

Appendix C – City of Beacon Harbor Management Plan

Executive Summary

The City of Beacon is located along the eastern shore of the Hudson River, across from the City of Newburgh. It was established in 1913 when the Villages of Fishkill Landing and Matteawan were merged; the name was taken from the signal fires built atop Mount Beacon during the American Revolution. The City occupies nearly five square miles and is approximately 60 miles north of New York City, 90 miles south of Albany, and 40 miles from Danbury, Connecticut.



Figure 1 – City of Beacon Harbor Management Area Boundary

Like many Hudson River towns and cities, by the mid 1900s Beacon Harbor and its harborfront entered into a period of decline as many of the City's industries closed. Over the past decade, however, there has been considerable interest in revitalizing the harbor and its adjacent land uses. In 2003, the City of Beacon was selected as the future home of the Rivers and Estuaries Center (now The Beacon Institute for Rivers and Estuaries). Also in 2003, Dia:Beacon, a world famous art museum focusing on modern art, opened in the old National Biscuit Company (Nabisco) plant. Ferry service to Newburgh was reestablished in 2005 and the Beacon train station has become one of Metro North's most heavily used stations. There is a planned waterfront revitalization project known as Long Dock Beacon that includes a

hotel, conference centers, restaurants, and parks proposed on the Long Dock peninsula (formerly Long Wharf).

The City of Beacon's Local Waterfront Revitalization Program (LWRP) was approved in 1992. Due to the number of recently completed and proposed projects that have implications for Beacon's waterfront and surface waters, there is a need for harbor management and a Harbor Management Plan (HMP).

The City of Beacon's HMP addresses all of the City's surface waters and waterfront ([Figure 1](#)). Beacon's Harbor Management Area (HMA) extends from just north of the Newburgh-Beacon Bridge, south to the southern tip of Denning's Point, and thence up the mouth of Fishkill Creek. The HMA's surface water area extends out into the Hudson River to a distance of 1,500 feet along the whole waterfront area. However, the focus of the HMP is mainly Beacon Harbor and its harborfront.

The City of Beacon's waterfront is comprised of two distinct components: an active harbor and harborfront and a relatively undeveloped riverfront along the Hudson River to the north and south of the harbor and a portion of Fishkill Creek. Surface water activities are focused in the harbor and harborfront while the riverfront is largely open space and includes Denning's Point State Park. The HMA includes both surface waters and the lands adjacent to the surface waters that can influence what takes place on the surface waters and whose use, in turn, may be influenced by what takes place on the surface waters.

The land use in the City of Beacon's HMA is a mix of parkland, transportation, institutional, commercial and residential uses. The Metro-North railroad tracks run along the Hudson River several hundred feet inland from the river and across the mouth of Fishkill Creek. The tracks are a dominant feature of the City's waterfront because they separate the City from the river. The only access is provided by: a vehicle/pedestrian bridge on Red Flynn Drive, which crosses over the railroad tracks in the Beacon Harbor area; a bridge and an at grade crossing which provides access across railroad tracks to Denning's Point; and a pedestrian tunnel beneath the railroad tracks at the Beacon Metro North Station.

The HMA includes a number of different habitats and supports a diversity of wildlife species. In the HMA there are aquatic and benthic habitats in both the Hudson River and Fishkill Creek, wetlands along the Hudson River and Fishkill Creek as well as in the mouth of Fishkill Creek, and uplands on Denning's Point and along the railroad tracks.

The Hudson River and Fishkill Creek are habitats and nursery grounds for a number of fish and invertebrate species including sturgeon, striped bass, American shad and blue claw crabs. Much of the shallow water area has been colonized by water chestnuts, an invasive species which has altered the natural habitats. Although the impact of water chestnuts on aquatic species has been studied along the Hudson River, direct impacts found in the HMA have not been well studied.

The habitats in the HMA also support a diversity of bird life and many shorebirds forage along the shore and in the water chestnut beds. Both osprey (*Pandion haliaetus*) and bald eagles (*Haliaeetus leucoce*) are state listed threatened species known to occur in the HMA. The southern portion of Denning's Point has been identified as a winter feeding area for bald eagles.

City of Beacon Local Waterfront Revitalization Program

Within the City's Harbor Management Area are a number of land uses that are integral to the City's surface waters and waterfront and thus the HMP. These land uses include:

- Denning's Point State Park
- The Beacon Institute for Rivers and Estuaries (also referred to in this document as The Beacon Institute), with facilities at Denning's Point State Park and proposed docking facilities in Beacon Harbor
- Newburgh-Beacon Ferry (Beacon ferry pier)
- Beacon Sloop Club
- The Hudson River Greenway Trail (Beacon Shoreline Trail, Denning's Point Trail, and Madam Brett Park Trail) and Hudson River Greenway Water Trail
- Long Dock Beacon
- Riverfront Park
- George Trakas' Beacon Point Public Art Work
- Dia:Beacon
- Metro-North Railroad Station

The following goals and objectives are the City of Beacon's vision for its HMA that also provide a standard against which existing conditions and proposed projects and actions can be measured:

- Goal 1: Promote the economic well-being of the City through appropriate waterfront redevelopment.
- Goal 2: Conserve the City's Hudson River heritage as a small, working harbor.
- Goal 3: Protect important habitats and open spaces, and maintain the pastoral character of the southern waterfront.

As the redevelopment in the HMA continues, there are many competing demands for additional uses of the surface waters in Beacon Harbor that will need to be addressed.

These are focused in the southern area of the harbor due to the shallow depths in the northern area, further compounding potential conflicts and space competition for major surface water uses which may include but are not limited to:

- The Beacon Institute for Rivers and Estuaries planning teams chose Beacon as their headquarters because the City of Beacon and Dutchess County anticipated Beacon Harbor as the location for The Beacon Institute's pier for its research vessel and educational outreach, to facilitate the revitalization of the harbor and to promote economic development;
- This pier could possibly offer winter berthing facilities for the Clearwater educational vessel and the Beacon Sloop Club's Woody;

City of Beacon Local Waterfront Revitalization Program

- The Hudson Fisheries Trust wants to moor its proposed museum barge along the waterfront and relocate its Boatbuilding and Small Boat Skills programs (currently on Main Street) to the harbor area;
- The Beacon Sloop Club wishes to maintain and enhance its moorings and boating programs;
- The Dutchess Boat Club, which currently operates a launching ramp and docks to tie up small boats, is seeking a location in which to operate as it must vacate its current site;
- Long Dock Beacon plans to construct a 166 room hotel and conference center for 350 person events on the north side of Long Dock peninsula which would include restaurants, parking for 370 vehicles, and docking for transient boats; and
- The City wishes to encourage and support tourism by making the harbor a destination and by connecting the harbor to the City's downtown area.

Summary of Recommendations

Several recommendations have been identified in this HMP that will advance the City's three goals for its harborfront. These recommendations are designed to minimize, mitigate, or eliminate the issues identified in the HMA.

To promote the economic well-being of the City through appropriate waterfront development, the City, all existing users and all potential uses of the harbor and harborfront area should continue to coordinate with each other concerning the development of Beacon Harbor. Each of the revitalization projects associated with the harbor should be designed to revitalize Beacon Harbor's economic viability and its connectivity with Main Street and other important economic areas of the City (such as Dia:Beacon). The City should take the lead in coordinating and overseeing that all projects are designed to achieve this goal of the HMP.

The conservation of the City's Hudson River heritage as a small, working harbor began its revitalization with the reestablishment of the ferry service from Newburgh and through the establishment of The Beacon Institute for Rivers and Estuaries headquarters in the City of Beacon. In addition, the proposed revitalization of Long Dock peninsula by the Scenic Hudson Land Trust, Inc. (Scenic Hudson) and the Foss Group Beacon, LLC (Foss Group Beacon) will attract visitors as well as prospective businesses to the harborfront. Some of the proposed capital projects that will help to conserve the City's heritage include the construction a research vessel pier for The Beacon Institute and the Hudson Fisheries Trust museum barge. To ensure that the City continues to revitalize its Hudson River heritage, this HMP recommends that the City continues to coordinate with The Beacon Institute, Scenic Hudson, and Hudson Fisheries Trust to ensure the opportunity for all of these projects to come to fruition.

To protect important habitats and open spaces of the HMA, this HMP recommends that the City should continue protecting the important habitats found within the HMA by insuring that all projects within the HMA protect existing or enhance important habitats and open space areas. Included as part of the protection, the City should evaluate the existing sanitary wastewater system, implement Phase II

stormwater best management practices for the stormwater pipe in the northwest corner of the harbor, and conduct a pilot project on best management practices for controlling water chestnuts in the HMA.

Section I - Introduction

1.1. Overview of Harbor Management Plans

Chapter 791 of the Laws of New York of 1992 amended Article 42 of the New York State Executive Law (Waterfront Revitalization and Coastal Resources Act) to provide local governments with the authority to comprehensively manage the uses in their harbor areas by developing a HMP and adopting the laws to implement the plan.

A HMP sets forth a community's vision for its harbor area. The plan addresses the problems, issues, and opportunities related to the use of a harbor, including the lands adjacent to it that may play a role in the uses of the harbor. In particular, a HMP seeks to resolve conflicts between competing uses and to allocate surface water uses. For this reason, HMPs have often been likened to zoning plans for surface water uses.

The City of Beacon's LWRP was approved in 1992. Over the past several years, the need for harbor management and a HMP has increased due to a number of completed and proposed projects that have implications for Beacon's waterfront and surface waters.

The goals of the City's HMP are threefold:

- Goal 1: Promote the economic well-being of the City through appropriate waterfront redevelopment.
- Goal 2: Conserve the City's Hudson River heritage as a small, working harbor.
- Goal 3: Protect important habitats and open spaces, and maintain the pastoral character of the southern waterfront.

1.2. Harbor Management Area Cultural, Ecological and Geographic Context

The City of Beacon is located along the eastern shore of the Hudson River, across from the City of Newburgh to which it is connected by a bridge. It was established in 1913 when the Villages of Fishkill Landing and Matteawan were merged; the name was taken from the signal fires built atop Mount Beacon during the American Revolution. The City, which occupies nearly five square miles and according to the 2000 census has a population of 13,808, is approximately 60 miles north of New York City, 90 miles south of Albany, and 40 miles from Danbury, Connecticut. Commuter service is available to New York City via Metro-North Railroad.

During the 1800s, Beacon became a factory town and was known as the "The Hat Making Capital of the United States". In the early 1900s, brick making became a major industry. In the 1920s and 1930s Denning's Point, located on the Hudson River, and became known as the "Coney Island of Dutchess County" because it attracted such large numbers of swimmers.

The City of Beacon's waterfront is comprised of two distinct components: an active harbor and harborfront and a relatively undeveloped riverfront along the Hudson River to the north and south of the harbor and a portion of Fishkill Creek. Surface water activities are focused in the harbor and harborfront while the riverfront is largely open space and includes Denning's Point State Park.

Historically, Beacon Harbor was small but active. Up until the 1960s, there was ferry service between Newburgh and the City of Beacon that had a fairly large ferry terminal on Beacon Harbor. Long Wharf (a man-made peninsula), now known as Long Dock peninsula or Long Dock Beacon, was the site of a large railroad freight yard and railroad/barge transfer facility that was variously used for bulk fuel and salt storage and for a junk yard. These uses have been abandoned and Long Dock peninsula, long vacant and underutilized, is now being redeveloped by Scenic Hudson and Foss Group Beacon. The New York Central Railroad train station (now Metro-North) is located a short distance from the ferry terminal.

Like many Hudson River towns and cities, Beacon Harbor and harborfront entered into a period of decline as many of the City's industries closed. Over the past decade, however, there has been considerable interest in revitalizing the harbor and its adjacent land uses. Ferry service to Newburgh was reestablished in 2005 and the Beacon train station has become one of Metro-North's most heavily used stations. A planned waterfront revitalization project known as Long Dock Beacon that includes a hotel, conference centers, restaurants, and parks has been proposed on Long Dock peninsula. The City of Beacon was chosen for the headquarters of The Beacon Institute, which is creating a global center for interdisciplinary research, policy-making, and education regarding rivers, estuaries, and their connection to society. This scientific and educational facility is currently revitalizing the abandoned industrial buildings on Denning's Point through a partnership with NYS Office of Parks, Recreation and Historic Preservation (NYSOPRHP), the City of Beacon, NYSDOS, and others, and proposes a pier for research vessels at Beacon Harbor.

1.3. Issues and Needs for Harbor Management Plan

The City of Beacon's HMP addresses all of the City's surface waters and waterfront HMA. For the purposes of the HMP, the terms "harbor" and "harborfront" shall apply to the actively used area of the City's surface waters and waterfront respectively while the term "riverfront" shall apply to the shores along the Hudson River and Fishkill Creek where the surface water uses are less intensive and the adjoining area is more natural. The focus of the HMP is Beacon Harbor and its harborfront. Beacon Harbor and its harborfront have been experiencing an increase in usage.

In 2003, the City of Beacon was chosen for the headquarters of The Beacon Institute for Rivers and Estuaries which needs a pier for research vessels and educational programming at Beacon Harbor. Dia:Beacon, a museum focusing on modern art, opened in 2003 attracting a large number of visitors to the harborfront area. In 2005 the ferry service to Newburgh was reestablished, dramatically increasing the number of passengers using the Beacon train station.

There are also a number of proposed or planned uses that will have implications for the harbor and harborfront. A hotel, waterfront esplanade, docks, and public open space that seeks to take advantage of its waterfront location is planned for Long Dock peninsula. The Beacon Institute will have its main facilities at Denning's Point State Park and it needs facilities in the harbor and harborfront to dock and

service its research vessels. The existing uses, such as the ferry service, need to be accommodated; and other such uses as the launching ramp, boat docks, and boat moorings need to be maintained and enhanced. Limiting use conflicts and accommodating those uses that best advance the City's vision and goals are critical to the future of Beacon Harbor.

1.4. Goals and Objectives

The following goals and objectives are the City of Beacon's vision for its waterfront. They also provide a standard against which existing conditions and proposed projects and actions can be measured.

Goal 1: Promote the economic well-being of the City through appropriate waterfront redevelopment.

- Goal 1a. Beacon's waterfront is a critical resource and should be revitalized as a regional and local destination for both residents and visitors.
- Goal 1b. The waterfront should be promoted as a recreational and commercial attraction, while also promoting important transportation activities, public access, and natural resource protection.
- Goal 1c. New development and commercial activities should support rather than dominate the City's waterfront.
- Goal 1d. Development of cultural uses, facilities, and opportunities should be promoted and encouraged.
- Goal 1e. The waterfront should be linked to and integrated with downtown Beacon and other points of interest.
- Goal 1f. Rail infrastructure and parking should be improved and integrated into the waterfront.
- Goal 1g. Waterfront use and access for boaters and pedestrians should be facilitated.
- Goal 1h. A framework should be provided to guide the City of Beacon in setting up a harbor management mechanism or organization which will continue to oversee, coordinate, manage, and provide direction for harbor activities.

Goal 2: Conserve the City's Hudson River heritage as a small, working harbor.

- Goal 2a. Water-dependent development and uses should be concentrated in the active northern area.
- Goal 2b. Beacon's waterfront heritage should be interpreted and be an underlying theme for future uses and development.

Goal 3. Protect important habitats and open spaces, and maintain the pastoral character of the southern waterfront. Habitats and open spaces are described further in Section 2 – Inventory and Analysis

- Goal 3a. Through The Beacon Institute for Rivers and Estuaries, the City should seek to enhance its reputation as the center of scientific research on the Hudson River.
- Goal 3b. Sight lines and scenic vistas within the waterfront area should be protected and enhanced.

Goal 3c. Best management practices for control of water chestnuts should be investigated and undertaken.

1.5. Political and Regulatory Framework

The City's harbor, harborfront, and riverfront are under multiple jurisdictions and a number of agencies will play a role in the future of the City's HMA. The City of Beacon is located in Dutchess County. While the City is largely responsible for regulating land use within its boundaries, under New York State General Municipal Law, some projects within the City must also be reviewed or approved by the town or county. Most of the underwater lands in the HMA are owned by the State of New York and are not within the boundaries of the City, but within the Town of Fishkill. The City of Beacon has communicated with the Town of Fishkill concerning the HMP.

The following is brief summary of the different roles the various agencies may have with respect to the implementation of the HMP.

1.5.1. Federal Government

United States Environmental Protection Agency (USEPA)

USEPA's mission is to safeguard human health by protecting the integrity of the environment. USEPA pursues this mission by developing legislation and national environmental protection programs and by administering funding to states and municipalities for the development and implementation of environmental plans, policies, projects, and programs. USEPA sponsors a number of programs for the protection of natural resources such as surface water quality, including various Clean Water Act (CWA) programs, and publishes a variety of environmental protection and planning guidance documents to provide technical support and educational assistance to the public.

