CITY OF PROVIDENCE

HARBOR MANAGEMENT PLAN

Approved December 22, 2015 by the Providence Harbor Management Commission

PROVIDENCE HARBOR MANAGEMENT PLAN

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EXECUTIVE SUMMARY

The Providence Harbor Management Plan (HMP) is the guiding document for management of the tidal waters of Providence, developed by the Providence Harbor Management Commission (HMC) in accordance with Rhode Island Coastal Resources Management Council (CRMC) programs and guidelines. As a policy document, the plan focuses on the following topics: Water Quality, Public Access, Mooring Management, and Shipping, Navigation and Multi-Use of Harbor Waters, as well as Storm Preparedness. Goals, objectives and recommended actions are identified in each issue section. Goals and objectives include the following:

Public Access:

Goal: Provide public access to the waterfront for all residents and visitors.

Objective I: Identify existing rights-of-way and maintain an inventory of rights-of-way and other public access to the shore, including municipal paper streets, dedicated easements, drainage outfalls, and utility easements such as buried cable sites.

Objective 2: Maintain, expand and enhance rights-of-way and access to the shore.

Objective 3: Promote and plan for continuous pedestrian access along all accessible waterfront.

Objective 4: Improve public information and education regarding the waterfront, public access and habitat.

Water Quality:

Goal:
Maintain and improve the water quality of Providence Harbor and rivers within and contributing to the harbor management area.

Objective 1:
Implement and support appropriate measures and enforce applicable regulations to mitigate harbor pollution.

Objective 2:
Support and enforce policies, designations, regulations, and initiatives that protect and improve water quality and critical habitat.

Objective 3:

Promote water quality improvements through improved wastewater treatment, stormwater management, and investment in “green” infrastructure projects.

Objective 4:

Promote resiliency, protection of water quality, compatible mixed use, and economic vitality in the port area.

Mooring Management:

Goal: Provide recreational mooring fields and transient anchorages in Providence waters to facilitate use by small vessels, boost the recreational economy and promote tourism without compromising navigation for sculls and other rowing vessels.

Objective 1: Establish a local process for selecting and designating recreational mooring fields and transient anchorages and implement the first phase of mooring designation under this HMP.

Shipping, Navigation and Multi-use of Harbor Waters:

Goal:
Provide for safe and efficient navigation by all commercial and recreational users of City waters.

Objective 1:
Implement and support appropriate measures and enforce applicable regulations to ensure optimal use of the federal shipping channel and adjacent waters by commercial vessels.

Objective 2:
Develop regulations, policies and initiatives to address compatible and safe use of harbor waters by a variety of users.

I. INTRODUCTION

This *City of Providence Harbor Management Plan* (HMP) is the guiding document for management of the tidal waters of Providence. It has been developed by the Providence Harbor Management Commission (HMC) in accordance with Rhode Island Coastal Resources Management Council (CRMC) programs and guidelines. It includes an Issue Identification Elements section that explores the following key topic areas: Water Quality, Public Access, Mooring Management, and Shipping, Navigation and Multi-Use of Harbor Waters (Storm Preparedness, a required element, is addressed in the Appendices.)

This document is a thorough revision of the previously adopted 2014 *Interim Harbor Management Plan* (HMP). In addition to updates to the inventory, additional content and recommendations have been included both to comply with State requirements and to reflect the input of stakeholders, the public and the Harbor Management Commission. Concerns expressed by users of Providence harbor waters were assessed in accordance with existing state and municipal regulations and policies.

The following outlines the regulatory framework and key players in local harbor management.

Coastal Resources Management Program (CRMP)

RIGL §46-23 states that it shall be the policy of the state to preserve, protect, develop, and, where possible, restore the coastal resources of the state for this and succeeding generations through comprehensive and coordinated long-range planning and management designed to produce the maximum benefit for society from these coastal resources. Preservation and restoration of ecological systems shall be the primary guiding principle upon which environmental alteration of coastal resources will be measured, judged, and regulated.

The CRMP is administered by the Coastal Resources Management Council (CRMC) and includes Municipal Harbor Regulations (Section 300.15) and Guidelines for the Development of Municipal Harbor Management Plans. These two elements of the CRMP address the CRMC's requirements for all municipal harbor management plans.

The CRMC has also developed several Special Area Management Plans (SAMPs) to address specific regional issues. These plans are ecosystem-based management strategies that are consistent with the council's legislative mandate to preserve and restore ecological systems. The CRMC coordinates with local municipalities, as well as government agencies and community organizations, to prepare the SAMPs and implement the management strategies." The Metro Bay SAMP, covering Providence, Pawtucket, Cranston and Warwick, has not yet been completed so the 1983 Providence Harbor SAMP is still in effect, though new Urban Coastal Greenways regulations and the Hazards section of the Metro Bay SAMP have been adopted.

The issues and goals outlined in this harbor plan relate directly to CRMC's major goals identified in the 1983 SAMP for Providence Harbor, which are generally in line with the current draft Metro Bay SAMP:

- Balanced and compatible shoreline use
- Increased recreational opportunities and public access
- Port development
- Multi-use of the harbor
- Improved water quality

Harbormaster, Harbor Management Commission and Jurisdiction

The post of Harbormaster was filled in 2011 to administer this plan, enforce federal, state and local regulations pertaining to harbor activity, and carry out related duties. The current Harbormaster oversees an available staff of 15 trained Providence Police officers and rotates a fleet of four patrol boats (generally one at a time). In addition to patrolling the harbor during peak activity, when events are scheduled and on weekends, the harbor patrol conducts details for ships in port carrying liquefied petroleum gas (LPG) and other hazardous materials. The Harbormaster and harbor patrol work closely with the U.S. Coast Guard (USCG), which manages most commercial traffic in the federal channel and provides necessary training to the harbor patrol. The Harbormaster and the Coast Guard have an effective working relationship.

Debris, derelict vessels and other navigational hazards present additional challenges to harbor management. These, along with other issues touched on here, are addressed in greater depth in the Issue Identification Elements section of this plan.

In 2013 a Harbor Management Commission was appointed and given responsibility for preparing and amending the harbor management plan, assisting with harbor management and other oversight. The City of Providence Interim Harbor Management Plan was adopted in December, 2014.

The Harbor Management Plan (HMP)

The CRMC requires that approved Harbor Management Plans be updated every five years, dictating a five-year timeframe for plan objectives and recommendations while taking a long view of future harbor management. Successful implementation of this Harbor Management Plan requires the involvement of several key City agencies and departments including the Providence City Council, the Department of Planning and Development, the Parks Department, the Department of Public Works, and the Providence Police Department/Harbor Patrol. Participation by key state agencies is also essential to the success of this plan. These agencies include the Rhode Island Department of Environmental Management Office of Law Enforcement and Division of Water Resources, the Coastal Resources Management Council, the Rhode Island

Department of Transportation, the Rhode Island Public Transit Authority, and the Public Utilities Commission.

INVENTORY

II. DESCRIPTION OF HARBOR WATERS

In accordance with Chapter 46, section 4-2 of the Rhode Island General Laws, the jurisdiction, powers and duties of the harbormaster of the City of Providence shall include "*all the public waters westerly of the easterly sides of the ship channels in Seekonk River, Providence River and Harbor and Narragansett Bay from the Pawtucket-Providence city line southerly to the point of intersection of the ship-channel side with a straight line drawn from Rumstick Point on the east shore to Rocky Point on the west shore, excluding that area subject to jurisdiction of the city of Cranston (pursuant to the provisions of § 46-4-5.1).*"

In short, the HMC and HMP have jurisdiction over all tidal waters within the boundaries of the City of Providence, including the Seekonk and Providence rivers and parts of the Moshassuck and Woonasquatucket rivers.

Hazards, Water Safety and Navigation

RIDEM considers the upper Providence River and Waterplace Park subject to harbor speeds of 5 MPH and **"**no wake" restrictions. According to RIGL §46-27-2, Regulations of Personal Watercraft, a person may not operate a personal watercraft within two hundred feet of shore except at headway speed, thereby preventing use of jet skis and other personal craft at speeds likely to cause wakes in the inner harbor.

Navigational hazards have been identified within the Providence harbor management area using information on NOAA nautical charts 13224 and 13225, supplemented with analysis of aerial photography and site visits. These hazards include abandoned bridges, shallow waterways, abandoned wharves, piers and rotting piles, and derelict vessels.

Reaches of the rivers in the inner harbor are relatively narrow and have bulkheaded sides. Severe wakes may be generated in these reaches, which continue to reverberate off the walls long after a vessel which has generated the wake has passed. This situation can be extremely dangerous to kayakers and canoeists, the most common users of these waters. Sculls on the Seekonk River are also susceptible to wakes created by motored vessels.

Navigation is constrained by silting of the federal channel extending to the Crawford Street Bridge over the Providence River. The courses used by rowers on the Seekonk River are dependent upon the tides. Waterplace Park is also experiencing severe siltation problems.

Crook Point Bridge, an abandoned bascule bridge located on the Seekonk River between the Gano Park ball fields and Crook Point, constrains navigation and is a safety hazard, but also presents opportunities for rehabilitation as a public access site and fishing site.

Warning signs currently posted within the harbor management area include those prohibiting anchoring in the vicinity of electric cables near the Point Street Bridge and on the Seekonk River, warning of low clearance beneath Providence River bridges, limiting speed limits to "no wake"

north of the Fox Point Hurricane Barrier (reported by RI DEM to be missing) and in the vicinity of Doubloon Landing (where the sign faces landward), and a sign posted on the Washington Bridge warning of scullers and rowers in the Seekonk River. Even on wider stretches, such as the channel on the East Providence and Pawtucket side of the water, boats often cause wakes. Establishment and enforcement of additional posted "no wake" zones will also protect rafts of wintering ducks that populate the rivers.

Debris in rivers includes pilings, abandoned piers and a sunken barge. During low tide sculls on the Seekonk River navigate in the federal channel to avoid debris exposed or close to the surface.

Water depths and navigational hazards including shoal areas are indicated on NOAA navigational charts 13224 and 13225 the links to which are found below.

http://www.charts.noaa.gov/OnLineViewer/13224.shtml

http://www.charts.noaa.gov/OnLineViewer/13225.shtml

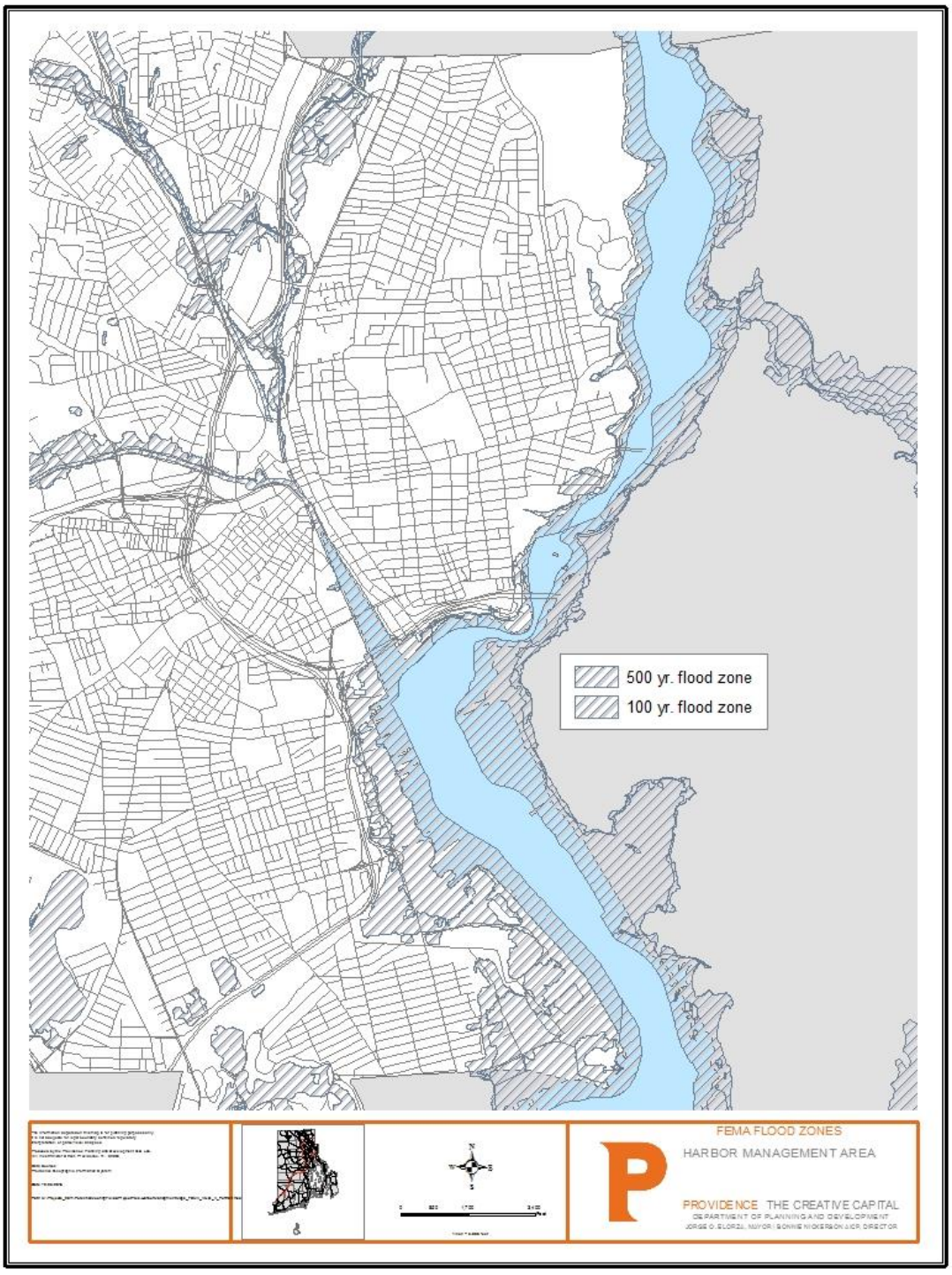
The US Army Corps of Engineers (ACOE) is responsible for maintaining the federal channels within the Seekonk and Providence rivers. If other federal navigation projects were present, such as anchorages, special anchorages, or turning basins, the ACOE would again be responsible for their maintenance.

However, as Waterplace Park is not a federal navigation project, the City is responsible for maintenance dredging, and options to finance necessary dredging projects must be investigated. There is an ongoing effort to do so, led by the Providence Foundation.

The City must also clear all debris in its waterways as soon as practical in accordance with §11-21(21) of the current harbor ordinance. Where navigational hazards cannot be removed they should at least be clearly marked to ensure the safety of recreational and commercial users of the harbor. Ongoing efforts led by Clean Bays are addressing this in phases, much of the debris off the East Providence shoreline but in many cases within the boundaries of Providence (much of the water sheet of the Seekonk is in Providence).

Regarding hazards to land-side coastal properties, the Federal Emergency Management Agency (FEMA) designates flood zones based on the risk of storm damage and coastal flooding and assigns associated insurance rates to individual properties. The following link leads to the FEMA flood insurance rate maps (FIRM) applicable to Providence:
http://msc.fema.gov/portal/search?AddressQuery=providence%2C%20rhode%20island

Impacts associated with rapidly changing climate conditions present hazards to coastal infrastructure, natural resources, and public safety. These impacts may include higher tides, higher storm surges, and increased flooding. Construction specifications for bridges and other structures built in established flood zones and vulnerable areas should accommodate projected sea level rise.



FEMA Flood Zones

III. CURRENT USES OF HARBOR WATERS

Although use of the harbor and rivers of Providence has historically been dominated by commercial movements (fuel, lumber, automobiles, etc.) and limited recreational use, the construction of Waterplace Park, riverwalks and riverfront parks downtown, and the emergence of WaterFire have substantially broadened the diversity of uses.

The Coastal Resources Management Council (CRMC) identified five major goals in the 1983 Special Area Management Plan for Providence Harbor (SAMP). Increased recreational opportunities and public access is one of the goals identified; port development is also identified as a CRMC goal. Multi-use of the harbor is critical to achieving these goals.

As cited above, the 1983 SAMP remains in place, but a new Metro Bay SAMP has been in development for the past several years (to date only the "Hazards" chapter and "Urban Coastal Greenways" [UCG] regulations have been adopted). UCG regulations reinforce public access and multi-use goals.

Water quality is affected by water use - and use may conversely be conditioned by water quality issues, especially in limiting opportunities for recreation and fishing. The common uses of Providence's tidal waters are detailed below.

Recreation

The Providence Department of Art, Culture + Tourism and the Parks Department maintain an active schedule of events for the waterfront parks within the City. The two major municipal waterfront parks are Waterplace Park and India Point Park. There is a regular seasonal schedule of public concerts at Waterplace Park. The City celebrates Independence Day in India Point Park each year with fireworks and performance.

India Point Park, the city's largest waterfront park, has seen major improvements associated with the I-Way Project, including a large pedestrian bridge over I-195 connecting the park to the Fox Point neighborhood and providing additional space in which to congregate. The non-profit Community Boating Center (CBC), located at India Point Park, offers city youth and others the opportunity to affordably learn to sail in the Outer Harbor. The CBC opened in June 1994 with a small fleet of boats, a few docks and a boat storage shed built largely with donated materials and volunteer labor. Today, the Community Boating Center has a new boathouse, a fleet of over 60 boats near areas suitable for small boat sailing and windsurfing, and dedicated membership; CBC plays an important role in the **s**uccess and growth of Providence's revived waterfront and in providing access to a broad range of users.

Gano Park in Fox Point is another center of recreational activity on the waterfront and the site of the Gano Park Boat Launch, which opened in 2014. A bike path extension is planned for 2016 along the waterfront (Segment 1A of the Blackstone Bikeway). Much of the shoreline adjacent to the park is eroded and otherwise degraded, construction debris serving as de facto rip-rap in places.

Blackstone Park, a passive recreational park with views of the Seekonk River, is accessed by River Drive and pedestrian paths. Efforts are underway to redesign River Drive (or "River Road")

along the Seekonk riverfront, addressing bicycle and pedestrian amenities, stormwater management, the eroding riverbank, public access, and the interests of small craft boating and fishing.

There are several, formal and informal sites for boat launching in the harbor management area. These include sites at South Water Street Landing, Riverside Park, Merino Park, Donigian Park and Collier Point Park. The City of Providence's first public boat ramp on City property opened in July 2014 at the CRMC designated right of way on the Seekonk River at Gano Park on East Transit Street.

WaterFire Providence, a multi-sensory environmental art event, features a series of picturesque nighttime wood brazier fires along segments of the Providence and Woonasquatucket Rivers, augmented by music broadcast from speakers along the length of the display. Spectators of all ages come together to stroll the river's walkways or sit on the river's edge. Throngs of people have witnessed these events since 1994, bringing nightlife and tourism to the river's edge. Siltation is a concern: dredging of Waterplace and the Providence River south to the Point Street Bridge will be necessary in the near future to ensure the continued success of this culturally, socially and economically important event. In order to ensure sufficient water depth, the Fox Point Hurricane Barrier is sometimes closed for WaterFire. The harbor patrol maintains a visible presence on WaterFire nights and for other special events.

The popular 14-mile East Bay Bike path, which traverses five East Bay communities between Providence and Bristol, has its northern terminus at India Point near the Gano Street exit of I-195. The RIDOT-planned statewide bicycle facility network includes plans to connect the East Bay bikeway to the Blackstone River Bikeway project, which will eventually extend to the Massachusetts state line in North Smithfield. Several segments of the Blackstone River Bikeway are under design and several have been completed. The route of the Blackstone Bikeway from River Road in Providence to India Point Park has not yet been finalized. Upon completion however, it will connect the Blackstone Bikeway to the East Bay Bike Path using on and off road connections through the East Side of Providence to Alfred Stone Road in Pawtucket.

The Woonasquatucket River Watershed Council (WRWC) and its Woonasquatucket River Greenway Project has been a major catalyst for change along the Woonasquatucket. The project has already revitalized a major hidden natural resource on the west side of the city and the Woonasquatucket Greenway (bike path) has become a destination for both neighborhood residents and people from across the city and state. The WRWC is active in river advocacy, cleanups, fish ladder installation and monitoring, recreation, and environmental awareness.

The project area for the Woonasquatucket River Greenway Corridor follows the course of the river for 5.5 miles, well beyond the scope of this plan. It extends from its eastern terminus at Waterplace Park in downtown Providence to Johnston. The Greenway Corridor Planning Area encompasses the five riverbank neighborhoods of Manton, Hartford, Olneyville, Valley, and Smith Hill, with the ultimate goal of connecting with the northern communities of Johnston,

Smithfield and North Smithfield. Runoff carrying sand and other substances from roadways in the northern stretch of the Woonasquatucket have significant impacts on downstream sedimentation at Waterplace Park, and in the lower Woonasquatucket and Moshassuck, as well as the upper Providence River.

Two rowing facilities practice and race on the Seekonk River: the Narragansett Boat Club on River Drive (founded in 1838 and at its present location since 1938), and the Brown University rowing team, located at the Marston Boathouse south of the Washington Bridge adjacent to India Point Park. The rowing season extends from March through November. On a nice day in September up to sixty Narragansett Boat Club members could be out rowing a total of 400 miles on the Seekonk. The boat club holds two regattas each year, with courses extending from Swan Point off Providence to Getty Pier in East Providence. The Narragansett Boat Club offers rowing lessons to the public from May to October.

Old Harbor Marina, located north of the Fox Point Hurricane Barrier on the east shore of the Providence River, has slips for 56 boats, with additional capacity for transients. Landside facilities include showers, restrooms, and wash/dry facilities. Neither gas nor pumpouts are currently available at the Old Harbor Marina. Three boats are currently used as liveaboards. Prior to this plan, there were no designated mooring fields in the waters of the City of Providence. Designation of mooring fields must occur under the jurisdiction of CRMC. Currently, there are no pumpout facilities in Providence but an East Providence pumpout boat and a landside pumpout truck are accessible to Providence boaters.

There are no swimming beaches along tidal rivers in the City of Providence. Neither the Seekonk nor the Providence River has water quality suitable for swimming, although people have been observed swimming at Bold Point Park, on the East Providence side of the river.

Recreational fishing is popular in several shorefront locations, most in the India Point and Fox Point areas on both the Providence and Seekonk rivers. In addition, Fields Point has recreational fishing and public access. Care should be taken so that any proposed mooring fields compatibly co-exist with rowing and fishing activity.

