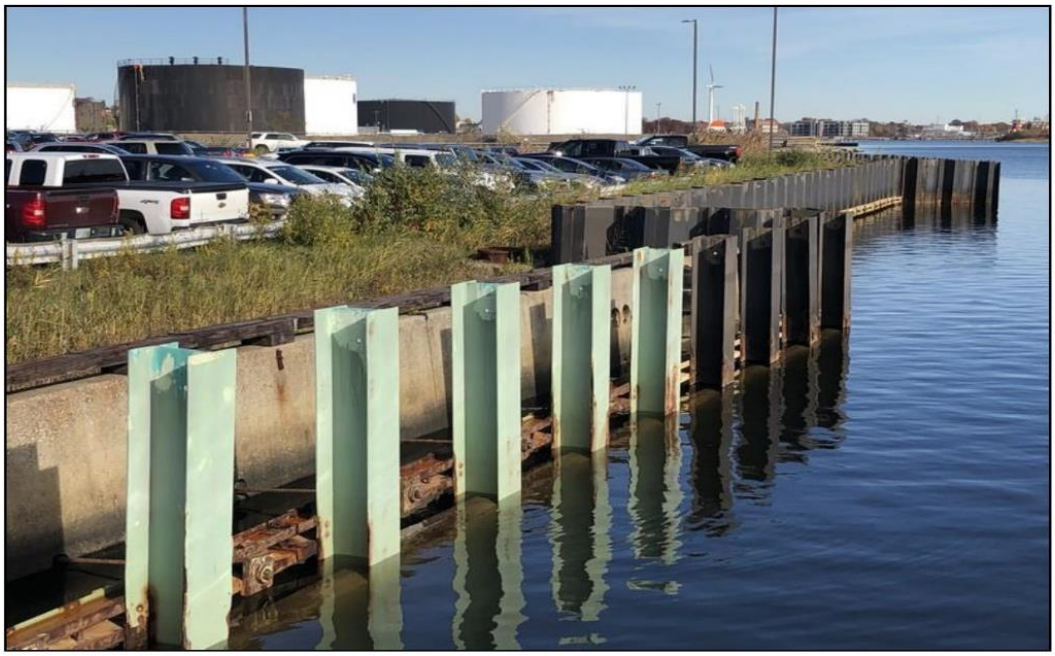
INTERPARK

Photo 14

15_INTERPARK_SHEET PILE WALL.JPG

INTERPARK

Photo 15



16_GREEN H-PILES.JPG

INTERPARK

Photo 16

17_WALL WITH EXPOSED REBAR.JPG

INTERPARK

Photo 17

18_CAR STAGING HARBOR WALK.JPG

245-257 MARGINAL ST

Photo 18

245-257 MARGINAL ST 19_HARBOR WALK DEFLECTION.JPG

Photo 19

245-257 MARGINAL ST 20_HARBOR WALK SHEETING FROM ENTERPRISE.JPG

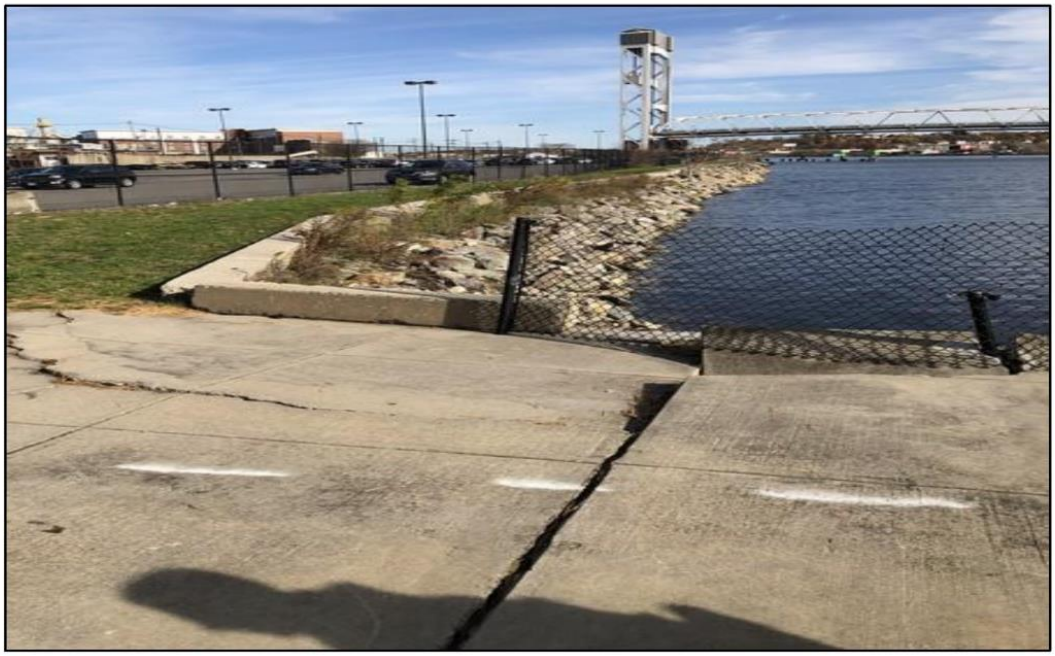
Photo 20

245-257 MARGINAL ST 21_HARBOR WALK WALE.JPG

Photo 21

245-257 MARGINAL ST 22_HARBOR WALK TYPICAL SLOPE AND CAP.JPG

Photo 22



23_HARBOR WALK SINKHOLE.JPG

245-257 MARGINAL ST

Photo 23

24_CAP FAILURE.JPG

245-257 MARGINAL ST

Photo 24

245-257 MARGINAL ST 25_SHEET PILE WALL AT RIP RAP TOE.JPG

Photo 25

ENTERPRISE 239 MARGINAL ST 26_ENTERPRISE LOT RIP RAP TYPICAL.JPG

Photo 26

27_ENTERPRISE LOT SLOPED PAVEMENT.JPG

ENTERPRISE 239 MARGINAL ST

Photo 27

28_KALICK PIER SEVERE PILES.JPG

KALICK PARCELS 197-215 MARGINAL ST

Photo 28

29_CAPS AND FILL LOSS.JPG

KALICK PARCELS 197-215 MARGINAL ST

Photo 29

30_NEW PIER.JPG

KALICK PARCELS 197-215 MARGINAL ST

Photo 30

31_KALICK PIER RIP RAP.JPG

KALICK PARCELS 197-215 MARGINAL ST

Photo 31

Appendix H: Waterfront Improvement Fund

The City of Chelsea will establish a fund for use in improving conditions within or impacting the planning area. The Waterfront Improvement Fund, will be used within the impacted area to promote and support activities consistent with a working waterfront.

Waterfront Improvement Fund:

The waterfront improvement trust fund will receive Chapter 91 mitigation funds, grants, gifts, and other donations. The funds will be overseen by the city manager and kept by the city treasurer separate from other funds.

(a) *Contributions to the Waterfront Improvement Fund.* Chapter 91 waterfront improvement mitigation funds may be generated when any of the following conditions are met. Contributions to the fund shall be a condition of any license and special permit, including temporary licenses. This fee will take into consideration non-maintenance of waterside infrastructure, depreciation of existing infrastructure, the cost of restoring the shore to a state that can accommodate maritime industries, and any encroachment on public rights in tidelands. The amount and payment schedule will be calculated on a case-by-case basis, based upon factors that may include the square footage of property in Chapter 91 jurisdiction, the type of licensed use(s), the type(s) of impact(s), and comparable property values.

(1) *Temporary uses that are licensed in the DPA or temporary licenses that are renewed.* Temporary uses along Chelsea Creek, though important to the local economy, are not water-dependent industrial uses. As such, temporary licensees are not incentivized to maintain waterfront infrastructure to support future water-dependent industrial uses. And though the temporary license conditions stipulate that properties must be marketed for water-dependent uses, this provision can be difficult to monitor and enforce. Further, should a prospective water-dependent industrial tenant be identified, there is no requirement or incentive for accommodating that use prior to the expiration of the temporary license. In order to incentivize the marketing of properties for water-dependent uses and to ensure that funds exist to maintain the waterfront infrastructure, property owners with temporary use licenses shall be required to pay a fee into the Waterfront Improvement Fund.