United States Fish and Wildlife Service (USFWS)

The USFWS has jurisdiction over the protection of migratory birds, federally-listed rare, threatened, and endangered species, marine mammals, and freshwater and anadromous fish. The USFWS works with individuals as well as public and private agencies to preserve, protect, and enhance the viability of fish and wildlife habitats within the United States. The USFWS must be consulted when a proposed project or action may impact endangered or threatened species.

Other responsibilities include enforcement of national wildlife laws, the restoration of wetlands, and the enhancement of wildlife populations.

United States Army Corps of Engineers (USACE)

The USACE has regulatory jurisdiction over all construction and filling activities taking place in the waters and wetlands of the United States, including the construction of docks and piers. The USACE has authority under § 10 of the Rivers and Harbors Act of 1899 and § 404 of the CWA which governs the permitting process for discharge of dredged or fill material. The USACE also has primary authority over federal flood and coastal erosion projects.

National Oceanic and Atmospheric Administration (NOAA)

The overall mission of NOAA is to undertake oceanographic and atmospheric investigations and to conserve and manage the coastal and marine resources of the United States. NOAA's National Marine Fisheries Service (NMFS) is responsible for rebuilding and maintaining the health of coastal marine habitats and managing fisheries as well as assessing the impacts of proposed projects on Essential Fish Habitat, marine mammals, and rare, threatened, and endangered species.

United States Coast Guard (USCG)

The U.S. Coast Guard is responsible for promoting the safety and security of the nation's waters. The Coast Guard enforces maritime laws, promotes vessel safety, conducts inspections of commercial and recreational vessels, participates in homeland security, undertakes illegal drug interdiction, responds to oil and hazardous materials spills, and performs emergency searches and rescues. The USCG is responsible for maintaining public aids to navigation (buoys, lights) and regulating the placement of private aids to navigation. The USCG undertakes icebreaking in the Hudson River to allow vessel passage.

1.5.2. New York State

New York State Department of Environmental Conservation (NYSDEC)

The New York State Department of Environmental Conservation, among other environmental responsibilities, manages the State's recreational and commercial fisheries, tidal and freshwater wetlands, and other natural resources. Under the Freshwater Wetlands Act, the NYSDEC issues permits for dredging, the construction of docks, piers, and shore protection, and building within 100 feet of a freshwater wetlands. Under the Use and Protection of Waters, the NYSDEC issues water quality certifications that certify that a proposed activity will not violate water quality standards and regulates docks and fill placement. The NYSDEC manages water quality throughout the state and through the State Pollution Discharge Elimination System (SPDES) oversees municipal stormwater management programs. The NYSDEC is overseeing the brownfield cleanup program at Long Dock Beacon. The NYSDEC also undertakes scientific research.

New York State Department of State (NYSDOS)

As described on the NYSDOS website <http://nyswaterfronts.com>, "the New York State Department of State's Division of Coastal Resources works with communities throughout New York State to help them make the most of what their waterfronts have to offer. Whether you are a municipal official, community group, non-profit organization, business, or someone who has an interest in the waterfront, the Division of Coastal Resources can help."

The Division of Coastal Resource provides information on ways to improve your community through planning, preservation and redevelopment of important waterfront resources and brownfields. The Division provides tools and techniques including effective local and regional initiatives, GIS waterfront mapping, conducting consistency reviews and information on state and federal grant opportunities. The Division of Coastal Resources reviews the actions of State agencies and advises them regarding consistency procedural matters and the consistency of their actions with State coastal policies, approved Local Waterfront Revitalization Programs, and other CMP special management area plans.

New York State Department of Health (NYSDOH)

NYSDOH identifies water-bodies that have compromised water quality which may have adversely affected the suitability of fish for human consumption and issues public health advisories on the consumption of living marine and aquatic resources.

New York State Office of General Services (NYSOGS)

NYSOGS must authorize the construction or placement of structures on State-owned underwater lands which include most of the Hudson River (there are a few privately owned underwater parcels in the HMA). Most residential docks are exempt from obtaining an authorization since they are covered under the riparian rights of the upland owner. All non-residential docks, piers, and moorings require authorization in the form of a lease, easement, license, or permit. The fee schedule is based upon the potential income from the dock, pier, or mooring.

1.5.3. Dutchess County

The City of Beacon is located in Dutchess County. Sub-division plats and changes of zone may require county review or approval. County Health Department approval is needed for sanitary facilities.

1.5.4. Town of Fishkill

The land portion of the HMA in the City of Beacon is surrounded by the Town of Fishkill and nearly all of the Hudson River within the HMA is within the Town of Fishkill. The Town of Fishkill may have the authority to approve the construction of dock and piers in the Hudson River when the area that the pier is to be constructed traverses underwater lands under the Town of Fishkill's jurisdiction.

1.5.5. City of Beacon

Jurisdiction over the HMA resides in the Beacon City Council through its overall legislative authority as well as through Chapter 33 of the City of Beacon Code of Ordinances for harbor specific activities. Authority for various planning, development review, and harbor management activities are delegated as follows: harbor management planning is delegated to the Conservation Advisory Committee working with other city staff and stakeholders; day to day harbor management activities are currently undertaken by the Beacon Sloop Club; new development in the HMA is reviewed by the Planning Board for site plan and subdivision review; the City Council is responsible for issuing Special Permits; and the Zoning Board of Appeals issues zoning variances and ordinance interpretations if required. The Department of Public Works issues permits for development in flood prone areas and for sewer and water hookups. The City of Beacon City Council adopts and amends laws, makes LWRP Consistency determinations, and approves changes of zone. The City's Fire Department provides emergency services, both on land and on the water. The City has its own police department. The existing jurisdictional structure described above does not provide a fully coordinated mechanism by which all HMA future planning, development, and management activities and may require a more coordinated effort in order for the expected development to occur.

1.5.6. Metropolitan Transit Authority

MTA Metro-North Railroad

The Metropolitan Transit Authority’s Metro-North Railroad parking at the Beacon Railroad Station is a major feature and limitation in the City’s harborfront. The parking at the station will play a major role in the future uses of the harbor and harborfront. Parking at the station is under the auspices of the MTA Metro-North, which leases the parking area from the City.

1.6. Harbor Management Area

Most the City of Beacon is within the City’s Local Waterfront Revitalization Area (LWRA). Beacon’s HMA extends from just north of the Newburgh-Beacon Bridge south to the southern tip of Denning’s Point which is located within Hudson Highlands State Park and thence up the mouth of Fishkill Creek. It extends out into the Hudson River to a distance of 1500 feet.

It includes both surface waters and the lands adjacent to the surface waters that can influence what takes place on the surface waters and whose use may be influenced by what takes place on the surface waters.



Figure 2 - Aerial Photography of the City of Beacon Waterfront

The boundaries of the HMA are shown on [Figures 1 and 2](#) and are described as follows:

1.6.1. Landside Boundary

The landward boundary of the HMA is the boundary of the City of Beacon's LWRA boundary as adopted in 1991, except that it only encompasses the mouth of Fishkill Creek. The landside boundary is described as follows:

Beginning at the intersection of the northern boundary of the City of Beacon and the Hudson River, proceeding easterly along the boundary line between the City of Beacon and Town of Fishkill to where it intersects with Route 9D and thence following Route 9D (North Avenue) south to its intersection with Main Street and thence continuing along South Avenue to Tioronda Avenue. At the intersection of Tioronda Avenue and South Avenue, the boundary continues to the centerline of the railroad tracks and thence continues along the centerline of the railroad tracks in a northeasterly direction along the Fishkill Creek to South Avenue. It thence continues along South Avenue across the bridge over Fishkill Creek to the intersection of South Avenue and Slocum Road. At the intersection, it thence continues along Slocum Road in a southwesterly direction to where it intersects the boundary between the City of Beacon and the Town of Fishkill. It thence continues along the City/Town boundary to the southernmost point of land at the eastern end of Denning's Point on the Hudson River.

1.6.2. Waterside Boundary

The limits of the City of Beacon generally run along the shoreline of the Hudson River from north of the Newburgh-Beacon Bridge south to the southern tip of Denning's Point and thence along the southern shore of Fishkill Creek. The proposed surface water boundary of the HMA in the Hudson River is a line generally located 1,500 feet west (towards the centerline of the Hudson River) of the shoreline as described as follows:

Extending the City's north boundary, where the City boundary intersects the shoreline just north of the Newburgh-Beacon Bridge, westward 1,500 feet (towards the centerline of the Hudson River) into the Hudson River. It thence continues southerly to a point located 1,500 west of the City of Beacon's Riverfront Park and thence continues southerly to a point located 1,500 west of the southernmost tip of Long Dock peninsula. It thence continues southerly 1,500 feet from the shoreline to the westerly extension of the City of Beacon city line as it extends from the southernmost point of land at Denning's Point and thence along this line to the eastern most tip of Denning's Point. It thus continues along the easterly City-Town of Fishkill boundary to the southern shoreline of Fishkill Creek. It encompasses Fishkill Creek as far as the bridge over Fishkill Creek at South Avenue.

1.6.3. Major Features of the Beacon Harbor Area

Within the City's HMA are a number of land uses that are integral to the City's surface waters and waterfront and thus the HMP. The major features include:

- Denning's Point, part of the Hudson Highlands State Park

City of Beacon Local Waterfront Revitalization Program

- The Beacon Institute for Rivers and Estuaries' public, educational and scientific facilities at Denning's Point State Park and proposed docking facility in Beacon Harbor
- Newburgh-Beacon Ferry Beacon ferry pier
- Beacon Sloop Club
- The Hudson River Greenway Trail (Beacon Shoreline Trail, Denning's Point Trail, and Madam Brett Park Trail) and Water Trail.
- Long Dock Beacon
- Riverfront Park
- Dia:Beacon
- Metro-North Railroad Station

Section 2 - Inventory and Analysis

2.1. Land Use General Overview

The City of Beacon encompasses a land area of approximately five square miles. The City’s HMA extends along the Hudson River from the northern boundary of the City of Beacon, which is located about a quarter of a mile north of the Newburgh-Beacon Bridge (I-84), south to Denning’s Point, and then easterly up the Fishkill Creek to the Tioronda Bridge at South Avenue, a total distance of approximately 4.25 miles. The City’s waterfront is comprised of three distinctive zones or “reaches”: the riverfront north of Riverfront Park (“northern reach”); the Beacon Harbor area which encompasses Riverfront Park and Long Dock peninsula, two peninsulas of land that extend into the Hudson River, together with the surface water between these two features (Beacon Harbor); and the riverfront south of Beacon Harbor (“southern reach”) which extends from the south shore of Long Dock Peninsula to Denning’s Point, and from Denning’s Point up Fishkill Creek to where it is crossed by the Tioronda Bridge at South Avenue. Refer to [Figure 3 – City of Beacon Waterfront Land Use](#) to see the boundaries of the HMP.

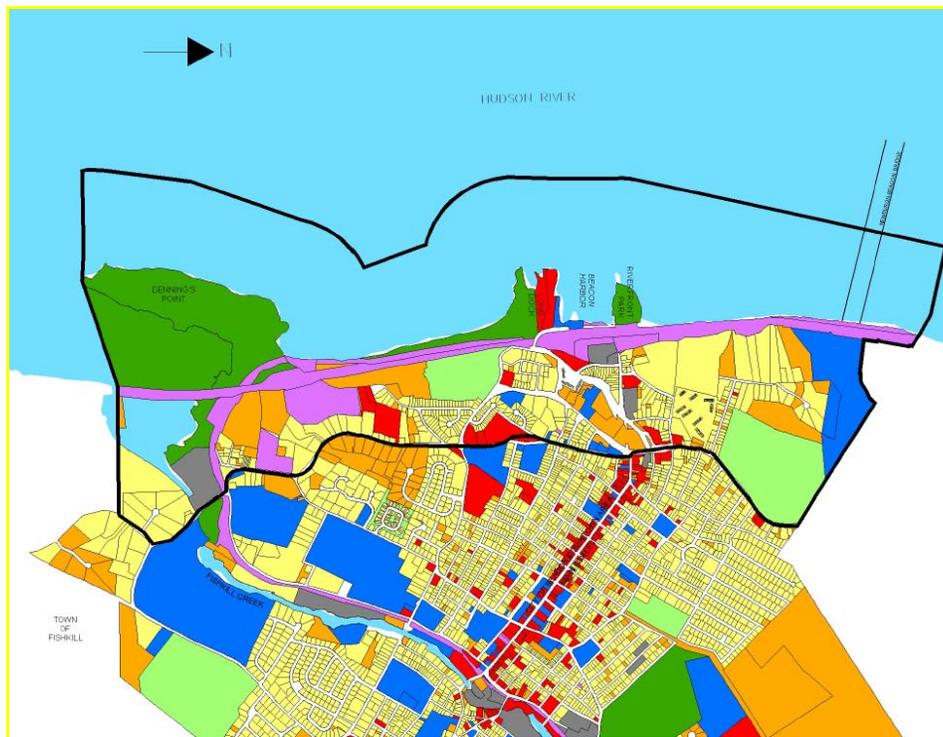


Figure 3 – City of Beacon Waterfront Land Use

The land use in the City of Beacon’s waterfront is a mix of parkland, transportation, institutional, commercial, and residential uses ([Figure 3](#)). The Metro-North railroad tracks that run along the Hudson River several hundred feet inland from the river and across the mouth of Fishkill Creek are a dominant feature of the City’s waterfront because they separate the City’s downtown from the river, with two exceptions. A vehicle/pedestrian bridge on Red Flynn Drive, which crosses over the railroad tracks in the

Beacon Harbor area, and a bridge and at-grade crossing which provide access across the railroad tracks to Denning's Point both offer connections between the City and the Hudson River.

Northern Reach

The land between the Hudson River and the railroad tracks, although one time natural, has undergone anthropogenic manipulation, including rip-rap that has been placed along the shoreline to retard erosion. The Newburgh-Beacon Bridge crosses over the northern reach, and north of the bridge is a small area of undeveloped land inland of the railroad tracks that is owned by American Premier Underwriters. From the Newburgh-Beacon Bridge south to Riverfront Park inland of the railroad tracks there is a mix of residential development that is separated from the railroad tracks by a band of woodlands.

Beacon Harbor and Its Surroundings

Beacon Harbor is located on the west (Hudson River) side of the railroad tracks. It is comprised of four components: the City's Riverfront Park, Long Dock peninsula, the surface water between Riverfront Park and Long Dock peninsula, and the shoreline between Riverfront Park and Long Dock peninsula along the west side of Red Flynn Drive (Figure 4). Vehicle and pedestrian access to the Beacon Harbor area is provided by Red Flynn Drive via a bridge that crosses over the railroad tracks and then continues northerly parallel to the railroad tracks, terminating at Riverfront Park; pedestrian access is also available via the underpass beneath the Beacon Railroad station.

Riverfront Park is a man-made peninsula of land that extends approximately 700 feet into the Hudson River. This City owned park has an area of approximately seven acres and offers a number of recreational opportunities including walking, tennis, and basketball. There is also a small parking lot that can accommodate ten vehicles.

Beacon Harbor is divided into two areas by a stone groin that extends westerly from the shoreline. The area north of the groin is shallow and not used, while the area on the south side is deeper and is the active harbor.

Long Dock peninsula is also a man-made peninsula that has an area of 26.49 acres and although currently vacant, is proposed to be redeveloped as a mixed-use hotel and recreational facility. Scenic Hudson owns 24.75 acres and an undeveloped 1.74 acre rectangular parcel in the northeast corner is owned by the City of Beacon.

The railroad terminal for Beacon Station is located adjacent to the Beacon Harbor area. Metro-North owns and maintains the platform and also owns the large parking area that is located on the east side of the train station and a smaller parking area on the west side of the railroad tracks. Metro-North has recently purchased the property of the Beacon Hat Factory on the east side of the railroad station but has not announced plans for its future use.



Figure 4 – City of Beacon Aerial Photograph of the Harbor Area

Long Dock Beacon

The property owned by Scenic Hudson is the only privately owned land available for development in the waterfront area. Approximately 8.5 acres of Long Dock peninsula are being proposed for development through an agreement between Scenic Hudson and the Foss Group Beacon; Foss Group Beacon will lease this property from Scenic Hudson. Sixteen acres of Long Dock peninsula are being proposed as a park to be developed by Scenic Hudson. The proposed development will include:

- **Hotel and Conference Center:** The main building will consist of a three story mixed-use hotel and conference center which will include 166 hotel rooms, a conference center designed to handle 350 person events, a fine dining “white tablecloth” restaurant, a bistro, and minimal retail space for hotel sundries and river related products. Surrounding the entire hotel and conference center building and along the north pier portions will be a fully accessible public walkway.
- **Red Barn:** The existing 4,000 square foot Red Barn building has been renovated and will be adaptively reutilized for community based programs and educational uses, such as boat building.
- **Greenhouse:** Adjacent to the Red Barn, the construction of a 1,900 square feet greenhouse is proposed which will be utilized for community education purposes as well as for growing of fresh flowers and herbs to be used in the hotel and restaurants. The greenhouse building will also include public washrooms.