Recreational hunting of water fowl occurs on the Seekonk and Providence Rivers in season. At present there is no signage informing other users of the river and shoreline areas of hunting activity. Consideration should be given to erecting warning signs indicating hunting areas and directing the public to visit RI DEM online for effective dates (roughly October to February).

The waterfront is accessible along numerous riverwalks on both sides of the Providence River, primarily in the Old Harbor area, and waterfront parks are planned as part of the redevelopment of the 195 parcels. The John H. Chafee Blackstone River Valley National Heritage Corridor (BRVNHC) includes historic sites, cultural landscapes, waterways, and structures within the Blackstone River Valley. The BRVNHC begins on the shores of the Seekonk River just north of the Washington Bridge in Providence and extends northerly along the shores of the Blackstone River

into Worcester. The BRVNHC Commission emphasizes historic resources and the public use of valley resources through high-visibility recreational activities and programs, including the development of bikeways, greenways, and other recreational opportunities focusing on the river's edge.

Commercial Fishing
No commercial fishing facilities are located in Providence waters nor are there likely to be any in the foreseeable future.

Marine Education
Save The Bay offers marine education to Providence Public School students through after school and school day programs. Local schools, universities, and stakeholders also use the harbor as an educational resource. In addition to providing sailing lessons for children and adults Community Boating Center offers marine education based on STEM (Science, Technology, Engineering, and Math).

Marine Transportation
Although Providence once served as a major harbor for steamship travel, service virtually halted some sixty years ago, though there were brief but ultimately unsuccessful runs of ferry service to Pawtucket (commuter) and Newport in recent years. Newport service proved increasingly popular but fell victim to cuts in federal funding. Other excursion services have operated out of the Providence waterfront in recent years, including lighthouse tours and summer camps offered by Save The Bay, and small cruise ships.

Tug service is provided by Providence Steamboat Company, which has been in operation since 1881 and was recently acquired by McAllister Towing and Transportation. Six tugboats operate in Providence Harbor out of India Point.

Scrap Metal
Scrap metal recycling operations occupy much of the Allens Avenue waterfront south of large-scale fuel operations.

Providence Piers area:
Ferries formerly ran from here and cruise ships have occasionally docked at the pier in recent years, but the property is currently in transition and excursion service is not currently operational.

Port of Providence
The Port of Providence has long served as the principal cargo handling area in the city. Ships calling at Providence include tankers, dry bulk carriers, roll-on roll-off ships, break bulk carriers, container ships and other freight carriers.

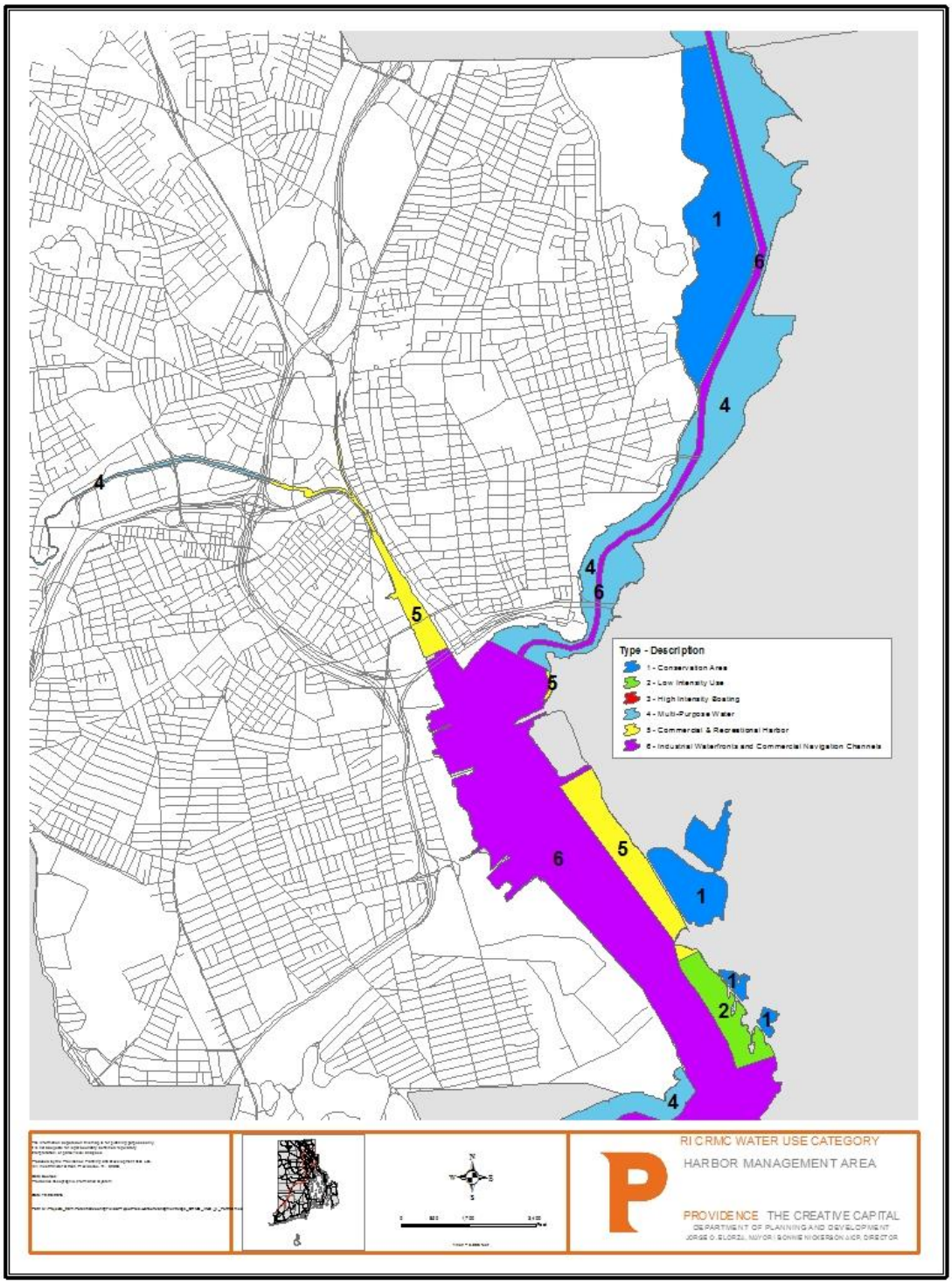
Five port terminals line the west side of the Providence River between Field's Point to the south and Henderson Street (Collier Point) In addition, two oil terminals are located in East Providence on the opposite side of the Providence River. Commercial shipping piers and wharves handle oil

and petroleum products, scrap metal, cement, chemicals, liquefied gas, salt, lumber, used car export, and ship repair.

The Municipal Wharf, formerly owned by the City of Providence and consisting of six ship berths along Field's Point, is operated by ProvPort, Inc., a private non-profit organization. Waterson Terminal Services manages ProvPort operations.

Primary imports to Providence include petroleum products, liquefied natural gas, cement, lumber, chemicals, coal, and road salt. Primary exports are scrap metal and waste paper, as well as used cars. Ship repair services are available, and two marine contractors have equipment yards and docks within the port area.

Ships calling at Providence include tankers, dry bulk carriers, roll-on roll-off ships, break bulk carriers, container ships and other freight carriers. A tug boat company and a ferry service operate out of the Fox Point/India Point area. Naval and Coast Guard vessels, cruise ships, and tall sailing ships may also visit periodically. Periodic maintenance dredging will be necessary in various locations so that larger vessels will continue to be able to navigate, unload and load.



CRMC Water Types in the Harbor Management Area

IV. NATURAL RESOURCES INVENTORY

This inventory section applies to tidal waters and adjacent shoreline areas.

Conservation Areas: Blackstone Park along the Seekonk River is a recognized conservation area and is zoned as such. In addition, land adjacent to the Seekonk at Swan Point Cemetery is de facto conservation land by virtue of CRMC's Type 1, Conservation Areas designation. This land area includes mixed woodland, bluffs and trails, and is habitat for numerous bird species.

Fisheries: There are no official fishing grounds in the harbor area but many waterfront sites are traditionally used by recreational fishers. The bulkhead beneath the I-Way Bridge, several sites at India Point Park, and the manmade banks along "River Road" (technically River Drive), by the Seekonk River, are just some of the many popular locations where recreational fishing is commonly observed. While shellfish cannot be legally harvested in the permanently closed waters of the Providence River, it is home to a de facto quahog spawning sanctuary, the larvae from which is carried by currents and supplements harvestable quahog populations in more southerly parts of Narragansett Bay.

Wetlands: Estuarine wetlands and their adjacent freshwater wetlands are important natural resources with diverse values. They provide habitats for fish, shellfish, invertebrates, waterfowl; and various other birds and mammals; water quality maintenance; microclimate regulation; aquatic productivity; and socio-economic values such as stormwater management and flood control, shoreline erosion control, hunting, recreation, aesthetics, education, and scientific research. Wetlands in the project harbor management area are under the jurisdiction of the RI Coastal Resources Management Council, RI Department of Environmental Management, U. S. Fish and Wildlife Service, U. S. Army Corps of Engineers, and U. S. EPA, acting under Section 404 of the Clean Water Act. Wetlands, including those adjacent to waters of the United States, are defined for regulatory purposes by the U.S. Army Corps of Engineers, the U.S. Fish and Wildlife Service, the U.S. Soil Conservation Service, and the State of Rhode Island. The U.S. Army Corps of Engineers defines "wetlands" as those areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions. The term *adjacent* means bordering, contiguous, or neighboring, including those areas separated from other waters of the U.S. by man-made dikes or barriers, natural river berms, etc. Waters of the U.S. is defined as a) navigable waters; b) wetlands; c) tributaries to navigable waters, including adjacent wetlands, lakes and ponds; d) interstate waters, their tributaries and wetlands; e) all other waters, including isolated wetlands, streams, etc. (Section 404 of the Clean Water Act). The U.S. Fish and Wildlife Service has mapped wetland areas at 2000-scale as part of its National Wetlands Inventory (NWI), however, those maps are only indicators and CRMC regulations mapping is the authority.

Intertidal Flats and Submerged Aquatic Vegetation: NOAA Chart 13224 shows the locations of various habitats including limited intertidal flats and fringe salt marsh at India Point Park and portions of the shore along Allens Avenue. According to Save The Bay, there is no submerged

aquatic vegetation in the harbor area as water quality is not sufficient to support self-sustaining eelgrass beds. An excess of phytoplankton blooms and macroalgal mats (whose growth is linked to increased nutrient loads from wastewater treatment plants, septic systems, fertilizers, and stormwater runoff) shade the eelgrass from sunlight. These findings were confirmed in the 2012 Mapping Submerged Aquatic vegetation (SAV) in Rhode Island Coastal Waters, a report produced by the University of Rhode Island, Save The Bay, the Narragansett Bay National Estuarine Research Reserve, and the U.S. Fish and Wildlife Service.

Providence River: The shoreline of the Providence River is tidally influenced and has been disturbed by activities associated with urban and maritime activities. Various remnant wetlands have been described along the shore, for example, at the shoreline end of Thurbers Avenue. Conservation of these resources should be integral to management of the shore.

A detailed characterization of the aquatic wildlife resources in the Providence River was accomplished as part of the Manchester Street Station Repowering Project environmental documentation. The study focused on three sources of information: published studies (over 10 years, 1975-85) of intake screen data from the Manchester and South Street Stations, and aquatic sampling at several stations in the Providence River from October 1988 to June 1989. A study of the upper Providence River estuarine ecosystem conducted in 1995 to supplement available information regarding the characteristics of the intertidal habitat concluded that the benthic communities in the intertidal zone to the Providence River appear to be relatively similar to the benthic communities in the subtidal zone. None of the species observed in the intertidal zone are restricted to intertidal habitats. Sampling conducted as part of the 1-195 Environment Impact Statement (EIS) corroborated with the detailed data from the Manchester Street Repowering Environmental Assessment (RIDOT, 1996).

Different species of flora and fauna are associated with different habitat on and around stone walls, rip-rap slopes, and concrete bridge piers in the Providence River. Taxonomic groups identified in the study area during the Manchester Street Repowering EA study were approximately 16 percent marine, 54 percent freshwater, and 24 percent estuarine reflecting the influence of freshwater inputs to the harbor system. Diatoms represented the highest number to taxa with 116 species from 31 genera. The greatest abundances were *Navicula* (32 species), *Achnanthes* (10 species), and *Nitzschia* (9 species). Eight species of blue-green algae and seven species of green algae were also identified. The diatoms were dominant from March through May while the green algae *Enteromorpha intestinalis* and the blue-green *synechococcus sp.* became dominant in June, especially in the inner harbor (RIDOT, 1996).

The muddy river bottom supports populations of benthic macroinvertebrates on the Annelida/Polchaeta, Annelida/Oligochaeta, Mollusca/Bivalvia, and Arthropoda groups. Low species diversity and patchy spatial distribution of these organisms indicated that their populations are under stress, probably as a result of pollutant concentrations and periodic anoxic conditions within the harbor. Polycheates, or bristle worms, were the most abundant in numbers of species and numbers of organisms. Populations of *Nereis succinea* and *Streblospio benedicti* prevailed as these are populations which are capable of quick colonization in areas impacted by pollution and tolerant of salinity changes respectively (RIDOT, 1996). The water column contains populations of ichthyoplankton (fish eggs and larvae), phytoplankton (algae),

and zooplankton (small animal), which vary with seasonal conditions. Ichtyoplankton species include Winter flounder, grubby and Sand Lance larvae as well as Fourbeard rockling, alewife and wrass eggs at frequencies which depend on the breeding cycle of each species. Phytoplankton included principally diatoms (Halies) in 94 genera of which about 50 % were freshwater forms; and green algae in 50 taxa and 32 genera of which 94% were freshwater forms. Diatoms tended to dominate in a winter-spring bloom, but flagellates in the genera *Cyclotella, Eutreptia,* and *Plagioseimis* dominate in the summer as the diatom abundance decreases. Zooplankton in 52 taxa including those in the major groups *Coelentrerate Medusae, Rotifera, Annelidal Polychaeta, Mollusca, Copepoda, Cladocera, Cirripedia, Decapoda,* and *Cheatognatha* also occur in the Providence River (RIDOT, 1996).

The water column also contains a number of finfish and motile macrobenthic species. The following includes typical and representative macroscopic aquatic organisms located in the upper reaches of the Providence River. Finfish include Alewife, Atlantic herring, Atlantic silverside, Blueback herring, Menhaden, Mummichog, Rainbow smelt, Silver hake, Striped bass, Striped killifish, Tautog, Weadfish, and Winter flounder. Benthic invertebrates include: Quahog, Blue crab, Coot clam, Bristle worm.

Various species of fish migrate from salt to fresh water. Herring are an economic and ecological asset and have been abetted by the construction of fish ladders on the Woonasquatucket River, eels are consumed by humans and other animals, and large, edible marine fish such as bluefish and striped bass are caught within the harbor area. Water column quality must be maintained in a working harbor with the goal of safe human consumption of finfish and maintaining the aquatic life standard of the Clean Water Act. Fish passage projects should continue to be encouraged.

Woonasquatucket River: South of Exchange Street, immediately downstream of the point where the Moshassuck joins the Woonasquatucket, the NWI map recognizes the more natural state and tidal influence of the Woonasquatucket River with its classification of the open water as an estuarine wetland (EI0W). The wetlands of the lower Woonasquatucket River have a legal history under the Public Trust Doctrine and the remaining shallow water habitat is further degraded by stormwater inputs of de-icing materials and other road run-off. Nonetheless, migrating birds and fish and occasionally mammals use the extremely channelized waterway. The entirety of the Woonasquatucket, tidally influenced up to the Rising Sun dam, is under RI CRMC jurisdiction and classified wetland. Proposals have been made to restore marsh where Pleasant Valley Stream, now conduited in a box culvert, enters the Woonasquatucket. Upstream wetland areas are typically confined to the river banks (R20W). The river is tidally influenced to a dam near Eagle Street (RlOW). Based on field observation, the Woonasquatucket River also supports limited quantities of carp. Other fish and shellfish, such as menhaden, quahogs and mussels often found in polluted waters may also be found in this river.

Moshassuck River: The Moshassuck River has also been channelized to a great extent along the majority of its course. The result limits its wetlands functions and values, yet fish (menhaden observed), ducks (mallards), and wading birds use the shallow water for foraging, and its aesthetic values enhance quality of life for city residents. The reach within the project area has a NWI classification of EIOW.

The aquatic life within the Moshassuck River appears to be the most limited of the rivers in the harbor management area. Large volumes of wastes deposited in the river over time, and the relatively small dry weather flows have kept much of the sediments in these rivers contaminated. Urbanization within the watershed of the Moshassuck River continues to place heavy pollutant loads on it.

The result of such poor water quality is a great reduction in aquatic life within the river. Chronic levels of pollutants, particularly iron, copper, lead, zinc and chromium, has accounted for the loss of fish population. Frogs were seen on the banks of the Moshassuck, indicating that motile creatures can survive in it for various periods of time. The aquatic regime of the Moshassuck supports insect larvae, some crustaceans which feed on bacteria and algae, tubifex worms, rotifers and protozoa (Narragansett Bay Commission, 1994).

Seekonk River: Downstream of the Main Street dam in Pawtucket, the Seekonk River is tidal and given two distinct classifications by the USF&WS on the NWI maps. The majority of the river is classified as estuarine sub-tidal open waters; the dredged channel within the Seekonk is classified as estuarine inter-tidal flat-bottom waters. Both classifications denote open water wetland conditions. Wetlands indicated on the NWI maps included York Pond and Blackstone Pond in Blackstone Park, and a marsh at the mouth of Grotto Brook which is located between the Butler Hospital Grounds and Blackstone Park. This marsh is noted for its vegetative character and its importance as a wildlife habitat.

Urbanization and increased pollutant loads have diminished the diversity of shellfish and other aquatic life in the Seekonk River. According to studies by Santschi, P.H., et aI, and Doering, P.H. and Pilson, M.E.Q., accumulation of metals in the sediment of the Seekonk River have posed a serious threat to the benthic communities, including the hard-shell clam or quahog, the soft shell clam, Eastern oysters, and the mussel which inhabit the sediments.

Although the Seekonk River was once the center of the Rhode Island oyster industry, the river has, for many decades now, been fouled to the point that it has been permanently closed to shellfishing. According to the RI DEM Notice of Polluted Shellfishing Grounds from May 1996, the Providence River and upper Narragansett Bay, north and west of a straight line from Conimicut Point to Old Tower at Nayatt Point, are permanently closed to shellfishing. This includes the tributaries of these waters which are north and west of this line.

Wildlife Resources: Species potentially occupying or utilizing the riparian areas include raccoon, mole, rat, and woodchuck. Extensive channelization and rip-rapping of many of the area waterways, and the development of nearly all of their shorelines, has limited the opportunity for underground habitats for many species of animals which typically represent the community of water-edge species. Waterfowl species utilize the open water environments, taking advantage of the emergent vegetation which provides shelter and nesting, and an abundance of invertebrate and fish for forage. The Seekonk River is an important wintering area for waterfowl. In winter duck species frequent the Seekonk and Providence rivers; these include Hooded and Red-breasted mergansers and buffleheads. Great Blue Heron, Great Egret and Double-crested Cormorant can be seen in the open water and along shorelines and Ospreys are known to nest

along the Seekonk River. In recent years the Osprey population has grown throughout the region, with a number of them nesting nearby and frequenting the Seekonk in Providence. There are also nesting pairs at Fields Point near Save the Bay. Over 150 species of birds have been identified at Swan Point. In 2014, Bald Eagles, a "threatened" species under the Endangered species Act, were reported nesting on the Pawtucket side of the Seekonk River and were frequently seen flying and foraging within the Providence area of the river. Other species include, but are not limited to, red fox, gray fox, skunk, turkey, towhee and other ground-nesting birds, and passerine birds that nest in association with water such as Eastern Kingbird and Baltimore Oriole.

The diadromous fish life cycle depends on passage between salt water for developing adults and fresh water for spawning, which is made possible by structures ("fish ladders") such as that at Rising Sun Dam.

Aquatic Ecology: The aquatic fauna which inhabit the rivers in the project area are limited by the quality of their water. The ecological health and diversity of the species are closely linked to pollutant loads and the water quality of the aquatic habitats. There are rising concerns with regard to invasive species.

These rivers have been subjected to large scale pollutant loads since early in the 1800s. Discharges from industrial, commercial and residential sources have resulted in levels of pollutants which exceed chronic levels, and eliminated many organisms which are sensitive to pollution. Although discharges from point sources are now controlled, chronic levels exceeding standards still exist in sediments, and disturbance can re-introduce those pollutants into the water column. Non-point sources are being mitigated as knowledge, techniques, and resources allow. Currently, few resident species which can tolerate degraded habitats remain. Lower species diversity and lower biomass of the plant and animal communities is a direct result of the poor water quality of these rivers. Recently, migratory species from Common Loon to Harbor Seal, as well as river herring and eel runs, have been observed in the Woonasquatucket River.

RI DEM's assessment of these rivers under sections 303D and 305B of the Clean Water Act show impairments [see DEM Web site http://www.dem.ri.gov/pubs/303d/] in the Moshassuck for enterococcus bacteria, and aquatic habitat; in the Seekonk for nitrogen, low dissolved oxygen, and fecal coliforms; in the Providence River for nitrogen, low dissolved oxygen, and fecal coliforms; and in the Woonasquatucket, where Total Maximum Daily Loads have been written for copper, lead, and zinc, mitigation has yet been planned for Dioxin (including 2,3,7,8-TCDD) , Mercury, Non-Native Aquatic Plants , low dissolve oxygen, Polychlorinated biphenyls, Enterococcus bacteria.

Additionally, sediments of these rivers often have high levels of pollutants due to their long term discharges. These sediments can be resuspended during high flow conditions, and the pollutants within continue to leach during dry-weather flows (Narragansett Bay Commission, 1994).

Combined sewer overflows and treatment plant bypasses degrade water quality and are detrimental to aquatic life. The release of nutrients, metals, and organic and inorganic compounds into receiving waters - particularly the Blackstone, Seekonk, and Moshassuck River- reduce the amount of oxygen available for marine life, cause systemic stress, and contribute to disease and death in marine organisms. Furthermore, these materials pose health concerns from viruses and bacteria for those who eat seafood and to swimmers and other direct contact recreational users. Despite improvement to water quality resulting from implementation of measures to reduce toxic discharges, these pollutants have reached such proportion in receiving waters that over 5,000 acres of prohibited shellfishing areas exist on the Providence River and approximately 10,000 acres of conditionally approved shellfishing grounds exist in the Upper Narragansett Bay. Additionally, non-point and point source pollution continues to contravene the aquatic ecology of the rivers in the harbor management area (Narragansett Bay Commission, 1994).