(2) *Licenses which rely upon discretion provided for by the Chelsea Creek Municipal Harbor Plan and Designated Port Area Master Plan.* Payment into the Waterfront Improvement Fund is an acceptable license and special permit condition when a project cannot meet the conditions of, or relies upon discretion provided for by, the Chelsea Creek Municipal Harbor Plan and Designated Port Area Master Plan as outlined in Chapters seven and eight of that Plan. Payment(s) shall be required when (a) mitigation is required for new net shadow-related impacts on the watersheet and areas in the DPA within Chapter 91 jurisdiction; or (b) a parcel is allocated a supporting-use quota for the parcel above 25% of the Lot Area.

As outlined in the Designated Port Area Master Plan, some parcels within the DPA may be eligible for an increase in the amount of supporting use allowed on the project site. The city will be responsible for tracking and reporting on the acreage available for supporting uses within the DPA, and may allow, at its

discretion, additional area for supporting uses as appropriate. Payment into the Waterfront Improvement Fund will be a license and special permit condition when any of the above conditions are met.

(3) *Failure to meet public access requirements.* Financial mitigation for failure to provide minimal public access shall be provided when (a) a project cannot meet the public access conditions as outlined in Chapters 7 and 8 of the Chelsea Creek Municipal Harbor Plan and Designated Port Area Master Plan (*e.g.*, the specific point access described in Chapter 7); or (b) impacts to the public's rights on tidelands cannot be compensated for through other means. Payment into the Waterfront Improvement Fund will be a license and special permit condition when any of the above conditions are met.

(4) *Making a non-prohibited use into a supporting use*. When no water-dependent industrial use exists on site, or a proposed supporting use is neither categorically excluded nor explicitly allowed as a "supporting use" in the city's zoning and through state regulations, then the use may be allowed provided that it demonstrates direct economic support of water dependent industrial uses through contributions to the Waterfront Improvement Fund. In these circumstances, payment(s) into the Waterfront Improvement Fund will be a license and special permit condition.

(b) *Uses of the Waterfront Improvement Fund.* The Waterfront Improvement Fund shall only be used within the impacted area to support projects that improve navigation, address inundation pathways, mitigate flooding, improve habitat, and promote activities consistent with a working waterfront. Projects may include: bulkhead improvements; fender maintenance; stormwater management; tide-gates; dredging; lighting; signage; traffic management; and improving signage and understanding related to safety, fishing, and small craft use of the waterways. Funds may be dispersed as grants or loans. No funds will be used to support any dredging where spoils will be disposed of within Chelsea Creek or the Mystic River.

Appendix I: Proposed revisions to the City of Chelsea Zoning Ordinance that support implementation of this DPA Master Plan

Proposed City Council Order to Amend Zoning Ordinance

Changes are in red.

WHEREAS, the Chelsea City Council has the authority to adopt ordinances to protect the health, safety, and welfare of all residents of the City of Chelsea; and

WHEREAS, a specific objective of the City of Chelsea's Zoning Ordinance states the need to encourage the most appropriate use of land throughout the City of Chelsea; and

WHEREAS, a further specific objective of the City of Chelsea's Zoning Ordinance states the need to preserve and increase amenities; and

WHEREAS, the City of Chelsea wishes to protect the industrial character of the portion of the waterfront along Chelsea Creek that remains within the Designated Port Area; and

WHEREAS, the City of Chelsea wishes to increase its tax base through thoughtful redevelopment of underutilized parcels along and adjacent to the waterfront along Chelsea Creek;

WHEREAS, the City of Chelsea is committed to harmonizing and aligning its zoning ordinances with the recommendations of the Chelsea Creek Municipal Harbor Plan and Designated Port Area Master Plan;

WHEREAS, the Massachusetts Constitution guarantees the people of the Commonwealth "the right to clean air and water, freedom from excessive noise, and the natural, historic, and esthetic qualities of their environment";

WHEREAS the City Council finds that the exposure to fossil fuel exhaust is not conducive to the health of residents of Chelsea; and

WHEREAS the City Council finds that fossil fuel exhaust contributes to climate change.

NOW, therefore be it ordained, that the Revised Code of Ordinances of the City of Chelsea as amended, by further amended and adopted as follows:

AN ORDINANCE REVISING PART II CHAPTER 34 OF THE CHELSEA CODE OF ORDINANCES TO ADD AND MODIFY THE FOLLOWING ZONING PROVISIONS:

Amendment 1

That Section 34-27 – Specific districts be amended by inserting two new zones in the table in (a) below the entry for W, Waterfront District:

P	Port District
WU	Waterfront Upland District

And that Section 34-27 be further amended by inserting two new subsections (k) and (l) and incrementing the lettering of the subsequent subsections:

(k) *Port (P) District.* The purposes of the P district are to provide an area for water-dependent and maritime industrial uses, to enable the siting of supportive uses, and to encourage appropriate public access to the working waterfront.

(l) *Waterfront Upland (WU) District*. The purpose of WU district is to promote economic development and to provide uses that are complementary to both a working waterfront and an adjacent residential neighborhood.

(m) *Industrial (I) District.* The purpose of the I district is to provide for research, manufacturing, wholesaling, and related distribution activities in locations with suitable access and where such activities can occur without an adverse impact upon residential areas.

(n) *Light Industrial/Office (LI) District.* The purpose of the LI district is to provide for office, light industry, research and development, wholesale and related distribution activities in locations with suitable access and where such activities can occur without an adverse impact upon residential uses.

(o) *Light Industrial/Office 2 (LI2) District.* The purpose of the LI2 district is to provide an area for light industrial uses compatible with the adjacent residential district.

(p) *Naval Hospital Development—Residential (NHR) District.* The purpose of the NHR district is to redevelop a portion of the former naval hospital site for residential purposes.

(q) *Naval Hospital Development—Commercial (NHC) District.* The purpose of the NHC district is to redevelop a portion of the former naval hospital site for office uses, recreational uses and related purposes.

Amendment 2

That Sec. 34-28. - Overlay districts be amended by deleting the Waterfront Industrial Overlay District.

Amendment 3

That Sec. 34-30. - Interpretation of district boundaries be amended by replacing subsection (5) with the following:

(5) *Divided lot.* Where a district boundary line divides a single zoning lot and a development is proposed to encompass the entire zoning lot, the zoning board of appeals may, by special permit, extend a use allowed in either district or the dimensional requirements of either district upon the recommendation of the department of planning and development.

Amendment 4

That Section 34-77 – Notes to dimensional table be amended by adding the Port (P) District to subsection (c):

(c) *Waterfront (W) and Port (P) Districts.* There shall be a land setback and/or easement of 15 feet from the mean higher high water line or harbor street.

Amendment 5

That Sec. 34-78. - Special dimensional regulations be amended by adding the port and waterfront upland districts to subsection (k)

(k) *Lot coverage.* In the industrial, port, and waterfront upland districts, a greater percent of site coverage may be permitted by special permit provided that the off-street parking and loading requirements of this chapter are met.

Amendment 6

The Sec. 34-108 – General landscaping requirements be amended by adding a new subsection at the end:

(g) *Waterfront lateral access*. Any parcel requiring a special permit, variance, or site plan review that is not within a Designated Port Area and that is adjacent to or contains a portion of the mean higher high tide water edge shall provide Lateral Access at least 15 feet wide adjacent and parallel to the mean higher high tide water edge from property boundary to property boundary for the purpose of providing continuous access for pedestrian traffic along the waterfront and for the purpose of providing an easement for underground utilities and surface infrastructure for flood mitigation, unless the department of planning and development determines that such an area would be hazardous. Where there is not currently a similar easement to an adjacent parcel, an easement shall also be provided from the public right-of-way to the waterfront area. For the purpose of this subsection, this requirement shall extend to any parcel within 100 feet of the mean higher high water line where the parcel containing the mean higher high water line cannot be built upon.

Amendment 7

That Sec. 34-110 – Performance Standards be amended by adding a new subsection at the end:

(p) *Inundation Pathways*. Any parcel requiring a special permit, variance, or site plan review shall eliminate any pathway through which floodwaters could access a public right-of-way for the design life of the project. The appropriate design height of stormwater shall be determined using the best available science and take into account projected sea-level rise using conservative emission reduction assumptions.