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- North Boardwalk and Public Plaza: The northern shore of Long Dock peninsula will be developed with a pedestrian oriented public space with multiple opportunities to view and access the Hudson River and which will also afford space for community and hotel conference center gatherings and activities. The western terminus of the North Boardwalk will be an open public plaza anticipated to be the focal point of seasonal outdoor special and civic events. This public gathering place overlooking the Hudson River will provide panoramic views to the north, south, and across the river. A small building located on the Public Plaza will be developed to provide a covered seasonal food concession. Also, along the North Boardwalk will be terraced steps providing visual public access to the water's edge and views of the active public harbor, an outdoor picnic area, and access to the greenhouse and Red Barn.
- Quiet Harbor: The surface water area currently utilized by the Dutchess Boat Club under a month to month lease with Scenic Hudson will be reconstructed as a Quiet Harbor. The Quiet Harbor will be for non-petroleum powered recreational river-oriented activities, including canoeing, kayaking, windsurfing, and other human-powered vessels and electric motor craft. Floating docks will be provided in the same location as the existing docks and the existing boat ramp within the Quiet Harbor area will continue to be utilized. In addition, the eastern end of the Quiet Harbor will be cleaned up and transformed into a usable beach area, which will be utilized for the launching and landing of non-motorized boats. On shore, an approximately 3,000 square foot boating storage building will be constructed for storage of small boats by the public, the rental of non-motorized water craft, and limited sales of boating related supplies.
- Scenic Hudson Park at Long Dock: Surrounding the hotel and conference center will be the Scenic Hudson Park at Long Dock. The park will consist of approximately 15 acres of trails (including access to Beacon Riverside Trail), a public artwork by George Trakas, pathways, enhanced and created wetlands, lawn, meadowlands, interpretive signs, bird watching areas, picnic areas, an environmental demonstration area, and other public amenities.

City Owned Property

The City owns the parcel of land located on the south side of the harbor, along the north side of Long Dock peninsula (approximately 1.8 acres), the Riverfront Park (approximately six acres) on the north end of the harbor, and the shorefront between Long Dock peninsula and Riverfront Park and Long Dock Beacon on the south (approximately one acre).

The City also has jurisdiction over several existing uses in the harbor and harborfront area which include: the pier which is used primarily by the Newburgh-Beacon Ferry; floating docks and moorings; the public boat ramp; the clubhouse and parking for the Beacon Sloop Club; parking for Metro-North (owned by the City and leased to Metro-North); and a walkway between the ferry dock and the Metro-North train station.

The Southern Reach

South of Long Dock peninsula, the land between the Hudson River and the railroad tracks is open space. Running through this open space is the Beacon Riverside Trail which connects Beacon Harbor to Denning's Point. In addition to the main railroad track, there are railroad tracks owned by Metro-North that run parallel to the main tracks before crossing at Denning's Point and then continuing along Fishkill Creek. On the east side of the railroad tracks is located Dia:Beacon, a world renowned art museum that occupies the refurbished, former Nabisco packaging plant. Also located on the east side of the railroad tracks at the end of Denning's Avenue are the City's compost facility and wastewater treatment facility.

The Denning's Point peninsula is open space and comprises Denning's Point State Park, which is part of the Hudson Highlands State Park. The main facilities of The Beacon Institute for Rivers and Estuaries are located within Denning's Point State Park.

Immediately south of Denning's Point is the railroad bridge that crosses Fishkill Creek. On the east side of the bridge, within the mouth of Fishkill Creek, is a large area of wetlands. The land along the shore of Fishkill Creek is undeveloped except for Beacon Terminal, a vacant former hat and textile factory adjacent to the Tioronda Bridge. The Madame Brett Trail runs through Madame Brett Park along Fishkill Creek.

Beacon Terminal has the potential to be an important redevelopment project. It is presently owned by Beacon Terminal Associates, L.P., a real estate investment and redevelopment company located in New York City. The company has been investigating the possibility of renovating the abandoned industrial buildings to accommodate art, commerce, and affordable living including the construction of a 600 seat theater, studios for individual artists, a small art museum, and an inn all to be located at the former hat and textile factory.

2.1.1. Zoning

There are 18 zoning categories in the City of Beacon; 12 of these categories are found in the HMA (Figure 5). The zoning of the City's waterfront along the Hudson River is predominately Waterfront Park (WP) and Waterfront Development (WD). These two zoning districts were recommended in the City's LWRP and are designed "to revitalize the City's riverfront, encourage appropriate recreational and open space uses of publicly owned land at the river and encourage the revitalization of presently underutilized privately owned lands at the riverfront" (LWRP V-10).

Zoning in the Northern Reach

The zoning along the waterfront of the northern section of the northern reach is R1-20 residential. R1-20 allows single family residences with a minimum lot size of 20,000 square feet.

The zoning immediately along the shoreline of the southern portion of the northern reach and extending inland approximately 200 feet is WP. WP zoning allows for open space and public parks and as set forth in Article IVA (Waterfront Zones) Section 223-41.3 of the City of Beacon's Zoning Code. The purpose of the WP zoning district is to:

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- maintain, enhance, and increase the levels and types of access to public water-related resources and facilities, including boating facilities, fishing areas and Waterfront Parks;
- encourage public pedestrian access along the water's edge in a manner compatible with adjoining privately-owned land uses;
- encourage water-dependent and water-enhanced recreation in a manner consistent with the preservation and enhancement of other coastal resources and with the public demand for such recreational uses; and,
- encourage uses which further the revitalization of the City's waterfront in a manner compatible with the scenic beauty and recreational opportunities of the riverfront area.

The permitted principal uses on properties zoned WP include: water dependent and water enhanced recreational activities such as fishing, swimming, and boating; park facilities; flood and erosion control structures; scientific and educational facilities; and piers, docks, marinas and boat launching facilities, and charter boat businesses. Permitted accessory uses, such as public festivals, street fairs, craft and art fairs, and concerts can be undertaken with prior approval by the City Council.

Inland of the WP zone, the zoning is a mix of RD-3 and RD-6 which are "Designed Residence" Districts. RD-3 allows for one and two family residences and multi-family residences with 3,000 square feet per dwelling and a minimum lot size of 5,000 square feet. RD-6 allows for one and two family residences and multi-family residences with 6,000 square feet per dwelling and a minimum lot size of five acres.

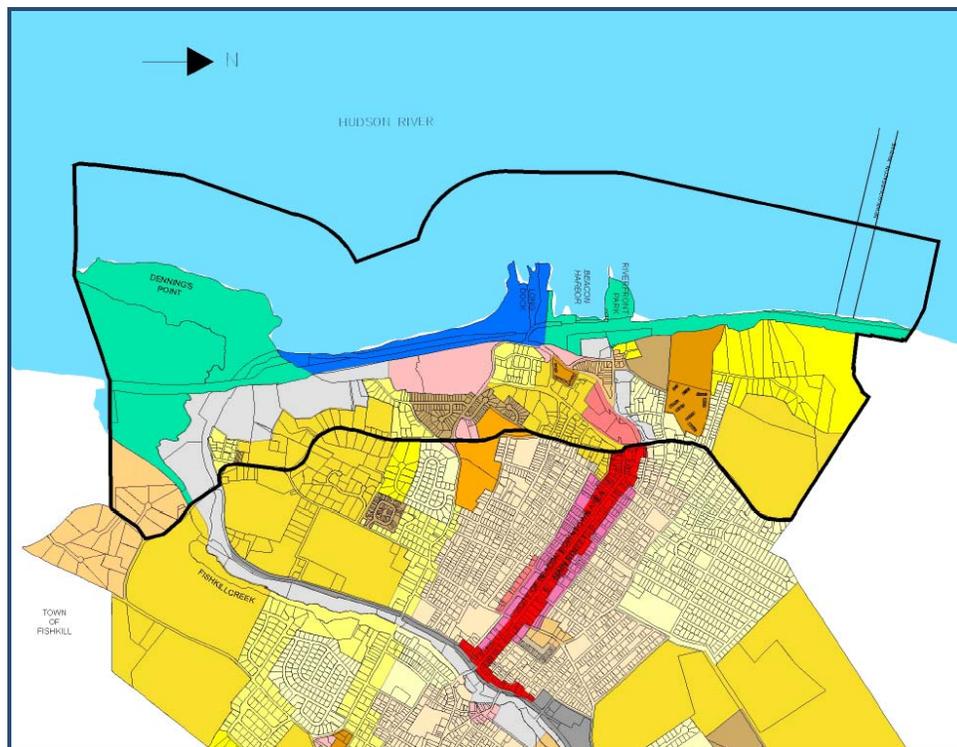


Figure 5 – City of Beacon Waterfront Zoning

Zoning in the Beacon Harbor Area

The zoning of the Beacon Harbor area is WP, WD and Light Industrial (LI). Riverfront Park, the land along Red Flynn Drive, and the northeastern corner of Long Dock peninsula, which are all owned by the City, are zoned WP as are the Beacon train station and the train station parking area on the east side of the railroad tracks; the former Beacon Hat Factory site is zoned LI.

The portion of Long Dock Beacon owned by Scenic Hudson is zoned WD. The purpose of the WD zoning district is to:

- stimulate the revitalization of the City and its waterfront by establishing a well-designed central focus for the City's waterfront area;
- provide for land uses consistent with the Beacon LWRP, including residential and waterfront commercial uses, to serve as a catalyst for the economic and physical revitalization of the entire waterfront area;
- encourage a mix of uses on the waterfront with a consistent set of design standards to assure a unified and comprehensively planned development that will function effectively and achieve a high standard of site planning and architectural design;
- eliminate deteriorated structures and incompatible, visually unattractive, or otherwise deleterious land uses; and
- increase pedestrian public access to, and the potential for the enjoyment of, the waterfront and to integrate that access with existing and anticipated pedestrian public access opportunities on adjacent public lands.

The permitted principal uses in a WD District include any use that is a mixed use incorporating various land-use elements as part of a comprehensive plan. These uses can include marine uses, marine-related retail and service businesses, convenience retail and personal service shops, restaurants, inns, hotels, boatels, conference centers, fitness centers, spas and day-care centers, public or semipublic uses, art, craft, or fine arts galleries, professional, small business offices and service facilities, charter boat businesses, fishing piers, and artist live/work spaces. Permitted accessory uses include any accessory use permitted under WP zoning, uses customarily incidental to permitted uses, and support facilities necessary to serve permitted uses.

Zoning in the Southern Reach

WD zoning encompasses the riverfront from Long Dock peninsula to Denning's Point between the railroad tracks and the shoreline, and along the east side of the railroad tracks. East of the railroad tracks, the zoning in this reach is Local Business (Dia:Beacon) and L1 (several small businesses, the City of Beacon's compost facility and wastewater treatment plant and former landfill). The properties west of the wastewater treatment plant and former landfill, Denning's Point, and the mouth of Fishkill Creek are zoned WP. The several properties along Fishkill Creek are zoned L1. Refer to [Figure 5 – City of Beacon Waterfront Zoning](#).

2.1.2. Transportation and Circulation

Traffic Circulation and Parking

The major roadways leading to the City of Beacon are I-84 and State Road 9D. I-84 runs east-west and connects the City to eastern New York State and Connecticut, and to the west side of the Hudson River and the City of Newburgh by means of the Newburgh-Beacon Bridge. State Road 9D is a major north-south arterial that runs through the City of Beacon and provides access to the areas north and south of the City. Tioranda Avenue and South Avenue provide access through the Fishkill Creek area of the HMA. Denning's Avenue provides access to Denning's Point.

The railroad tracks that parallel the eastern bank of the Hudson River greatly restrict access to the riverfront within the HMA. There is an above grade crossing south of the railroad station on Red Flynn Drive that connects the inland/upland areas of Beacon with the harbor area. Access to Denning's Point across the railroad tracks is provided by an above grade crossing (the bridge is narrow and weight restricted) and an at-grade level railroad track crossing for the Housatonic Railroad (the tracks are used infrequently by trains).

Parking along the harborfront is limited to the small parking area in Riverfront Park (ten spaces), along Red Flynn Drive (50 spaces), in the area of the ferry dock (20 spaces) and in the large lot next to the train station (175 spaces). With the exception of the parking at Riverfront Park, all of this parking is regulated by Metro-North and dedicated to commuter parking on weekdays.

There is a large parking area for the Beacon Station on the east side of the railroad tracks, and permit parking for the station is also available along Beekman Street. The parking capacity at the station and along Beekman Street is 963 spaces and there is a parking permit waiting list of approximately 500, even though Metro-North has recently added 365 parking spaces. Most of these parking spaces are not used during the weekend.

Metro-North Railroad (MTA) Intermodal Facility

Currently, the Beacon Station provides a total daily boarding of Manhattan bound riders of 1,877 persons and on an average weekday accounts for approximately seven percent of the Metro-North Hudson Line's Manhattan bound ridership. Over the last five years, Metro-North's ridership in Dutchess County has grown by 50 percent and is expected to grow by an additional 40 percent in the next ten years.

Recognizing the need to improve parking and access at the Beacon Station while at the same time better integrating Beacon Station into its surroundings, in 2002 Metro-North initiated a community-based planning process to address these needs. The planning process considered improving the appearance of the railroad station facilities, Beacon Station's role as a rail and intermodal center, and improving access and linkages within and between the surrounding areas and developments. It took a broad and inclusive view of the Beacon Station area and the role it plays not only as a transportation hub, but also as a conduit to and from the Hudson River.

The vision that resulted from the planning process was to develop services and facilities to:

- create Beacon Station as a "Gateway to the Hudson Valley,"

- facilitate and support intermodal uses (bus, ferry, pedestrian, bicycles, taxi, etc),
- provide a design function that can serve a variety of purposes in addition to rail travel, and
- reflect the image of the community/region it serves.

The planning process culminated in a community meeting in 2004. One of the major recommended improvements was the construction of a parking garage on the east side of the railroad station which would replace the commuter parking on the west side, so it would be available to harbor visitors. The first step in achieving these results has begun. The MTA Metro North Railroad issued a Request for Expressions of Interest in October 2007. This initiates the process of identifying qualified developers to design and construct a dynamic, mixed-use, Transit-Oriented Development (TOD) at its Beacon Station facility. The context and requirements of this TOD were generated from the Beacon Station Area Master Plan, a planning process that involved MTA, the community, and stakeholders. This upland development will be an important adjacent component to the Beacon Harbor revitalization.

Pedestrian Circulation

Pedestrian access to the riverfront is difficult because of the barrier created by the railroad tracks. There are three ways in which pedestrians can access the Beacon Harbor area. One is Red Flynn Drive that also provides vehicular access to the Beacon Harbor area. A second way is through the underpass beneath Beacon Station which links the parking lots on the east side of the railroad tracks to the harborfront, and the third way is the Beacon Riverside Trail which is accessed at Denning's Point.

Because of the railroad tracks, the only pedestrian access to the riverfront between Long Dock Peninsula and Denning's Point is by means of the Beacon Riverside Trail, which can be accessed from either Long Dock peninsula or Denning's Point. Pedestrians can access Denning's Point by means of Denning's Avenue.

Bus Transportation

On weekdays, the Newburgh-Beacon-Stewart Shuttle bus service, which is provided under contract with the New York State Department of Transportation, operates between Stewart International Airport, the City of Newburgh, the City of Beacon, and the Beacon railroad station. It also provides express service from Newburgh to the railroad station.

Newburgh-Beacon Ferry

Metro-North's Newburgh-Beacon ferry began operation in late October 2005 as a way to reduce vehicle traffic between Newburgh and Beacon, and to address the lack of parking in Beacon for Metro-North customers living on the west side of the Hudson River. The trip across the Hudson River takes ten minutes and there are six ferry trips in the morning and eight in the evening (Monday–Friday only). The ferry boat is 65 feet in length, 20 feet in width, and has a draft of six feet. It is powered by two engines, is manned by one captain and two crew members, and has a capacity of 149 people. It requires a 50 foot wide navigational path to and from the ferry pier and a 150 foot turning area at the end of the pier.

There is free parking for the ferry in Newburgh and the ferry dock in Beacon is only a few hundred feet from the railroad station. Frequent users can pay for the ferry by buying a "UniTicket" which is a greatly discounted unlimited-ride monthly combination ferry/rail ticket. Metro-North has a Guaranteed Ride

Home program that will be offered to all its monthly UniTicket holders which will provide ticket holders taxi service from Beacon Station to their home or car during times when there is no scheduled ferry service (weekday, off peak).