Area of Particular Concern Zone: The Area of Particular Concern (APC) zone incorporates areas within the CRMC Metro Bay SAMP boundary that have been identified either as highly significant habitats (High Priority Conservation or Restoration Areas) or as areas of significant recreational value. The conservation, restoration, and recreation designations were identified using a ranking system that includes habitat quality, use of the site by wildlife, presence of rare species, geographic relationships (i.e., contiguous parcels with habitat value), and restoration potential. The APC Zone is delineated in the Urban Coastal greenway Zone Map within the Metro Bay SAMP. It is the policy of the CRMC to maintain and restore natural vegetated coastal buffers within the APC Zone with maximum widths to protect the valuable habitats and/or contiguous vegetated corridors contained within the zone. The Council does not support projects that propose to alter existing natural areas having high environmental value for habitat, recreation, or scenic quality, as delineated on the Urban Coastal Greenway HPCA and HPRA Map. Accordingly, projects that propose to alter these habitats are inconsistent with this policy, and are strongly discouraged.

V. WATERFRONT ZONING AND LAND USE

When the original CRMC water types were determined in the 1970s, land use in the inner and outer harbor of Providence was significantly different from today. Since that time, major public works efforts have produced a vibrant downtown, with the rivers as a focal point of the city. Where previously bridges and rail yards dominated the rivers, now parks and promenades dominate. The outer harbor between Fox Point and India Point now includes a park, community boating center and a marina, in addition to more traditional port uses such as the tug and ferry docks.

Zoning along the Providence, Seekonk, Moshassuck, and Woonasquatucket rivers reflects current land use. The City initially created three Waterfront Zoning Districts recognizing the value and dynamic nature of the coastal feature and riverfronts as well as their value as natural resources. Since that time, one of the waterfront zones has been eliminated and other adjustments have been made. The current zoning ordinance describes the waterfront districts as follows:

W-2 Mixed-Use Waterfront District

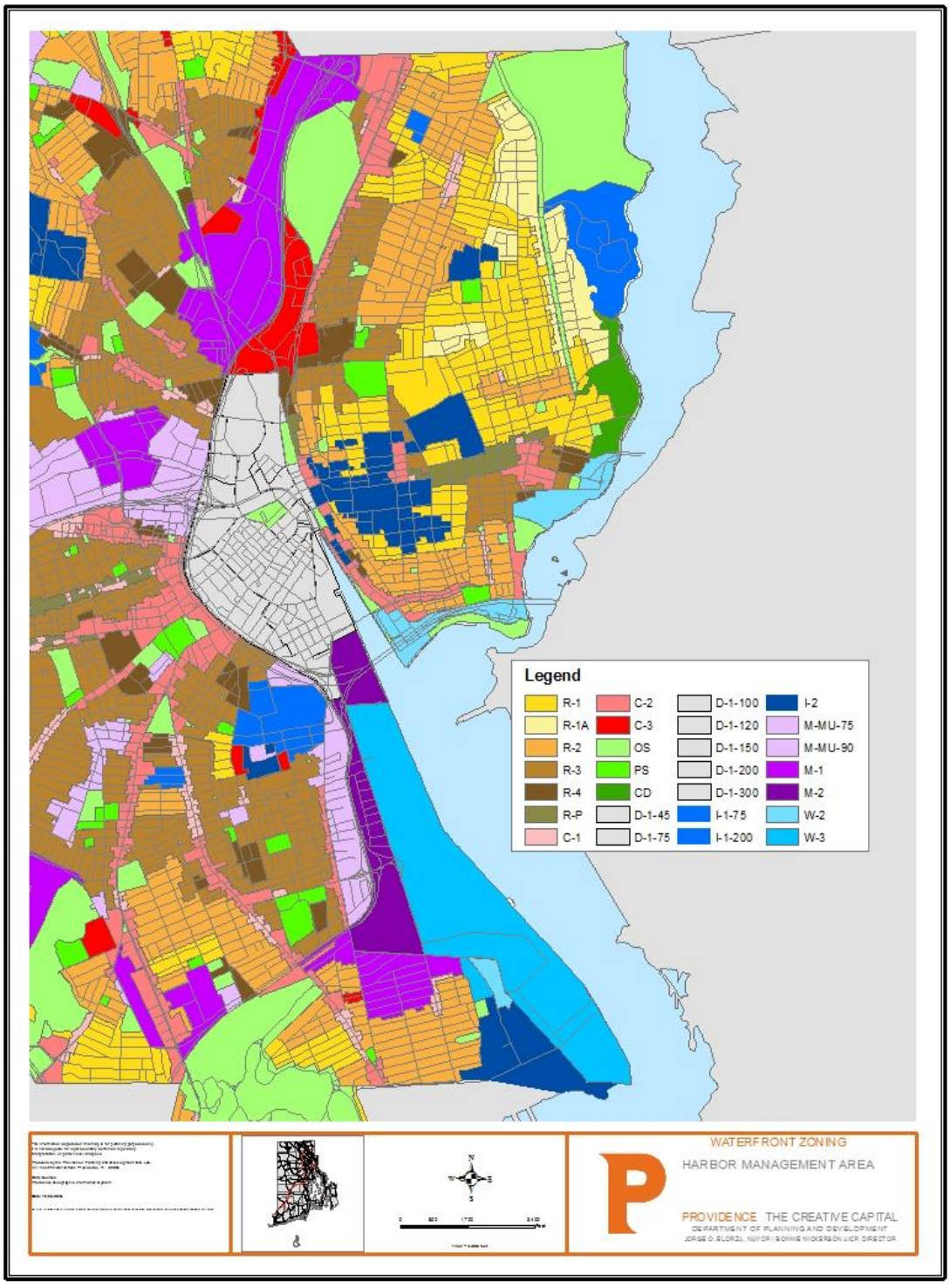
"The W-2 Mixed Use Waterfront District is intended to promote a balance among appropriately scaled residential and commercial development. The W-2 District encourages compatible development with adjacent areas and surrounding residential neighborhoods and enhances and creates public access to the waterfront as a public resource." (City of Providence Zoning Ordinance, July 24, 2015)

W-3 Port/Maritime Industrial Waterfront District

"The W-3 Port/Maritime Industrial Waterfront District is intended to promote maritime industrial and commercial uses within the areas of Providence's waterfront, protect the waterfront as a resource for water-dependent industrial uses, and facilitate the renewed use of a vital waterfront." (City of Providence Zoning Ordinance, July 24, 2015)

Other Waterfront Zoning Designations

The above zoning designations encompass only a portion of Providence's waterfront area, primarily along the Fox Point/East Side shoreline (W-2, which encourages public access to the waterfront) and along Allens Avenue (W-3). Other waterfront areas within tidal waters include land zoned M-2 (General Industrial), CD (Conservation, OS (Open Space), D1 (Downtown), and I1 (Healthcare Institutional).



Waterfront Zoning in Context of Citywide Zoning

Waterfront Land Uses

Current land uses along the Providence River include ProvPort; the Providence Animal Shelter; metals recycling facilities; fuel terminals; City Pier; Fields Point Wastewater Treatment Facility (Narragansett Bay Commission); Narragansett Electric Power Station (National Grid); Dominion Energy, Old Harbor Marina; Davol Square; recreation areas including Collier Point Park and Gardner Jackson Park; and numerous office/retail areas north of the Hurricane Barrier.

Along the Moshassuck River from the Providence River to the end of the Harbor Management project area at Smith Street land uses include Capital Center and the Roger Williams National Memorial park.

Along the Woonasquatucket River from the Providence River to Eagle Street land uses include Waterplace Park, the Promenade Riverwalk, numerous office and retail uses, and some manufacturing.

Along the Seekonk River from the Providence River to the Pawtucket line land uses are diverse and include active and passive recreation at Gano Street Park, commercial and office development in and around Richmond and Wayland squares, Blackstone Park, the Narragansett Boat Club, Swan Point Cemetery, and Butler Hospital, as well as wildlife habitat and human recreation at various locations.

ISSUE IDENTIFICATION ELEMENTS

VI. PUBLIC ACCESS

Public access to the shore and contiguous water areas is a right long recognized as inherent to citizens of the U.S. and is a right that will continue to be honored and protected by careful planning and management of coastal resources. At a minimum, the area below the Mean High Water (MHW) line is open to public access. Public access to the shore is guaranteed in order that the citizens of the state have access to the shore and waters in general, and are not prevented from reaching the waters. The CRMC has been authorized by the state legislature to manage this public resource. In Rhode Island public access to the shore is provided by designated Rights-of Way, which are the primary means by which the public reaches the shoreline and water areas. Access to the shore traditionally used by the public is being displaced by commercial and residential development. Some access sites are not being maintained and/or marked, and thus have become "incorporated" or "privatized" by adjacent property owners. Some public sites are illegally blocked off. CRMC recommends that an aggressive approach to maintain existing sites, identify and develop new sites, and identify and prioritize future sites be developed by the City to ensure public access to the shore.

Public access to the shore and contiguous water areas is a right long recognized as inherent to the citizens of the United States that will continue to be honored and protected by careful planning and management of coastal resources. Further, public access to the shore is guaranteed under provisions of the Rhode Island Constitution, Article 1, Section 17, which provides for basic rights in relation to the shore, stating that:

> *The people shall continue to enjoy and freely exercise all the rights of fishing and privileges of the shore, to which they have been heretofore entitled under the charter and usages of the state, including but not limited to fishing from the shore, the gathering of seaweed, leaving the shore to swim in the sea and passage along the shore….*

Access to shoreline areas traditionally used by the public has in some places been appropriated by private interests; according to the Public Trust Doctrine this may not occur without State consent. The HMC should be vigilant in upholding the intent of the Public Trust Doctrine.

Public Access is a general term used to describe the way the public legally reaches and enjoys the coastal areas and shoreline of the State which are held in public trust. Public access includes:

a. Physical access: the ability to reach the shoreline from upland areas via perpendicular access points such as right-of-ways, boat launching ramps, and fishing piers; and the ability to pass and repass horizontally along the shoreline as guaranteed by the Rhode Island State Constitution.

b. Visual access: the provision of unobstructed views of the coast and shoreline areas. Examples of visual access include; viewing platforms, observatories, scenic drives, and innovative architectural designs that provide unobstructed views.

c. Interpretive access: the provision of signage, plaques, etc., or the use of innovative techniques which serve to educate the public about the historical, ecological, or cultural significance of a

site or the industrial/commercial utilization of public trust resources. Interpretive access may also include other methods which impart a sense of public ownership and understanding of public trust resources. Amenities that enhance public access opportunities, such as picnic tables, public restrooms, lighting, etc., and other improvements are vital contributions to public access.

The following information addresses physical, visual and interpretive access potential from parks, visual access from parallel streets, and physical, visual and interpretive access potential from marinas/boat yards and rights-of-way. Information is presented for the following harbor management areas Seekonk River, Inner Harbor (including Providence, Moshassuck and Woonasquatucket rivers) and the Outer Harbor.

Existing Public Access in Providence

Public access is provided at numerous public parks including Waterplace Park, Gardner Jackson Park, Doubloon Landing, and Corliss Landing in the inner harbor; Gano Street Park (no developed waterfront) and Blackstone Park along the Seekonk River; and India Point Park in the outer harbor. Facilities range from passive recreation opportunities with paths and seating to ball fields for active recreation, and provide scenic waterfront vistas. Floats and piers provide dock space at several parks. Additional public access is provided at parks and greenways constructed and operated by Dominion Energy at Collier Point Park, Narragansett Electric at Point Street Landing, and Johnson & Wales University and Save The Bay at Fields Point. Facilities at these sites include passive recreation amenities, including a boat ramp at Collier Point, and docks. Public access is also provided through rowing programs offered by the Narragansett Boat Club and sailing classes at the Community Boating Center. Trails at Fields Point provide additional public access to the shore for fishing and recreation.

The extensive Providence Riverwalk network provides continuous public access along the Providence and Woonasquatucket rivers and connects to Waterplace Park, a large central open space with seating and amenities surrounding the water.

Harbor View Trail is a discontinuous waterfront walkway that includes fishing and viewing areas with both direct access along the water and pedestrian access proximate to the water.

The CRMC subcommittee on Rights-of -Way publishes a listing of all CRMC-designated Rights-of-Way to tidal areas of the state; this currently includes three City streets with access to the Seekonk River in Providence: Irving Avenue (CRMC Designation # L-1), Butler Avenue (CRMC Designation # L-2), and East Transit Street (CRMC Designation # L-3), where a boat ramp and small dock along with a parking lot for vehicles and trailers was completed in 2014 (this is a well-used and accessible public access site). Access to the right-of-way at the terminus of Irving Avenue at the Seekonk River is currently limited by an eroded bank, compromised rip-rap and ongoing drainage issues that make access to the water very difficult. Access to the Butler Avenue right-of-way is partially blocked by fencing and overgrowth, unmarked, and generally poorly defined.

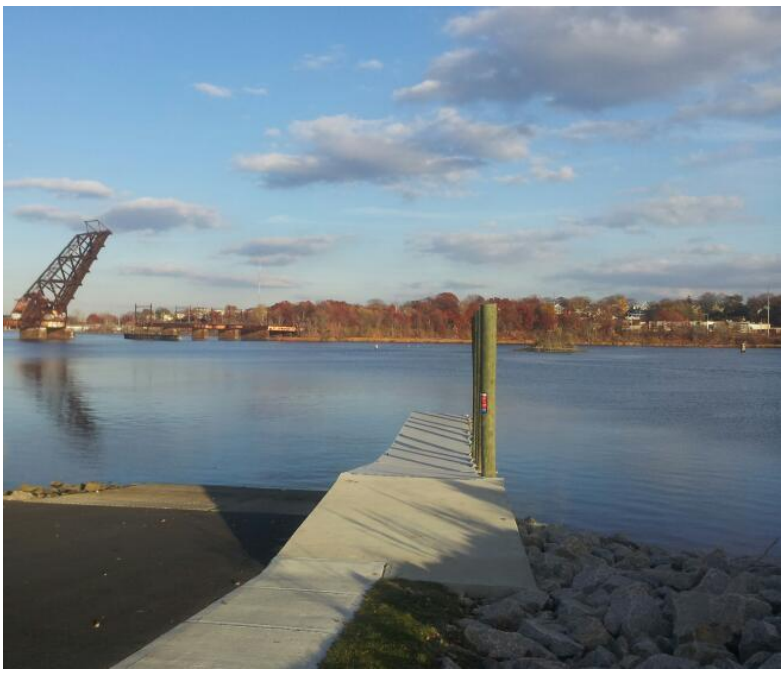
The area underneath the I-Way Bridge is a heavily used fishing and visual access site that currently functions without formal designation. Nearby, south of the Hot Club on South Water Street near the Fox Point Hurricane Barrier, is an additional fishing site. These sites correspond

with Harbor View Trail, which provides a pedestrian route that includes both waterfront walkways and accessible boardwalk and near-water pathways.

Additional informal fishing and access points are located within and adjacent to Gano Street Park and along East River Drive/River Drive (commonly known as “River Road”).
Other potential access points to the water include the termini of Public Street and Oxford Street off Allens Avenue. Consideration should be given to formal recognition of all or some of these sites for formal public access, whether physical or visual.

Irving Avenue ROW L-1

CRMC ROW L-2 - Butler Avenue



Gano Park Boat Launch at CRMC ROW L-3 with Crook Point Bascule Bridge in Background

Fishing and Painting under the I-Way Bridge

Oxford Street Terminus with Derelict Piers

Harbor View Trail at the Fox Point Hurricane Barrier

The CRMC identified five major goals in the Special Area Management Plan (1983) for Providence Harbor. Included among them were increased recreational opportunities and public access. This is reflected in draft language for the Metro Bay SAMP and in the Urban Coastal Greenway policy, which includes a codified requirement of provision of public greenways or access paths, or mitigation if that is not feasible.

The former "Shooter's" property immediately west of India Point Park on India Street in Providence is zoned W2, a waterfront mixed-use district intended in part to "enhance and create public access to the waterfront…." Currently owned by the State and controlled by the Department of Environmental Management, the site has specific conditions imposed on it to preclude residential redevelopment. In addition, CRMC requires a 25-foot minimum Urban Coastal Greenway (UCG) and an additional 25-foot construction setback. This is an ideal site for public access through marine use and dedicated open spaces as dictated by City zoning map notation. Any additional development capacity requested will only be granted in exchange for additional access and other public amenities.

Corliss Landing/Harbor View Trail Today

Current Conditions of Existing and Potential Public Access Sites

The condition of the three existing CRMC-designated rights-of-way varies: Irving Avenue access is compromised by stormwater drainage infrastructure and rip-rap, both of which are in disrepair and obstruct reasonable access to the water. Access to the Butler Avenue right-of-way is partially obstructed and overgrown. East Transit Street is the site of the recently completed Gano Park Boat Launch, providing direct small craft access to the water (the only comparable facility in Providence is at Collier Point Park). The Gano launch site is located within a large waterfront park with additional pedestrian waterfront access, and is the site of a planned waterfront bike path extension as part of the Blackstone River Bikeway (Segment 1A, slated for 2016).

CRMC Section 335 Public Access Plans

Under Section 335 of the Rhode Island Coastal Resources Management Program (RICRMP) the CRMC recognizes that certain activities which require the private use of public trust resources to the exclusion of other public uses necessarily impact public access. In general, these activities include:

1) Commercial and industrial development and redevelopment projects, as defined in section 300.3 of the RICRMP
2) New and significant expansions to marinas, as defined in section 300.4 of the RICRMP; and,
3) Activities which involve the filling of tidal waters, as defined in section 300.10, other than those considered as maintenance, as defined in section 300.7 of the RICRMP

As it is the CRMC's policy to protect, maintain and, where possible, enhance public access to and along the shore for the benefit of all Rhode Islanders, Section 335 requires applicants for such activities to provide, where appropriate, on-site access of a similar type and level to that which is being impacted as the result of a proposed activity or development project.

The CRMC permits for the following sites contain stipulations regarding the development and implementation of a public access plan consistent with the requirements of Section 335:

1) 25 India Street (aka “Shooters”)
2) Collier Park
3) Corliss Landing
4) Save The Bay/Fields Point
5) South Street Power Station

Fields Point/Save The Bay Public Access

The 25 India Street

De Facto and Potential Public Access Sites

In addition to the sites described above for which consideration should be given to official public access designation, several other de facto and potential access sites exist along our waterfront. As mentioned, de facto public access points include the areas underneath the I-Way Bridge and adjacent to the Hurricane Barrier, and several informal locations along River Road.

The abandoned Crook Point Bridge adjacent to Gano Park, while iconic, is a potentially hazardous site for children and other park visitors. It may have potential for rehabilitation as a fishing pier.

In addition, several City rights-of-way and/or adjacent areas have the potential for public access to the water; public access is an inherent right under the Public Trust Doctrine, particularly where there is a history of human use.

PUBLIC ACCESS POLICIES and IMPLEMENTATION

GOAL: Provide public access to the waterfront for all residents and visitors.

Objective I: Identify existing rights-of-way and maintain an inventory of rights-of-way and other public access to the shore, including municipal paper streets, dedicated easements, drainage outfalls, and utility easements such as buried cable sites.

Actions:

1. Assist the CRMC in its continuing responsibility to discover and designate public rights-of-way to the shore. Investigate the usefulness of municipal paper streets, drainage outfalls, buried cables, dedicated easements, and other potential CRMC rights-of-way in providing shoreline public access.

2. Ensure that there are usable rights-of-way to the shoreline accessible to residents throughout the City. The City should investigate vacant shorefront property for the suitability of constructing public boat ramps.

3. Evaluate and consider indirect access to the waterfront, such as through views and interior walkways, including those from privately-owned as well as public buildings.

4. Investigate the potential for nominating paper streets to CRMC for designation on the listing of designated public rights-of-way to tidal areas. This is especially important in the port and working waterfront area where limited access to the shoreline is possible at this time.

Objective 2: Maintain, expand and enhance rights-of-way and access to the shore.

***Actions*:**

1. Preserve, protect, and enhance CRMC ROWs and other shoreline public access sites.

2. Prioritize CRMC ROW improvements as necessary to ensure that they continue to provide safe public access to the shore.

3. Prevent further abandonment of public rights-of-way to the shoreline. In accordance with RIGL §46-23-6.2, no city shall abandon a right-of-way designated as such by the CRMC, (e.g. Irving Ave. and Butler Ave.) unless the CRMC has approved the abandonment.

4. Do not allow future “privatization” of existing public access points.

5. To ensure safe access, where necessary support physical improvements of shoreline access areas on a priority basis.

6. Support the participation of citizens in the physical restoration, upgrading and maintenance of rights of ways.

7. Examine the possibilities for the acquisition of or donation of lands adjacent to access points for open space and recreation as monies become available.

8. Explore the potential for additional public shoreline access points, including sites historically in public use where the public trust doctrine may apply, municipal paper streets, dedicated easements, drainage outfalls, and buried energy cables.

9. Require that new or expanded waterfront development provide some form of public access.

10. Study the feasibility of rehabilitating the Crook Point Bridge as a public fishing and viewing pier.

11. Investigate and promote Oxford Street as a potential public right-of-way to the water and potential site for interpretive signage, art installations and wetland restoration.

12. Support plans for a revitalized shoreline along the Seekonk River (River Drive) including improved access to the water, opportunities for small craft boating and fishing, a multi-use path, stabilization of the eroding riverbank, potential living shoreline improvements, and better stormwater management.

13. Make the Irving Avenue designated CRMC right-of-way an accessible access way to the shore and consider its use as a possible launch for small non-motorized watercraft (e.g. kayaks and canoes).

14. Work with the RI Department of Environmental Management (DEM) to seek federal funding to reopen the dock at the “Shooter’s” parcel (25 India Street) and establish a fishing pier, kayak launch and transient boating site.

15. Work with the Rhode Island Department of Transportation (RIDOT) to secure funding and help develop a redesign of Allens Avenue that includes bicycle and pedestrian connections between Davol Square and Fields Point and emphasizes green infrastructure for stormwater management.