For development proposals on property within vulnerability zones identified in the report *Designing Coastal Community Infrastructure for Climate Change*, January 2017, or any update to the city's projections of coastal flooding, proponents must include a description of how projected changes in sea-level rise and storm surge will affect the survivability, integrity, and safety of the proposed project and of any inhabitants, and the measures included in project siting and design to avoid, eliminate, minimize, or mitigate any adverse impacts.

Amendment 8

That a new section 34-112 – Waterfront improvement fund be added.

Sec. 34-112. – Waterfront improvement fund.

The waterfront improvement fund will receive Chapter 91 mitigation funds, grants, gifts, and other donations. The funds will be overseen by the city manager and kept by the city treasurer separate from other funds.

(c) Chapter 91 waterfront improvement mitigation funds may be generated when any of the following conditions are met. Contributions to the fund shall be a condition of any license and special

permit. This fee will take into consideration non-maintenance of waterside infrastructure, depreciation of existing infrastructure, and the cost of restoring the shore to a state that can accommodate maritime industries. The amount and payment schedule will be calculated on a case-by-case basis, based upon factors that may include the square footage of property in Chapter 91 jurisdiction, the type of licensed use(s), the type(s) of impact(s), and comparable property values.

(1) *Temporary uses that are licensed in the DPA or temporary licenses that are renewed.* Temporary uses along Chelsea Creek, though important to the local economy, are not water-dependent industrial uses. As such, temporary licensees are not incentivized to maintain waterfront infrastructure to support future water-dependent industrial uses. And though the temporary license conditions stipulate that properties must be marketed for water-dependent uses, this provision can be difficult to monitor and enforce. Further, should a prospective water-dependent industrial tenant be identified, there is no requirement or incentive for accommodating that use prior to the expiration of the temporary license. In order to incentivize the marketing of properties for water-dependent uses and to ensure that funds exist to maintain the waterfront infrastructure, property owners with temporary use licenses shall be required to pay a fee into the Waterfront Improvement Fund.

(2) *Licenses which rely upon discretion provided for by the Chelsea Creek Municipal Harbor Plan and Designated Port Area Master Plan.* Payment into the Waterfront Improvement Fund is an acceptable license and special permit condition when a project cannot meet the conditions of, or relies upon discretion provided for by, the Chelsea Creek Municipal Harbor Plan and Designated Port Area Master Plan as outlined in Chapters seven and eight of that Plan. Payment(s) shall be required when (a) mitigation is required for new net shadow-related impacts on the watersheet and areas in the DPA within Chapter 91 jurisdiction; or (b) a parcel is allocated a supporting-use quota for the parcel above 25% of the Lot Area.

As outlined in the Designated Port Area Master Plan, some parcels within the DPA may be eligible for an increase in the amount of supporting use allowed on the project site. The city will be responsible for tracking and reporting on the acreage available for supporting uses within the DPA, and may allow, at its discretion, additional area for supporting uses as appropriate. Payment into the Waterfront Improvement Trust Fund will be a license and special permit condition when any of the above conditions are met.

(3) *Failure to meet public access requirements.* Financial mitigation for failure to provide minimal public access shall be provided when (a) a project cannot meet the public access conditions as outlined in Chapters 7 and 8 of the Chelsea Creek Municipal Harbor Plan and Designated Port Area Master Plan (*e.g.*, the specific point access described in Chapter 7); or (b) impacts to the public's rights on tidelands cannot be compensated for through other means. Payment into the Waterfront Improvement Trust Fund will be a license and special permit condition when any of the above conditions are met.

(4) *Making a non-prohibited use into a supporting use*. When no water-dependent industrial use exists on site, or a proposed supporting use is neither categorically excluded nor explicitly allowed as a "supporting use" in the city's zoning and through state regulations, then the use may be allowed provided that it demonstrates direct economic support of water dependent industrial uses through contributions to the Waterfront Improvement Fund. In these circumstances, payment(s) into the Waterfront Improvement Fund will be a license and special permit condition.

(d) *Uses of Waterfront Improvement Fund.* The waterfront improvement fund shall only be used within the impacted area to support projects that improve navigation, address inundation pathways, mitigate flooding, improve habitat, and promote activities consistent with a working waterfront. Projects may include: bulkhead improvements; fender maintenance; stormwater management; tide-gates; dredging; lighting; signage; traffic management; and improving signage and understanding

related to safety, fishing, and small craft use of the waterways. Funds may be dispersed as grants or loans. No funds will be used to support any dredging where spoils will be disposed of within Chelsea Creek or the Mystic River.

Amendment 9

That Sec. 34-214 – Special Permits section (b) *Criteria* be amended by adding the following subsection at the end:

(7) For all uses requiring a special permit in the Port (P) district on parcels that are within the boundaries of the Designated Port Area, the permit granting authority in approving the project must also find that:

a. the proposed use will not displace an existing water-dependent use with a non-water-dependent use;

b. the proposed use will not, by virtue of its location, scale, duration, operation, or other aspects, pre-empt or interfere with existing or future development of water-dependent uses of the project site or surrounding property;

c. the proposed use is compatible with the working waterfront character of the district; and

d. the proposed use will not adversely affect the preservation of water dependent uses on surrounding properties.

Amendment 10

That Sec. 34-215 – Site plan review be amended by adding a new clause to subsection (a) Applicability at the end:

(4) Construction, exterior alteration or exterior expansion of, or change of use, on a parcel that is subject to a state-approved Designated Port Area Master Plan.

Amendment 11

That Sec. 34-215 – Site plan review be amended by revising subsection (b) Minor site plan approval as follows:

(b) *Minor site plan approval.* An application for permits to build, alter, or expand any building, structure or use in any district where such construction: (1) will not exceed a total gross floor area of 8,000 square feet, and (2) will not generate the need for more than 25 parking spaces shall be deemed a minor site plan. For the purposes of computing total gross floor area or parking spaces, all such applications made within the five previous calendar years shall be considered in the aggregate. And further, within the Waterfront (W), Port (P), and Waterfront Upland (WU) districts, total gross floor area shall include any Intensive Use Area that is outside of the building or structure. Minor site plans shall be reviewed by the building inspector as follows:

Amendment 12

That Sec. 34-215 – Site plan review be amended as follows:

(1) by changing in subsection (e)(1) the number of separate plans from six to seven in the opening sentence;

(2) adding a new clause g. in subsection (e)(1), which shall read as follows:

g. Certified plot plan, which shall contain all boundaries, easements, utilities, and dimensions.

(3) relettering the existing clause g in subsection (e)(1) to h.

Amendment 13

That Sec. 34-215 – Site plan review be amended by adding a new subsection (g) and relettering subsequent subsections to (h), (i), and (j):

(g) In addition to the current requirements of subsection (f), development projects that include supporting commercial or industrial uses on filled tidelands within the Port (P) district, must comply with these additional standards:

(1) The amount of supporting commercial or industrial uses located on the filled tidelands portion of a property shall be no more than 25% or that allowed by a state-approved Designated Port Area Master Plan.

(2) The supporting commercial or industrial use must provide a water-dependent industrial use in the DPA with direct economic and/or operational support.

a) If proposed on a property with a functioning water-dependent industrial use, required level of support is assumed to be provided.

b) If proposed on a property with no existing or proposed water-dependent industrial use, the required level of financial support is to be (1) invested in on-site waterfront infrastructure improvements, or (2) if no or insufficient investment on-site is feasible, funds are to be contributed to the waterfront improvement fund.

(3) For properties with supporting commercial uses proposed for filled tidelands, but not for supporting industrial uses, in the Port (P) district:

a) At least one square foot of filled tideland area shall be reserved for public open space for every square foot of filled tideland covered by the combined footprint of buildings containing a non-water-dependent use on the project site. Where the reservation of filled tideland area for public open space is not practical, other areas of the project may be reserved, provided that the public access is enhanced by the change.

b) Supporting commercial uses cannot be located on pile-supported piers.

c) If in a new building, supporting commercial uses cannot be located in the water-dependent use zone of filled tidelands.

Amendment 14

That the following definitions be added or modified in Section 34-241:

Lot area. The horizontal area of the lot exclusive of

(a) any area in a street or private way open to public use, and

(b) any water area below the mean higher high-tide line.