Connection between Key Sites

There are many sites of interest scattered throughout the City of Beacon's HMA including: Dia:Beacon, Denning's Point State Park, The Beacon Institute for Rivers and Estuaries, downtown Beacon, and the Beacon Harbor area (Figure 6). At the present time, travel between these and other sites is limited to automobile, taxis, walking, bicycles, and a weekend bus shuttle.

2.1.3. Parks and Open Space

Madam Brett Park

Named for Beacon founder Kataryna Rombout Brett, this 12 acre park is owned by Scenic Hudson and managed by a partnership between Scenic Hudson and the City of Beacon. The park is located at the mouth of Fishkill Creek and is accessed off South Avenue after passing through a one lane railroad underpass. Recent upgrades to the park provide a hiking/biking trail that will ultimately be linked with the Greenway Trail System. Vandalism, which is probably due in part to its isolated location, has been a problem at the park.

Riverfront Park

Riverfront Park is a peninsula of land that is the City's only riverfront park. As the result of a law passed in 1962 by New York State, the City acquired the property from New York State Bridge Authority for use as parkland.

Vehicle access to the park is via Red Flynn Drive. Pedestrians can access the park from the east side of the railroad tracks by means of the underpass beneath Beacon Station. The park offers basketball courts, a playground, a sand volleyball court, and picnic tables with accompanying grills; an asphalt walkway is located along the perimeter of the park's riverfront. The park also offers panoramic views of the Hudson River, the Newburgh-Beacon Bridge and the northern section of the Hudson Highlands.

Hudson River Valley Greenway

The Hudson River Valley Greenway is a state program created by the New York State Legislature in 1991 that encompasses a network of existing and new trails that connect riverfront parks, historic sites, and other features.

The City of Beacon participates in the Greenway Compact which provides communities with incentives through the Hudson River Valley Greenway Act, and as of March 2004, there were four Greenway riverside trails in the HMA:

1. Trail of Two Cities: Located in the City of Beacon and maintained by the City of Beacon Public Works Department, this 4.6 mile trail links the Beacon waterfront and Main Street to the Hudson Highlands and the Newburgh-Beacon Bridge.
2. Denning's Point (Riverside) Trail: 1.2 miles maintained by the NY/NJ Trail Conference.
3. Madam Brett Park Trail: 1.0 mile maintained by Scenic Hudson.

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4. Beacon Riverside Trail: a mile long walking and biking trail built in 2004 on the Hudson River side of the railroad tracks that connects the Beacon Harbor area with Denning's Point. Much of the trail traverses Scenic Hudson's property and will be incorporated into the trail system at Long Dock Beacon when that project is built. As part of Beacon's Greenway Trail System, the Beacon Riverside Trail will also eventually link to the Fishkill Creek Trail, the Hudson Highland Trail, the Mount Beacon Trail and the Trail of Two Cities which links Beacon and Newburgh. In addition, the City is currently constructing the trail to extend the Beacon Riverside trail to Madam Brett Park.

The Hudson River Water Trail, in conjunction with the Greenway, provides access for kayaks, canoes and small boats, with the goal of providing access points (boat launches) approximately every ten miles along both sides of the river.

The City of Beacon has two designated Water Trail sites within the HMA. One is located at the City's public boat launch and the other is located on the western shore of Denning's Point. The public boat launch can accommodate both hand and trailer launching while Denning's Point is restricted to hand launching only. Both sites are designated for day use.

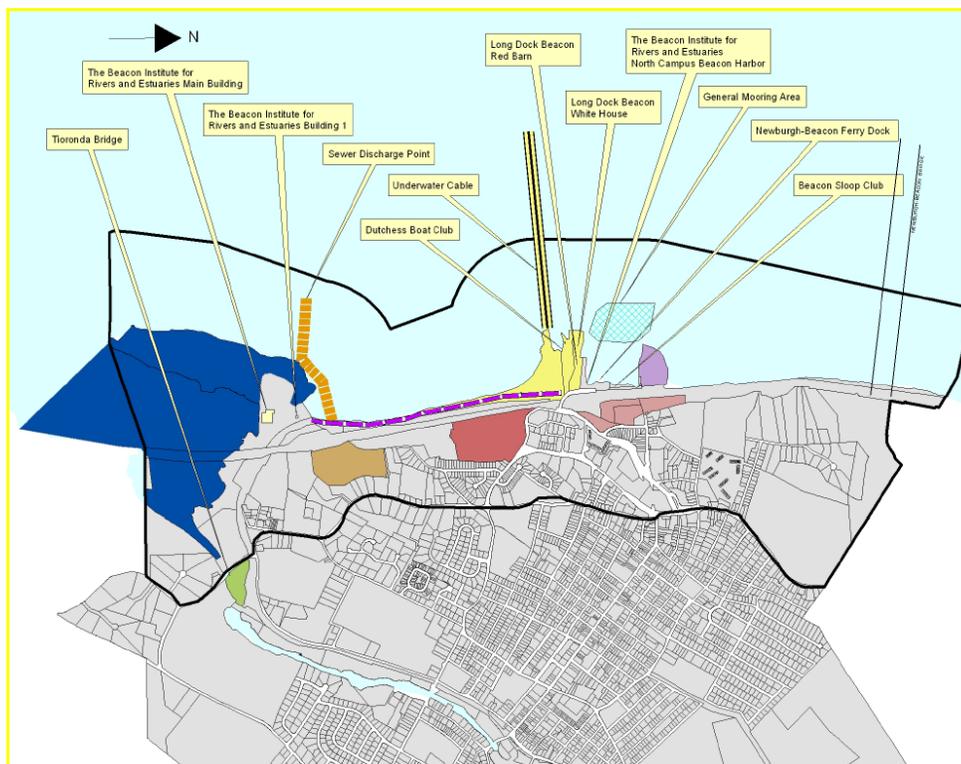


Figure 6 – City of Beacon Waterfront Facilities

Denning's Point State Park

Denning's Point State Park is located in the southern section of the City's HMA on the eastside of the railroad tracks. It encompasses all 65 acres of Denning's Point peninsula and approximately 160 acres of the mouth of Fishkill Creek. It was added to the Hudson Highlands State Park in 1988 and is the

northernmost section of the park. It is currently accessed from the parking area located at the City's wastewater treatment plant at the end of Denning's Avenue.

The park currently does not offer any amenities. There is, however, a 1.2 mile hiking trail (Denning's Point Trail) that circles Denning's Point and connects to the Beacon Riverside Trail.

In 2000, New York Governor George Pataki announced that portions of the park would be used for the River and Estuaries Center Riverfront Campus. (In 2006, the Rivers and Estuaries Center changed its name to The Beacon Institute for Rivers and Estuaries.) The proposed improvements include:

- **Building One**

Opening in 2008, Building One features an adaptive reuse of a 19th century Denning's Point Brick Works building. The building will utilize the latest green technologies and function as an educational center, exhibition space and interpretive visitor's center.

- **Parking and Road Improvement**

Once the main building is constructed, the majority of The Beacon Institute's parking requirements will be accommodated on top of the now closed municipal landfill located adjacent to the wastewater treatment facility at the end of Dennings Avenue. A planning process by the City of Beacon is underway which will be examining ways of providing more direct access both to Route 9 and to the central business district and diverting traffic away from the residential community north of Denning's Point.

- **Main Building**

This building will be located on or near the footprint of the former Noesting Pin Ticket Company building. It will house the administrative offices, interdisciplinary scientific and research laboratories, meeting, educational and conference spaces, as well as areas for public information sharing and community access.

Scenic Hudson Park at Long Dock

This proposed park will surround the hotel and conference center to be constructed at Long Dock Beacon (Figure 7). This public park will include improvements to the shoreline and existing bulkhead, new trails that will be linked to the Beacon Riverside Trail, universally accessible walkways and a fishing pier, a public artwork by George Trakas which includes terraced steps for viewing the Hudson River, wetland enhancement and creation, kayak put-in stations, historic and environmental interpretive areas, meadowlands, bird watching areas, and areas for picnicking and passive recreation.

2.1.4. Scenic Resources

Hudson Highlands Scenic Area of Statewide Significance

In order to determine which areas in New York State met the criteria of statewide aesthetic significance in coastal areas, the NYSDOS prepared a report entitled *Scenic Areas of Statewide Significance (SASS)*. This report identified and designated areas as Scenic Areas of Statewide Significance thereby providing them with additional protection to achieve a balance between economic development and preservation. The Hudson Highlands is a SASS, a 20-mile stretch of the Hudson River and its shoreline located between Denning's Point and the southern end of Bear Mountain State Park.

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The Dutchess Junction Subunit of the SASS runs from the northern shoreline of Denning's Point to the railroad tracks and then along the tracks adjacent to the Fishkill Creek and includes Denning's State Park. This subunit was included in the SASS because of its high scenic quality which features a variety of landscape components including rolling wooded upland, a low wooded point, the Fishkill Creek and its confluence with the Hudson River and a mix of vegetative cover. The area is visible from surrounding subunits on both shores of the Hudson River. It is recognized as part of the northern gateway to the Hudson Highlands.

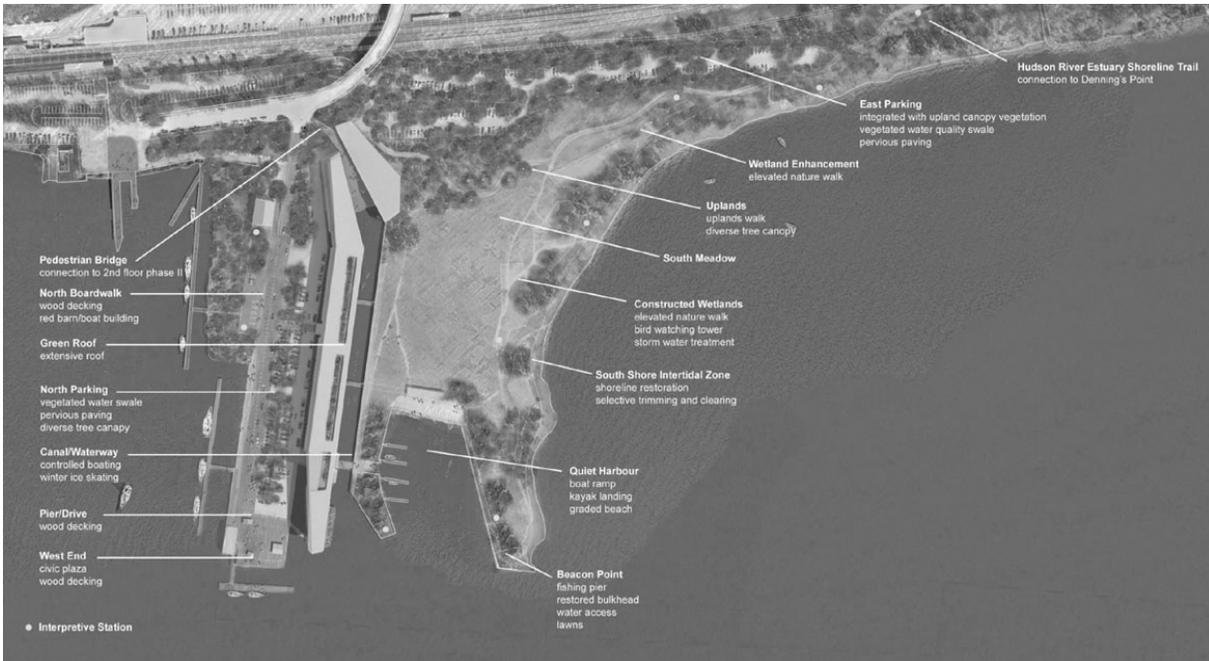


Figure 7 - Proposed development at Long Dock Beacon showing proposed construction and park improvements. Source: Long Dock Beacon 2005.

Long Dock Beacon

The Long Dock peninsula extends into the Hudson River and offers wide views of the river to the north and south and also west across the river to the City of Newburgh's waterfront. Views to the immediate north of the Long Dock peninsula include Beacon Harbor and the City of Beacon's Riverfront Park in the foreground and the Newburgh-Beacon Bridge that spans the river in the background. Views to the south are dominated by a small bay, locally known as Biscuit Bay, and Denning's Point. Beyond Denning's Point, there are views of the Hudson Highlands, Fishkill Ridge and Storm King Mountain.

Beacon Riverside Trail

The Beacon Riverside Trail offers opportunities to view the shoreline of the Hudson River and also provides spectacular views of the Hudson Highlands and Mount Beacon.

Riverfront Park

The park offers panoramic views of the Hudson River, Beacon Harbor, Hudson Highlands and Long Dock peninsula to the south, the Newburgh-Beacon Bridge to the north, the City of Newburgh's waterfront across the Hudson River to the west, and the Beacon Station and Mount Beacon to the east.

Madam Brett Park

There is an elevated boardwalk adjacent to Beacon Terminal, overlooking Fishkill Creek. There is also a hiking trail that runs along Fishkill Creek that offers views of Fishkill Creek and Tioranda Falls. From the Tioranda Bridge, one can look up and down Fishkill Creek.

2.1.5. Historic and Cultural Resources

National Register of Historical Places

Currently there are four structures on the National Register of Historic Places located within the City of Beacon's HMA: National Biscuit Company Carton Making and Printing Plant (The Biscuit); Tioranda Bridge; Eustatia; and the Reformed Dutch Church of Fishkill Landing. Two of the structures, The Biscuit and Tioranda Bridge, are integral elements of the HMA:

- **The Biscuit** - The building known by locals as "The Biscuit", which is the former Nabisco Box Printing Plant, located within walking distance of Beacon Harbor and Beacon Station, was built in 1929 and is a steel, concrete and glass structure encompassing 293,000 square feet. It is considered to be a superb example of early twentieth century industrial architecture and the only one of its kind in the City. It is surrounded by 34 acres of land overlooking the Hudson River. The Biscuit is the current home of Dia:Beacon, a world renowned art museum focusing on modern art. Dia:Beacon opened in May of 2003 with a projected visitation of 50-60,000 people per year but by the end of December of that year it had received 110,000 visitors. According to Dia, in 2004 the museum had 126,082 visitors and there were 77,803 visitors in 2005. Metro-North has shown a dramatic increase in ridership to the Beacon Station since Dia:Beacon opened.
- **Tioranda Bridge** - Located on South Avenue, the bridge crosses the Fishkill Creek and was constructed by the Ohio Bridge Company. Dating back to the Civil War era, the bridge was one of only two remaining Bowstring Truss Bridges left in the United States. On December 12, 2006 the bridge began to be disassembled and the truss portions of the bridge will be stored until such time that they can be "restored" and eventually returned as ornamental pieces when the new bridge is built.

Although not listed on the National Register of Historical Places, the following sites can be considered as significant local historic landmarks:

- **Red Barn** - Located on the Long Dock peninsula the Red Barn dates back to the mid to late 1800's and is owned by Scenic Hudson. It has been rehabilitated by Scenic Hudson and retains its historic appearance and character.
- **Beacon Sloop Club Building** - Located along Red Flynn Drive on the parcel of land bordering the harbor, this building was originally the ferry terminal diner and was taken over by the Sloop Club in the mid-1970s. The Sloop Club has since renovated and made a number of changes to the

building, including two enlargements and the addition of a composting toilet. Some of these renovations are of local cultural significance, such as the stone fireplace which was built from stones taken from the stone groin that extends into the harbor and a three-dimensional mural built on the west wall of the building which is composed of ceramic figurines made by Sloop Club members including folk singer Pete Seeger. A sister mural was created by Club members in the Beacon Library. The Sloop Club holds their monthly meetings in the building and the Farmers Market uses the building and Club equipment. The Club holds four to five festivals on the waterfront each year drawing a total of approximately 4,000 visitors.

- Denning's Point - This approximately 66 acre peninsula was originally acquired by Beverly Robinson and in 1785 was purchased by William Denning, the property's namesake. In 1925, the Denning's Point Brick Works began manufacturing bricks using large deposits of clay located on the site. The Noesting Pin Ticket Company later acquired the property and built a factory for the manufacture of paper clips and other wire products. Manufacturing continued until the land was purchased by the NYSOPRHP in 1988. Recent historical research done by The Beacon Institute has authenticated that Alexander Hamilton lived on Denning's Point, formulating and writing his seminal economic ideas while there.

Cultural Resources

Two of the most significant cultural resources that reflect the City of Beacon's Hudson River maritime heritage are replicas of historic Hudson River sailing ships:

- **Woody Guthrie**
The Woody Guthrie (Woody) is owned and operated by the Beacon Sloop Club. It is a 32 foot long wooden replica of a gaff-rigged Hudson River ferry sloop and has a draft of three feet. Hudson River ferry sloops were styled after Dutch designs and plied the Hudson River throughout the 18th and 19th centuries. The Woody was built as an educational tool to promote the beauty and wonder of the Hudson River and was launched in 1978. The Beacon Sloop Club takes 1,200 people on free sails on the river each year, and holds sailing classes in its clubhouse and on the Woody.
- **Clearwater**
Clearwater is a 106-foot wooden sailing sloop designed after 18th and 19th century Dutch sailing sloops, with a draft of eight feet. It is owned and operated by Hudson River Sloop Clearwater, Inc. which conducts environmental education, advocacy programs and celebrations of the Hudson River maritime heritage. The vessel is the centerpiece of Hudson River Sloop Clearwater's public education programs. Launched in 1969, the Clearwater serves as a moveable classroom, laboratory, stage, and forum. More than a dozen national and international programs have been successfully modeled after those pioneered by Hudson River Sloop Clearwater.