16. Explore the possibility of wetlands restoration, art installations and educational signage at Collier Point Park.

17. Support the proposed pedestrian bridge and public park in the former 195 land as a central park that strengthens community ties to the water.

18. Promote and reinforce existing and proposed rights-of-way on 195 parcels, promote their connectivity to each other, and identify potential additional ROWs.

19. Develop, maintain and update maps showing all public rights-of-way and other public access to the water.

20. Promote waterfront public access as a tourist attraction.

21. Develop and implement a maintenance plan for all public access.

22. Provide handicapped accessible resources and amenities at public access locations wherever feasible.

Objective 3: Promote and plan for continuous pedestrian access along all accessible waterfront.

Actions:

1. Support extension of the Urban Coastal Greenway (UCG) on Lot 288 to and around the cove north of Save The Bay.

2. Promote connectivity of urban coastal greenways and other linear shorefront walkways and multi-use paths with the goal of achieving continuous connectivity along all non-industrial waterfront land under the purview of the HMP and HMC.

3. Support extension of the Blackstone Bikeway through Gano Park in Fox Point (Segment 1A) and advocate for continued expansion to connect off-road to River Drive.

4. Support City Walk as it applies to shoreline pedestrian accessibility.

5. Work with the CRMC and local regulators to ensure that public access to the waterfront is a condition of all waterfront development consistent with Urban Coastal Greenway program.

6. Ensure that waterfront development, marinas and other activity do not impede navigation and productive use of the water, with the HMC offering an advisory opinion on all relevant projects.

Objective 4: Improve public information and education regarding the waterfront, public access and habitat.

Actions:

1. Install clear signage denoting all public access points to the water and providing clear notification of and directions to all waterfront parks including Collier Point, India Point, Gano Street and proposed new parks, as well as wayfinding to and from the East Bay Bike Path, Woonasquatucket Greenway and to the harbor area.

2. Develop maps identifying waterfront access and make such maps publicly accessible.

3. Promote the development and installation of interpretive signage explaining cultural and natural history at public access points and in waterfront parks where practicable.

4. Support marine and coastal experiential education programs offered through the Providence Public Schools.

5. Work with community and waterfront user groups to develop waterfront "adopt-a-spot" programs to ensure dedicated, low-cost maintenance of public access sites.

6. Erect signs indicating where and when to beware of waterfowl hunting and directing the public to visit RI DEM online for effective dates (hunting season), roughly October to February.

View of the Seekonk Looking North from Gulf Road

VII. WATER QUALITY

The Coastal Resources Management Council identified five major goals in the Special Area Management Plan (1983) for Providence Harbor. Improved water quality is one of those goals.

The Providence and Seekonk rivers are currently unsuitable for swimming or shellfishing. The Providence River and all of its tributaries north of Conimicut Point have been permanently closed to shellfishing by Rl DEM. The Field's Point and Bucklin Point Waste Water Treatment Facilities (WWTFs) have point source outlets that discharge into these waters. Upstream sources of degradation include nonpoint source discharge of pollutants from storm drains, ISDS leaching, and overland runoff.

Narragansett Bay is a "no discharge zone" for marine sanitary waste as established by RI DEM and EPA. Although federal law requires all recreational boats with installed toilets to be equipped with approved marine sanitation devices (MSDs), there are concerns that boats continue to discharge wastes.

Oil terminal operators and hazardous material storage facility owners are bound by federal and state laws to have response plans available for immediate implementation in the event of a petroleum or hazardous material spill. Primary response plans prepared by terminal operators include an Emergency Response Action Plan and a Spill Prevention Control and Countermeasure Plan.

In the event of an oil or hazardous material spill at the waterfront, notification and contingency plans are immediately put into place. The US Coast Guard acts as the Federal On-Scene Coordinator (for a spill on land, the US EPA may assume the federal role), and will make a determination as to the adequacy of the response. The Federal On-Scene coordinator may "federalize" the spill response and assume control if this federal agency determines that the terminal operator's response is inadequate.

Water Quality and Point Source Pollution

Rivers tributary to Narragansett Bay have been subject to numerous sources of industrial, commercial, and residential pollution since before the Industrial Revolution, when the Woonasquatucket, Moshassuck and Blackstone (upstream of the Seekonk) rivers were first where household wastewater was directly discharged, and then a much needed source of power and convenient method of waste disposal for industry. Wastes from fabric dyeing, metalworking, leather tanning, mills, and other activities were dumped into the rivers. These past activities, which are no longer discharging, severely diminished the quality of these waters to the point that water-contact recreation is limited and aquatic habitats have nearly disappeared in many of the waterways included in the Providence Harbor. Over time, large quantities of toxins also accumulated in the sediments of the rivers and Narragansett Bay, contributing to the degraded quality of the waterways.

The City of Providence constructed its first sewer system in the 1870s, conveying City waste directly into the rivers and harbor via 65 sewer outfalls. With awareness of health impacts on the rise and based largely on study of European systems already in place, by the 1880s a system of interceptors was proposed by City Engineer Samuel M. Gray: sewage would be collected from neighborhood sewer lines and conveyed to Field's Point, where it would be processed by chemical precipitation. The Providence Sewage Treatment System began operation in 1901 as the third largest such operation in the United States. A pumping station at Ernest Street conveyed sewage to Fields point for treatment. By 1910 problems with chemical precipitation and the growth of the city led to the dumping of large volumes of sludge into Narragansett Bay about 14 miles south of Providence. By the 1930s the City converted the Field's Point plant operation to the activated sludge process. Subsequent improvements were made through the 1940s and 1950s. [Source: Narragansett Bay Commission (NBC) website]

The Clean Water Act of 1972 set national standards for regulating discharges, but the subsequent decline of the Field's Point plant due to deferred maintenance resulted in some 65 million gallons of untreated and partially treated sewage flowing into the state's waters daily. This had serious impacts on the environment, including the closing of shellfish beds to fishing, and threatened the state's tourist industry and economic future. A 1979 EPA violation order resulted in formation of the Narragansett Bay Water Quality District Commission and voters approved an $87.7 bond issue to fund improvements at Field's Point. The upgrade of the plant was completed at a cost of $100 million in 1992 and the NBC was mandated to also assume control of the Bucklin Point Wastewater Facility in East Providence. By 1995 Field's Point was recognized nationally as the best large secondary treatment facility.

Like many northeastern US sewer systems, the Providence area consists of numerous combined sewer systems. They are designed to collect rainwater runoff, domestic sewage and industrial wastewater in the same pipe. Most of the time, combined sewer systems transport all of their wastewater to a sewage treatment plant, where it is treated and discharged to a water body. However, during periods of heavy rainfall or snowmelt, wastewater volume in a combined sewer system can exceed the capacity of the sewer system or treatment plant. Combined sewer systems are designed to overflow occasionally and discharge excess wastewater directly to nearby streams, rivers or other water bodies. These overflows are called "combined sewer overflows" (CSOs) and contain not only stormwater but untreated human and industrial waste, toxic materials, and debris. They are a major water pollution concern for the many cities that have combined sewer systems.

Because bacteria was a significant cause of shellfishing closures in the Upper Bay, bacteria standards for water quality were consistently violated and numerous beach closings occurred, in 1999 NBC began the massive Combined Sewer Overflow Abatement Plan to end the discharge of combined sewer overflows into the bay. There are 66 CSOs in the NBC service area and some 2.2 billion gallons of CSO activity in a typical year. Phase 1 began in 2001 and the Main Spine Tunnel and related CSO facilities were constructed through 2008, collecting sewer water and wastewater from 12 CSOs in the NBC service area. The results are significant since completion of the tunnel, with most water quality indicators showing reduced levels, resulting in far fewer beach closings, conditional opening of shellfish beds, and even the Urban Beach Initiative, under which the RI Department of Health is looking into the possibility of opening three closed

beaches in the Upper Bay (none in Providence). Phase 2 included the Seekonk and Woonasquatucket CSO interceptors and coincided with improvements to the wastewater treatment facility at Field's Point. It is expected to result in additional improvements in water quality. When the CSO project is completed (Phase 3), it is anticipated that 95% of overflows will be prevented.

Largely as a result of the CSO Abatement Project, the waterfront is becoming a desirable place to live, work and play, as shown by a renewed interest in recreational uses of the rivers and Upper Bay in recent years. Amenities for public access, fishing, boat launching facilities, mooring fields, and, if water quality should sufficiently improve, even swimming areas, are being discussed as real possibilities within the metropolitan area.

Additional challenges are posed by non-point stormwater pollution, especially via runoff from paved areas adjacent to and proximate to water bodies. Mitigation efforts will have to include public education and awareness and depaving and use of permeable surfaces where feasible, abetted by continued interest in and use of the water itself.

Water quality standards for the waters of Providence are set by the Water Resources Division of the Rhode Island Department of Environmental Management (RI DEM). These standards define the water quality goals of a water body by designating the use or uses of the water and setting criteria necessary to protect the uses. As such, the designated water quality standards may not reflect current water quality conditions. Water quality standards are intended to protect public health and welfare, improve the quality of water and serve the purposes of the Clean Water Act and the General Laws of Rhode Island. Whenever attainable, water quality standards should maintain and improve water quality for the protection and propagation of fish, shellfish, and wildlife, as well as for recreation in and on the water; take into account water bodies' use and value as public water supplies; and take into consideration their use for agricultural, industrial and other purposes including navigation.

DEM Surface Water Quality Standards

The RI Department of Environmental Management has developed water quality standards for all freshwater and saltwater surface waters of the state. All surface waters are assigned to a specific class by the DEM Office of Water Resources. Each class is defined by the most sensitive designated uses, governing water uses it is intended to protect. Surface waters may be suitable for other beneficial uses, but shall be regulated to protect and enhance the designated uses. The following link leads to the complete set of the Rhode Island Department of Environmental Management's Water Quality Regulations as amended December 2010:
http://www.dem.ri.gov/pubs/regs/regs/water/h2oq10.pdf

The following water quality designations apply to saltwater bodies in Rhode Island and are from the RI DEM Surface Water Quality Standards as amended December 2010:

Rule 8. – RI DEM SURFACE WATER QUALITY STANDARDS
A. Purpose. A water quality standard defines the water quality goals of a surface waterbody, or portion thereof, by designating the use or uses of the water and by setting criteria necessary to protect the uses. Water quality standards are intended to protect public

health, safety and welfare, enhance the quality of water and serve the purposes of the Clean Water Act and Chapter 46-12 of the General Laws of Rhode Island. "Serve the purposes of the Act" (as defined in Section 101(a) (2) and 303(c) of the Clean Water) means that water quality standards should, whenever attainable, provide water quality, including quantity, for the protection and propagation of fish and wildlife and for recreation in and on the water and take into consideration their use and value as public water supplies, propagation of fish and wildlife, recreation in and on the water, agricultural, industrial, and other purposes including navigation.

Such standards serve the dual purposes of establishing the water quality goals for a specific surface water body or waterbody segment and serve as the regulatory basis for the establishment of water-quality-based-treatment controls and strategies beyond the technology-based levels of treatment required by Sections 301(b) and 306 of the Clean Water Act.

B. Water Use Classification - The surface waters of the state shall be assigned to one of the classes listed below. Each class is defined by the designated uses, which are the most sensitive and therefore governing water uses which it is intended to protect. Surface waters may be suitable for other beneficial uses, but shall be regulated to protect and enhance the designated uses. In no case shall waste assimilation or waste transport be considered a designated use.
(2). Seawater:
(a). Class SA*@ - These waters are designated for shellfish harvesting for direct human consumption, primary and secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation and industrial cooling. These waters shall have good aesthetic value.
(b). Class SB*
- These waters are designated for primary and secondary contact recreational activities; shellfish harvesting for controlled relay and depuration; and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value.
(c). Class SB1 *
- These waters are designated for primary and secondary contact recreational activities and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value. Primary contact recreational activities may be impacted due to pathogens from approved wastewater discharges. However all Class SB criteria must be met.
(d). Class SC - These waters are designated for secondary contact recreational activities, and fish and wildlife habitat. They shall be suitable for aquacultural uses, navigation, and industrial cooling. These waters shall have good aesthetic value.

* Certain Class SA, SB and SB1 waterbody segments may have partial use designations assigned to them as noted in rules 8.B(3) below.

@ Some Class SA waters contain Closed Safety Zones which are waters in the vicinity of an approved sanitary discharge which may be impacted in the event of complete failure of treatment and are therefore, currently prohibited to shellfishing. Although shellfishing use is restricted, all SA criteria must be met.

(3). Partial Uses - In accordance with rule 19 of these regulations, the Department may

designate a partial use for the above listed water use classifications. Partial use denotes specific restrictions of use assigned to a waterbody or waterbody segment that may affect the application of criteria. For example, a partial use designation may be appropriate where waters are impacted by activities such as combined sewer overflows and concentrations of vessels. Additional partial uses may be so designated by the Director if provided in accordance with rule 19.

(a). CSO - These waters will likely be impacted by combined sewer overflows in accordance with approved CSO Facilities Plans and in compliance with rule 19.E.1 of these regulations and the Rhode Island CSO Policy. Therefore, primary contact recreational activities; shellfishing uses; and fish and wildlife habitat will likely be restricted.

(b). Concentration of Vessels - These waters are in the vicinity of marinas and/or mooring fields and therefore seasonal shellfishing closures will likely be required as listed in the most recent (revised annually) RI DEM document entitled Shellfish Closure Areas, however, all Class SA criteria must be attained.

Seekonk and Providence River Sub-basins

The Seekonk and Providence river sub-basins that fall under the scope of the Providence HMP are described by DEM Water Quality Regulations as follows:

Seekonk River Sub-basin - RI0007019

RI0007019E-01 Seekonk River from the Slater Mill Dam at Main Street in Pawtucket to India Point in Providence. Pawtucket, Providence SB1{a}

Providence River Sub-basin - RI0007020

RI0007020E-01B Providence River from its confluence with the Moshassuck and Woonasquatucket Rivers in Providence south and south of a line from India Point to Bold Point (across the mouth of the Seekonk River), to a line extending from a point on shore due east of Naushon Avenue in Warwick to the western terminus of beach Road in East Providence, including Watchemoket Cove. SB1{a},

Marine Discharges

Although federal law requires all recreational boats with installed toilets to be equipped with approved marine sanitation devices (MSDs), boats still discharge wastes. The discharge of these sanitary wastes may have a significant impact on the quality of the water by increasing the Biological Oxygen Demand (BOD), introducing pathogens into the water and contributing to the degradation of the water quality in Providence Harbor. At present, there are no pump-out stations in Providence.

No Discharge Area for *all* of Rhode Island's Marine Waters

Under the federal Clean Water Act it is illegal to discharge untreated (raw) sewage from a vessel within 3 miles of shore (the territorial waters) of the United states, the Great Lakes and navigable rivers. On August 10, 1998 the state of Rhode Island took a step toward ensuring better water quality in marine waters by designated their coastal waters as a No Discharge Area

(NDA). The Rhode Island waters include territorial seas within three miles of shore, including all of Narragansett Bay. A No Discharge Area is a designated body of water in which the discharge of *treated* and *untreated* boat sewage is prohibited (this does not include greywater or sink water).

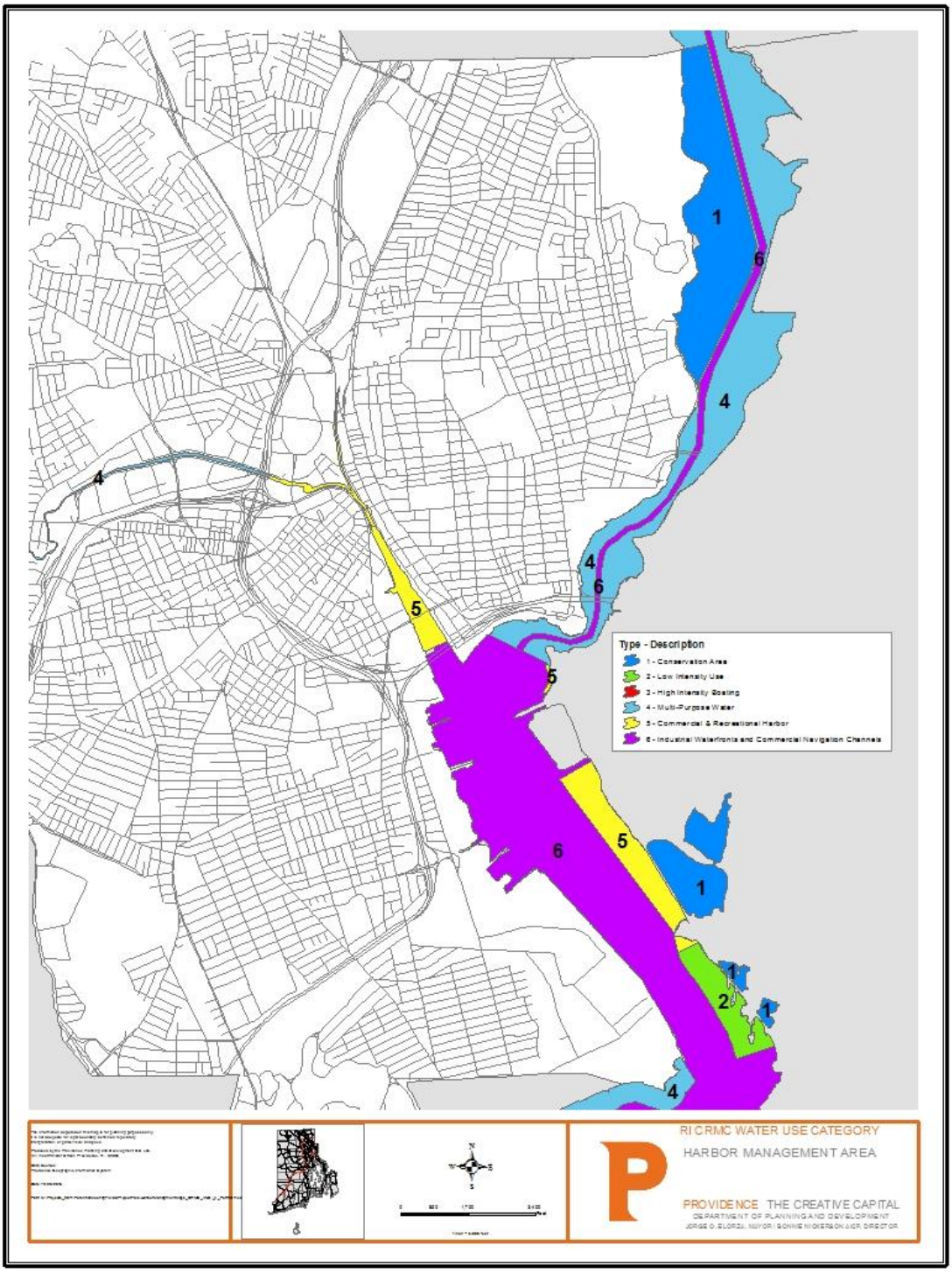
Complying with vessel sewage discharge laws and regulations, and using pumpout facilities, are a necessary step to protect public health, water quality, and the marine environment.

Ballast Water

Ballast water is regulated by RI DEM's Office of Water Resources for compliance with Section 401 of the federal Clean Water Act and Rhode Island's Water Quality Regulations (Chapter 42-35 pursuant to Chapters 46-12 and 42-17.1 of RIGL of 1956 as amended).

Coastal Resource Management Council/Water Types

The Coastal Resources Management Council reviews municipal harbor management plans to ensure that municipal goals and recommendations are consistent with state goals for permitted activities in Rhode Island's coastal waters. One way that this is accomplished is by requiring that proposed and actual activities occur only where they are consistent with CRMC regulations as established for six different water types. Each water type allows certain activities and may prohibit others according their potential impacts. The CRMC further establishes priority uses for each water type; the priority uses for the CRMC water types assigned to the coastal waters adjacent to the City of Providence are depicted in the following map and described below.


Type - Description
1 - Conservation Area
2 - Low Intensity Use
3 - High Intensity Boating
4 - Multi-Purpose Water
5 - Commercial & Recreational Harbor
6 - Industrial Waterfronts and Commercial Navigation Channels
RI CRMC WATER USE CATEGORY
HARBOR MANAGEMENT AREA
PROVIDENCE THE CREATIVE CAPITAL
DEPARTMENT OF PLANNING AND DEVELOPMENT

Type 1 Conservation Areas - The Council's goal is to preserve and protect Type 1 waters from activities and uses that have the potential to degrade scenic, wildlife, and plant habitat values, or which may adversely impact water quality or natural shoreline types.

Type 4 Multipurpose Waters - The Council's goal is to maintain a balance among the diverse activities that must coexist in Type 4 waters. The changing characteristics of traditional activities and the development of new water-dependent uses shall, where possible, be accommodated in keeping with the principle that the Council shall work to preserve and restore ecological systems.

Type 5 Commercial and Recreational Harbors - The highest priority uses of Type 5 waters and adjoining land areas within Council jurisdiction are (a) berthing, mooring, and servicing of recreational craft, commercial fishing vessels, and ferries; (b) water-dependent and water-enhanced commerce, including businesses catering to tourists; (c) maintenance of navigational channels and berths, and removal of obstructions to navigation; and (d) activities that maintain or enhance water quality and scenic qualities, including the preservation of historic features. The Council shall suitably modify or prohibit activities that significantly detract from or interfere with these priority uses.