Water-dependent industrial use: industrial uses that require direct access to or location in tidal waters, and therefore cannot be located away from said waters, including those categorically defined as such at 310 CMR 9.12(2)(b).

Water-dependent use zone: an area of filled tidelands, as described in 310 CMR 9.51, running landward of and parallel to the project shoreline extending in width for the lesser of 100 feet or 25% of the weighted average distance from the present high water mark to the landward lot line of the property, but no less than 25 feet; along the ends of piers and wharves, extending the lesser of 100 feet or 25% of the distance in question to the base of the pier or wharf, but no less than 25 feet; and along the sides of piers and wharves, extending the lesser of 50 feet or 15% of the edge in question to the opposite edge, but no less than 10 feet.

Supporting industrial use: a non-water-dependent industrial use in a Designated Port Area that provides water-dependent industrial use in the DPA with direct economic or operational support.

Supporting commercial use: a commercial use in a Designated Port Area that provides water-dependent industrial use in the DPA with direct economic or operational support.

Filled tidelands: former submerged lands and tidal flats which are no longer subject to tidal action due to the presence of fill.

Designate Port Area (DPA): an administrative area designated by the commonwealth under 301 CMR 25.00 that reserves geographic areas for current and future water-dependent industrial and supporting industrial and commercial uses.

Point access: a barrier-free pedestrian way leading from a public right-of-way to the water's edge with a terminus designed to provide the public with a safe, comfortable vantage point from which to view the water, surrounding activities, and vistas. The street end of the access way shall be posted with a public access sign approved by the city.

Lateral access: a barrier-free pedestrian way along the water’s edge with unobstructed connections to public access on adjoining parcels or to the public right-of-way.

Mean higher high water line: The line marking the average of the higher high water height of each tidal day as observed over the National Tidal Datum Epoch and defined by the National Oceanic and Atmospheric Administration.

Intensive Use Area: The area of a project, outside of any structure, where materials are stored or manipulated as part of the use. This area does not include required parking or landscaping.

<u>Amendment 15</u>

That Sec. 34-262 – Table of dimensional regulations be amended by adding the following 2 columns after the column for Waterfront:

TABLE OF DIMENSIONAL REGULATIONS

Zoning Districts	Waterfront (W)	Port (P)	Waterfront Upland (WU)
Minimum Lot Area (sq. ft.)			
Per dwelling Unit	NA	NA	NA
But not less than	NA	NA	NA
Maximum Density	35 units per acre	NA	35 units per acre
Minimum Density	12 units per acre	NA	NA
Minimum Frontage (ft.) [4]	NA	NA	NA
Maximum Floor Area Ratio [2]			
Standard	1.5	2	2
Bonus	NA	NA	NA
Maximum Height (ft.) [5]	35	50; 80 by SP	45
Maximum Number of Stories	NA	NA	NA
Required Yards (ft.) [7]			
Front Yard	10	15	5
Side Yard	10	10	NA
Rear Yard	10	NA	NA
Max. % of Lot Covered	NA	NA	NA
Minimum Usable Open Space per family (sq. ft.)	150	NA	150
Minimum Area to remain as Usable Open Space [9]	15[10]	15[10]	15[10]

Minimum distance Between Access Points to the same lot (ft.) [11]	50	100	50

Amendment 16

That Sec. 34-300 – Table of principal use regulations be amended by replacing it with the attached table.

Amendment 17

That the zoning map referenced in Sec. 34-29 – Zoning map be amended by replacing it with the attached map.

Sec. 34-300. - Table of principal use regulations.

Changes are highlighted in yellow.

TABLE OF PRINCIPAL USE REGULATIONS

Principal Use	Districts															
	R1	R2	R3	BR	BR2	BH	B	SC	W	P	WU	I	LI	LI2	NHR	NHC
	A. Residential uses															
Single-family dwelling	Y	Y	Y	N	N	N	N	N	Y	N	Y	N	N	N	N	N
Two-family dwelling	Y	Y	Y	N	N	N	N	N	Y	N	Y	N	N	N	N	N
Three-family dwelling	N	Y	Y	N	N	N	N	N	Y	N	Y	N	N	N	N	N
Multifamily dwelling with four to six dwelling units	N	SP	Y	Y	Y	N	N	N	SP	N	SP	N	N	SP	Y	N
Dwellings containing seven or more dwelling units	N	N	N	N	N	N	N	N	SP	N	SP	N	N	N	Y	N
Multifamily dwelling at a minimum density of 12 units and a maximum density of 35 units per acre	N	N	N	N	N	N	N	N	Y	N	Y	N	N	N	N	N
Conversion of a dwelling	Y	Y	Y	N	Y	N	N	N	N	N	N	N	N	Y	N	N
Dwelling above the first floor of a building containing retail or office use	N	N	Y[1]	Y	Y	N	N	N	N	N	SP	N	N	SP	N	N
Retail or professional service business, or business or professional office, within a dwelling structure	N	N	N	N	N	N	N	N	N	N	N	N	N	N	SP	N
Lodginghouse or boardinghouse	N	SP	SP	SP	N	N	N	N	N	N	N	N	N	N	N	N
Congregate housing	SP	SP	SP	N	N	N	N	N	N	N	N	N	N	N	N	N
Assisted and/or independent living facility	N	SP	SP	SP	SP	N	N	N	SP	N	N	N	N	N	SP	N
Shared elderly housing	SP	SP	SP	SP	SP	N	N	N	SP	N	N	N	N	N	SP	N
Community residence	SP	SP	SP	SP	SP	N	N	N	SP	N	N	N	N	N	SP	N
	B. Exempt and institutional uses															
Use of land or structures for religious purposes	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y

Principal Use	Districts															
	R1	R2	R3	BR	BR2	BH	B	SC	W	P	WU	I	LI	LI2	NHR	NHC
Use of land or structures for educational purposes on land owned or leased by the state or any of its agencies, subdivisions or bodies politic or by a religious sect or denomination, or by a nonprofit educational corporation	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Family day care home, small	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Family day care home, large	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Adult day care facility, small	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Adult day care facility, large	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP
Child care facility in existing building	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Child care facility in new building	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	N	SP
Use of land for the primary purpose of agriculture, horticulture, floriculture, or viticulture on a parcel of more than five acres in area	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Facilities for the sale of produce, and wine and dairy products, provided that during the months of June—September of every year, or during the harvest season of the primary crop, the majority of such products for sale, based on either gross sales dollars or volume, have been produced by the owner of the land containing more than five acres in area on which the facility is located	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Municipal facilities	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Essential services	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y
Hospital	N	N	N	SP	SP	SP	SP	SP	N	N	N	SP	N	N	N	N

Principal Use	Districts															
	R1	R2	R3	BR	BR2	BH	B	SC	W	P	WU	I	LI	LI2	NHR	NHC
Noncommercial research facility	N	N	N	N	N	N	SP	N	SP	SP	SP	SP	SP	SP	N	N
Parks and playgrounds	Y	Y	Y	Y	Y	Y	Y	Y	Y	SP	Y	Y	Y	Y	Y	Y
Institutional uses, including marine research, education and laboratory facilities, not including overnight accommodations	N	N	N	N	N	N	N	N	SP	Y[7]	SP	N	N	N	N	N
	C. Commercial uses															
Nonexempt educational use	N	N	N	Y	Y	Y	SP	Y	Y	N	SP	N	N	N	Y	Y
Nonexempt educational use with a minimum of 20,000 square feet	N	N	N	N	N	N	N	N	N	N	N	Y	N	N	N	N
Animal clinic or veterinary hospital	N	N	N	SP	SP	N	N	SP	N	N	SP	SP	N	N	N	N
Kennel	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Private club or lodge	N	N	N	Y	Y	SP	N	SP	N	N	N	N	N	SP	N	N
Nursing or convalescent home	SP	SP	SP	SP	SP	SP	N	N	N	N	N	N	N	N	SP	N
Funeral home	N	N	N	SP	N	SP	N	SP	N	N	N	N	N	N	SP	SP
Hotel, inn, motel, tourist home	N	N	N	SP	SP	SP	Y	SP	SP	SP[4]	SP	SP	SP	N	N	Y
Hotel/motel, extended stay lodging	N	N	N	SP	SP	SP	Y	SP	SP	SP[4]	SP	SP	SP	N	N	Y
Planned development	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP[3]	SP	SP	SP	SP	SP	SP
Bakery, delicatessen, candy, fish, including accessory food service	N	N	N	Y	Y	Y	SP	Y	Y	SP[4]	Y	N	SP	SP	N	Y
Book, stationery, gift, clothing, dry goods, hardware, jewelry, or variety store	N	N	N	Y	Y	Y	N	Y	Y	SP[4]	Y	N	N	N	N	Y
Convenience store with hours of operation not to exceed 5:00 a.m. to 11:00 p.m.	N	N	N	SP	SP	SP	SP	SP	N	SP[4]	SP	SP	N	N	N	SP
Convenience store with hours of operation exceeding 5:00 a.m. to 11:00 p.m., and/or	N	N	N	SP	SP	SP	N	N	N	SP[4]	SP	N	N	N	N	N