2.2. Surface Water Uses – General Overview

There is a wide range of surface water uses in the HMA, particularly in the Beacon Harbor area (Figure 8). Currently, there is boat launching at the City’s public boat ramp, a ferry service, a boat mooring area, recreational boating, dockage, and fishing. A number of additional surface water uses have been proposed or suggested including docking and boating associated with Long Dock Beacon, sailing schools, The Beacon Institute’s research vessels, excursion boats, and the proposed Hudson River Fisheries Trust barge.

2.2.1. Existing Launching, Docking and Mooring Usage

The waters of the City of Beacon’s HMA contain several docks and boat launching facilities. These facilities and future projects are described below. The NYS Office of General Services will be contacted before the implementation of any of the proposed projects involving the placement of structures above or on the bed of the Hudson River.

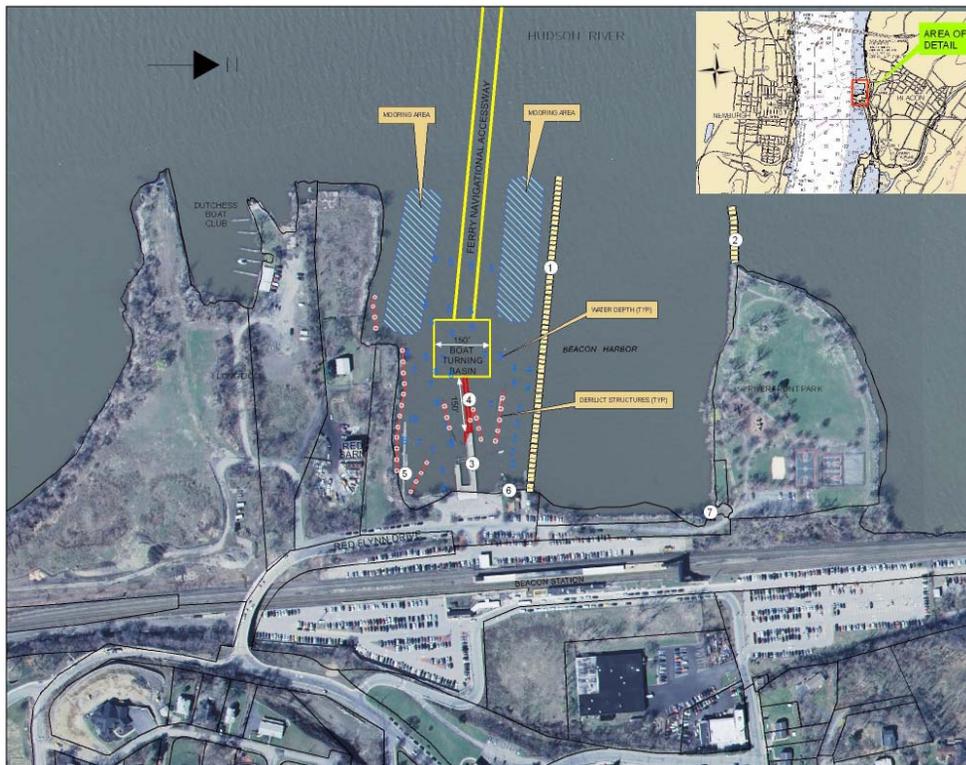


Figure 8 – Beacon Harbor Area Existing Surface Water Uses and Structures

Newburgh-Beacon Ferry Pier

Historically, there was a ferry terminal and pier in Beacon Harbor for the Newburgh-Beacon ferry; these facilities fell into disrepair when ferry service was ended in the 1960s as a consequence of the opening of the Newburgh-Beacon Bridge. The terminal building was removed but the in-water support structures were left in place.

As part of the effort to re-establish ferry service to reduce automobile congestion at the Beacon railroad station and to promote economic development, the City in 2004 constructed a new pile-supported pier that is 48 feet long and 17 feet wide. To this was later added two 50 foot by 12 foot steel floats, supported by four steel piles, that are joined to the pier by a gangway approximately 48 feet long and six feet wide that allows for embarking and disembarking from the ferry. The dock is owned by the City and can be used by any boat; however, when the ferry is operating, it has preferential access. The ferry operates as long as the river is not iced over, and there are six ferry trips in the morning and eight in the evening (Monday–Friday only).

Boat Ramps

Currently, the only public boat ramp within the harbor is located along the north side of the Beacon Sloop Club building on Red Flynn Drive. The ramp was built with the help of the Beacon Sloop Club members, and currently needs to be repaired or rebuilt. The ramp is approximately 50 feet long by 12 feet wide with an access dock on the south side of the ramp. It can accommodate one vehicle and trailer at a time. The traffic pattern makes access and maneuvering to and from the ramp difficult. During the week, parking is limited to three cars with trailers, although on weekends when there are no commuters, Metro-North allows vehicles with trailers to use its parking lot. Also, the water channel to the ramp is full of debris and rocks and needs to be cleaned.

Docks

There are several floating docks in Beacon Harbor. Along the City property on the Long Dock peninsula, there is a four foot wide by 200 foot long floating dock that is used to tie up small boats and to store dinghies. It is accessed via a ramp from the City property south of the ferry pier. There is a four foot wide by 20 foot long floating dock alongside the stone groin that is used to tie up the *Woody Guthrie*; it is not accessible from land. This dock is served by an underwater electrical cable extending from the Beacon Sloop Club that provides power to charge the electric batteries on the *Woody Guthrie*. The underwater cable needs maintenance. Also, in the future, the electrical cable may be modified to use a solar charging system. There is a four foot wide by 100 foot long floating dock extending from directly behind the Beacon Sloop Club used primarily for dinghies supporting the boats in the mooring field and supporting the *Woody Guthrie*. There is a floating dock that extends along the north side of the launching ramp that is for boats using the launching ramp.

Mooring and Anchorage Areas

There are no Federal, or State, designated or recognized, mooring areas within the City's HMA. There is, however, an area used for moorings located along the outer edges of Beacon Harbor that accommodates approximately 30 private moorings. Also, there are two areas within the harbor that accommodate approximately 11 moorings: five are located along the northern shoreline of Long Dock peninsula and six are located along the south side of the harbor's stone groin. All of the moorings are managed by and available to members of the Beacon Sloop Club. Refer to [Figure 8 – Beacon Harbor Area Existing Surface Water Uses and Structures](#).

2.2.2. Proposed Surface Water Uses and Facilities

Beacon Sloop Club

The Beacon Sloop Club, a 501(c) (3) non-profit educational organization, was formed in 1969 and its mission is to protect, preserve and celebrate the environs of the Hudson River through education, advocacy, and sailing throughout the Mid-Hudson Valley. The Sloop Club has about 300 members of which 200 actively use the boating facilities. The mooring area and the boat ramp next to the Sloop Club building are owned by the City of Beacon and managed by the Beacon Sloop Club.

The Beacon Sloop Club has suggested the improvements listed in Table 1 below be made to the City’s existing dock system.

Table 1 - Beacon Sloop Club Vessel and Desired Docking Facilities

Vessel Type	# of Vessels	Size of Vessel	Dock Type
dinghies for mooring -hoist/dinghy haul & launch	40	10 feet	floating hoist and racks
Woody Guthrie -land area for big boat repair	1	31 feet	floating
auxiliary	1	24 feet	staging/ no shore connection
work barge/moorings	1	24 X 12 feet	staging/no shore connection

Dutchess Boat Club

The Dutchess Boat Club is a private organization that operates a marina facility at the end of Long Dock peninsula in the small harbor area. It currently operates the facility under a month to month lease with Scenic Hudson, the owner of the property. As of December 2005, there were 70 members registered to utilize its facilities which consist of a concrete boat launching ramp, five floating docks that accommodate 12 boats, and a building in which meetings are held. There is no seasonal docking and transient overnight stays; members are permitted to overnight on a short-term basis with permission from the Boat Club. Boats using the facility range in size from 14 to 32 feet in length. One of the benefits of membership is that trailer parking, unlike at the City launching ramp, is always available.

Scenic Hudson has indicated that at some point in time it will not renew the Dutchess Boat Club lease and will reconfigure the club area into the Quiet Harbor that will be used by non-petroleum powered recreational boats such as canoes, kayaks, windsurfers, paddle boats, and electric motor craft.

Beacon Institute for Rivers and Estuaries Research Vessel Pier

The Beacon Institute currently uses the existing floating dock along the City property for its 35 foot vessel but future research vessels will require a much larger dock. The Beacon Institute is proposing to construct a pier in Beacon Harbor to accommodate its research vessels. When the City was selected as the site for The Beacon Institute for Rivers and Estuaries, it was anticipated that the pier would be constructed in the harbor for The Beacon Institute's vessel use and enhanced public access and activities. It is not feasible to construct a pier at Denning’s Point because it is adjacent to the Fishkill Creek Significant Coastal Fish and Wildlife Habitat; Denning’s Point is within SASS; a pier would not

currently be compatible with NYSOPRHP’s management planning for Denning’s Point and the surrounding waters are too shallow and exposed.

The pier should also provide docking for other large vessels including the Clearwater and the Woody Guthrie. The Beacon Institute will require shore side support facilities for loading and off-loading the vessels and storing equipment. As provided by the Beacon Institute, Table 2 lists the vessel and docking requirements for The Beacon Institute’s North Campus. It is unlikely that these vessels will be all in the Harbor at once; rather, they will most likely come and go, tending sensor platforms and other research activities on the River.

Table 2 - The Beacon Institute Vessel and Docking Requirements

Function	Vessel	# of Vessels	Size of Vessels	Dock Type
Scientific research	Beacon Institute research vessels	potentially 7	Varies: 25-45 feet	fixed pier w/utilities or floating dock

Several potential locations for the pier have been considered along Riverfront Park: extending from the City-owned property south of the ferry pier, extending from the City-owned property on the north side of Long Dock peninsula, the western end of Long Dock Beacon, and a wharf along the city-owned property north of Long Dock.

Hudson Fisheries Trust Barge and Docks

The Hudson Fisheries Trust (Trust) is a not-for-profit organization committed to preserving and teaching the skills, traditions and history of the Hudson River commercial fisheries and working on the Hudson River. The Trust supports sailing and small boat building educational programs and is planning to construct a museum to reconnect community members with the rich history and lore of the working Hudson River. It will be built as a barge that will be reminiscent of the covered railroad barges used in the 1800s that connected waterfront rail terminals with other ports and at one point in time handled 63 percent of the rail freight that traveled in New York waters. These barges were used by the commercial fishermen of the Hudson as their essential staging areas during fishing times; with sleeping quarters, kitchen for the on-board cook, dining areas, and repair shops for the boats and nets. The museum will serve as a living museum and contain a series of learning stations with interactive exhibits, hands on demonstrations, and living and working quarters. The below deck area will utilize the newest technologies to create a modern exhibition gallery with adjacent theater/meeting room and a conference/classroom.

The proposed barge will be 40 feet wide by 120 feet long and draw approximately three feet of water. As described in Table 3, the barge will require sewer and utilities connections for year round service, a dock based, three ton boom and hoist and attached floating gangway to allow easy access to the barge. There will also have to be a passenger drop-off and waiting area on the shore. The barge could be partially surrounded by floating docks to support the boat building and sailing school vessels. With Beacon as its home port, ideally the barge could travel to other communities along the Hudson, mooring long enough to provide educational programs and historic information to the public. The Fisheries Trust

Museum Barge is included in this Harbor Management Plan as a “placeholder” and potential future harbor user. It is unclear how soon the Museum Barge will come to fruition.

Boat Building Workshop at the Red Barn

Scenic Hudson is the owner of the Red Barn. This structure has a gross floor area of 4,000 square feet and is located approximately 200 feet from the southern shoreline of Beacon Harbor. Because of building code issues, the building will be a single purpose building and will most likely be the location of a traditional wood boat building project with a special focus on the youth of the City of Beacon. A proposed fixed pier with a gantry will enable the project to launch and retrieve boats from this site.

Long Dock Beacon

The partners developing Long Dock Beacon have applied for a permit to construct a seasonal floating dock accessible from the western edge of the Public Plaza. The dock will be accessible via a gangway from the plaza and will have suitable depths to be visited by tour boats, large recreational boats, the *Clearwater* and other vessels.

Table 3 - Summary of Infrastructure Requirements for Proposed Uses

Facility	Requirements
Trust barge	<ul style="list-style-type: none"> - requires sewer and utilities connection for year round use - 3 ton boom and hoist on dock - attached floating gangway - easy access to public meeting and classrooms on barge - floating docks surrounding the barge to support sailing - school and boat building vessels - shoreside visitor access (drop-off, waiting area) - sailing and rowing school - floating dock for chase boats and staging dock launch - staging dock (will sail to and from dock –no power) on shore 2 ton hoist with access to land storage for sail and rowboats
Public Boat Ramp	<ul style="list-style-type: none"> - adequate to haul the Woody Guthrie sloop - floating dock next to ramp
Harborfront Building	<ul style="list-style-type: none"> - to support the surface water uses and to provide a land based focus for the waterfront
Red Barn and Boat Building	<ul style="list-style-type: none"> - work docks for boat building - crane/forklift pad - onshore with access to winter dock storage area - 10 ton truck crane - 3 ton fork lift
The Beacon Institute	<ul style="list-style-type: none"> - meet requirements to service research vessels listed in Table 2 - truck access to bring equipment to the vessels
Excursion Boats	<ul style="list-style-type: none"> - shared use dock to allow safe passenger loading and unloading
Sloop Club	<ul style="list-style-type: none"> - dinghy docks, hoist and land storage racks used for dinghies to access boats at mooring areas

Long Dock Beacon will include the redevelopment of the existing Dutchess Boat Club marina area into a Quiet Harbor. Floating docks will be provided in the same location as the existing docks and the existing boat ramp will continue to be utilized. The eastern end of the Boat Club facility will be cleaned-up and transformed into a useable beach area, which will be utilized for the launching and landing of kayaks, canoes and other small non-motorized boats. On shore, an approximately 3,000 square foot boat storage building will be constructed for the storage of small boats and non-motorized watercraft.

Proposed Harborfront Building

A building in the harborfront would support the surface water uses and provide a land-based focus for the waterfront, while incorporating green building design elements. The harborfront building could provide: a shelter/waiting area; restrooms; an office for a harbormaster; meeting space; and classrooms, storage and support facilities for The Beacon Institute. The facility would also have a small parking area for use by The Beacon Institute personnel and the harbormaster during weekdays when parking is limited in the waterfront area.

2.2.3. Vessel Pumpout Facilities

Pumpout facilities enable boaters to empty the sanitary waste from their boat's holding tanks. There are at least 35 pumpout facilities on the Hudson River and 39 facilities capable of servicing portable toilets. There are no pumpout facilities presently located in the City of Beacon's HMA, and it is recommended that a pumpout facility be installed.

2.2.4. Navigation

Channels

There is a Federal Navigation Channel running up the Hudson River between Manhattan and Albany which varies in width from 400 to 600 feet and is maintained by periodically dredging to its authorized depth of 32 feet. The Federal Channel is located approximately 2,700 feet west of Long Dock peninsula. There are no designated navigational channels connecting Beacon Harbor to the Federal Channel.

There is an informal accessway for the Newburgh-Beacon ferry service between the ferry dock and the deep water of the Hudson River and a 150 foot square turning area at the end of the dock so that the ferry can turn around.

Hazards

- **Derelict Structures**

There are several areas within the harbor that have deteriorating bulkheads and pilings, many of which are associated with the old Newburgh-Beacon ferry dock. These structures present a hazard to navigation because they are not marked and many are covered by water during high tide. The derelict structures will constrain future uses of the harbor unless they can be removed; removal may be difficult if it is determined that they provide fish habitat.

There is also a low, unmarked stone groin running from east to west in the middle of the harbor that becomes submerged during high tide.

- **Water Depth**

Water depths within the harbor north of the stone groin are generally less than two feet deep during low tide and the area is not considered navigable. Water depths south of the stone groin at low tide vary from between three feet (along the southern edge of the stone groin) and eight feet deep (near the ferry dock).



View looking down the north side of the new Newburgh-Beacon Ferry Pier at derelict pilings from the old ferry terminal. During low tide, all of these structures are visible; however during high tide, most of these structures are underwater creating an extremely dangerous navigation issue.