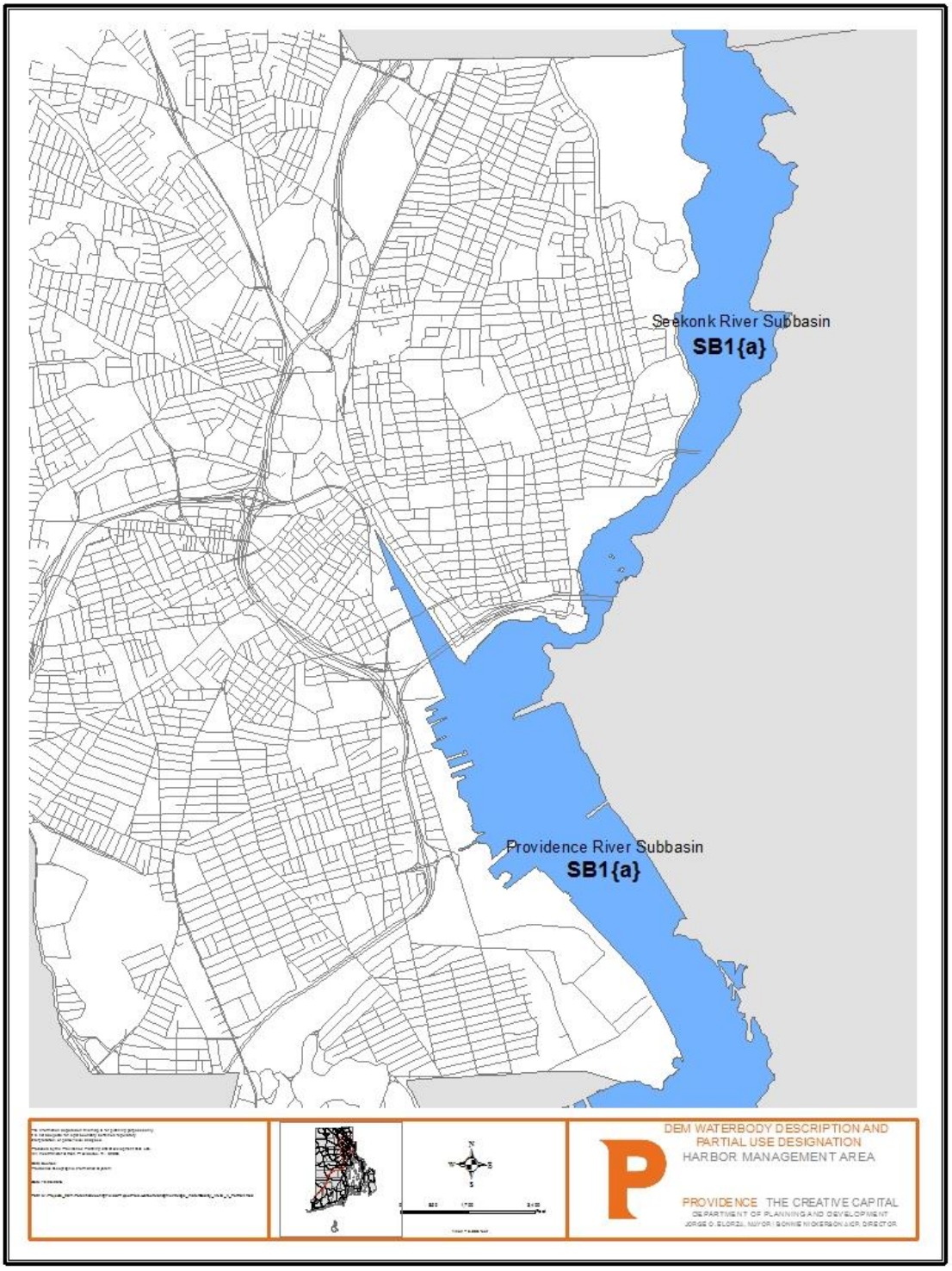
Type 6 Industrial Waterfronts and Commercial Navigation Channels - Highest priority uses of Type 6 waters and adjacent lands under Council jurisdiction are: (a) berthing, loading and unloading, and servicing of commercial vessels; (b) construction and maintenance of port facilities, navigation channels, and berths; and (c) construction and maintenance of facilities required for the support of commercial shipping and fishing activities.

Issues

- Past use of rivers for water power and industrial processing has degraded the quality of Providence waters. While Clean Water Act implementation has improved the quality of water in the city over the past four decades and CSO abatement has already led to dramatic water quality improvements, continuous attention to non-point source pollution is necessary.

- Industrial and other uses in the port area include an increase in scrap metal businesses that are required to meet more stringent stormwater, flooding and other regulations. The continued success of these businesses must be balanced with continuing improvement of water quality that is the result of decades of investment and effort to the benefit of all.

- Marinas and mooring fields have not historically degraded water quality, but are viewed by water quality regulatory programs as being potential polluters and therefore, require up-front mitigation. Hence, CRMC policies require that all new marinas and significant expansion of marinas include the installation of pumpout facilities.



DEM Water Quality Classifications

WATER QUALITY POLICIES AND IMPLEMENTATION

GOAL:
Maintain and improve the water quality of Providence Harbor and rivers within and contributing to the harbor management area.

Objective 1:
Implement and support appropriate measures and enforce applicable regulations to mitigate harbor pollution.

Actions:

1. Support efforts to minimize public and private discharges of pollutants into the City's waters.

2. Enforce the prohibition of sanitary waste discharges from marine sanitation devices (MSDs) while in the harbor management area.

3. Develop and seek funding for a pump-out station or vessel and ensure that pumpouts are accessible, operational and maintained at all times.

4. Enforce designation of Narragansett Bay as a "no discharge" zone.

5. Encourage the installation and use of Best Management Practices at marinas and waterfront commercial properties.

6. Provide facilities for the storage and removal of inorganic waste (trash receptacles).

7. Encourage marinas to develop operations and management plan (OMP) measures and attain Clean Marina status.

8. Work with all relevant agencies including RIDOT, RI DEM, Narragansett Bay Commission, CRMC, and Providence DPW to maintain and improve water quality through coordination of operations and maintenance and capital projects, with an emphasis on green infrastructure where practicable.

Objective 2:
Support and enforce policies, designations, regulations, and initiatives that protect and improve water quality and critical habitat.

Actions:

1. Support the CRMC policy insuring that marinas with liveaboards provide pumpout facilities.

2. Support CRMC designation of coastal wetlands and other marine habitats.

3. Review and provide comment to the City Plan Commission on CRMC permits relating to the impact of proposed development on coastal lands and environments.

4. Prohibit boats in critical shallow water habitats.

5. Support CRMC policies regarding requirements for the installation and use of pumpout stations at marinas and other locations to provide adequate capacity to handle vessels at marinas and any future public mooring fields.

6. Support programs and projects intended to improve water quality, including the Narragansett Bay Commission's Combined Sewer Overflow (CSO) abatement program.

7. Work with state and federal agencies to secure funding to dredge Waterplace Park and the downstream stretch of the Woonasquatucket River.

8. Develop erosion mitigation strategies for shoreline areas including India Point, Richmond Square and the Seekonk River along River Drive, and promote living shorelines along currently hardened shoreline where appropriate and feasible.

9. Support efforts to restore shellfish populations, where appropriate, to improve fish habitat and improve water quality.

Objective 3:

Promote water quality improvements through improved wastewater treatment, stormwater management, and investment in "green" infrastructure projects.

Actions:

1. Support efforts to improve the stormwater system that drains into York Pond, just inland of the Seekonk River. Current conditions contribute to erosion of the riverbank, flooding and water quality impacts.

2. Support funding for citywide stormwater management programs, including the potential development and implementation of a stormwater enterprise fund. Promote the purchase of equipment needed to implement regular bi-monthly street vacuum sweeping to remove sand and sediments that contribute to severe sedimentation and flooding at Waterplace Park.
3. Encourage the use of RI DOT settlement funds for implementation of any and all of the above.

Objective 4:

Promote resiliency, protection of water quality, compatible mixed use, and economic vitality in the port area.

Actions:

1. Support development of a "green port" initiative designed to encourage port operators to adopt best practices in areas such as stormwater management, green infrastructure, renewable energy, energy conservation, air quality, habitat protection, living shorelines, and public access.

2. Require all port area operators and businesses to comply with hazard mitigation and debris management regulations.

3. Work with the harbormaster and others to manage the cleanup of large debris after storms, including derelict vessels, damaged and derelict piers, and downed tree limbs.

VIII. MOORING MANAGEMENT

Introduction

The CRMC has permitted a limited number of moorings in Providence at the time of this writing, all of them held by the Community Boating Center at India Point Park, which has five moorings and a fleet of 60 boats available to members. Prior to this plan, no process was in place to establish public mooring fields managed by the City of Providence for the benefit of stakeholders with an interest in boating access. This section of the HMP lays out the framework for establishing both seasonal moorings and transient anchorages.

Due to the rising interest in additional opportunities for small craft recreation, the HMC developed preliminary potential mooring and anchorage areas for the Interim Harbor Management Plan, which have since been refined. The final proposed anchorage and seasonal mooring fields shown on the map were selected where water depths are sufficient to support at least shallow draft moored vessels. Different CRMC water types are represented, as are different shoreside characteristics and uses. Accessibility to the shore was an important factor in locating proposed moorings. Public input was received from members of the rowing community and others to ensure that mooring and anchorage locations do not interfere with other established use of the water, particularly navigational corridors.

In addition to seasonal mooring fields, which provide long-term in-water storage for vessels, the Harbor Management Commission oversees the process for determining where transient anchorages, which provide short term storage, are located. Whereas mooring fields are managed consistent with CRMC's "no greater than 3:1" resident to non-resident mooring allocation requirement – and, as such, will likely provide boating access primarily to the residents of Providence - a transient anchorage accommodates any boater who wishes to visit Providence via the state's waterways.

The current harbor ordinance must be amended to include a description of the lottery process and support policies providing the Harbormaster the authority to ensure public safety, environmental protection and equitable allocation of resources. In addition, the CRMC requires the ordinance be amended to address nonconforming moorings and outhauls.

Transient Anchoring and Anchorages

The City of Providence, through this HMP, establishes transient anchorages for up to twelve (12) vessels:

- a transient anchorage to the west of the "ceremonial pier" at India Point Park and to the north of buoy N-1 ("Red Nun") accommodating five (5) vessels up to 40 feet in length;
- a transient anchorage in the Old Harbor area south of the Point Street Bridge on the west side of the river for two (2) vessels up to 25 feet in length;
- a transient anchorage for five (5) vessels up to 25 feet in length south of the boat launch at Gano Park to the west of the Narragansett Boat Club and Brown University rowing

lanes.

These anchorages are the priority locations for all boaters wishing to anchor vessels while visiting the City. The maximum duration of stay allowed on a City of Providence transient anchorage mooring is four (4) days.

The corner point coordinates for the transient anchorages are listed below (RISPF).

India Point (105,316 square feet total area):

LATITUDE	LONGITUDE
267234.8506	357800.7957
267357.4343	357451.3026
267374.015	357317.9535
267405.5107	357102.488
267535.1708	357126.76
267524.5327	357337.4571
267490.6086	357493.3212
267372.8539	357841.5269

Old Harbor (36,155 square feet total area):

LATITUDE	LONGITUDE
267321.5987	354347.2839
267401.9752	354462.3631
267570.4565	354359.7753
267623.9889	354331.5444
267563.3745	354220.169
267508.727	354243.0597
267393.6481	354306.7899

South of Gano Park Boat Launch (54,311 square feet total area):

LATITUDE	LONGITUDE
269108.7628	358691.0521
269049.0444	358690.5052
268947.6962	358639.5804
268803.9606	358606.7705
268811.8015	358551.1521
268840.9451	358492.4167
268943.4863	358424.4332
269078.8121	358475.7825
269094.9115	358527.5334

See Attached Map ***Mooring Field in the Seekonk River and Transient Anchorages at Three Locations***.

Anchorage Standards:

The United States Fish and Wildlife Service/RI DEM transient mooring program will provide twelve (12) 2000-pound concrete mooring blocks and with chains and all other related equipment at no cost to the City of Providence to provide opportunities for transient boaters to visit and enjoy the City via the state's coastal waterways.

With the Harbormaster's permission, transient boaters may anchor their vessel in other locations within the coastal waters and harbor areas of the City. In no case shall any boater anchor a vessel within a federal navigation channel, navigation fairway, mooring field, swimming area, right-of-way ingress and egress area, or launching ramp area. Written consent from the Harbormaster is required for extended visits of more than 24 hours. No vessel anchored under such conditions shall be left unattended. Owners and/or operators of such vessels may go ashore, but must be available to tend the vessel in the event of heavy weather. It shall be the vessel owner's and/or operator's responsibility to remain clear of all moored vessels, and other structures.

Seasonal Mooring Fields

The City of Providence, through this HMP, establishes a seasonal mooring field consisting of eight (8) moorings for vessels up to 25 feet in length on the Seekonk River to the north of the Gano Park Boat Launch and south of the Crook Point Bascule Bridge west of the rowing lanes.

The seasonal mooring field has a total area of 103,413 square feet as defined by the following coordinates (RISPF):

LATITUDE	LONGITUDE
269892.0552	359252.6048
269806.8592	359304.4708
269776.1112	359262.2885
269766.2776	359241.678
269740.0631	359157.8645
269615.2041	359008.4928
269355.6042	358829.378
269251.4453	358799.959
269192.5117	358779.4095
269243.2462	358663.8048
269286.1768	358682.6722
269397.5598	358717.6984
269690.3148	358915.7866
269834.246	359095.7498

See Attached Map ***Mooring Field in the Seekonk River and Transient Anchorages at Three Locations***.

Permitting

Permits shall be issued on a one-year lottery basis. The deadline for annual applications is February 28 of each year. Applications must include vessel type and length for which the mooring is sought; proof of ownership, and RI DEM boat registration number. Moorings will be allocated at the Harbormaster's discretion.

No mooring shall be located in the coastal waters and harbor area of the city until a permit has been issued for the use of such mooring by the harbormaster. No mooring shall be located nor shall be maintained unless the mooring owner has received a valid mooring permit from the harbormaster.

A complete and accurate mooring permit application must be provided to the harbormaster before the harbormaster can act to approve or deny such application. The harbormaster shall determine if a new mooring permit can be issued only after all the pertinent provisions of the harbor management plan are met.

It is the responsibility of the permit holder to apply for a permit by February 28 of each year.

Any mooring permit holder shall be deemed to have forfeited his mooring permit by reason of the following:

(1) Failure to comply with any of the requirements of these regulations.

(2) Knowingly providing false information to the harbormaster in the mooring permit application process.

(3) Sale of a permitted vessel and failure to notify the harbormaster or allow the new owner to occupy the mooring.

Occupancy of mooring:

(1) No vessel shall occupy a mooring other than the one for which it has been permitted. The harbormaster shall have the authority to move any vessel violating the provisions of this section, with such movement at the expense and risk of the vessel owner.

(2) The harbormaster may permit the temporary use of a mooring by another vessel after receiving written consent by the permitted mooring owner.

Mooring Permit Application Requirements:

The following requirements are set for applications for private mooring permits:

(1) Name, address and telephone number of permit holder;

(2) Vessel name, make, length (feet), draft (feet), and RI registration number and copy of the RI registration certificate and MSD decal number if required;

(3) Whether vessel has changed in status since the last permit was issued;

(4) Mooring permits are issued to individual persons allowing them to moor a vessel to mooring equipment owned and provided by the City of Providence. Permits are not transferable.

(5) The location of mooring tackle or anchoring systems shall be at the discretion of the harbormaster and may be relocated at any time to best utilize the space available;

(6) Any person who sells his permitted vessel must apply for a new mooring permit and if granted shall pay any and all costs of adjusting his or the surrounding mooring tackle. A new vessel may result in the loss of the previous mooring location and may require relocation to a different mooring field.

Numbering:

(a) Each mooring located in the coastal waters and harbor areas of the city, once permitted, shall be assigned a number by the harbormaster. The number will be displayed in contrasting color in two places on each mooring buoy float in block numerals at least three inches in height.

(b) Any mooring not displaying a mooring registration number will be considered a non-permitted mooring. Non-permitted moorings, and any vessels attached thereto, will be removed in accordance with the provisions of this article.

Mooring records:

The harbormaster shall keep a detailed record of all moorings, their location, along with each permit holder's name, home (and business, if applicable) address, telephone number, and mooring permit number. These records shall be updated and made available to the harbor management commission.

Any permit holder who sells the vessel which they were previously permitted to moor shall submit a new permit mooring application along with a copy of the RI boat registration for the new vessel. A new permit may or may not be approved by the harbormaster after review of the new vessel's length and draft.

Transfer of moorings:

Mooring permits cannot be transferred from person to person.

Mooring fields:

(a) *Permit required.* No mooring shall be located or placed within the coastal waters and harbor areas of the city without a valid mooring permit issued by the harbormaster and without having the mooring inspected as detailed in this article and approved by the harbormaster. The harbormaster must direct the placement of the mooring.

(b) *Mooring within boundaries.* No vessel so moored or anchored shall extend beyond the designated mooring field boundaries, as detailed in this article without written permission from the harbormaster (Example: Riparian mooring).

(c) *Mooring field designations.* Those waters designated as mooring are authorized for the placement of permitted moorings. They are located in accordance with all policies of the City's harbor management plan, the policies and requirements of the CRMC's guidelines for the development of municipal harbor management plans, and CRMC procedures for siting mooring fields. Any revisions to the size, and/or location of these mooring field designations shall require HMC approval. Once approval is obtained, approval for the revisions from the CRMC shall also be obtained. Once approval has been obtained from the CRMC, the revisions may take place.

(d) All designated mooring fields sited within the coastal waters and harbor areas of the city shall be set back a minimum distance of fifty feet from the shore and shoreside structures such as, but not limited to, docks and piers.

The initial seasonal moorings are sized for vessels with a maximum length of 25 feet. For these and any moorings established in the future, mooring tackle shall meet the following minimum standards:

Length of Vessel	Concrete Stone Block Lbs.	Mushroom Lbs.	Shackle & Heavy Chain	Shackle & Light Chain	Swivel Pin	Pendant Nylon
Under 23'	400	150	1/2"	1/2"	1/2"	5/8"
23'--30'	600	300	3/4"	1/2"	3/4"	3/4"
31'--35'	800	375	3/4"	1/2"	3/4"	7/8"
36'--39'	1,200	500	1"	5/8"	3/4"	1"
Over 39'	2,000	1,000	1"	5/8"	3/4"	1"

At the time of inspection, or whenever tackle is raised for any reason, it must be checked

and made to conform to these specifications.

[1]Boat lengths are rounded to the nearest foot.

(1) The maximum length of the pendant should be 2 1/2 times the distance from the bow chock to the water plus the distance from the bow chock to the mooring cleat or post.

(2) All pendant lines running through a chock or any other object where chafing may occur should have adequate chafe guards.

(3) Lengths of tackle are specified on a per mooring basis. The total length of chain shall be 2.5 times the high water depth. The lower and upper chains shall be 1.25 times the high water depth.

(4) All shackles, swivels, and other hardware used in the mooring hookup should be proportional in size to the chain used. See mooring standards.

(5) Cast iron must be a minimum of 1.75 times mushroom weight. Concrete must be two times mushroom weight.

(6) The mooring buoy shall be white in color and shall have a blue stripe. The Mooring number shall be displayed in contrasting color in two places on each mooring buoy in block numerals at least three inches in height.

(7) A winter mooring stick/spar, if used to replace the mooring buoy, shall be white in color and bear the assigned mooring number in block numerals at least 3 inches in height. A winter mooring stick/spar shall be removed on or before May 31st and shall not be set until or after September 30th of each calendar year.

(8) A mooring in violation of these specifications may be issued a warning sticker. Failure to respond to this warning issued by the harbormaster within the specified amount of time from the date issued shall result in additional penalties and fines as provided for in this article.

Inspections:

(a) All new moorings in the coastal waters and harbor areas of the city must have the chain, tackle, and anchor inspected by the harbormaster or his designee prior to setting the mooring.

(b) The City shall be required to maintain all moorings in safe condition. Any chain, shackle, swivel, or other tackle which has become warped or worn by one-third its normal diameter shall be replaced. Failure to maintain a safe mooring shall be cause for revocation of the mooring permit and shall be deemed a violation. The harbormaster or his designee may

inspect any moorings at any time to determine compliance with this section at the owner's expense.

(c) All moorings shall be inspected once every three years and the results of such inspection shall be reported to the harbormaster. Mooring inspections shall be performed by a qualified inspector. The inspection shall be made by either raising the mooring or by underwater inspection. Such inspection shall determine compliance with the mooring and mooring tackle standards of this article. Any mooring or component of a mooring reported not in compliance with this article shall be replaced within 30 days of such notice. Any mooring washed ashore during a storm shall be inspected by the harbormaster or his designee before it is reset. All costs of any mooring inspection required shall be the responsibility of the City.

(d) Any person may apply to the commission to be designated as an inspector. Applications shall be made on the form provided by the harbormaster and must be accompanied by the annual application fee as set by the HMC along with a resume which includes relevant professional experience from either current or previous employers in marine related industry or area harbormasters. A qualified inspector must reapply by July 1 of each year. The commission may designate as many inspectors as it feels are necessary; shall set standards for the inspectors to follow; and shall establish criteria for qualifying as an inspector. Any inspector who has failed to exercise diligence in the exercise of his duty shall have his inspector's license revoked.

(e) The harbormaster shall keep a list of all qualified inspectors and shall make this list available to holders of mooring permits and provide a copy of this list to the city clerk's office

(f) Any person, prior to being appointed as a qualified inspector will provide and submit to the harbormaster either proof of insurance or a surety bond in the amount of $1,000,000.00. The insurance policy must name the City of Providence and harbormaster as additional insured and certificate holders of the policy. The policy must clearly state "mooring inspector".

Dredging:

(a) Periodically mooring fields may be maintenance dredged. It shall be the sole responsibility of the City to remove all hardware and ground tackle for the duration of the dredge project.

(b) Reinstallation of mooring hardware and ground tackle will be the sole responsibility of the City.

Outhauls:

Outhauls are subject to the regulatory jurisdiction of the CRMC. The Council may authorize a municipality to administer an annual permit for such provided said municipality has a Council-

approved and active harbor management plan and ordinance which contains the following:

a. municipal documentation that demonstrates that

i. except as provided below, an outhaul(s) is/are to be permitted to the contiguous waterfront property owner; and,

ii. up to two (2) outhauls may be allowed per waterfront property; and,

iii. outhauls are not permitted on properties which contain a recreational boating facility; and,

iv. procedures have been adopted to ensure that permits are issued only consistent with the RICRMP, including the provisions of 300.18; and,

v. their procedures acknowledge that the CRMC retains the authority to revoke any permits issued by the municipality if it finds that such permit conflicts with the RICRMP; and,

vi. from November 15 to April 15, when a boat is not being secured by the device on an annual basis, the outhaul cabling system shall be removed; and,

vii. outhauls may be "grandfathered" in their current location upon annual harbormaster documentation that such outhauls have been in continuous use at such location since 2004, and, the contiguous property owner(s) agree in writing to such, however, such "grandfathering" is extinguished whenever a recreational boating facility is approved at the location.