Principal Use	Districts															
	R1	R2	R3	BR	BR2	BH	B	SC	W	P	WU	I	LI	LI2	NHR	NHC
with the sale of beer and/or wine																
Convenience store with the sale of alcoholic beverages other than beer and/or wine	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Gasoline sales with convenience store	N	N	N	N	N	SP	SP	SP	N	SP[4]	N	SP	N	N	N	N
Supermarket with hours of operation exceeding 5:00 a.m. to 11:00 p.m., and/or with the sale of beer, wine and/or other alcohol	N	N	N	SP	SP	SP	N	N	N	N	SP	N	N	N	N	N
Supermarket and grocery store	N	N	N	SP	SP	SP	N	SP	N	N	SP	N	N	N	N	N
Department store, discount house	N	N	N	SP	SP	SP	N	SP	N	N	SP	N	N	N	N	N
Retail stores and services not elsewhere set forth	N	N	N	SP	SP	SP	N	SP	N	SP[4]	SP	N	N	N	N	N
Major commercial project	N	N	N	SP	SP	SP	SP	SP	SP	SP[4]	SP	SP	SP	SP	SP	SP
Motor vehicle sales and rental	N	N	N	N	N	SP	N	N	N	N	N	N	N	N	N	N
Motor vehicle repair services and washing and waxing establishments	N	N	N	SP	N	SP	N	N	N	N	N	N	N	N	N	N
Motor vehicle service station	N	N	N	SP	N	SP	N	N	N	N	N	Y	N	N	N	N
Motor vehicle parts stores	N	N	N	SP	N	SP	N	Y	N	N	N	N	N	N	N	N
Motor vehicle storage and repair	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Boat and accessory sales, service and rental establishments[6]	N	N	N	N	N	N	N	N	SP	SP	SP	N	N	N	N	N
Boat storage facilities, including rack storage facilities	N	N	N	N	N	N	N	N	N	Y[7]	N	N	N	N	N	N
Boatbuilding and shipbuilding, including facilities for construction fabrication, maintenance, and repair of	N	N	N	N	N	N	N	N	N	SP	SP	N	N	N	N	N

Principal Use	Districts															
	R1	R2	R3	BR	BR2	BH	B	SC	W	P	WU	I	LI	LI2	NHR	NHC
boats and ships exceeding 60 feet in length[6]																
Ferries and excursion facilities[6]	N	N	N	N	N	N	N	N	SP	Y[7]	N	N	N	N	N	N
Fishing, commercial, and industrial vessel berthing, including docks	N	N	N	N	N	N	N	N	SP	SP	N	SP	N	N	N	N
Fishing pier	N	N	N	N	N	N	N	N	Y	Y[7]	N	N	N	N	N	N
Fabrication, storage, and repair of fishing equipment[6]	N	N	N	N	N	N	N	N	N	Y[7]	N	Y	N	N	N	N
Fueling and bunkering of vessels	N	N	N	N	N	N	N	N	SP	SP	N	N	N	N	N	N
Harbor and marine supplies and services, chandleries, ship supply, not including bunkering of vessels	N	N	N	N	N	N	N	N	N	Y[7]	SP	N	N	N	N	N
Commercial docks and marinas	N	N	N	N	N	N	N	N	N	Y[5,7]	N	N	N	N	N	N
Marinas, including boat storage and boat repair	N	N	N	N	N	N	N	N	SP	SP[5]	N	N	N	N	Y	Y
Yacht club, boat rental	N	N	N	N	N	N	N	N	Y	N	N	N	N	N	N	N
Marine construction and salvage facilities[6]	N	N	N	N	N	N	N	N	N	Y[7]	N	N	N	N	N	N
Marine intermodal transportation terminals and facilities[6]	N	N	N	N	N	N	N	N	SP	Y[7]	N	N	N	N	N	N
Marine offices, including without limitation, offices of owners of wharves or their agent, naval architects, and seafood brokers	N	N	N	N	N	N	N	N	Y[7]	Y[7]	SP	N	N	N	N	N
Accessory maritime uses[8]	N	N	N	N	N	N	N	N	SP	Y[7]	SP	N	N	N	N	N
Facilities for marine pollution control, oil spill cleanup, and the servicing of marine sanitation devices	N	N	N	N	N	N	N	N	N	SP	N	N	N	N	N	N

Principal Use	Districts															
	R1	R2	R3	BR	BR2	BH	B	SC	W	P	WU	I	LI	LI2	NHR	NHC
Tugboat, fireboat, pilot boat and similar services	N	N	N	N	N	N	N	N	N	Y[7]	N	N	N	N	N	N
Food handling and preparation facilities	N	N	N	N	N	N	N	N	N	SP[4]	SP	SP	SP	SP	N	N
Restaurant, including service of alcoholic beverages	N	N	N	Y	Y	Y	Y	Y	SP	SP[4]	SP	SP	SP	SP	Y	Y
Restaurant, drive-in	N	N	N	N	N	SP	N	SP	N	N	N	N	N	N	N	N
Restaurant, fast food	N	N	N	N	N	SP	N	SP	N	SP[4]	SP	N	N	N	N	N
Professional, business and governmental offices	N	N	N	Y	Y	Y	Y	Y	Y	SP[4]	Y	Y	Y	Y	Y	Y
Medical centers	N	N	N	N	N	SP	N	SP	N	N	N	SP	N	SP	N	N
Medical marijuana treatment center	N	N	N	N	N	N	N	SP	N	N	N	N	N	N	N	N
Substance abuse counselling center	N	N	N	N	N	SP	N	SP	N	N	N	SP	N	SP	N	N
Substance abuse treatment center	N	N	N	N	N	SP	N	SP	N	N	N	SP	N	N	N	N
Bank, financial agency	N	N	N	Y	Y	Y	SP	Y	Y	SP[4]	Y	Y	SP	SP	Y	Y
Indoor commercial recreation	N	N	N	N	N	N	N	Y	N	N	SP	SP	N	N	N	N
Personal service establishment	N	N	N	Y	Y	Y	N	Y	N	SP[4]	Y	N	N	N	N	Y
General service establishment	N	N	N	Y	Y	Y	N	Y	N	SP[4]	Y	N	N	N	N	Y
Adult entertainment establishment	N	N	N	N	N	SP	N	SP	N	N	N	N	N	N	N	N
Bed and breakfast	SP	SP	SP	N	SP	N	N	N	N	N	N	N	N	N	N	N
Parking facilities	N	SP	SP	SP	SP	SP	SP	SP	SP	SP[4]	SP	SP	N	N	SP	SP
Park and ride/park and fly facilities	N	N	N	N	N	N	N	N	N	SP[4]	N	N	N	N	N	N
Storage of vehicles for hire or return from hire	N	N	N	N	N	N	SP	N	N	SP[4]	SP	N	N	N	N	N
Theaters, concert halls and cinemas	N	N	N	Y	N	N	N	Y	N	N	SP	SP	N	N	N	Y
Trade and craft establishments	N	N	N	Y	Y	Y	N	Y	N	SP[4]	Y	Y	N	Y	N	N
Health and fitness club	N	N	N	SP	Y	SP	Y	Y	SP	SP[4]	SP	SP	SP	SP	N	N