The water depth at the City's boat ramp is approximately two feet at low tide, allowing only small vessels to be launched at low tide. The average depth throughout the rest of the harbor is between three and nine feet. At the western edge of Long Dock peninsula, where a fixed pier has been proposed, a depth of six feet (required for larger vessels) occurs less than 25 feet from the shoreline.

- **Shoaling**

In Beacon Harbor, water depths are shallow due to shoaling on the north side of the stone groin and north of the Sloop Club building. The shoaling is probably a result of sediment being transported into the harbor from the Hudson River and from sediments carried by stormwater entering the harbor through the outfall pipe located in the northern corner of the harbor. Before the shoaling can be dredged, a sediment grain size and contaminant analysis of the sediment will need to be undertaken. A means to dispose of the dredge spoil will be needed if it is determined that the sediment can be dredged.

It was reported that 20 years ago, a canal was proposed to be constructed between Beacon Harbor and waters to the north of Riverfront Park in order to increase flushing and thereby reduce sedimentation.

However, prior to any such project being undertaken, a study of sediment transport in and around the harbor should be conducted.

- **Public Safety**

The Beacon Sloop Club has a volunteer harbormaster that oversees the various structures the Sloop Club manages as well as the mooring area. There is no municipal public safety presence on the harbor; the Beacon Fire Department's Station No. 2 is the closest to the harbor, approximately a half mile away, and houses two fire trucks, a heavy rescue truck, an inflatable zodiac boat on a trailer, and cold water survival suits.

2.2.5. Recreation

Fishing

Presently, land based fishing occurs on the western shore of Riverfront Park, the shoreline of Long Dock peninsula, the western shoreline of Denning's State Park, the concrete platform on the Beacon Riverside Trail and at scattered areas along the Fishkill Creek, including the Tioronda Bridge. Fishing is also done from small boats in the shallow waters along the shore. The abundance of water chestnuts (*Trapa natans*) often makes fishing difficult by limiting boat access and preventing fishing gear from entering the water. Fishing activity is greatest in late spring when striped bass (*Morone saxatilis*) are running. Other species caught within the HMA include: blue gill (*Lepomis macrochirus*), common carp (*Cyprinus carpio*), brown bullhead (*Ameiurus nebulosus*), blue crab (*Callinectes sapidus*), white perch (*Morone americana*) and bluefish (*Pomatomus saltatrix*).

Swimming

Swimming can take place at either public bathing beaches or at "informal" locations. The difference between the two is that a public bathing beach must meet various public health requirements, such as the presence of bathrooms, lifeguards, and water quality standards, most notably microbiological parameters, while an informal area does not. Historically, there had been a bathing beach located on the western shore of Denning's Point but presently, there are no public bathing beaches within the HMA.

Pursuant to the 1998 Hudson River Estuary Action Plan, the NYSDEC conducted an investigation of potential bathing beaches in the Hudson River. A report was issued describing its findings entitled *Swimming in the Hudson River Estuary – Feasibility Report on Potential Sites* (Hudson River Estuary Program, 2005) which included an analysis of Denning's Point. Although it met many of the NYSDEC's site criteria for establishing a bathing beach (beach conditions, accessibility, hydraulic conditions, water quality, and construction and operation), the area was deemed not to be suitable because the outfall of the Beacon wastewater treatment plant was within 750 feet (the minimum distance required between a bathing beach and wastewater outfall pipe). The report also concluded that the beachfront conditions (quality of sand/beach material, slope at the water front, length of beach available and availability of an area backing the beach) were barely acceptable.



Sloop

River Pool at Beacon

River Pool at Beacon, Inc. is a community group that is proposing to build a partially submerged pool in the Hudson River (“River Pool”) off the north shore of Riverfront Park. The goals and objectives of River Pool at Beacon are to:

- provide inexpensive public access to the Hudson River;
- educate the general public about the importance of preserving and cleaning the Hudson River
- promote swimming as a fun, healthful fitness activity in a natural environment; and
- demonstrate to other communities the viability of floating pools by building a successful prototype.

The river pool will have sides and a bottom that will be made of protective netting that is open to river water. It will be accessed from the shore by ramps. The first phase of the River Pool at Beacon is a 20 foot diameter prototype wading pool that was deployed in 2007 and used to test the materials for the pool bottom. The river pool will be used from the end of May to the end of September and will be taken out of the water for the winter. If the prototype proves effective, a larger and deeper pool is planned for Phase 2 of this project. It should be noted that any required dredging in the harbor has the potential to affect use of the river pool, and should be carefully coordinated with the river pool’s seasonal schedule.

Kayaks and Small Boats

The City launching ramp provides water access for small boats including kayaks, canoes, car tops, and small power boats. Hudson Valley Pack and Paddle, located at 45 Beekman Street in the HMA, uses the ramp to launch kayaks for its rentals and tours.

Long Dock Beacon’s future plans include a Quiet Harbor, to be located at the current site of the Dutchess Boat Club, for non-petroleum powered boats and other recreational river-oriented activities. The eastern end of the existing marina will be cleaned up and transformed into a useable beach area, which will be utilized for the launching and landing of kayaks, canoes and other small non- motorized

boats. Also, there will be a building which will serve as the base for an operator to rent kayaks and canoes and to lead outings. This building will also provide rental storage for local owners of canoes and kayaks. There will also be a day-use launch at the southern end of the eastern parking area for people who carry their craft on top of their cars. Launching at Denning's Point is restricted to hand launching only and is designated for day use only.

There are two designated access points of the Hudson River Water Trail within the HMA, the City's public launching ramp and the western shore of Denning's Point.

2.2.6. Wastewater Disposal

Sanitary

The City of Beacon wastewater treatment plant is located on Dennings Avenue. The facility is a secondary, activated sludge treatment plant which serves all of the City of Beacon and a portion of the Town of Fishkill. Its effluent is discharged into the Hudson River north of Denning's Point, approximately 600 feet from shore. The City reports that the plant is currently operating at 3.5 to 3.7 million gallons per day (MGD), which is approximately 60 percent of its capacity of six MGD. While the City does not have combined sewer overflows, due to infiltration during heavy rainfall events, the daily flow can increase to as high as 11 MGD which results in sewer overflow.

The Beacon Harbor area is not connected to the wastewater treatment plant; any future development will require sewer lines being extended to the harbor area. Although the wastewater treatment plant has adequate capacity to meet future development, the problem of infiltration will need to be addressed so that capacity is not further exceeded during storm events.

Stormwater

The City of Beacon is a regulated Municipal Separate Storm Sewer System (MS4) under the Phase II Storm Water Management Program. Pursuant to New York's Phase II requirements, the City submitted its Notice of Intent (NOI) in 2003 which describes the various measures the City will implement (in each of the six mandatory control measures) to address stormwater discharges. In conformance with its NOI, the City has undertaken a wide range of actions to minimize the impacts of stormwater. The City has appointed an overseer of the project, assessed existing conditions of City-owned properties in the regulated area, reviewed existing ordinances and has begun developing amendments/modifications to its ordinances to provide for additional protection under the MS4 criteria mandate by the NYSDEC. In addition, an assessment of City's waste management and municipal vehicle washing programs has been conducted.

Future development will need to conform to the NYSDEC's General Permit for Construction Activity (GP-02-01). This means that operators of construction activities that involve one acre or more of land disturbance will need to file a Notice of Intent and prepare a Stormwater Management Pollution Prevention Management Plan (SWMPPP). In addition, the City, through its site plan review and approval process, can limit the quantity and improve the quality of stormwater.

2.2.7. Public Water Supply

Potable water is supplied in the HMA by the City of Beacon which serves approximately 19,000 people and has 4,013 active metered connections. Water is obtained from three surface water sources - the Cargill, Mt. Beacon and Melzingah reservoirs - and three groundwater wells. All of these sources are blended in various combinations depending on the source, conditions and demand for water; the blended water is treated at the water filtration facility at 470 Liberty Street. The current capacity of the filtration plant is four million gallons per day but the average daily demand is only 2,223,674 gallons. There is a ten inch water main entering the harbor area along Red Flynn Drive which has sufficient capacity to supply potable water for future development in the harbor area.

2.3. Underwater Lands and Uses

Pattern of Underwater Land Ownership

Scenic Hudson owns approximately 64.7 acres of underwater lands in the vicinity of Long Dock peninsula. These underwater lands are in the jurisdiction of the Town of Fishkill. According to a survey provided by The Scenic Hudson Land Trust, Inc., The City owns underwater lands in a portion of the harbor pursuant to a “Beneficial Enjoyment” grant provided by the State in 1812 and all other underwater lands are owned by the State of New York.

Underwater Land Grants, Leases, and Easements

According to the records of the New York Office of General Services, the only recorded easement in the HMA is to Central Hudson Gas and Electric Corporation, issued on June 21, 1954 (Alan C. Bauder, NY Office of General Services, personal communication, November 15, 2005). The easement extends from the City of Beacon to the City of Newburgh and is located approximately 900 feet south of the Newburgh- Beacon Bridge.

There was a transfer of jurisdiction of underwater lands to the New York State Department of Public Works (now New York State Department of Transportation) that was issued on January 27, 1961. The transfer was associated with construction of the Newburgh-Beacon Bridge and runs beneath the bridge.

Underwater Cables and Pipelines

Currently, Central Hudson Gas and Electric Corporation operates and maintains two natural gas pipelines that cross the Hudson River within the HMA (written communication with Central Hudson Gas and Electric Corporation, October 25, 2005). The two lines leave the Newburgh shoreline almost directly east of the intersection of William and Water Street and arrive at the Beacon shoreline just south of the Dutchess Boat Club. The two gas mains are 4-inch and 8-inch nominal diameter steel. The 4-inch line was built in 1925 and the 8-inch line was built in 1929. The 4-inch line is north of the 8-inch line. Both mains were laid directly onto the bottom of the river. Central Hudson will not allow any dredging, boring, or pile driving within a 100 foot buffer zone on both sides of the pipes. The pipelines do not appear to have received easements.

There are two retired and abandoned in place electric cables running from Newburgh to Beacon designated NB-1 and NB-2. These were installed in 1913 and 1921, respectively, and retired between 1964 and 1966. Central Hudson indicates that neither is oil-filled.

There is a cable owned by AT&T that runs across the Hudson River within the HMA. It does not appear that the cable received easements.

2.4. Environmental Conditions and Resources

2.4.1. Topography/Bathymetry/Sediments

Topography

The City is located on the lowlands at the northern edge of the Hudson Highlands. To the south and east of the City are Breakneck Ridge, South Beacon, and North Beacon mountains which are all part of the Hudson Highlands. The topography of Beacon's HMA varies widely from the flat terrain along the Hudson River to the steep slopes of the Hudson Highlands.

The area west of the railroad tracks is relatively level and therefore development in this area is not limited by topography. However, most of the HMA east of the railroad tracks consists of steeply sloped wooded hillsides. These slopes, which occur along the waterfront from I-84 to Fishkill Creek, vary in steepness from 15 percent to over 25 percent and consist of highly erodible soils. Steep slopes also occur along Fishkill Creek. Therefore, future development in these areas will require proper building techniques (i.e., retaining walls) that will minimize soil erosion and prevent sediment from entering the Hudson River and Fishkill Creek.

Bathymetry

The Hudson River Benthic Mapping Project, funded by the NYSDEC, conducted a bathymetric survey of the Newburgh Bay region which included some of the underwater lands in the HMA. The remnants of a cable crossing and numerous dump sites are clearly imaged in the data. The project found that the bathymetry of this area of the Hudson River has been extensively influenced by human activities including the construction of the Newburgh-Beacon Bridge.

There is limited bathymetric data available for Beacon Harbor. A survey of the area south of the stone groin was undertaken by Metro-North as part of the planning for the Newburgh-Beacon ferry service. Water depths are greatest extending out from the ferry dock towards the Hudson River and range from five to nine feet. Water depths increase fairly quickly outside the harbor as it approaches the main channel in the Hudson River. Several advisory committee members reported that water depths in Beacon Harbor south of the stone groin had been fairly deep and that it shoaled after the ferry service ended in the early 1960s. This suggests that vessel movement was responsible for preventing sediment deposition or scouring out sediments. The area north of the stone groin has not been surveyed but is very shallow and mud flats are exposed at low tide. A bathymetric survey, at least of the southern portion of the harbor, will need to be undertaken if dredging is contemplated and to aid in the siting of docks and piers.

Sediments

There is no recent data on either sediment grain size or the environmental quality of sediments in Beacon Harbor. Sediments may have some chemical contamination either from sediments that were transported into the harbor from the Hudson River or from prior uses of the harbor and the area surrounding it. An analysis of the sediment size and quality will be required prior to any dredging to help guide selection of dredging methods and disposal protocol.

2.4.2. Flooding and Erosion

Flood Zones and Areas of Flooding

The 100-year flood elevation along the Hudson River in the City is estimated to be eight feet. The flood hazard area (designated A3 according to the Flood Insurance Rate Maps) is a relatively narrow zone along most of the City's riverfront on the west side of the railroad tracks. Portions of the HMA that may be susceptible to flooding are Riverfront Park, Long Dock peninsula, and a very small portion of the waterfront area around Denning's Point.

Erosion Areas and Shoreline Protection

According to George Trakas, *The Beacon Waterfront: A Survey of the Edge* (Minetta Brook, 2000), during periods of high tide and strong southwest winds, wave erosion occurs along the south shore of Long Dock peninsula, particularly where the old railroad staging area was located.

Most of the shoreline surrounding Beacon Harbor and the northern reach of the HMA is protected by stone rip-rap, which limits erosion, retains the bank and helps to prevent erosion from wave action. However, it is unclear whether the rip-rap was installed to prevent erosion or to create a construction limit for projects along the riverfront (i.e., the filling in and creation of Long Dock peninsula and Riverfront Park).

2.4.3. Water Quality

Designations

The NYSDEC under Part 703 Surface Water and Groundwater Quality Standards has assigned a "best use" designation to all of the surface waters of the State. Surface waters in the City's HMA are classified as "B", which means that the best uses for these waters are primary and secondary contact recreation and fishing (swimming included). Class B waters are also suitable for fish propagation and survival.

This surface water classification does not necessarily indicate or reflect existing water quality. Class B waters are expected to meet water quality standards outlined in the above mentioned regulation and these standards are used to determine discharge limitations for various chemical, physical and biological pollutants (such as pH, dissolved oxygen and coliform bacteria). Presently, there is not enough data to determine which of the standards are not being met.

Both the New York Public Health Law 225, Chapter 1 - State Sanitary Code, Subpart 6-2 and the Dutchess County Sanitary Code (Article 6) have strict statutory requirements to assure a sanitary, healthful and safe environment for the public when using bathing beaches. These standards are important for the

River Pool at Beacon. Bathing beaches must meet the following water quality criteria for bacteriological, physical and chemical quality:

- Bacteriological quality. Based on the mean of the logarithms of the results of five or more samples collected in a 30 day period, the upper value for density of bacteria shall be:
 - 2,400 total coliform bacterial per 100/ml; or 200 fecal coliform bacteria per 100/ml; or
 - 33 enterococci per 100/ml for freshwater; or
 - 126 E. Coli per 100/ml for freshwater.
- Chemical quality. The water shall be free of chemical substances capable of creating toxic reactions, skin or membrane irritations to the general public.
- Physical quality-water clarity. In all bathing areas, except the Great Lakes or ocean beaches, it shall be possible to see an eight-inch black and white disk in four feet of water. Clarity tests should be performed at a four foot depth in the bathing area at a minimum of three different locations.

In 2004, a 153-mile segment of the Hudson River beginning at the Troy dam and ending at Battery Park in Manhattan became a “No Discharge Zone”. Thus the City’s HMA is located in a no discharge zone. This designation means that it is illegal to discharge both treated and untreated sanitary waste from boats.

Water Quality Data

Water quality is not routinely tested in the HMA. The water quality at the proposed River Pool at Beacon site was tested during 2003 and 2004. The results indicate that water quality was very good during the summer, even after heavy rains. Based on these water quality data, it appears that the river pool will meet the State’s bathing standards.

Impairments

The discharge of stormwater from the stormwater outfall pipe located in the northern section of the harbor is likely to be causing water quality impairment. It is likely to be a significant contributor to the shoaling in the north part of the harbor and is also likely to be a source of nutrients that enhance the growth of the water chestnuts in the northern end of the harbor.

During heavy rains, there are overflows from the sewer pipes that cause raw sewage to be released into the surface waters. This has been observed along the Fishkill Creek where one of the main sewer pipes runs along the north side of the creek. This release of raw sewage into the Fishkill Creek, together with the wastewater treatment plant’s discharge pipe, are major contributors in preventing designation of the beach located on the western shore of the Denning’s Point as a formal bathing beach.