Fees and Penalties

No permit shall be issued until payment of appropriate fees is made to the City. All such fees are nonrefundable. These fees shall be set annually by the harbor management commission. At no time shall the fee collected from a mooring permit applicant be different for residents and nonresidents. Seasonal mooring and transient anchorage fees shall be determined by the HMC and reviewed annually.

Review of Mooring Fees:

The harbor commission shall review the mooring fee schedules each year and ensure that the fees are consistent with market conditions and commensurate with the value of City services provided or anticipated.

MOORING MANAGEMENT POLICIES AND IMPLEMENTATION

GOAL: Provide recreational mooring fields and transient anchorages in Providence waters to facilitate use by small vessels, boost the recreational economy and promote tourism without compromising navigation for sculls and other rowing vessels.

Objective 1: Establish a local process for selecting and designating recreational mooring fields and transient anchorages and implement the first phase of mooring designation under this HMP.

Actions

1. Seek funding to establish seasonal moorings as described in this section.
2. Establish transient anchorages and seasonal mooring fields as described in this section.
3. Amend the harbor ordinance and establish procedures for the regulation of mooring fields (the HMC working with the Harbormaster) including provisions governing the mooring permit lottery system, non-conforming moorings, and outhauls, as well as supporting policies providing the Harbormaster with the authority to ensure public safety, environmental protection and equitable resource allocation per CRMC standards.
4. Seek funding for and provide local pump-out services to meet demand.
5. Establish a secure pen for transient boater dinghies in the area of the Gano Street Boat Launch, utilizing RI DEM funding opportunities as available.
6. Consider establishment of a fund derived from mooring fees to be applied to promotion of navigation and safety.
7. Establish “No Wake” zones around all mooring fields and ensure sufficient signage and buoys. (See also Shipping, Navigation and Multi-use of Harbor Waters.)
8. Plan for future recreational mooring fields as demand and navigational access dictates.

IX. SHIPPING, NAVIGATION AND MULTI-USE OF HARBOR WATERS

Introduction

CRMC guidelines encourage the inclusion of Port Development as a key element of any harbor plan for the city of Providence. Indeed, the Metro Bay Special Area Management Plan, which includes Providence, places an emphasis on balancing uses, ensuring the protection of both environmental and economic development resources. The commission has come to the same conclusion.

As part of the process, the commission reached out to the port stakeholder community and the response was strong. Input on port trade was received from the public and private sectors, including trade organizations and pubic officials, as well as a diverse group of marine companies conducting business in the harbor. After receiving input from such a diverse group, there was general consensus that the port of Providence is a vibrant marine port and an important economic and energy asset for the state, as well as for our region.

Stakeholders agreed that more than one factor positions Providence well as an important center for trade with further potential for growth:

1) Providence is a deep water port maintained by the Federal Government (one of two in New England);
2) Providence is the home of dozens of commercial shipping stakeholders with world class reputations in quality and experience; and
3) The port is located on a major trade route with intermodal connectivity and in proximity to one of the densest populations in the country.

Market factors like the expansion of the Panama Canal and congestion at other ports create conditions for increased business and potential for the port of Providence. The HMC recognizes this value and encourages all stakeholders to work together to find ways of further leveraging the economic development opportunities presented by maritime trade - utilizing the city's water asset to benefit the city at large.

High sediment loads in the Woonasquatucket River have settled out in the basin at Waterplace Park, significantly reducing available draft for navigation. In the segment of the Woonasquatucket between Eagle Street and Waterplace Park, sediment loading is generated several ways: deteriorating pavement in old mill complexes exposes soil to erosion, lack of street sweeping on streets and in private parking lots contributes to a high volume of trash carried into storm drains during the "first flush" of a storm, and highway runoff from 195 is directed into the river at this location.

Multi-Use of Harbor Waters

The City of Providence supports multiple uses of its rivers for recreation, transportation, and port development, and it has long been the policy that multiple uses should be encouraged through enactment of any necessary regulations and enforcement. The overriding objective

(and the charge of this HMP) is to maximize safe use of harbor and river resources for recreation, marine transportation and port purposes. Additional goals are to encourage use of marine resources by populations of all Providence neighborhoods and to encourage tourism and opportunities to enjoy Providence's waterfront heritage.

As the city's waterfront becomes more popular, conflicts may arise between user groups with diverse needs and interests. It's important that safety not be compromised as multi-purpose use is encouraged.

Inland Tidal Waters

Sedimentation of Waterplace Park and the Providence River to the south impedes navigation of boats associated with WaterFire and gondola service. While not a navigation hazard *per se*, accumulation of trash in the water in these locations is detrimental to the experience.

Construction of Providence Place Mall and the accompanying I-95 ramp system helped minimize overland storm flow, and implementation of stormwater management plans required by CRMC decreased Total Suspended Solids (TSS) deposited in the Woonasquatucket River.

However, today it is recommended that Waterplace Park be dredged again, as siltation has resulted in parts of the basin being relegated to mud flats at certain times. Funding sources remain the key obstacle. Ongoing Narragansett Bay Commission efforts to abate CSOs on the river through construction of sedimentation/disinfection facilities and interceptors to divert stormflow from the river to the WWTF at Field's Point reduce sediment loading. By diverting the "first flush" of stormflow from the river less debris and sediment is carried by the river and deposited downstream.

The March, 2010 flood resulted in significant damage along the Woonasquatucket, particularly in the Olneyville and Valley neighborhoods. Flood mitigation, stormwater management and bank restoration measures must be undertaken to protect vulnerable properties and to improve river flow. Effective, regular vacuuming of City and State roadways is necessary to prevent sedimentation.

Water Safety

RIDEM considers the upper Providence River and Waterplace Park subject to harbor speeds of 5 MPH and **"**no wake" restrictions. RIGL §46-27-2, Regulations of Personal Watercraft, entails that a person may not operate a personal watercraft within two hundred feet of shore except at headway speed, thereby preventing use of jet skis and other personal craft at speeds likely to cause wakes in the inner harbor.

The City supports the efforts of RI DEM to post speed signs/buoys and establish no wake zones in the inner harbor and Seekonk River. In addition, The City should post clearance signs on all structures that might impede safe navigation of commercial and recreational vessels.

Additional “no wake” zones are needed, particularly near the Hurricane Barrier and in areas designated as mooring fields; this will entail “no wake” designation, buoys and marking, and additional signage.

Specifically, “no wake” designations, signs and buoys are currently needed as follows:

- a sign indicating the extent of the Fox Point no wake zone (to the Washington Bridge);
- establishment of a no wake zone just south of the Henderson Bridge to the red buoy north of the Narragansett Boat Club;
- establishment of a no wake zone extending from the Crook Point Bridge to the Henderson Bridge because the river narrows in this stretch and wakes bounce from side to side off the hard banks; and
- establishment of a no wake zone on the upper Seekonk River.

Debris, derelict vessels and other navigational hazards present additional challenges to harbor management. Ongoing efforts by Clean Bays to remove marine debris through a congressional appropriation are supported (2015-16).

ISSUES

- Five submerged or partially submerged vessels adjacent to 434 Allens Avenue pose significant water pollution impacts and navigation hazards.
- Derelict vessels, rotted piles and other debris may be difficult to remove and dispose of properly and, in some cases, may have scenic, historic or habitat value.
- Rl DEM requires City assistance in posting and maintaining speed limit buoys and signs.
- Dredging needs for public and private use and to ensure economic and recreational viability must be prioritized and monitored, and funding sources must be sought.

SHIPPING, NAVIGATION AND MULTI-USE OF HARBOR WATERS POLICIES AND IMPLEMENTATION

GOAL:
Provide for safe and efficient navigation by all commercial and recreational users of City waters.

Objective 1:
Implement and support appropriate measures and enforce applicable regulations to ensure optimal use of the federal shipping channel and adjacent waters by commercial vessels.

Actions:

1. Promote and enforce safe boating standards pursuant to RIGL §46-22 and harbor regulations. [Harbormaster]

2. Provide overall management of all tidal waters as defined by RIGL. [Harbor Management Commission]

3. Establish harbor regulations regarding vessel speed, vessel speed zones, and vessel operations.

4. Designate and physically establish "no wake" zones as follows, using available Harbormaster resources and available grant funding:

   - Erect a sign indicating the extent of the Fox Point no wake zone (to the Washington Bridge).

   - Establish a no wake zone just south of the Henderson Bridge to the red buoy north of the Narragansett Boat Club.

   - Establish a no wake zone extending from the Crook Point Bridge to the Henderson Bridge.

   - Establish a no wake zone on the upper Seekonk River.

5. Enforce speed and operation regulations in the inner harbor and rivers where wakes reflect off of walls and bridges, creating dangerous conditions for canoes and kayaks and in posted reaches of the Seekonk River where scullers and rowers are easily capsized by wakes.

6. Urge RI DEM and elected officials to oversee removal of all derelict vessels that pose navigational hazards in harbor waters, particularly those adjacent to 434 Allens

Avenue.

Objective 2:
Develop regulations, policies and initiatives to address compatible and safe use of harbor waters by a variety of users.

Actions:

1. Establish regulations for the commercial, marine transportation, and recreational use of the Seekonk River for rowing sculls, personal watercraft, other recreational boating, and commercial vessels in the federal channel.

2. Establish regulations for joint commercial and recreational use of Providence River (including Old Harbor Plan) piers for commercial excursion boat/water taxi, Block Island ferry as well as recreational craft.

3. Establish regulations prohibiting overnight recreational docking at public facilities (docks, floats and ornamental rings) in the inner harbor.

4. Establish regulations for the joint commercial and recreational use of the Providence River in the Port of Providence area.

5. Establish and enforce regulations addressing swimming (prohibited), fishing, shellfishing (prohibited), use of vessels as liveaboards, and other use, public health and compatibility concerns.

6. Incorporate sea level projections into the construction of bridges and other structures in flood zones and vulnerable waterfront areas.

APPENDICES

Appendix 1: Providence Harbor Ordinance

Regulations for use of open waters of Providence are specified by both municipal ordinance and Rhode Island General Law (RIGL). Until recently, many of these regulations predated current marine use of the harbor and therefore amendments and/or replacement of ordinances and law were necessary to bring current use into compliance. Additional changes may be necessary.

Providence Code of Ordinances

Passed in 2011, the City of Providence's Harbor Ordinance establishes a Harbor Management Commission and grants it certain authority and duties.

Chapter 11, Harbor and Port

Harbormaster, Harbor Management Commission and Port Commission

Sec. 11-1. Harbormaster.

(a) Appointment. In accordance with §46-4-2 of the Rhode Island General Laws, the city council shall appoint a harbormaster for the harbor of the city, defined as all the public waters westerly of the easterly sides of the ship channels in the Seekonk River, Providence River and Harbor and Narragansett Bay from the Pawtucket-Providence city line southerly to the point of intersection of the ship-channel side with a straight line drawn from Rumstick Point on the east shore to Rocky Point on the west shore, excluding that area subject to the jurisdiction of Cranston. The harbormaster shall report to the commissioner of public safety.

(b) Powers and duties. The powers and duties of the harbormaster shall include, but are not limited to administering and enforcing the harbor management plan, enforcing all federal, state, and local laws pertaining to activity in the harbor, recommending rules, regulations, and ordinances pertaining to the harbor to the city council, serving as an ex-officio member of the harbor management commission, and carrying out all other powers and duties authorized to the harbormaster under various state and federal marine laws.

Sec. 11-2. Harbor Management Commission – Establishment and authority

There shall be a harbor management commission, which shall:

(1) be responsible for preparing a harbor management plan for the harbor of the city, as defined in Sec. 11-1 of this chapter;

(2) provide for annual review of the harbor management plan;

(3) recommend any additions or modifications to the plan as may be deemed necessary;

(4) assist in the evaluation of the city's harbor management operation;

(5) hear appeals to actions of the city in execution of the plan;

(6) initiate studies and other actions as may be necessary for proper management of the tidal waters of the city in accordance with the city charter and state enabling legislation;

(7) be responsible for the development and recommendation of additional policies, rules and regulations for the harbor management plan and subsequent ordinances, subject to approval of the city council and, where applicable, the coastal resources management council.

Sec. 11-3 Harbor Management Commission – Composition

The harbor management commission shall consist of seven (7) voting members, appointed by the mayor and subject to approval by the city council. All appointed members of the commission must be residents of the city. The voting members of the commission shall elect a chairperson by simple majority vote. No current city employee or elected official shall be eligible for appointment to the harbor management commission as a voting member. Such commission shall, to the extent practicable, include a member of the conservation commission or the port commission.

Sec. 11-4 Harbor Management Commission – Ex-officio members

Each ex-officio member shall be a non-voting member of the harbor management commission. The harbormaster, the commissioner of public safety, the superintendent of parks, and the mayor shall serve as ex-officio members of the commission.

Sec. 11-5 Harbor Management Commission – Appointments

Upon enactment of this section, two (2) appointees shall be appointed for a term of one (1) year (expiring December 31, 2012); two (2) appointees shall be appointed for a term of two (2) years (expiring December 31, 2013); three (3) council appointees shall be appointed for a term of three (3) years (expiring December 31, 2014). Upon expiration of these initial terms each subsequent appointee shall serve for a term of three (3) years. All such three-year terms shall expire at the end of their respective third calendar year (December 31st) notwithstanding the actual date of appointment. Vacancies shall be filled as necessary. Any person appointed to fill an unscheduled vacancy shall serve for the remainder of the unexpired term. The commission may also appoint subcommittees to address specific duties of the commission.

Sec. 11-6 Harbor Management Commission – Officers

A chairperson and vice-chairperson shall be elected by the members of the commission. Meetings shall be called by the chairperson or at the request of at least four members of the commission. The commission shall meet monthly and shall conform to open meeting laws.

Sec. 11-7 Harbor Management Commission – Compensation

No voting member of the harbor management commission shall receive compensation for service to the commission.

Sec. 11-8 Harbor Management Commission – Additional powers and duties

The harbor management commission shall be the municipal advisory and appeal body authorized to prepare and to amend, subject to city council approval, a harbor management plan, and to oversee the

implementation and enforcement of such plan and subsequent implementing ordinances, regulations, and programs. The harbor management commission shall adopt rules of procedure and operation for its meetings and is authorized to:

(1) Recommend to the city council the adoption of rules, regulations and other amendments to the harbor management plan and its subsequent ordinances which may be necessary to fulfill the goals and objectives of the harbor management plan and meet the requirements of this article.

(2) Recommend, as necessary, additional authorities and duties for the harbormaster.

(3) Assist in the preparation of an annual budget for harbor management in accordance with the provisions of the city charter.

(4) Recommend the expenditure of budgeted funds to acquire services or materials necessary for the implementation of the harbor management plan, subject to approval of the city council.

(5) Recommend fees and fines, subject to city council approval, for the implementation of the harbor management plan, including support of the harbormaster's payroll, improvement to moorings, anchorages, access ways, marine sanitation, surveys, studies, and other activities deemed necessary for carrying out the goals, policies, and implementation of the harbor management plan.

(6) Review and revise as necessary the harbor management plan and subsequent ordinances for city council and coastal resources management council approval. The harbor management plan and its ordinances shall be reviewed and revised at least once every five years. Public participation and input shall be encouraged during each five year review. Significant public notice, which shall include notice in the newspaper, shall be given by the commission for all meetings at which the review and revision of the harbor management plan will be discussed.

(7) Assist in the coordination of all public and private agencies, commissions and other organizations which have interest or jurisdiction with regard to the tidal waters of the city.

(8) Review for consistency with the harbor management plan any application for a local, state or federal permit for any water-based activity taking place within the jurisdiction of this article, and to respond in a timely fashion with recommendations to the regulating agencies.

(9) Review and make recommendations on proposed water use activities contiguous to the waterfront and in the harbor within the jurisdiction of the city that are received for review by other municipal agencies.

(10) Advise the mayor and city council on the performance and/or the qualifications of the harbormaster.

(11) Coordinate and/or conduct a minimum of one U.S. Coast Guard approved boating safety class per year.

(12) Conduct, with the harbormaster, not less than one meeting per month and one or more public hearings per year. The dates and times are to be determined by the harbormaster and the harbor management commission and are designed to solicit public comments regarding all elements of the harbor management plan.

(13) Members of the public may suggest revisions to the harbor management plan at any meeting of the commission. Each suggested revision shall be noted in the minutes of the commission's meetings. The minutes shall also reflect the actions taken by the commission on the request. The commission shall also, on a semiannual basis, provide to the city council a report of all suggested revisions made by the public and a written statement as to how the commission acted upon the suggested revision.

Sec. 11-9. Prohibited activities on and within the waters of the city.

(a) Prohibited activities. It shall be unlawful for any person operating a motorboat or vessel on and within the waters of the city of Providence to:

(1) Operate an unregistered and/or unnumbered motorboat or vessel;

(2) Operate a motorboat or vessel within a water area which has been clearly marked by buoys or some other distinguishing device, as a bathing, swimming or otherwise restricted area; provided, however, that this section shall not apply in the case of an emergency, or to patrol or rescue craft;

(3) a. Operate a motorboat or vessel at a speed of greater than five (5) miles per hour no wake within areas designated by the port commission;

b. Operate a motorboat or vessel within non-designated areas at a speed greater than forty-five (45) miles per hour during the hours from sunrise to sunset and twenty-five (25) miles per hour during periods of darkness or other periods of restricted visibility;

(4) Operate a motorboat or vessel in a manner which shall unreasonably or unnecessarily interfere with any other motorboat or vessel, or with the free and proper navigation of the waters of the city;

(5) Fail to stop and render assistance in the event of a collision, accident or other casualty, and/or fail to provide identification, in writing, to any person injured and to the owner of any property damaged in the collision, accident or other casualty, so far as the operator of any motorboat or vessel involved in a collision, accident or other casualty can do so without serious danger to his or her own vessel, crew and passengers;

(6) Fail to report any accident, casualty, vandalism or theft to the Department of Environmental Management or the police department where such accident, casualty, vandalism or theft involving a motorboat or vessel is in excess of five hundred dollars ($500.00);

(7) Operate a motorboat or vessel with improper:

a. Light installation;

b. Use of lights;

c. Sound-producing devices;

d. Personal flotation devices (PFD);

e. Fire extinguishers; and

f. Muffling devices. as set forth in state law.

(8) Operate a motorboat or vessel, or manipulate water skis, surfboards or similar devices in a reckless manner so as to endanger the life, limb or property of another;

(9) Operate a motorboat or vessel, or manipulate water skis, surfboards or similar devices while intoxicated or under the influence of any narcotic drug, barbiturate or marijuana.

A person arrested and charged with operating any motorboat or vessel, or manipulating any water skis, surfboard or similar device while under the influence of intoxicating liquor or narcotic or habit-forming drugs shall have the right to be examined at his or her own expense immediately after his or her arrest, by a physician selected by him or her, and the officer so arresting or so charging that person shall immediately inform that person of this right and afford him or her a reasonable opportunity to exercise the same, and at the trial of that person, the prosecution must prove that he or she was so informed and was afforded such opportunity;

(10)Dock or otherwise make fast any motorboat or vessel to any pier, channel marker, buoy, wharf or other shore structure without the consent of the owner, except in the case of an emergency;

(11) Operate a motorboat or vessel on and within the waters of the city for towing a person or persons on water skis, or a surfboard or similar device unless there is in the motorboat or vessel (i) a person at least twelve (12) years of age, in addition to the operator, in a position to observe the progress of the person or persons being towed; (ii) at least one (1) personal flotation device (PFD) for each person being towed;

(12) Operate a motorboat or vessel on and within any waters of the city towing a person or persons on water skis, a surfboard or similar device beginning at one (1) hour after sunset and ending at one (1) hour before sunrise;

(13) Engage in water skiing, surfboarding, or similar activity at any time between the hours beginning at one (1) hour after sunset and ending at one (1) hour before sunrise, or within areas in which said activities are prohibited;

(14) Operate or manipulate any motorboat, vessel, tow rope or other device by which the direction or location of water skis, a surfboard, or similar device may be affected or controlled in such a way as to cause the water skis, surfboard, or similar device, or any person thereon, to collide with or strike against any object or person;

(15)Conduct a regatta, motorboat, or other boat race, marine parade, tournament, or exhibition, except on the terms and conditions specifically set forth by the port commission;

(16) Refuse to move or stop on oral command of the harbormaster, assistant harbormaster, or police officer operating from a patrol boat identified as such, and exercising the duties lawfully assigned to him or her;

(17)Engage in scuba diving, skin diving, or snorkeling in an area where power or motorboats are operated, unless the proper warning flags, as set forth in state law, are posted;

(18) Operate a motorboat or vessel within fifty (50) feet of any warning flag as set forth in state law;

(19)Construct and/or place a mooring without a permit issued by the port commission;

(20)Throw, dispose of, deposit, or cause to be thrown, disposed of, or deposited, bottles, glass crockery, cans, scrap metal, junk, paper, garbage, refuse or debris of any nature, or any noxious substance in or upon any of the waters within the city;

(21)Deposit or abandon a vessel or structure upon the shore, a public right-of-way or on and within the waters of the city. When any vessel or structure is deposited or abandoned in the waters of the city, the same may be removed by the police department, or its lawfully authorized agent.

a. Notice of removal of vessel/harbor structures. If the person who owns, has an interest in, or exercises any control over the vessel or structure, or otherwise is known, the chief of police, or the harbormaster, shall give written notice by certified mail to said person to remove the vessel or structure within a specified time.

b. Removal of vessel/harbor structures. If the vessel or structure is not removed within the time specified in the notice and in a manner and to a place satisfactory to the chief of police, or the harbormaster, or if no such person is known to the chief of police, or his lawfully designated agent, upon whom the notice can be served, then the chief of police, or the harbormaster, may proceed to remove, or cause the vessel or structure to be removed, in a manner and to a place the chief of police, or his lawfully designated agent, shall deem appropriate.

c. Liability. In the event that such person identified in paragraph (1) above, shall allow a vessel or structure to be removed by the chief of police, or the harbormaster, in accordance with this ordinance, then such person shall be liable to pay the cost and expenses of the removal and storage, or to repay the same when paid by the city. The expense may be recovered in an action brought by the city solicitor against the owner(s). If the owner(s) are unknown or the vessel or structure is unclaimed within ninety (90) days of the removal, the city may sell the vessel or structure. The proceeds from the sale shall be used to defray the cost the city incurred in the removal and storage of the vessel or structure, and in the administration of this section.