Principal Use	Districts															
	R1	R2	R3	BR	BR2	BH	B	SC	W	P	WU	I	LI	LI2	NHR	NHC
Art use	N	N	N	SP	SP	SP	N	N	N	N	Y	Y	Y	Y	N	N
Marine-industrial related museum	N	N	N	N	N	N	N	N	Y	Y[7]	SP	N	N	N	N	N
Moving company, less than 15,000 square feet gross floor area (2)	N	N	N	N	N	N	N	N	N	SP[4]	SP	Y	N	N	N	N
Moving company, 15,000 square feet or more gross floor area (2)	N	N	N	N	N	N	N	N	N	SP[4]	SP	SP	N	N	N	N
	D. Industrial uses															
Light manufacturing	N	N	N	N	N	N	N	N	N	SP	SP	Y	Y	Y	N	N
Wholesale business and storage in connection with wholesale business	N	N	N	N	N	N	N	N	N	SP[4]	SP	Y	Y	SP	N	N
Inside display and sale of merchandise by distributors or manufacturers	N	N	N	N	N	N	N	N	Y	SP[4]	SP	SP	Y	SP	N	N
Logistics or fulfillment facilities where substantially all deliveries are done by zero-emission vehicles	N	N	N	N	N	N	N	N	N	SP[4]	SP	SP	N	N	N	N
Logistics or fulfillment facilities where deliveries are done by fossil fuel powered vehicles	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Manufacturing	N	N	N	N	N	N	N	N	N	SP[4]	SP	SP	SP	N	N	N
Manufacturing, bio-tech	N	N	N	N	N	N	SP	N	SP	SP[4]	SP	SP	SP	N	N	N
Fabrication of marine related goods, marine industrial welding, marine repair services, marine machine shops and related storage facilities	N	N	N	N	N	N	N	N	SP	SP	SP	SP	SP	N	N	N
Marine-related and supporting light industrial	N	N	N	N	N	N	N	N	SP	SP	SP	N	N	SP	N	N
Marine-related research, laboratories, and scientific development	N	N	N	N	N	N	N	N	N	Y[7]	SP	N	Y	N	N	N

Principal Use	Districts															
	R1	R2	R3	BR	BR2	BH	B	SC	W	P	WU	I	LI	LI2	NHR	NHC
Marine-related wholesale business, warehousing and storage	N	N	N	N	N	N	N	N	SP	SP	SP	N	Y	N	N	N
Materials recovery facility	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Research and development, including related offices	N	N	N	N	N	N	SP	N	SP	SP[4]	SP	SP	SP	SP	N	SP
Contractor's yard	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Junkyard or automobile graveyard	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
Bulk storage of cargo and freight	N	N	N	N	N	N	N	N	N	SP	N	N	N	N	N	N
Bulk storage facilities, provided the use is fully enclosed, including petroleum products storage and oil and gas distribution facilities, but specifically excluding junkyard facilities and any other unsightly bulk storage	N	N	N	N	N	N	N	N	SP	SP	N	N	N	N	N	N
Container shipping operations, marine cargo handling facilities	N	N	N	N	N	N	N	N	N	SP	N	N	N	N	N	N
Freight forwarding facilities	N	N	N	N	N	N	N	N	N	SP[4]	N	N	N	N	N	N
Enclosed seafood processing, seafood packing and packaging, seafood loading, and seafood distribution	N	N	N	N	N	N	N	N	SP	SP	SP	N	N	N	N	N
Commercial or industrial laundry	N	N	N	N	N	N	N	N	N	SP[4]	SP	SP	N	N	N	N
Urban agriculture	N	N	N	N	N	N	N	N	N	SP[4]	SP	SP	N	N	N	N
Brewery with retail sales	N	N	N	N	N	N	N	N	N	SP[4]	SP	SP	SP	SP	N	N
Distillery with retail sales	N	N	N	N	N	N	N	N	N	SP[4]	SP	SP	SP	SP	N	N
	E. Other uses															
Ambulance service	N	N	N	N	N	N	N	N	N	N	N	SP	SP	SP	N	N
Dog kennel/dog daycare	N	N	N	N	N	SP	SP	SP	SP	N	N	SP	SP	SP	N	N

Principal Use	Districts															
	R1	R2	R3	BR	BR2	BH	B	SC	W	P	WU	I	LI	LI2	NHR	NHC
Drive-in window services at retail or other use	N	N	N	N	N	SP	SP	SP	SP	N	N	SP	SP	SP	SP	SP
Municipal education buildings being rehabilitated or converted from such use to a nonmunicipal use	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP	SP

Note:

(1) For buildings fronting on Broadway only, provided that sufficient off-street parking is available for the residential uses.

(2) In accordance with section 34-241, on-site storage, if any, shall not exceed 30 percent of gross floor area, except in instances where the zoning board of appeals, in accordance with section 34-214, may grant a special permit to allow storage up to 50 percent of the gross floor area.

(3) except that no residential use is allowed as part of the planned development.

(4) except prohibited on pile-supported piers.

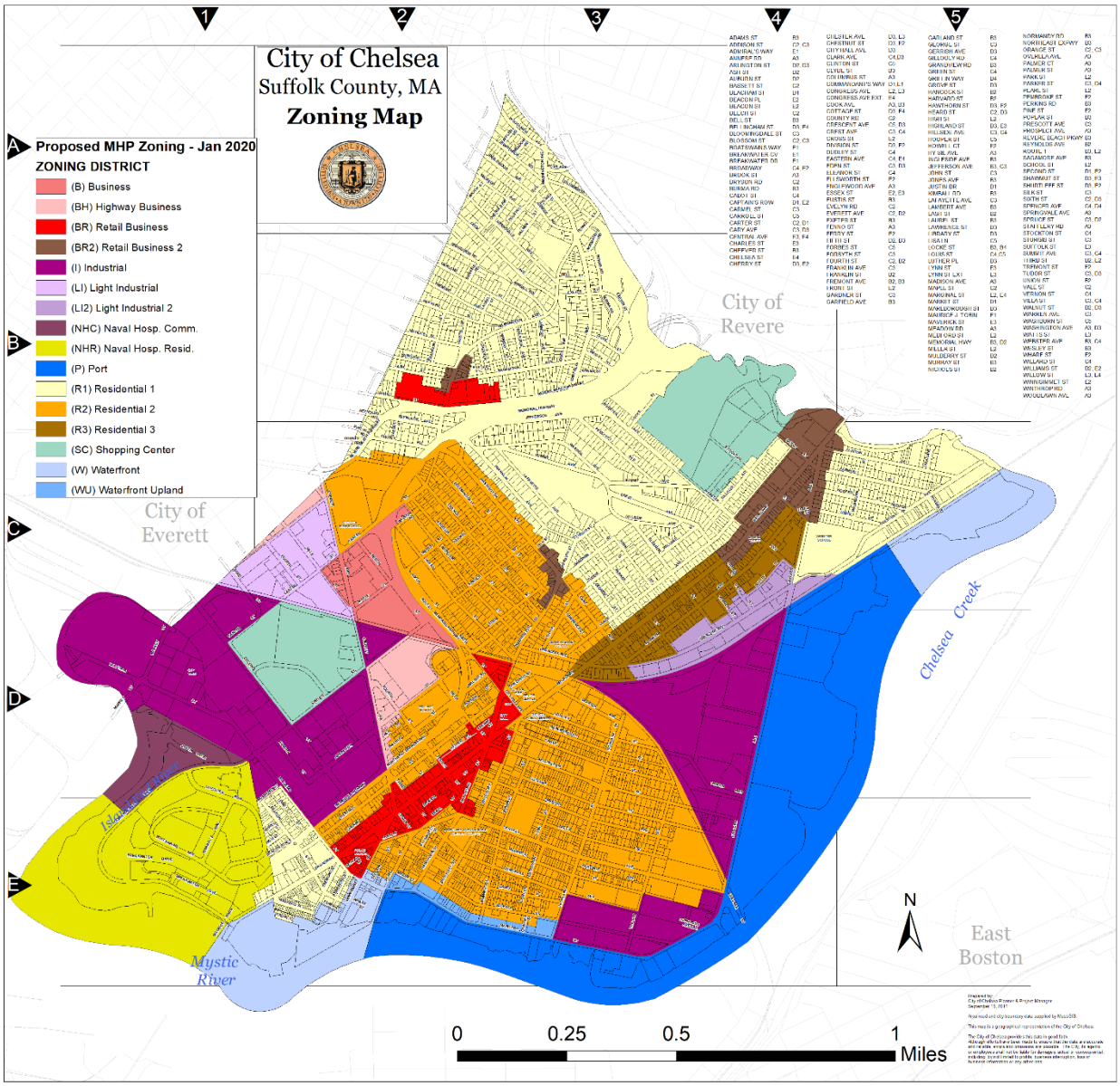
(5) facilities for recreational boats limited to nine slips.