The invasive water chestnut is extremely abundant within the HMA’s surface waters and large stands of water chestnuts have been found to dramatically deplete dissolved oxygen in the water column resulting in hypoxic (low oxygen) conditions (Institute of Ecosystem Studies, 2005). Hypoxia compromises habitat for many fish and invertebrates and only animals that are very tolerant of low oxygen may be able to live in water chestnut stands. However, shorebirds, such as herons, have been observed perching on water chestnuts to feed. Dense surface mats of water chestnuts also impede

canoeing, kayaking, fishing, swimming and other recreational uses of the surface waters because the surface mats are difficult to penetrate.

There are a number of ways to control water chestnuts but they are typically extremely labor intensive, and there is the risk that they could cause additional spreading. It may also take many years before control becomes effective because of the large seed bank that exists in the sediment. Prior to undertaking any remedial actions, further study is needed to determine the major factors contributing to the extensive water chestnut growth in the HMA and the ecological impacts of control measures.

2.4.4 Habitats

The HMA includes a number of different habitats and supports a diversity of wildlife species. In the HMA there are aquatic and benthic habitats in both the Hudson River and Fishkill Creek, wetlands along the Hudson River and Fishkill Creek as well as in the mouth of Fishkill Creek, and uplands on Denning's Point and along the railroad tracks.

The Hudson River and Fishkill Creek are habitats and nursery grounds for a number of fish and invertebrate species including sturgeon, striped bass and American shad as well as blue claw crabs. Much of the shallow areas have been colonized by the water chestnut, an invasive species, which has altered the natural habitats, although the impacts on aquatic species have not been well studied.

The habitats in the HMA also support a diversity of bird life and many shorebirds forage along the shore and in the water chestnut beds. Both osprey (*Pandion haliaetus*) and bald eagles (*Haliaeetus leucoce*) are state listed threatened species known to occur in the HMA. Denning's Point is an important winter area for bald eagles; as they perch and feed at the southernmost tip of the peninsula.

The only New York State mapped wetland area in the HMA is located in the lower portion of Fishkill Creek. However, there are wetlands within the HMA that are not mapped as designated NYS wetlands. For example, on Long Dock peninsula there are six pockets of wetlands having a combined total surface area of 2.89 acres (Rudikoff, 2005). Three of the wetlands are located near the westerly upland boundary of the Long Dock Beacon site and are subject to tidal influence. A fourth, small common reed marsh wetland is located in the north-central area of the site and appears to be mainly groundwater supplied. The remaining two wetlands are perched shallow depressional wetlands that appear to obtain their water supply solely from precipitation.

The uplands of the HMA are typical of those found throughout the Hudson River Valley. While much of the HMA has been developed, there are mature woodlands of mixed deciduous and coniferous trees. On Denning's Point, the upland includes old-field at the northern end, containing pioneer species and such old-field perennials as ragweed, and a large tract of woodland along the Hudson River that is typical of the woodlands along the Hudson.

Ecologically Sensitive Areas and Special Designations

As described by the New York State Division of Coastal Resources, there is one Significant Coastal Fish & Wildlife Habitat in the HMA, Fishkill Creek, which is described as one of the major freshwater tributaries of the lower Hudson River. The habitat is an approximate one-half mile stream segment, extending from Fishkill Creek's mouth on the Hudson River to the first upstream dam. Most of the habitat is within the

tidal range of the Hudson River, and contains extensive areas of mudflats, emergent marsh, and subtidal beds of aquatic vegetation. The habitat includes an approximately 80 acre shallow bay area located at the creek mouth (west of the railroad tracks), and undeveloped portions of Denning's Point.

The diversity of natural ecological communities, and lack of significant human disturbance in the area, provides favorable habitat conditions for a variety of fish and wildlife species. Habitat quality in the open bay portion may be reduced by expanses of water chestnut. However, several rare plant species, including subulate arrowhead, and kidney leaf mud-plantain, occur in the estuarine portion of Fishkill Creek.

Fishkill Creek is an important spawning area for anadromous fishes, such as alewife, blueback herring, white perch, tomcod, and striped bass. A substantial warm water fish community also occurs in Fishkill Creek throughout the year. Resident species include largemouth bass, bluegill, brown bullhead, and goldfish. Fishkill Creek probably marks the northern extent of blue claw crab (in abundance), and is occasionally used by marine fishes, such as bluefish, anchovy, silversides, and hogchoker. Freshwater inflows from Fishkill Creek play an important role in maintaining the water quality and salinity gradient in the Hudson River estuary.

In addition to its importance as a fisheries resource, Fishkill Creek provides productive feeding habitats for various wildlife species. Locally significant concentrations of herons, waterfowl, furbearers, and turtles, may be found in the area at almost any time of year. Fishkill Creek is reported to be a major crossing point for raptors migrating through the Hudson Valley, along the northern slope of the Hudson Highlands. Concentrations of migratory osprey, which are unusual in the lower Hudson Valley, are found in the area and the area is a focal point for osprey research in the Hudson Valley.

Rare, Threatened, and Endangered Species

Rare plant species including northern estuarine beggar ticks (*Bidens hyperborea*), smooth bur-marigold, and heartleaf plantain (*Plantago cordata*) have been identified on Denning's Point and the Long Dock peninsula.

Bald eagles, State listed as threatened and Federally listed as endangered, feed in the winter off the southern portion of Denning's Point and ospreys, State listed as threatened, have been observed on Fishkill Creek during the spring migration.

Section 3 - Harbor Management Issues

3.1. Conflicts and Competition among Users for Surface Waters

A wide variety of uses and facilities have been suggested for Beacon Harbor. Each of these uses and facilities has a set of requirements that must be met in order to make it functional. In addition, the uses, facilities, and requirements must be integrated and be compatible with each other while taking into account the physical and other limitations and constraints of Beacon Harbor. Because of the limited area, shared, joint, and multiple uses and users must be a priority.

Newburgh-Beacon Ferry Dock

This dock is owned by the City but the ferry service has preference. When the ferry is running, the dock must be available and accessible to the ferry and all other surface water users must work around the ferry's timetable. As the harbor begins revitalization, it is imperative that coordination between users be established to avoid conflicts of dock usage.

City-Owned Boat Ramp

The ramp can only accommodate one vehicle and trailer at a time which can create congestion. Another boat ramp issue is that the water depth in front of the ramp is extremely shallow during low tide which limits its usability and restricts the size of boats that can be launched. Also, there is a sharp drop-off at the end of the ramp. The City is planning to make repairs to the ramp to improve its accessibility.

Beacon Sloop Club

Currently, the Beacon Sloop Club manages the City's existing floating dock systems as well as the mooring fields. As the harbor begins to revitalize, there may be a need to relocate and reconfigure these floating docks and mooring areas to accommodate the needs of other users.

Dutchess Boat Club

The Dutchess Boat Club (Club) lease will be terminated to make way for construction of Long Dock Beacon. Scenic Hudson and the Club have been participating in the harbor management planning process to identify places in the HMA for recreational motorboats to dock, including accommodations for the members of the Dutchess Boat Club. In addition, members of the boat club would possibly use of public meeting space of the proposed harborfront building for its meetings and functions.

The Beacon Institute for Rivers and Estuaries Research Vessel Pier

It is not feasible to construct a research vessel dock at Denning's Point where The Beacon Institute's primary scientific and educational facility will be located. Therefore, a pier will need to be located elsewhere along the waterfront. From the inception of The Beacon Institute, it was anticipated that its

research vessels would be docked in the harbor to help revitalize Beacon as a working harbor and to promote economic development. The pier will need to have a water depth of at least 15 feet and be capable of accommodating small trucks carrying research equipment and supplies. The research vessels will also require shore side support facilities for loading and off-loading the research vessels and for equipment storage. The Beacon Institute anticipates that both the dock and the shore-side facility will include a strong public component, increasing the public's access and understanding of the river. The Beacon Institute is committed to collaborating with all the harbor stakeholders and the community to create a revitalized and accessible harbor.

Hudson Fisheries Trust Museum Barge and Docks

The barge will require sewer and utilities connections for year round service, a dock based three ton boom and hoist, and an attached floating gangway to allow access. Due to its requirement for year round access to electric and sewers, the location of the barge must be within an area that can accommodate these utilities. In addition, the barge will require roadside access to the site for loading and unloading equipment. The museum will require parking and a visitor drop-off and pickup area.

Long Dock Beacon

Long Dock Beacon has applied for a permit to construct a plaza with a harborfront walkway and fishing pier along the north side of Long Dock peninsula and a seasonal floating dock accessible from the western end of the peninsula. The dock will be accessible from the plaza and need suitable water depths to be visited by tour boats and large recreational vessels.

The plan for Long Dock peninsula is based on the principle of continuous public access to the shoreline throughout the site and includes approximately 440 feet of public space along the north and west edges of Long Dock peninsula, and a public boardwalk, civic plaza and steps to bring people closer to the river. Therefore any other developments within the harbor area should seek to accommodate this vision, as well as other public components of the project.

3.2. Land Available For Water Dependent Uses

Due to the proximity of the railroad tracks to the Hudson River, there is very little available land that could be developed for water-dependent uses. The only underutilized property is Long Dock peninsula, which is currently being proposed for redevelopment.

City-Owned Property

The City owns the parcel of land located on the south side of the harbor, along the north side of Long Dock Peninsula. The property is a public focal point of the harbor and development must take into account the City's desire to protect its aesthetic quality. The City has offered this property to The Beacon Institute for access to its proposed research vessel pier, as well as a shared-use shore-side facility. In addition to pier access, The Beacon Institute has discussed maintaining and enhancing the public surface water access and creating a more park-like setting. Because of this parcel's proximity to Long Dock Beacon's development, any improvements should be compatible with the vision of that project.

The City also owns the shoreline between Long Dock peninsula and Riverfront Park. Within this harborfront area and located between Long Dock peninsula and the stone groin, is the Beacon Sloop Club building, a parking lot, a boat ramp, access ways leading to the floating docks, and a small promenade leading to the ferry pier. This area would require reconfiguration if any additional water-dependent uses are to be located here. The narrow strip of land between the stone groin and Riverfront Park is too small to consider developing and should remain more natural in appearance.

Long Dock Peninsula

Except for the City-owned property, all of Long Dock peninsula is owned by Scenic Hudson. Scenic Hudson has entered into a development agreement with the intent to lease a portion of the peninsula to Foss Group Beacon for the construction of a sustainably designed and operated mixed-use development which will include a hotel, conference center, restaurants, spa, offices, sundries retail, site amenities and a Quiet Harbor. Both Scenic Hudson and Foss Group Beacon have expressed their desire to continue working with all harbor stakeholders toward the goal that proposed projects in Beacon Harbor be compatible with one another.

3.3. Protection of Scenic Quality

The harbor area offers panoramic views of the surrounding area and its scenic quality is important. Structures should therefore be designed and sited so as to not block or impair these views. Structures should also have the appropriate scale and design and should be sited to maintain the aesthetic qualities of the harbor and harborfront.

The site for The Beacon Institute's research vessel pier, in particular, could have significant visual implications. As the pier is located and designed, scenic views and impacts on surrounding harbor projects should be closely analyzed. The Beacon Institute is committed to collaborating with all of the harbor stakeholders during the next phase of the plan, which will determine the pier's dimensions and details.

3.4. Traffic Circulation and Parking

Perhaps the greatest upland constraint for the harbor is the lack of parking in the waterfront area on weekdays because the existing parking areas are dedicated to Metro- North commuters using the Beacon train station. Along the western side of the railroad tracks there is no room for expanding the parking. There have been discussions about constructing a parking garage on the east side of the station which would enable the parking on the west side to be used for parking for waterfront activities. However, the construction of a garage on the east side is a long-term solution that is still in the discussion stage and currently there is no funding for such a project.

3.5. Public Access and Constraints

Red Flynn Drive is the only roadway running through the waterfront area of the harbor, providing access to both the parking areas along the west side of the railroad tracks and Riverfront Park. Its right-of-way is relatively narrow, there are no opportunities for loading and unloading passengers

from vehicles without blocking travel lanes, and its location makes access and using the boat ramp difficult and inefficient. Long term development plans for the Beacon Train Station by Metro North in conjunction with the City of Beacon call for eliminating parking from this area and re-configuring drop off areas.

3.6. Infrastructure Improvements

Sanitary Wastewater

During the construction of the new Red Flynn Drive overpass, a 4-inch and a 6- inch sanitary sewer force main pipes that terminate at the east side of the overpass were installed. The City's wastewater treatment facility is currently operating at approximately 60 percent capacity and during times of dry weather flow should have adequate capacity to handle redevelopment along the harbor. However, in extreme rainfalls, the sewage pump station and the treatment plant may not have adequate capacity due to a significant amount of stormwater infiltration and inflow. The City is currently evaluating ways to reduce the infiltration and inflow and prior to redevelopment, this issue needs to be addressed.

Stormwater Management

Improvements to the stormwater system that discharges into the northeast corner of the harbor near Riverfront Park should be made to improve water quality. Currently, this system allows untreated stormwater runoff to enter the harbor. Also, this outfall pipe is likely to be a significant contributor to the shoaling in the northern section of the harbor.

Pumpout Facilities

The tidal portion of the Hudson River from New York Harbor to the Troy Dam is classified as a no-discharge zone for vessel waste. Adequate pumpout facilities already exist on the Hudson River and the City is not required to install any additional facilities. However, if boat usage increases in the harbor and in order for the City to be a more attractive destination for boaters, a new pumpout facility may be warranted.

City Owned Boat Ramp

The existing City owned boat ramp is in need of repair. Improvements should be made to increase efficiency, safety, and capacity.

3.7. Water Quality

One area of major water quality concern within the HMA is the stormwater outfall pipe located in the northern section of the harbor. Untreated stormwater is known to convey a wide variety of contaminants into surface waters, such a pathogens, nutrients, organic compounds and inorganic constituents.

Another area of concern is the wastewater from the City's wastewater treatment facility, which during heavy rains allows raw sewage to be released into the surface waters of Fishkill Creek. This release of raw sewage is a major contributor of pathogens to the local surface waters, preventing the beach located on the western shore of Denning's Point from becoming a formal bathing beach. It is also a major contributor to nutrients into the creek that promote the growth of water chestnuts that dominate the mouth of the creek.

3.8. Public Safety

Currently, the Beacon Sloop Club has a volunteer harbormaster who oversees the various structures the Club manages as well as the mooring area. There is no routine public safety presence on the harbor. The Beacon Fire Department's Station No.2, which has two fire trucks, a heavy rescue truck, an inflatable zodiac boat on a trailer, and cold water suits is the closest to the harbor.

As the harbor begins to revitalize and in order to provide a quick response to emergency issues, the need for a more significant public safety presence may be required which could include a full time harbormaster and a fire and safety unit facility located in the waterfront.

3.9. Degraded Habitats and Habitat Protection

Water Chestnuts

Water chestnuts are an annual, aquatic plant considered invasive to the Hudson River. During its growing season, extensive mats dominate the northern portion of the harbor, Biscuit Bay and the mouth of Fishkill Creek.

Due to its dense growth and low food value for wildlife, water chestnuts can potentially have a substantial negative impact on the use of an area by waterfowl and other native species. Also, their dense surface mats likely inhibit the growth of indigenous plant species. Decomposition of the abundant detritus produced in the fall as the plant dies could contribute to low oxygen levels in shallow water, thus adversely impacting other aquatic organisms.

3.10. Safe, Adequate Navigation and Water Depths

Channels

There is an informal accessway for the Newburgh-Beacon ferry between the ferry dock and the deep water of the Hudson River and a 150 foot square turning basin at the end of the dock so that the ferry can turn around. To provide safe navigation within the harbor, a formal, buoyed channel should be established.

Mooring and Anchoring Area

Currently, there are several informal mooring and anchoring areas located throughout the harbor which are managed by the Beacon Sloop Club. As the harbor revitalizes and boat traffic increases, some of these mooring areas will interfere with safe navigation in the inner harbor. It will be necessary to move

and reestablish these moorings in an area that will not interfere with boat traffic, which should become a formal, designated mooring area.

Derelict Structures

There are several areas within the harbor that have deteriorating bulkheads and pilings, many of which are associated with the old Newburgh-Beacon ferry dock. These structures present a hazard to navigation because they are not marked and many are covered by water during high tide. The derelict structures also pose obstacles for future uses of the harbor.

There is also a low, unmarked stone groin running from east to west in the middle of the harbor that becomes submerged during high tide creating an additional navigational hazard. The groin should be marked with hazardous structure buoys.

Water Depth

The harbor area located north of the stone groin is less than two feet deep during low tide. The average depth throughout the rest of the harbor at low tide varies from between three feet (along the southern edge of the stone groin) and eight feet (near the ferry dock). The water depth at the City's boat ramp is approximately two feet at low tide allowing only small vessels to be launched from this facility at low tide. At the western edge of Long Dock peninsula where a dock has been proposed, a depth of six feet (required for larger vessels) is within 25 feet of the shoreline.