(22) Engage in rafting on a single mooring or anchor, unless such rafting does not unreasonably interfere with any adjacent single moorings or anchorages. Motorboats and/or vessels in a raft shall be manned at all times;

(23) Operate a marine toilet at any time so as to cause or permit to pass or to be discharged into harbor waters, any untreated sewage, or other waste matter or contaminant of any kind, and/or dumping of holding tanks containing anything other than fresh water or sea water into harbor waters;

(24) Moor or anchor a houseboat or floating business unless such mooring or anchoring is done within designated areas. In accordance with RIGL 46-22-91, house boats and floating businesses are prohibited from berthing or mooring in coastal ponds and in all CRMC designated Type 1 and Type 2 waters. Houseboats and floating businesses are also prohibited from mooring or anchoring in tidal waters unless within the bounds of a marina.

(25) Swimming and waterskiing in any navigation fairways, city dock areas, or launch areas. In mooring fields and transient anchorage areas swimming is prohibited, with the exception of vessel owners or crews or persons contracted to do maintenance on the boat or its mooring tackle within a reasonable

distance of said boat. Waterskiing shall be prohibited in all designated channels, fairways and mooring areas.

(b)Miscellaneous provisions. Any time the chief of police, or the harbormaster, directs that a motorboat or vessel be towed pursuant to this ordinance, there shall be a fee assessed to the owner of said motorboat or vessel for said towing. Said fee shall be one hundred dollars ($100.00) and shall be subject to annual revision by the commissioner of public safety, or his lawfully designated agent. Should the towing be performed by a commercial towing service, this fee shall be in addition to the towing fee charged by the towing service.

(c) Definitions. As used in this section, unless the context clearly requires a different meaning:

Houseboat means a building constructed on a float, raft, or barge that is used primarily for single- or multiple-family habitation; if used for transportation, this use is secondary.

Floating business means a building constructed on a raft, or hull that is represented as a place of business, including but not limited to waterborne hotels, restaurants, marinas or marina-related businesses.

Motorboat means any vessel whether or not the vessel is propelled by machinery. For the purposes of this chapter, motorboat shall not include houseboats as defined in the General Laws of Rhode Island, any ferry, canoes and rowboats twelve (12) feet in length or less.

Operate means to navigate or otherwise use a motorboat or vessel.

Person means an individual, partnership, firm, corporation, association, or other entity.

Vessel means every description of watercraft other than a seaplane on the water, used or capable of being used as a means of transportation on water.

(d) Enforcement authority.

(1) The city or the harbormaster shall have the authority to enforce the provisions of this section and in the exercise thereof, shall have the authority to stop and board any motorboat or vessel subject to this section.

(2) Such enforcement authority as set forth in (1) above shall be concurrent with that possessed by the department of environmental management, pursuant to sections 46-4-2 and 46-22-17 of the General Laws of Rhode Island.

(e) Penalties for violation.

(1)The general penalties provided for by section 1-10 of the Code of Ordinances shall apply to violations of this chapter, except that any person electing to appear before the clerk of the court, or in lieu of a personal appearance electing to enter an appearance by mail, and admitting the violations charged shall be punished by a fine as set forth for each violation as follows:

a. Any person who violates any provision of subsections (a)(3)a., (7) or (18) of this section shall be subject to a fine of fifty dollars ($50.00) for each violation.

b. Any person who violates any provision of subsections (a)(1), (5), (7), (15) or (16) of this section shall be subject to a fine of one hundred dollars ($100.00) for each violation.

c. Any person who violates any provision of subsections (a)(11), (12), (13) or (14) of this section shall be subject to a fine not to exceed two hundred dollars ($200.00) for each violation.

d. Any person who violates the provisions of subsection (a)(3)b. of this section shall be subject to the following fines:

MPH In Excess of Speed Limit		Fine
1—10	$	25.00
11—15		50.00
16—20		75.00
21—25		100.00
26 and above		5.00 per mile in excess of speed limit

e. Any person who violates the provisions of subsection (a)(3)b of this section shall be required to attend a boating safety course in addition to the payment of any fine. In the event a fine as set forth for each violation is not paid or a plea of not guilty is not entered by any person charged with any violation prior to the fourteenth day after the date of the violation, said fine shall be doubled.

In the event a fine as set forth for each violation is not paid or a plea of not guilty is not entered subsequent to the fourteenth day after the date of violation, said fine shall be tripled.

(2) Any person who violates any provision of subsections (a)(6), (19), (20), (21), (22) or (23) of this section shall be guilty of a petty misdemeanor and shall be subject to a fine not to exceed five hundred dollars ($500.00), or imprisonment not to exceed thirty (30) days, or both for each violation.

(3)Any person who violates any provision of subsections (a)(2), (4), (8), (9), (10) or (24) of this section shall be guilty of a misdemeanor and shall be subject to a fine not to exceed one thousand dollars ($1,000.00), or imprisonment not to exceed one (1) year, or both for each violation.

(4) Any person charged with any violation set forth in subsections (a)(3)a., b., (5), (7), (11), (12), (13), (14), (15), (16), (17) or (18) of this section and notified in writing by a police officer to appear to answer such charge before the Providence Municipal Court may, in lieu of such appearance, elect to appear in person or by one duly authorized by him in writing, before the clerk of said court, admit the truth of said charge, and pay to said clerk the designated fine; provided that such appearance, admission and payment be made at the office of said clerk during regular business office hours, within sixty (60) days of such notification, and failure to so appear shall be deemed a waiver of the right to dispose of such charge without personal appearance in court.

(5)In those cases where mail is used for payment of such fine, the payment shall be by check or by money order, and in those cases where payment is attempted with a check drawn against insufficient funds, an

additional payment of twenty-five dollars ($25.00) shall be imposed against the violator to defray administrative costs.

(6) The payment of a fine to the clerk of the municipal court as herein provided for any violation set forth in subsections (a)(3)a., (5), (7), (11), (12), (13), (14), (15), (16), (17) and (18) shall operate as a final disposition of the charge.

(7) Notice of any violation set forth in subsections (a)(3)a., (5), (7), (11), (12), (13), (14), (15), (16), (17) and (18) shall indicate the offense charged, a schedule of fines for such violation, the time within which such fine by mail may be exercised, the place to which such fine may be mailed and such other information as will enable the person charged to take advantage of the provisions hereof.

Appendix 2: Rhode Island General Laws

RIGL §46-4-2 authorizes and empowers the City of Providence to appoint a harbormaster and to ordain and establish ordinances necessary to carry out the provisions of this sections, as indicated below. Note that the position of harbormaster was recently filled; the US Coast Guard currently coordinates use of the channel for shipping.

> § 46-4-2 City and town control of harbors – Harbormasters – Extension of Providence jurisdiction. – (a) The council of any city or town is hereby authorized and empowered to appoint a harbormaster for the harbors within the confines of the city or town, and to ordain and establish such bylaws and ordinances and establish such fees and compensation as the city council or town council may deem necessary and expedient for carrying out the provisions of this section; provided, that the jurisdiction, powers, and duties of the harbormaster of the city of Providence shall include all the public waters westerly of the easterly sides of the ship channels in Seekonk River, Providence River and Harbor and Narragansett Bay from the Pawtucket-Providence city line southerly to the point of intersection of the ship-channel side with a straight line drawn from Rumstick Point on the east shore to Rocky Point on the west shore, excluding that area subject to jurisdiction of the city of Cranston, pursuant to the provisions of § 46-4-5.1, and all acts of the general assembly and ordinances of the city of Providence, now or hereafter passed, relative to the harbor of the city of Providence, shall apply to and be in force relative to the public waters.

Appendix 3: CRMC Mooring Requirements

Mooring Allocation

Mooring allocation is among the most important and challenging issues facing a municipality as it develops its HMP. At a minimum, the Guidelines establish that residents, non-residents, and commercial interests must be considered with regard to mooring allocation.

While it may be expected that the majority of mooring permit holders in a given municipality's mooring fields are residents of that municipality, all citizens have a legal interest in using the state's coastal waters for boating and other activities. As such the CRMC requires all municipal HMPs to include a no greater than 3:1 resident to non-resident mooring allocation policy to ensure that moorings throughout the state's coastal waters are available to all its citizens, including those from inland communities.

This policy applies to all mooring fields except those established by the federal government as federal navigation projects. In these cases the federal "open to all on equal terms" policy, as follows, applies.

U.S. Army Corps of Engineers Definition of
Open-To-All on Equal Terms

Federal navigation projects must be managed in the general public interest and must be accessible and available to all on equal terms. Any number of approaches may be used to ensure that all citizens desiring mooring or other access to the project are treated impartially; it is no the Federal Government's intention to prescribe specific procedures.

A management system shall be considered acceptable provided that it:

- **Makes no arbitrary distinction or requirement of any kind in allocating use of the project and ancillary facilities and services to the public except as may be consistent with the purpose for which the project was constructed.**

- **Does not impose arbitrary fees or arbitrary variations in fees among users. The cost of providing necessary management and ancillary facilities and services may be offset through equitable user fees based on actual costs incurred.**

Information pertinent to harbor management – including but not limited to rules and regulations, lists of mooring holders, waiting fees and fee schedules – shall be readily available to the public at all times.

The City shall seek to balance the interests of all stakeholders with respect to mooring allocation and to that end will implement both the CRMC and federal mooring allocation policies as applicable.

Mooring and Mooring Field Requirements

Consistent with RIGL 34-8-9 the coordinates of all mooring fields must be recorded according to the Rhode Island State Plane Coordinate System. As a practical aid to mariners, landmarks that coincide with the locations of mooring field corner points must be described and listed in this HMP. Similarly, maps of all mooring fields must also be included in this HMP, along with their total area (acres, square feet) and the number of vessels permitted within them.

In all cases, mooring fields shall be set back a minimum of 50 feet from residential docks, piers, floats, and public launching ramps. Setback limits from riparian moorings and shoreline public rights of ways shall be sufficient to allow ingress and egress and prevent interference with the exercise of private and public right in these areas. In addition, mooring fields shall be setback at least three times the US Army Corps of Engineers authorized project depth from federal navigation projects.

In addition to these fundamental requirements, all mooring fields in the State of Rhode Island must be established according to the CRMC's "Guidance for the Siting of Mooring Areas" (Guidance) a link to which follows: http://www.crmc.ri.gov/regulations/Mooring_Fields_Siting.pdf.

While the policies listed below reflect key elements of the Guidance it is important to follow their requirements verbatim when considering the establishment of mooring fields. (**Note:** *the harbor ordinance should be amended to support these policies as applicable to provide the harbormaster with the authority to ensure public safety, environmental protection, and equitable resource allocation*)

In order to keep the Providence mooring fields safe for navigation and the boating public, there shall be a limit on the total number of moorings that can be placed in these mooring fields.

There will be equitable and efficient allocation of available mooring space to private and commercial mooring owners.

There will be equitable and efficient allocation of available mooring space consistent with the CRMC's no greater than 3:1 resident to non-resident mooring allocation policy. Where federal mooring fields are established the ACOE "Open to All on Equal Terms" policy shall apply

There shall be no unregistered moorings in the coastal waters within the City's boundaries.

Mooring permit fees shall be consistent with market conditions and with the services provided or anticipated in the future.

Except when underway, all moored vessels must remain within the perimeters of the mooring field to which they are assigned by the harbormaster. Riparian moorings are the single exception; they must be located within the on-water extension of the lateral boundaries of the waterfront lot with which they are associated.

No mooring field shall be established, nor any vessel moored or anchored, so as to interfere with the free and unobstructed use of channels, fairways, or shoreside facilities within the harbor.

No commercial moorings shall be located within a federal navigation project.

All new and significantly expanded mooring fields shall be sited to ensure that tides and currents aid in flushing the mooring area.

- The Harbormaster's Office should create and maintain a database of legally registered moorings which includes:
- the mooring number;
- latitude and longitude;
- current mooring owner name, address and phone numbers and emergency contact numbers;
- length, type, color, and name of boat; type of marine sanitation device, registration and hull identification numbers;

- vessel owner name;
- mooring type, class and weight;
- required weight;
- date of last mooring inspection; and,
- payment information.

All new and significantly expanded mooring fields shall be sited to avoid adverse effects on water quality.

Swimming and water skiing shall be prohibited in all designated channels, fairways and mooring fields.

The harbormaster shall maintain a mooring permit waiting list and permits shall be issued consistent with the CRMC's "no greater than 3:1 resident to non- resident mooring allocation policy.
Mooring fields shall not be sited so as to obstruct access to:

- Designated shellfish management areas
- Traditional fishing grounds
- Public recreational areas
- Conservation areas

Mooring fields shall be sited so as not to significantly adversely affect:

- Fish and/or shellfish resources
- Wetlands
- Submerged aquatic vegetation
- Other aquatic habitat areas

The City shall ensure that mooring areas are adequately serviced and that pump out facilities are accessible, functional, and regularly maintained.

Ordinances

The harbor ordinance should be amended to include the following:

Ordinance to limit mooring transfers
Transfer of moorings.

(1) At such time as an existing mooring becomes available for sale, the owner shall notify the harbormaster and provide proof of inspection within the last year. The harbormaster shall assign the space to the person next on the waiting list whose boat fits the mooring. The mooring owner may then sell the mooring gear in its location to this person; or, remove the mooring within ten days at the mooring owner's expense.

(2) Notwithstanding the above provision, a private mooring may transfer to an immediate family member (brother, sister, mother, father, spouse, children or grandchildren) upon written notice to the harbormaster which shall include the name and address change. Such transfers shall be strictly limited to a one time basis to those individuals holding a valid permit on the date that the CRMC approves the City of Providence Harbor Management Plan and Harbor Ordinances. No immediate family member to whom a private mooring is transferred shall then be allowed to transfer that private mooring under any circumstance. Thereafter, all private moorings that are forfeited by or not renewed by a holder of a valid mooring permit shall be made available to individuals on the waiting list.

Ordinance to Address Outhauls

Outhauls are subject to the regulatory jurisdiction of the CRMC. The CRMC may authorize a municipality to administer an annual permit for such provided said municipality has a CRMC approved and active harbor management plan and ordinance which contains the following:

a. municipal documentation that demonstrates that

i. except as provided below, an outhaul(s) is/are to be permitted to the contiguous waterfront property owner; and,
ii. up to two (2) outhauls may be allowed per waterfront property; and,
iii. outhauls are not permitted on properties which contain a recreational boating facility; and,
iv. procedures have been adopted to ensure that permits are issued only consistent with the RICRMP, including the provisions of 300.18; and,
v. their procedures acknowledge that the CRMC retains the authority to revoke any permits issued by the municipality if it finds that such permit conflicts with the RICRMP; and,
vi. from November 15 to April 15, when a boat is not being secured by the device on an annual basis, the outhaul cabling system shall be removed; and,
vii. outhauls may be "grandfathered" in their current location upon annual harbormaster documentation that such outhauls have been in continuous use at such location since 2004, and, the contiguous property owner(s) agree in writing to such, however, such "grandfathering" is extinguished whenever a recreational boating facility is approved at the location.

Non-conforming Moorings

The Harbor Ordinance should be amended to include provisions for the removal of abandoned and illegal moorings.

Appendix 4: Storm Preparedness

One of the critical harbor and shoreline users is the individual boater. Because they are often the primary occupants of the harbor area, they should be given special attention. As part of this element of the harbor plan and related ordinance, each boater should complete and submit to the Harbormaster a preparedness plan. There is a growing amount of technical and educational material being developed for individual boat owners about how to prepare for storm events.

The following is a summarization of key points contained in the current literature.

Boat owners will be faced with the decision of what to do with their boats in advance of a storm event.

If the storm is less than tropical strength and the decision is made so that boats can remain tied to the docks, all lines should be doubled and chaffing protection provided where dock lines pass through fairleads and chocks over the vessel's side. Dock lines should be attached to the high end of the pilings, if on a floating dock, rather than to cleats or other fastenings on the dock.

If mooring tackle has been recently inspected and serviced, leaving the boat on the mooring may be the best option. One of the drawbacks to staying on a mooring, as with staying at a dock, is the threat of storm surge. Check with expected storm-surge forecasts to determine if the scope of the mooring will provide sufficient holding power at maximum tidal flow. All individuals using their moorings during a storm must notify the Harbormaster's Office that they will be weathering the storm on the mooring. Those same individuals will also be required to notify the Harbormaster again when finally leaving the vessel. The City of Providence requires mooring inspections to be done every other year. Inspection reports are due on September 1st.

Regardless of whether the boat remains at a dock or mooring, there are some basic steps that need to be taken before the storm strikes. The first step is to minimize the amount of surface area the wind can work against. The more surface area the wind has to push on, the greater the strain on all components of your boat and securing devices. Remove sails entirely and stow them below deck, especially roller furling jibs. Secure or remove everything in the cabin that is not fastened down, with particular attention to the galley area and chemicals stored in lockers. Secure all ports and hatches, and remove and cap all funnels. Tightly secure the tiller or wheel with strong lines from either side of the cockpit, do not leave coils of line on deck, and take out all slack from running lines on the deck or mast. In order to minimize damage caused by impact of loose boats in a crowded harbor, it is important to place fenders on both sided of the boat. Once all precautions have been taken, the boat owner should leave the boat and seek shelter.

Can the municipality tow a disabled vessel?

According to the U.S. Coast Guard, assistance cases fall into two broad categories: distress and non-distress. Distress is defined as imminent danger requiring immediate response and assistance (U.S. Coast Guard COMDTINST 16101.2B, p. 2). If the situation is life threatening, the historic law of the sea obliges the Harbormaster, or any boater, to render assistance.

In cases of distress the Coast Guard should be notified immediately of the situation and of the intent of the Harbormaster. The Harbormaster plays a key role in the hierarchy of emergency response, as he/she is often the first to arrive on-scene. If the Coast Guard deems it necessary, it may direct other

private/public resources, in addition to its own, to respond. If the Coast Guard arrives and finds a stable situation with the first responders capable of assisting, it may withdraw its response equipment.

However, if the Coast Guard finds the situation unstable, and if the first responders are unable to provide the necessary assistance, it will intervene immediately. When a Harbormaster responds to a distress situation, and provides some form of emergency aid, he/she is afforded protection from liability through Title 46, Section 2303 of the US Code which states:

Any person...who gratuitously and in good faith renders assistance at the scene of a vessel collision, accident, or other casualty without objection of any person assisted, shall not be held liable for any civil damages as a result of the rendering of assistance for any act or omission in providing or arranging salvage, tonnage, medical treatment, or other assistance where the assisting person acts as an ordinary, reasonable prudent man would have acted under the same or similar circumstances.

The key phrase here is “act as an ordinary, reasonable prudent...” which dictates that the Harbormaster must act in good faith and in a reasonable, seamanlike manner. Any variance from this standard may increase liability.

This potential liability, and the fact that alternatives exist, should dissuade the Harbormaster from towing. Other resources that may be able to offer assistance can be contacted. The Coast Guard will issue a Marine Assistance Request Broadcast (MARB) which solicits voluntary response of anyone who can assist the disabled mariner (including Coast Guard Auxiliary Units and good Samaritans) (U.S. Coast Guard COMDTINST 16101.2B, p. 2). A Harbormaster may also contact a friend or family member of the boater for assistance.

Another viable form of assistance may be sought through professional towing companies that work in the area. The Harbormaster can provide the disabled boater with information on how to contact these companies, and their current rates. In most instances these firms will contact the boater directly in response to the MARB. Once the boater decides upon a service and a verbal agreement is made, the Harbormaster cannot interfere with that contract.

It is clear that "good faith" actions of Harbormasters are protected, to some degree, by the "Federal Boating Safety Act of 1971," but to what extent remains uncertain. Unfortunately, there is no statutory framework from which to formulate guidelines. Issues such as this are decided by customary law, which means each case is reviewed individually by a judge and jury. Because there are so few cases involving Harbormaster liability, judges and jurors lack prior judicial decisions which set precedents. It is therefore difficult to predict the extent to which Harbormasters will be protected by the state. In order to limit the potential of being found liable, Harbormasters must realize the extent of their liability and must make rational, professional decisions which can be supported as reasonable actions before a court of law.

What is the municipalities mooring liability?

The major concern focuses on the Harbormaster's involvement with setting mooring standards, placing ground tackle and conducting inspections. In order for a Harbormaster to avoid or minimize the amount of liability he/she must exercise reasonable care. This includes:

1) Setting mooring standards which are appropriate for the area. The Harbormaster must be able to justify the standards which have been set. The maximum load the mooring gear is expected to withstand must be identified and documented;

2) Providing mooring occupants with information on the stress points of moorings and offering advice on dealing with extreme weather conditions;

3) Ensuring that all mooring gear under city control is routinely inspected, and that proper records of these inspections are kept. The question of liability continually arises if the city conducts the inspections itself. Liability results not because the city inspects the mooring, but because it does so improperly or fails to correct a situation in which the mooring does not meet specifications. The City of Providence places the burden of mooring inspection on the boaters. Moorings are to be inspected every other year based on odd or even years.

4) Identifying and correcting situations which may cause damage to a moored vessel. If a Harbormaster learns that two boats are hitting one another while on city managed moorings, the situation needs to be rectified quickly. The Harbormaster must first stop the vessels from hitting. This can be achieved by removing one of the vessels from its mooring. The Harbormaster then decides where to move the vessel. Information on mooring specifications and storm preparedness can be obtained through the Harbormaster, or online in the near future.

HAZARD MITIGATION PLAN

Summary for Providence Harbor and Surrounding Waters

• Land Use: The land use along the shores of Providence is a mixture of industrial, commercial, and residential development. The majority of residential and commercial properties will be significantly affected in the event of severe weather combined with high tides and a substantial storm surge.

• Mooring Fields: (complete this section when/if mooring fields and /or transient anchorages are established)

Authority:

The primary authority for carrying out the responsibilities detailed in this plan is vested with the Harbormaster, who will work in cooperation with the harbor commission. However to successfully complete the activities outlined in this plan, the Harbormaster is required to work with other city departments including the: planning board, police and fire departments, city planners, building code officials, department of public works and the Providence Emergency Management Authority.

Goals of the Harbor Hazard Mitigation Plan

To prevent the loss of life and property by:

- Properly preparing for storm events;

- Having a completed and enforceable response and recovery plan;

• Working in cooperation with harbor and shorelines users to ensure that a coordinated approach is applied to hazard mitigation;

• Integrating harbor hazard mitigation activities with other, ongoing, local hazard mitigation programs;

• Identifying and completing long term actions to redirect, interact with or avoid the hazard.