(6) Site plan review under section 34-215 is mandatory. Uses are only authorized after site plan approval.

(7) Uses are by right in the Port district only provided that (i) the principal use shall occupy a gross floor area and outside intensive use area totaling less than 30,000 square feet and (ii) less than 10,000 square feet of the principal use activities shall be located outside the buildings. If these conditions are not met, use is by special permit.

(8) Accessory maritime uses are those that are customarily incidental and subordinate to the location, function, and operation of permitted principal uses, including temporary uses, provided that all such temporary uses on a lot do not exceed a combined total of 30 days per year and that the total floor area utilized for such uses does not exceed ten percent of the total floor area of lot area at any given time.

Sec. 34-29 – Zoning map



Appendix J: Municipal Harbor Plan and DPA Master Plan Notice to Proceed, Massachusetts Office of Coastal Zone Management

A Request for a Notice to Proceed was sent to the Massachusetts Office of Coastal Zone Management on 30 March 2018 by the City of Chelsea.

The Notice to Proceed with the Chelsea Creek Municipal Harbor Plan and DPA Master Plan was issued by the Office of Coastal Zone Management on 11 June 2018 and published in the 20 June 2018 Environmental Monitor.

The Notice to Proceed is also available online at:
https://eeaonline.eea.state.ma.us/EEA/emepa/mepadocs/2018/062018em/pn/Notice%20of%20Chelsea%20Municapal%20Harbor%20Plan%20Designation%20Port%20Area%20Master%20Plan.pdf

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
251 Causeway Street, Suite 800, Boston, MA 02114-2136
(617) 626-1200 FAX: (617) 626-1240

June 11, 2018

John DePriest, Director
Chelsea Department of Planning and Development
Chelsea City Hall
500 Broadway, Room 101

Chelsea, MA 02159

RE: Chelsea Municipal Harbor Plan/Designation Port Area Master Plan

Dear Mr. DePriest,

Pursuant to 301 CMR 23.03, the Municipal Harbor Plan ("MHP") Regulations, the City of Chelsea submitted a Request for Notice to Proceed ("RNTP") for a state approved MHP and Designated Port Area (DPA) Master Plan for the Chelsea Waterfront on March 30, 2018. Notice of this request was published in the Environmental Monitor on April 11, 2018 and public comments were accepted for a thirty-day period ending on May 11, 2018. Based on a review of the City's request and on comments received, I am pleased to issue the following Notice to Proceed for the City of Chelsea's Chelsea Creek Waterfront MHP/DPA Master Plan.

Overview

The MHP Regulations (301 CMR 23.00) establish a voluntary procedure by which municipalities may obtain approval of MHPs from the Secretary, promoting long-term, comprehensive, municipally-based planning of harbors and other waterways that fully incorporates state policies governing stewardship of trust lands. Additionally, approved plans guide and assist the Massachusetts Department of Environmental Protection (MassDEP) Wetlands and Waterways Division in making regulatory decisions pursuant to MGL Chapter 91 and the Waterways Regulations (310 CMR 9.00) that are responsive to harbor specific conditions and other local and regional circumstances. As promulgated, the Waterways Regulations provide a uniform statewide framework for regulating tidelands projects and developments. Municipal Harbor Plans present communities with an opportunity to adopt a vision that modifies these uniform standards through the amplification of the discretionary requirements of the Waterways Regulations or through the adoption of provisions, which if approved, are intended to substitute for the minimum use limitations or numerical standards of 310 CMR 9.00. While the City's plan may embody the vision for the development of its waterfront, the scope of an MHP is generally limited to the modification of certain Chapter 91 standards to fulfill the local planning goals. Project specific issues such as traffic and broader environmental impacts will be described, analyzed, and assessed during any requisite reviews by the Massachusetts Environmental Policy Act Office (MEPA) or the local planning and zoning boards.

I. Municipal Harbor Planning Area

The harbor planning area identified in the RNTP includes the Chelsea waterfront along the Chelsea Creek extending from the McArdle Bridge to the confluence with Mill Creek. The area is bounded on the upland side by Pearl Street, Marginal Street, Eastern Avenue, and the MBTA railroad right of way and on the water side by the Chelsea/East Boston/Revere municipal boundary. The planning area, comprising over 25 parcels, includes the entire Chelsea portion of the Chelsea Creek DPA as well as lands removed from the DPA boundary as part of the Chelsea Creek DPA Boundary review (April 2016).

For consideration as you develop your MHP, I call particular attention to the provisions of 301 CMR 23.04, Review Procedures, and 301 CMR 23.05, Standards for Approval. The MHP should contain a clear and detailed discussion of the relationship between the harbor planning area and land subject to Chapter 91 jurisdiction. Pursuant to 301 CMR 23.02, a harbor planning area should include all areas that are relevant to the functional use and management of the harbor or other waterway segment in question. Functional use refers to those activities that have the potential to promote or impair water dependent activity or public use or enjoyment of waterways or shorelines. At a minimum, the landward boundary of any harbor planning area subject to these regulations shall encompass all filled tidelands subject to the jurisdiction of DEP pursuant to 310 CMR 9.04.

To facilitate review of the MHP and future implementation, at a minimum, the MHP should contain one or more maps that present a well-defined boundary of the proposed MHP and its approximate relationship to Chapter 91 jurisdictional tidelands. Pursuant to 301 CMR 23.03(4) for planning purposes, the MHP should depict the boundaries of such tidelands based on guidance for historic tidelands delineation provided by MassDEP's Waterways Program.

II. Substitution Guidance

A state-approved MHP can allow greater flexibility to the application of certain Waterways requirements in that it may include provisions that substitute for certain Chapter 91 limitations or numerical standards as long as the substitute provisions are at least as effective at meeting the state tidelands policy objectives as those stated in the corresponding Chapter 91 provisions and certain specific conditions are met. When a project conforms to a state-approved MHP, MassDEP will apply the use limitations or numerical standards specified in the MHP as a substitute for the respective limitations or standards contained in 310 CMR 9.00 to the licensing process.

Substitutions as described above will be allowed only if the municipality demonstrates in the MHP that the substitution provisions will promote state tidelands objectives with comparable or greater effectiveness than the corresponding Chapter 91 provision. Substitute provisions may be less restrictive than the Chapter 91 requirements only if the plan includes other requirements that adequately offset adverse effects on public-related interests. In determining whether comparable or greater effectiveness is achieved by the substitute offsets in the MHP, the Secretary will consider the following provisions:

a. The planning analysis and data must be organized to clearly identify the substitute provisions proposed and the relative effects of the less restrictive provisions on the related tidelands policy objectives.

b. Offsetting measures should be applied within reasonable proximity to the locus of adverse effects to ensure a balance in the distribution of public benefits and potential detriments.

III. DPA Master Plan

The City's RNTP briefly addresses the DPA that makes up a significant portion of the Chelsea Creek Waterfront Harbor Planning Area, but does not specifically discuss plans for the DPA. Because requirements for a DPA are specific and differ from the general requirements of both the harbor planning and waterways regulations, the MHP should include a DPA Master Plan to address this area. The master plan should preserve and enhance the capacity of the DPA to accommodate water dependent industrial use and prevent substantial exclusion of those uses by other allowable DPA uses. To meet this, the master plan must meet several criteria.

In order to assure that the water-dependent industrial capacity of the DPA is preserved and enhanced, an extensive amount of the DPA land area close to the water must be reserved for water dependent industrial use. Though temporary uses may be allowed, the master plan must include a provision that water-dependent industrial use is solicited before these are permitted. In addition, commercial uses should generally be limited to no more than 25 percent of the total DPA land area.