Risk Assessment

General Harbor Characteristics

High Hazard Areas

Risk Assessment Table

Threat (cause)	Marine Interest	Effect	Result: Lvl 1	Result Lvl 2
Flood/surge	Main harbor	Wide fetch	Poor holding	
	Moored boats	Decreased scope	Dragging	Threaten auto bridge
	Marina facility	Flooded facility	Floating debris	Threaten auto bridge
			Spills of hazardous material	Threaten surrounding wetland
		Docks topping pilings	Freed docks and boats	
	Private residences	Flooded property		
Wind	Moored boats	Windage	Dragging or pennant breakage	
	Marina facility	Windborne debris	Structural damage	

STRATEGIES FOR PREPAREDNESS, RESPONSE, AND RECOVERY

The Harbormaster shall be responsible for all harbor activities related to preparation, response, and recovery. This will be done in coordination with the Commissioner of Public Safety, the Director of Emergency Management, and other department directors.

The City of Providence, through its Harbormaster, will activate the following preparedness, response, and recovery plan 72 hours prior to a severe storm event or as necessary for unpredictable events.

THE SAFFIR-SIMPSON HURRICANE SCALE

The Saffir-Simpson Hurricane Scale is a 1-5 rating based on the hurricane's present intensity. This is used to give an estimate of the potential property damage and flooding expected along the coast from a hurricane landfall. Wind speed is the determining factor in the scale, as storm surge values are highly

dependent on the slope of the continental shelf in the landfall region. Note that all winds are using the U.S. 1-minute average.

Category One Hurricane:

Winds 74-95 mph (64-82 kt or 119-153 km/hr). Storm surge generally 4-5 ft above normal. No real damage to building structures. Damage primarily to unanchored mobile homes, shrubbery, and trees. Some damage to poorly constructed signs. Also, some coastal road flooding and minor pier damage. Hurricanes Allison of 1995 and Danny of 1997 were Category One hurricanes at peak intensity.

Category Two Hurricane:

Winds 96-110 mph (83-95 kt or 154-177 km/hr). Storm surge generally 6-8 feet above normal. Some roofing material, door, and window damage of buildings. Considerable damage to shrubbery and trees with some trees blown down. Considerable damage to mobile homes, poorly constructed signs, and piers. Coastal and low-lying escape routes flood 2-4 hours before arrival of the hurricane center. Small craft in unprotected anchorages break moorings. Hurricane Bonnie of 1998 was a Category Two hurricane when it hit the North Carolina coast, while Hurricane Georges of 1998 was a Category Two Hurricane when it hit the Florida Keys and the Mississippi Gulf Coast.

Category Three Hurricane:

Winds 111-130 mph (96-113 kt or 178-209 km/hr). Storm surge generally 9-12 ft above normal. Some structural damage to small residences and utility buildings with a minor amount of curtainwall failures. Damage to shrubbery and trees with foliage blown off trees and large trees blown down. Mobile homes and poorly constructed signs are destroyed. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the center of the hurricane. Flooding near the coast destroys smaller structures with larger structures damaged by battering from floating debris. Terrain continuously lower than 5 ft above mean sea level may be flooded inland 8 miles (13 km) or more. Evacuation of low-lying residences with several blocks of the shoreline may be required. Hurricanes Roxanne of 1995 and Fran of 1996 were Category Three hurricanes at landfall on the Yucatan Peninsula of Mexico and in North Carolina, respectively.

Category Four Hurricane:

Winds 131-155 mph (114-135 kt or 210-249 km/hr). Storm surge generally 13-18 ft above normal. More extensive curtainwall failures with some complete roof structure failures on small residences. Shrubs, trees, and all signs are blown down. Complete destruction of mobile homes. Extensive damage to doors and windows. Low-lying escape routes may be cut by rising water 3-5 hours before arrival of the center of the hurricane. Major damage to lower floors of structures near the shore. Terrain lower than 10 ft above sea level may be flooded requiring massive evacuation of residential areas as far inland as 6 miles (10 km). Hurricane Luis of 1995 was a Category Four hurricane while moving over the Leeward Islands. Hurricanes Felix and Opal of 1995 also reached Category Four status at peak intensity.

Category Five Hurricane:

Winds greater than 155 mph (135 kt or 249 km/hr). Storm surge generally greater than 18 ft above normal. Complete roof failure on many residences and industrial buildings. Some complete building

failures with small utility buildings blown over or away. All shrubs, trees, and signs blown down. Complete destruction of mobile homes. Severe and extensive window and door damage. Low-lying escape routes are cut by rising water 3-5 hours before arrival of the center of the hurricane. Major damage to lower floors of all structures located less than 15 ft above sea level and within 500 yards of the shoreline. Massive evacuation of residential areas on low ground within 5-10 miles (8-16 km) of the shoreline may be required. Hurricane Mitch of 1998 was a Category Five hurricane at peak intensity over the western Caribbean. Hurricane Gilbert of 1988 was a Category Five hurricane at peak intensity and is one of the strongest Atlantic tropical cyclones of record.

LEVEL 3 - 72 HOURS

1. If hurricane, begin tracking and monitoring hourly weather reports

2. Contact any services under contract for after event to assess their readiness

3. Manage harbor traffic as it increases during marina/boater preparation activities

4. Ensure fuel tanks are full and reserve batteries are charged

5. Inventory and update first aid equipment and other onboard emergency tools

6. Contact local marinas and boat moving companies for statuses to relay to mariners.

7. Maintain radio watch

8. Alert local port community, encouraging boat owners to seek safe refuge, remove boats from water, or take action to minimize damaging effects

9. Alert local marinas, marine interests, holders of mooring permits, and occupants of special anchorage areas to impending emergency.

10. Keep Marine Safety Office (MSO) Providence appraised of hazardous conditions in harbor

11. Document waterfront using photographs or video

12. Start tracking time and resource allocations for possible state and federal reimbursement.

LEVEL 2 - 48 HOURS

1. Continue to perform activities in level 3

2. Contact mooring permit holders who are not complying with preparedness plan.

3. Assist marinas/waterfront business with special requests

4. Continue to manage harbor traffic as it increases

5. Finalize emergency work schedule with Harbormaster

6. Confirm arrangements to have Harbormaster vessel hauled and stored

7. Preparation of city properties with department of public works, that includes:

- removing all City equipment from flood plain
- securing all items such as trash bins, benches, etc..
- complete necessary precautions for Harbormaster office

8. Establish liaison with police, fire and public works departments

9. Alert maritime community to unsafe conditions in the harbor as needed

10. Curtail regular business activities

11. Begin regular patrols of the harbor to ensure necessary individual precautions are begin taken

12. Advise MSO Providence as to the status of emergency preparedness in progress

13. Alert local harbor community to any impending closure of anchorages or waterways.

14. Encourage local marinas to suspend fueling operations and to secure fueling piers sufficiently to minimize pollution threat.

15. Inventory of individuals who plan on staying on their moored vessels during the storm event.

LEVEL 1 - 24 HOURS

1. Final patrol of the harbor

- inventory number of vessels and precautions taken by harbor and shoreline users
- clear public pier of vessels and equipment

2. Log information on transient boats

3. Fuel Harbormaster vessel

4. Haul and store Harbor Patrol vessel with assistance of the Department of Public Works

5. Complete shoreline survey and final harbor check from shore

6. Alert harbor community and MSO to any unsafe conditions in harbor

7. Continue to perform pertinent level 2 activities.

Response - The City of Providence's policy is that no emergency watercraft will be dispatched for emergency response during a storm event. All requests for assistance will be forwarded to the nearest Coast Guard Station. This policy will remain in effect unless revoked by the Commissioner of Public Safety or the Mayor. The Harbormaster will remain on-call to address any harbor related issues. This will also allow the Harbormaster vessel to begin operation immediately at the conclusion of storm. The Harbormaster shall monitor police, fire and marine frequencies throughout the event.

Recovery - Immediately after the event has terminated, the city has three recovery priorities.

Priority 1:

Reestablish the Harbormaster's Office as an operational unit in order to facilitate the second and third priority

Priority 2: Take the necessary immediate action to minimize additional risk to life and property.

Priority 3:

Reopen the harbor for recovery activity.

To achieve these priorities, the following sequential actions will be taken:

IMMEDIATE 24 HOURS

1. Assess readiness of the Harbormaster's Office, correct deficiencies, re-establish radio communications.

2. Complete rapid appraisal of damage.

3. Provide damage assessment information to city officials and to MSO Providence.

4. Initiate pre-established contracts services companies (towing, salvage) if required.

5. Institute security watches as necessary.

6. Alert maritime community to unsafe conditions in the harbor.

7. Provide damage assessment information to city officials and to MSO Providence.

MID-TERM 1 TO 14 DAYS

1. Complete comprehensive inventory of damage using photographs and video if possible.

2. Notify appropriate parties regarding damage (i.e., mooring holders).

3. Provide list of unidentified boats to MSO Providence and DEM Enforcement.

4. Contact local harbor and shoreline users to assess their situation.

5. Provide MSO Providence with a daily harbor status.

6. Begin to remove large pieces of floating debris from the harbor.

7. Assist city and state agencies with damage assessments and emergency permitting process.

LONG-TERM 14 TO 90 DAYS

1. Analyze effects of storm on the harbor. Complete summary report within 30 days of storm event for City Council and Mayor.

2. Review mitigation list and selection actions that could be implemented during the recovery phase.

3. Conduct an evaluation meeting for harbor and shoreline users to identify problems not properly addressed by this plan.

4. Complete a survey of boat damage.

5. Update hazard mitigation plan and identify new mitigation opportunities.

7. Assist emergency situations as appropriate.

8. Track time and resource allocations for possible state and federal reimbursement.

Boaters - Boats moored on possible City managed moorings will be required to submit a preparedness plan. This will be accomplished by adding a preparedness plan questionnaire as part of the annual mooring renewal forms. For a mooring permit to be approved, the questionnaire must be completed and returned with the mooring application. Boaters will be expected to comply, to the best of their ability, with the plan they have prepared. The boat owner should advise the Harbormaster of any significant changes to the plan made during the boating season.

Mooring standards have been developed to maximize safety during normal weather conditions. To safeguard a moored boat during a severe storm event, additional precautions will be necessary. These actions will include:

- Improving the connection between the vessel and the mooring chain by using chafing gear and extra lines.
- Reducing windage
- Whenever possible, increase scope.

Boaters should also consider:

- Bypassing the mooring swivel and attach the chain directly to the pennant.
- Hauling their boat and storing it upland
- Leave anchor lights and auto bilge pumps on.
- Ensure that self-bailing cockpit drains are clear of debris
- Add an emergency catenary weight at the vessel end of the chain to absorb shock

Boat owners are encouraged NOT to stay aboard during major storm events. The City's standard procedure is not to respond to on-the-water requests for assistance during a major storm event. Such requests for assistance will be forward to the nearest U.S. Coast Guard Station.

Marina facilities – As part of the City of Providence's harbor hazard mitigation plan, all marina facilities (as defined by CRMC) will submit a hazard mitigation plan to the Harbormaster within 90 days of this

document being approved. The facility's plan will be updated annually and any changes will be reported to the Harbormaster by January 1st of each year.

Waterfront businesses – All waterfront businesses (excluding marinas) are expected to take the necessary precautions to protect their property.

Shorefront homeowners - All shorefront homeowners are expected to take the necessary precautions to protect their property.

Transient vessels - Vessels not usually moored in the harbor, but seeking safe refuge will be allowed to moor in the specified anchorage areas. Transit yachts will not be allowed to tie to a mooring if not authorized by both the mooring owner and the Harbormaster. Transient vessels seeking shelter will provide the Harbormaster with:

- name of owner and captain if different.
- home port
- registration/documentation numbers
- length, draft and type (power/sail)
- number of persons aboard
- address and phone were owner can be contacted

Passenger vessels and ferries- As deemed necessary by the Harbormaster, local passenger vessels and ferries will submit individual plans to the Harbormasters. These plans will include information about planned preparedness, response and recovery actions.

Inventory of longer term mitigation projects

1. Maintaining the existing seawalls. Although it does not provide complete protection, there is a measure of safety gained by having the seawall properly maintained.

2. Methods to increase scope within the harbor without losing surface area maximization should be explored. Actions may include a targeted approach to removing vessels from moorings and increasing the scope with storm pennants for those that remain.

3. Implement an annual education and training program conducted by the Harbormaster for the public. This program should focus on storm preparedness for the boater. Other workshops should be conducted with the help of the building inspector and planning board to discuss shoreline construction standards and storm proofing homes and business.

4. The Harbormaster should compile a list educational material that can be shared with harbor and shorefront users.

5. Maintain accurate lists of principal marine interests including marinas, waterfront business, neighboring Harbormasters, Coast Guard, Towing and Salvage Companies, Environmental Response teams, Key vessel operators (charter boats and ferries) fishing cooperatives, etc.

6. Starting at the beginning of each hurricane season (June 1) the Harbormaster shall:

- review local harbor hazard mitigation plan and update as necessary
- distribute and post revised plan
- inspect all storage sheds, outbuildings, and portable office trailers for proper tie-down.
- inspect all emergency power sources and lighting systems to ensure they are operational
- prepare and distribute a storm checklist for to boaters

7. Conduct a Disaster Mitigation workshop for Business and Industry in cooperation with RI Emergency Management Agency. Propose activities that can be implemented to mitigate damage. Suggested actions for local coastal business may include:

- Place more essential equipment and functions on higher levels of the structure, above the anticipated flood level;
- Construct berms around the facility;
- Install or have dewatering pumps;
- Provide emergency generators and potable water storage;
- Install blowout plugs in floor slabs whose elevation is below anticipated flood elevation;
- Install master shutoff valve controls for sewer, gas, and water above anticipated flood elevation;
- Reinforce walls to carry hydrostatic and hydrodynamic loads;
- Install flood proof electrical systems and utility cores in areas subject to flooding;
- Install safety glass in windows.

8. Assess the feasibility of developing a volunteer corps who can assist the Harbormaster secure vessels during the phase or maintain security patrols after an event.

Coordination

Memorandum of Agreement shall be entered into with the Department of Public Works to establish the working relationship between it and the Harbormaster for completing the following activities: preparing pubic waterfront property and hauling and storing the Harbormaster vessel.

The harbor commission shall work with the planning board and planning department to establish redevelopment policies for shoreline areas. These policies will be consistent with CRMC and DEM regulations.

In order to discourage redevelopment of critical shoreline areas and to reduce vulnerability of life and property to coastal hazards the city should:

1) Limit development and redevelopment in hazardous coastal areas to protect lives and property from coastal storms and hazards. Post storm development shall avoid extensive rebuilding and intensification of land uses in critical areas and encourage reductions in the amount and intensity of development in order to reduce exposure of lives and property to coastal hazards.

2) Attempt to minimize public expenditures and reduce risk to public infrastructure and facilities through redevelopment
3) Encourage relocation of structures landward of critical areas. This can be done by influencing State policies, expenditures, and programs to reduce the amount and intensity of development and redevelopment
4) Require shorefront areas replacement of non-conforming uses and eliminate unsafe conditions and inappropriate uses as opportunities arise
5) Identify shorefront areas that shall be subject to post-storm regulations and acquisition in order to reduce loss of life and damage to property.

In order to further coordinate local policies contained in the comprehensive land use plan for resource protection, coastal management, the city should consider the following policies.

1. The City should work with appropriate state agencies to ensure that Post-storm shoreline management options for shoreline areas shall be consistent, to the extent possible, with use, density and other land uses policies and standards contained in the comprehensive land use plan.

2. Create local priorities for acquiring coastal properties to promote hazard mitigation, public recreation, and resource management objectives contained in the comprehensive plan.

3. Post-storm redevelopment options should consider impacts to evacuation routes, as determined by emergency management officials.

4. Maintain and or adopt minimum parcel size and configuration requirements on the subdivision of critical shoreline features.

PAST STORM INFORMATION

THE GREAT NEW ENGLAND HURRICANE of 1938
(CAT 3 - September 21)

The Great New England Hurricane of 1938 was one of the most destructive and powerful storms ever to strike southern New England. This system developed in the far eastern Atlantic, near the Cape Verde Islands on September 4. It made a twelve day journey across the Atlantic and up the eastern seaboard before crashing ashore on September 21 at Suffolk County, Long Island, then into Milford, Connecticut. The eye of the hurricane was observed in New Haven, Connecticut, 10 miles east of Milford. The center made landfall at the time of astronomical high tide, moving north at 60 mph. Unlike most storms, the hurricane did not weaken on its way toward southern New England, due to its rapid forward speed and its track. This kept the center of the storm over the warm waters of the Gulf Stream.

Sustained hurricane force winds occurred throughout most of southern New England. The strongest winds ever recorded in the region occurred at the Blue Hill Observatory with sustained winds of 121 mph and a peak gust of 1 86~mph. Sustained winds of 91 mph with a gust to 121 mph was reported on Block Island. Providence, Rhode Island recorded sustained winds of 100 mph with a gust to 125 mph. Extensive damage occurred to roofs, trees and crops. Widespread power outages occurred, which in some areas lasted several weeks. In Connecticut, downed power lines resulted in catastrophic fires to sections of New London and Mystic. The lowest pressure at the time of landfall occurred on the south side of Long Island,

at Bellport, where a reading of 27.94 inches was recorded. Other low pressures included 28.00 inches in Middletown, Connecticut and 28.04 inches in Hartford, Connecticut.

The hurricane produced storm tides of 14 to 18 feet across most of the Connecticut coast, with 18 to 25 foot tides from New London east to Cape Cod. The destructive power of the storm surge was felt throughout the coastal community. Narragansett Bay took the worst hit, where a storm surge of 12 to 15 feet destroyed most coastal homes, marinas and yacht clubs. Downtown Providence, Rhode Island was submerged under a storm tide of nearly 20 feet. Sections of Falmouth and New Bedford, Massachusetts were submerged under as much as 8 feet of water. All three locations had very rapid tides increased within 1.5 hours of the highest water mark.

Rainfall from this hurricane resulted in severe river flooding across sections of Massachusetts and Connecticut. Three to six inches fell across much of western Massachusetts and all but extreme eastern Connecticut. Considerably less rain occurred to the east across Rhode Island and the remainder of Massachusetts. The rainfall from the hurricane added to the amounts that had occurred with a frontal system several days before the hurricane struck. The combined effects from the frontal system and the hurricane produced rainfall of 10 to 17 inches across most of the Connecticut River Valley. This resulted in some of the worst flooding ever recorded in this area. Roadways were washed away along with sections of the New York, New Haven, and Hartford Railroad lines. The Connecticut River, in Hartford reached a level of 35.4 feet, which was 19.4 feet above flood stage. Further upstream, in the vicinity of Springfield, Massachusetts, the river rose to 6 to 10 feet above flood stage, causing significant damage. A total of 8900 homes, cottages and buildings were destroyed, and over 15000 were damaged by the hurricane. The marine community was devastated. Over 2,600 boats were destroyed, and over 3,300 damaged. Entire fleets were lost in marinas and yacht clubs along Narragansett Bay. The hurricane was responsible for 564 deaths and at least 1700 injuries in southern New England. Damage to the fishing fleets in southern New England was catastrophic. A total of 2,605 vessels were destroyed, with 3,369 damaged.

HURRICANE CAROL
(CAT 3 - August 31, 1954)

On the morning of August 31, Hurricane Carol, the most destructive hurricane to strike southern New England since the Great New England Hurricane of 1938, came crashing ashore near Old Saybrook, Connecticut, leaving 65 people dead in her wake. Carol had developed in the Bahamas several days earlier, making only slow progress northward . Carol began her rapid acceleration during the evening of August 30, while passing just east of Cape Hatteras, North Carolina. Carol made landfall on eastern Long Island and southeastern Connecticut about 12 hours later, moving at over 35 mph.

Sustained winds of 80 to 100 mph roared through the eastern half of Connecticut, all of Rhode Island, and most of eastern Massachusetts. Scores of trees and miles of power lines were blown down. Strong winds also devastated crops in the region. Nearly 40 percent of apple, corn, peach, and tomato crops were ruined from eastern Connecticut to Cape Cod. Several homes along the Rhode Island shore had roofs blown completely off due to winds which gusted to over 125 mph. The strongest wind ever recorded on Block Island, Rhode Island occurred during Carol when winds gusted to 135 mph. The National Weather Service in Warwick, Rhode Island recorded sustained winds of 90 mph, with a peak gust of 105 mph. Lowest recorded pressure was at Suffolk County Airport on the south shore of Long Island with a reading

of 28.36. Block Island reported 28.51 while Quonset Airport in North Kingstown, Rhode Island reported 28.72.

Hurricane Carol arrived shortly after high tide, causing widespread tidal flooding. Storm surge levels ranged from 5 to 8 feet across the west shore of Connecticut, and from 10 to 15 feet from the New London area eastward. Storm tide profiles show, as in 1938, how dramatically the tides increased just before landfall across Narragansett Bay, the Somerset, Massachusetts area and in New Bedford, Massachusetts harbor. Narragansett Bay and New Bedford harbor received the largest surge values of over 14 feet in the upper reaches of both water ways. On Narragansett Bay, just north of the South Street Station site, the surge was recorded at 14.4 feet, surpassing that of the 1938 hurricane. However, since Hurricane Carol arrived after high tide, the resulting storm tide was lower.

Coastal communities from central Connecticut eastward were devastated. Entire coastal communities were nearly wiped out in New London, Groton, and Mystic, Connecticut, as well as from Westerly to Narragansett, Rhode Island. Once again, as in the 1938 hurricane, downtown Providence, Rhode Island was flooded under 12 feet of water.

Rainfall amounts ranged from 2 to 5 inches across most of the area. The heaviest amounts, up to 6 inches, occurred in the New London, Connecticut area in the vicinity of landfall, and across extreme north central Massachusetts.

Hurricane Carol destroyed nearly 4000 homes, along with 3500 automobiles and over 3000 boats. All of Rhode Island, much of eastern Connecticut and much of eastern Massachusetts lost electrical power. In addition, as much as ninety-five percent of all phone power was interrupted in these locations.

This information was taken from SOUTHERN NEW ENGLAND TROPICAL STORMS AND HURRICANES, A Ninety-eight Year Summary 1909-1997, by David R. Vallee and Michael R. Dion, National Weather Service, Taunton, MA.