The master plan should also establish reasonable arrangements to prevent use of space/facilities that would significantly discourage present or future water dependent industrial activity, especially on the waterfront. These should include appropriate limits on the parameters of commercial uses to assure compatibility with DPA uses as well as reasonable limits on types of commercial uses allowed if necessary to avoid conflict with DPA uses.

The master plan should identify industrial or commercial uses that are allowed under local zoning that the City also wishes to qualify as supporting DPA uses. These uses should be carefully considered to assure that they comply with the provisions of the waterways regulations (310 CMR 9.00).

Finally, the master plan should include a strategy to guide continuing promotion of water dependent industrial use, including, at a minimum, recommendations for capital improvements or other economic/operational benefits to water dependent industrial uses to be provided by supporting uses on a property; recommendations to preserve or enhance transportation infrastructure (channels, truck routes, etc.) for access to properties in DPA on both land and water side; and commitments to maintain a pattern of development that provides an appropriate buffer between DPA uses and certain community uses to avoid significant operational conflict.

IV. MHP Renewal

Pursuant to 301 CMR 23.06(2)(a), the MHP should include a discussion recommending the period of time for which the MHP shall be in effect. Approved MHPs expire on the date specified in the Secretary's Approval Decision and must be renewed periodically to ensure continuing use by MassDEP in its licensing decisions.

V. Public Participation

The RNTP documented the extensive planning work and participation that has already been completed towards the development of this MHP, as part of the Chelsea Creek Waterfront Master

Planning effort. The MHP should contain a detailed discussion of the harbor planning process, and document the public participation to date, as well as the continued public planning process.

VI. Compatibility with State Agency Responsibility

The MHP must demonstrate that the municipality has worked with all relevant state agencies maximize compatibility of the harbor plan with the plans or planned activities of all state agencies owning real property or responsible for the development/implementation of plans or projects in the harbor planning area.

VII. Implementation Strategy

It is essential that the MHP include enforceable implementation commitments to ensure that all measures will be taken in a timely and coordinated manner to offset the effect of any MHP requirement that is less restrictive than that contained in the Waterways regulations (310 CMR 9.00).

We commend the City's work to develop a Municipal Harbor Plan/Designated Port Area Master Plan that balances the regional economic importance of the Chelsea Creek DPA with the development demands of the City and public access desires of the community. EEA and CZM have worked closely with the City during previous the Chelsea Creek Designated Port Area Boundary Review (April 2016) and have supported the local Chelsea Waterfront Community Vision Plan (October 2016), and we look forward to continued collaboration in this MHP/DPA master planning process. Pursuant to 301 CMR 23.04 and 301 CMR 23.04, the submission deadline will be June 11, 2020. As you develop the Chelsea Creek Waterfront MHP/DPA master plan, we look forward to consultation with the City to provide guidance to ensure that the process is meaningful, efficient and productive.

In closing, I extend my sincere thanks to you and your staff for your continuing support for the pro-active management of our coastal resources. I encourage your staff to continue to work closely with CZM and our Boston Harbor Regional Coordinator on the development of the Chelsea Waterfront Municipal Harbor Plan/Designated Port Area Master Plan.

Sincerely,

Bruce K. Carlisle
Director

Cc:
Karl Allen, Planner, City of Chelsea
Ben Lynch, MassDEP Waterways Program Chief

Appendix K: Municipal Harbor Plan and DPA Master Plan Extensions of Deadline for Submission, Massachusetts Office of Coastal Zone Management

THE COMMONWEALTH OF MASSACHUSETTS
EXECUTIVE OFFICE OF ENERGY AND ENVIRONMENTAL AFFAIRS
OFFICE OF COASTAL ZONE MANAGEMENT
251 Causeway Street, Suite 800, Boston, MA 02114-2136
(617) 626-1200 FAX: (617) 626-1240

June 8, 2020

Thomas G. Ambrosino, City Manager
City of Chelsea
City Hall
500 Broadway, Room 302
Chelsea, MA 02150

RE: Request by City of Chelsea to Extend Deadline for Submission of the Chelsea Creek Municipal Harbor Plan and DPA Master Plan

Dear Mr. Ambrosino,

The Executive Office of Energy and Environmental Affairs (EEA) and its Office of Coastal Zone Management (CZM) acknowledge receipt of your request to extend the submission deadline of the Chelsea Creek Municipal Harbor Plan and DPA Master Plan ("Chelsea Creek MHP") for an additional six months.

In your letter dated May 29, 2020 and received on June 2, 2020, you indicate that while the City of Chelsea (the "City"), through its Department of Planning and Development, has made progress since the issuance of the Notice to Proceed by CZM on June 11, 2018, development of the Chelsea Creek MHP is still underway and efforts to complete the plan have been complicated by the ongoing COVID-19 pandemic and related closure of city operations. In order to finalize the technical details of the DPA Master Plan, engage key stakeholders, and present the planning study and accompanying zoning amendments to the City Council, the City has requested an extension of the submission deadline by six months.

Pursuant to 301 CMR 23.04(1), a Municipal Harbor Plan submission deadline may be extended by six months to provide additional time for the completion of the plan. Consistent with this standard, a six-month extension to the submission deadline for the Chelsea Creek MHP is granted, with a new submission deadline of December 11, 2020.

I encourage your staff to continue to work closely with CZM and our Boston Harbor Regional Coordinator, Erikk Hokenson, on the Chelsea Creek MHP & DPA Master Plan process.

Sincerely,

Lisa Berry Engler
Director

CHARLES D. BAKER GOVERNOR **KARYN E. POLITO** LIEUTENANT GOVERNOR **KATHLEEN A. THEOHARIDES** SECRETARY **LISA BERRY ENGLER** DIRECTOR
www.mass.gov/czm

cc: John DePriest, Director, City of Chelsea Department of Planning & Development
Alex Train, Assistant Director, City of Chelsea Department of Planning & Development
Karl Allen, Economic Development Planner, City of Chelsea Department of Planning & Development
Daniel Padien, Program Chief, MassDEP Waterways Regulation Program

THE COMMONWEALTH OF MASSACHUSETTS
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251 Causeway Street, Suite 800, Boston, MA 02114-2136
(617) 626-1200 FAX: (617) 626-1240

December 2, 2020

Thomas G. Ambrosino, City Manager
City of Chelsea
City Hall
500 Broadway, Room 302
Chelsea, MA 02150

RE: Request by City of Chelsea to Extend Deadline for Submission of the Chelsea Creek Municipal Harbor Plan and Designated Port Area (DPA) Master Plan

Dear Mr. Ambrosino,

The Executive Office of Energy and Environmental Affairs (EEA) and its Office of Coastal Zone Management (CZM) acknowledge receipt of your request to extend the submission deadline of the Chelsea Creek Municipal Harbor Plan and DPA Master Plan ("Chelsea Creek MHP") for an additional six months.

In your letter dated and received on December 1, 2020, you indicate that while the City of Chelsea (the "City"), through its Department of Planning and Development, has made progress since the issuance of the Notice to Proceed by CZM on June 11, 2018, development of the Chelsea Creek MHP is still underway and efforts to complete the plan were complicated by the on-going COVID-19 pandemic. In order to solicit public comment during a hearing on December 15, 2020 and for the City Council to authorize submission of the draft MHP, the City has requested an extension of the submission deadline by six months.

Pursuant to 301 CMR 23.04(1), an MHP submission deadline may be extended by six months to provide additional time for the completion of the plan. Consistent with this standard, a six-month extension to the submission deadline for the Chelsea Creek MHP is granted, with a new submission deadline of June 11, 2021.

I encourage your staff to continue to work closely with CZM and our Boston Harbor Regional Coordinator, Erikk Hokenson, on the Chelsea Creek MHP process.

Sincerely,

Lisa Berry Engler
Director

cc: John DePriest, Director, City of Chelsea Department of Planning & Development
Alex Train, Assistant Director, City of Chelsea Department of Planning & Development
Karl Allen, Economic Development Planner, City of Chelsea Department of Planning & Development
Daniel Padien, Program Chief, MassDEP Waterways Regulation Program

Appendix L: Secretary's Decision on the City of Chelsea's Request for Approval of the Chelsea Creek Municipal Harbor Plan and DPA Master Plan Pursuant to 301 CMR 23.00