Many of the proposed water surface uses would require sections of the harbor to be deepened. If the City decides to deepen portions of the harbor, dredging would be required and regulatory requirements for dredging and spoil storage/removal will need to be examined.

3.11. Management and Coordination of Activities in the HMA

Currently in the City of Beacon, management and coordination of direct harbor related activities in the HMA area are undertaken through the efforts of the Beacon Sloop Club which has a volunteer harbormaster who oversees the various structures the Club manages as well as the mooring area. Policy considerations, authority and decision-making concerning the HMA are the ultimate responsibility of the Beacon City Council. The Council has delegated responsibility to various stakeholders including a harbor management planning function to the appointed Conservation Advisory Council and new development review and regulation through municipal staff and Boards. Municipal action to formalize the creation of a structure to permanently provide policy guidance on harbor matters to the Council as well as to manage and coordinate harbor planning, harbor development and harbor management activities is required.

Section 4 - Recommended Surface Water Uses

There are many competing demands for additional uses of the surface waters in Beacon Harbor, which are focused in the southern harbor due to the shallow depths in the northern harbor as described below.

- The Beacon Institute for Rivers and Estuaries wants to construct a pier for its research vessels, and to support public access and their educational mission. This could possibly offer shared berthing facilities for the Clearwater educational vessel and the Woody Guthrie if desired.
- The Hudson Fisheries Trust wants to moor the museum barge it plans to construct along the waterfront and to relocate their Boatbuilding and Small Boat Skills programs (currently on Main Street) to the harbor area.
- The Beacon Sloop Club wishes to enhance its moorings and boating programs. Additional transient moorings are desired by the Sloop Club.
- The City wishes to encourage and support tourism by making the harbor a destination and connecting the harbor to the City.
- The Dutchess Boat Club, which currently operates a launching ramp and docks for small boats and a club house, is seeking a location in which to operate as it must vacate its current site.
- Long Dock Beacon plans to construct a 166 room hotel and conference center for 350 person events on the north side of Long Dock Beacon in the south harbor that would include restaurants, retail space, parking for 370 vehicles, a pedestrian oriented public space (North Boardwalk) along the shoreline of the south harbor, and possibly docking for transient boats.

If some or all of the area north of the stone groin could be dredged, then the demands placed upon the south harbor for surface water uses would be greatly reduced as a fairly large area could be opened up for surface water usage. Dredging may not be feasible as there are a number of logistical and regulatory issues that would need to be overcome, including the quality and quantity of material to be removed (dredging a 300 feet wide by 800 foot long area from the Hudson River to the shoreline to a depth of five feet would generate nearly 45,000 cubic yards of sediment), impacts to benthic habitats and aquatic species, the method of dredging, where to place the dredged material until it is disposed of, and where to dispose of the dredged material. The cost of dredging will also be significant so obtaining the necessary funding would be an issue. For these reasons, dredging of the north harbor is, at best, a potential long term solution to provide additional usable surface water area and to meet the demand for additional uses.

The surface waters in Beacon Harbor have been allocated between various uses, described previously. Each use has its own set of requirements and many of the uses must interact with and be compatible

with other uses. In some cases, one use will preclude another in the same area; for example, a dock cannot be constructed in a vessel accessway.

The limited amount of usable surface water area in Beacon Harbor requires that it be used efficiently. One way that this can be achieved is by shared or multiple uses. For example, the ferry currently only uses the ferry dock on weekdays so the ferry dock could be used by excursion vessels on weekends. Similarly, while parking in the waterfront is largely unavailable on weekdays, it is plentiful on weekends. Shared and multiple uses will require cooperation and coordination amongst the harbor uses to work.

When considering potential surface water uses, the upland adjacent to the surface water must also be taken into account. Many surface water uses require access to the upland or accessory structures on the upland and if the surface water user is different than the property owner, the consent of the upland owner may be required.

4.1. Public Launching Ramp

Consideration was given to constructing a new launching ramp south of the ferry dock/landing to replace the existing ramp. A ramp at this location was recommended in the City's 1991 LWRP and plans for this ramp were prepared; no action was taken as the City improved the ferry dock instead. The benefit of relocating the ramp is that the water depths south of the ferry dock are comparatively deep (greater than five feet) which would eliminate the need for dredging with the possible exception of a small area at the end of the new ramp. A new ramp at this location could improve efficiency, safety, and launching capacity.

However, the relocation of the ramp is not considered viable for the following reasons.

- The existing grades and topography of the upland south of the ferry dock, where the launching ramp staging area and launching ramp would be located, are too steep for boat launching. In order to achieve a slope appropriate for launching and retrieving boats in for a staging area, a significant amount of grading and filling, and possibly the construction of a retaining wall, would be required. In addition, the slope of Red Flynn Drive, which would have to be used to access the ramp, is relatively steep.
- A large area of the ferry landing would have to be removed and converted into a driveway to access the launching ramp.
- A launching ramp would be a new use at this location and would require extensive modification to the shoreline which might pose regulatory issues.
- The use of a launching ramp at this location might increase conflicts between pedestrians accessing the ferry dock for either ferries or excursion boats and vehicles launching and retrieving vessels.
- A launching ramp south of the ferry dock would severely restrict other uses in this part of the harbor as a designated accessway of at least 30 feet in width would be required from the end of the ramp to at least the ferry turning basin. In addition, the dedicated

floating dock that would be required for the temporary tie up of boats being launched and retrieved would occupy additional surface water area.

- There is insufficient area between Red Flynn Drive and the launching ramp for a staging area for the ramp which would create a conflict between vehicles using the ramp and vehicles traveling on Red Flynn Drive.
- A new ramp might attract more users than this limited waterfront area may be able to accommodate, particularly on weekdays when parking is limited.

The existing ramp is a viable ramp that does allow boat launching, although it has several limitations. The principal limitation, the shallow water depths that restricts its use to small boats during times of low water, is being addressed by the improvements proposed by the City. These limitations are not uncommon along the Hudson River and conflicts can be minimized by making potential ramp users aware of the constraints/use parameters. It should be noted that a new ramp capable of handling large boats and with a larger parking area (during peak times, however, there is insufficient parking) has recently been constructed in the City of Newburgh on the opposite side of the Hudson River from the City of Beacon. The City has expressed an interest in conducting further study into the need and cost of ramp improvements.

4.2. Parking

Parking will remain an issue. Currently, there are only three vehicle/trailer parking spaces available during weekdays; vehicle/trailer parking is not limited during weekends. The parking issue will not be resolved until the parking garage that has been suggested for the east side of Beacon Station is constructed.

There are a number of actions that could be undertaken that would greatly improve the functioning of the existing ramp and address the navigational impairments.

- The floating dock for boats accessing the ramp should be replaced with a dock that is more stable, longer, and easier to access from the land.
- The paved area in front of the launching ramp and the curbing should be reconfigured and marked to improve vehicle/trailer access to the ramp and to direct traffic flow and movement.
- The channel leading from the ramp to deep water should be marked with buoys and signage.
- Signage should be placed on the stone groin advising ramp users of its location.
- Obstructions on the bottom and shoals should be removed within channels and points of access.
- If water depths at low tide limit navigation, the use of the ramp should be restricted to those times before and after high water when a vessel is not likely to be damaged; there should be signage to this effect placed at the ramp.

- All of the old pilings and in-water structures should be removed to provide safer navigation and easier access.

4.3. Ferry Accessway and Turning Basin

The Newburgh-Beacon ferry requires unrestricted access to the ferry dock that is sufficiently wide to provide safe navigation, particularly during times of high winds and waves and strong currents. The ferry needs an accessway between the open waters of the Hudson River and the ferry dock. There also needs to be an open area (i.e., turning basin) at the end of the ferry dock so that the ferry can turn around for its return trip to Newburgh.

A 50 foot wide accessway should be designated from the end of the turning basin to deep water in the Hudson River. The orientation of the accessway, if possible, should be angled in a northerly direction in order to create more usable surface water area between it and Long Dock peninsula. The accessway should be buoyed and anchoring and mooring within the accessway should be prohibited.

4.4. Research Vessel Pier: The Beacon Institute for Rivers and Estuaries

Given its size and use, the research vessel pier, wherever it is placed in the harbor, will be a major feature. One of its goals is to augment the educational and public programs planned by The Beacon Institute. The research vessel pier may limit certain other surface water uses. The research vessel pier could also provide opportunities for multiple uses, provided that they do not preclude the reasonable operation of the research vessels. The pier should be designed, constructed, and managed accordingly.

In locating the pier, several factors need to be taken into account.

- **Shore access:** Small vehicles and forklifts need to be able to access the pier from the shoreline. This means that there needs to be an accessway and ramp leading to the pier, and a loading zone if items need to be transferred from large to smaller vehicles.
- **Pier length:** The pier length should be as short as possible while accommodating its various uses and users. As pier length increases, so too does the cost of construction (a preliminary engineering estimate is \$3,000 per linear foot for the fixed pier options). Shading of the water column, which is considered to be a significant environmental issue, also increases with pier length. As pier length increases, its use becomes increasingly inconvenient, the risk of accidents increases, and it becomes an increasing risk to navigation. A longer pier, however, may allow for additional public water access and use.
- **Ice damage:** Ice flows in the Hudson River can cause significant damage to a fixed pier. It should be noted that the stone groin was originally constructed as an ice block to protect the harbor from ice damage. If a fixed pier extends outside the harbor, then the design of the pier will have to be even more robust in anticipation of ice conditions adding greatly to its construction costs. Vessels docked at the pier would also be exposed to these environmental stressors.

A number of sites were considered for the location of the research vessel pier including the south side of Riverfront Park, the west end of Long Dock peninsula, the City owned property between the ferry dock and Long Dock peninsula, the west end of the City owned property adjacent to Long Dock Beacon's northern edge and civic plaza, a wharf along the city-owned property north of Long Dock, and a gangway landing with floating docks.

- Riverfront Park was deemed not to be viable because it is a designated parkland and this would require action by the New York State Legislature to allow the fixed pier to be built. The infrastructure, access road, and operation of the pier would be in conflict with the park setting. In addition, water depths in the north harbor are not adequate for the proposed research vessels which would necessitate significant dredging.
- A pier at the western end of the Long Dock peninsula is a possibility, but the pier would have to be accessed across private property (Scenic Hudson/Foss Group Beacon) and its access and use might conflict with the proposed development on Long Dock Beacon. This location might also place constraints on the research vessel activities. In addition, the pier would be susceptible to ice damage and the environmental forces in the open river. For these reasons, this option might not be viable.
- This Harbor Management Plan is intended to present viable options for the pier location, without finalizing the location. In the subsequent phase of pier development, marine engineers will evaluate the suggested options in depth and the final location will be determined using that information.
- Viable Research Vessel Pier Options

Five research vessel pier options are considered viable, and are further described in the following sections. The figures appear on the pages following the descriptions:

- 1. Fixed Pier off City Property on Long Dock Peninsula**
(Option 4.4.1 - [Figures 11A through 11 C](#))
- 2. Fixed pier as an extension of the Existing Ferry Dock**
(Option 4.4.2 – [Figure 11D](#))
- 3. Fixed Pier off City Property South of Ferry Landing**
(Option 4.4.3 - [Figure 11E](#))
- 4. Wharf along the North Shore of Long Dock Peninsula**
(Option 4.4.4 - [Figure 11F](#))
- 5. Floating Docks**
(Option 4.4.5 - [Figure 11 G](#))

4.4.1. Fixed Pier off City Property on Long Dock Peninsula (Figures 11 A, B, C)

The City owns a narrow rectangular 60 foot wide by 260 foot deep parcel on the north side of Long Dock Peninsula from which a fixed pier could originate and extend out into Beacon Harbor and potentially the Hudson River. Regardless of the exact orientation and length, there are a number of benefits associated with constructing the fixed pier off the City property.

- Research vessel operations: The navigation of the research vessels would not conflict with the navigation of vessels inside Beacon Harbor.
- Minimize activity in the inner harbor: The fixed pier off the City property would place the additional vessel activity associated with The Beacon Institute into the outer harbor area minimizing the amount of increased activity in the inner harbor, reducing conflicts and allowing other uses.
- Increased potential for enhancing public access to the waterfront: The fixed pier would expand the access to surface water and open area of the harbor to the public.

There are also a number of issues associated with constructing a fixed pier at this location.

- Limiting access from the harbor to the shoreline along Long Dock peninsula: The fixed pier could significantly limit or constrain water access to and from the north side of Long Dock Beacon, depending upon its location relative to the Long Dock peninsula shoreline, and its design.
- Visual impacts on Long Dock Beacon: The fixed pier might have approximately the same elevation as the Long Dock Beacon after the hotel, parking area and boardwalk are constructed, which might adversely impact scenic views to the north of the harbor and the Hudson River from Long Dock Beacon's North Boardwalk proposed along the harbor's southern shoreline.
- Restricted surface water usage in the area between the fixed pier and Long Dock peninsula: The fixed pier might create a confined area of surface water between it and the Long Dock peninsula shoreline. The size of the area, its potential uses and access will be determined by the orientation of the fixed pier relative to the shoreline (see below).
- Lack of connectedness to activities on the waterfront: The Beacon Institute for Rivers and Estuaries should be an "anchor" for the waterfront area. Its research vessels could play an integral role in creating this anchor as well as generating interest in the activities of The Beacon Institute. Placing the research vessels at the end of a long fixed pier, 1,000 feet from Red Flynn Drive, would tend to disconnect them from the waterfront, although a long pier could also afford the opportunity for increased public and municipal use such as docking for other vessels.
- The potential for dredging and the need to remove derelict piles.

The fixed pier could have various lengths and orientations relative to the shoreline on Long Dock peninsula and there are various combinations of lengths and orientations as well (Figure 11A, B and C). The particular length and orientation that is chosen for the fixed pier will depend upon many factors including water depths, the need for dredging, regulatory issues, various engineering considerations such as sediment stability, navigation, public safety, and the need to make trade-offs. To guide in the selection of a location, an analysis of the impacts of changing lengths and orientations of the fixed pier was undertaken.



Figures 11A, B, C – Fixed Pier of City of Beacon

Pier Length

The fixed pier will need to extend out at least as far as the end of Long Dock peninsula, a length of the 400 feet, in order to provide adequate docking space. It could also extend beyond Long Dock peninsula and into the Hudson River.

If the fixed pier were only to extend to the end of Long Dock peninsula, the following factors need to be considered:

- dredging would be required because the water depths would be insufficient for the larger research vessels;
- similar to the alternative that uses the south side of the ferry dock, the number of vessels that could be docked at the City property alternative would be limited because the number of boats that could use it is proportional to its length; there might be limited opportunity for use by recreational boats; and
- the design options at the terminus of the fixed pier would be limited (see below) because it will terminate within the harbor.

It would:

- be the least expensive to build and maintain;
- possibly cause the least amount of surface water shading;
- be the most protected from ice damage;

- pose the smallest risk and interference with navigation; and,
- be the easiest to use and access.

However, as the length of the pier increases beyond Long Dock peninsula:

- the amount of dredging required will decrease and if the pier extends far enough into the Hudson River (approximately 200 feet from the end of Long Dock peninsula), dredging will be unlikely;
- more vessels will be able to use the fixed pier;
- the construction and maintenance costs will increase due to the additional length and the increasing potential for ice damage;
- its potential to interfere with navigation will increase;
- it will become increasingly susceptible to ice damage;
- the amount of surface water shading will increase; and • it will be more difficult to use.

Pier Orientation

From where the fixed pier originates on the shoreline of the City property, it can have a range of orientations (angles) relative to Long Dock peninsula. There are five principle considerations that need to be taken into account with respect to the orientation of the fixed pier:

1. the possible uses of the area of surface water that it creates between Long Dock peninsula and the fixed pier;
2. the visual impacts of the fixed pier on Long Dock Beacon and particularly the North Boardwalk;
3. the potential to pose an obstruction to ferry operations;
4. vessel access to and from the inner harbor; and
5. the quality of the views from the harborfront to the Hudson River and of the harborfront from the Hudson River.

It should be noted that the degree to which the fixed pier will pose an obstruction to the ferry and will limit access to the inner harbor will also be determined by its length.

The closest location of the fixed pier to the Long Dock peninsula could be along the City property line, ten to twenty feet north off of the shoreline. This would create a relatively small and probably unusable area of surface water. This location would have the greatest negative impact on Long Dock Beacon because the closeness of the fixed pier to the North Boardwalk would create visual and aesthetic issues. It would, however, have the least impact on the ferry and access to the inner harbor.

As the orientation of the fixed pier is shifted towards the north (i.e., angled away from Long Dock peninsula), the area of the surface water between it and Long Dock peninsula would increase and this would increase the usability of the area by small boats. There will also be increasing separation between it and Long Dock peninsula which will reduce the fixed pier's adverse visual impacts on Long Dock

Beacon. However, its proximity to the ferry accessway will increase as the orientation shifts northward, and thus its potential conflict with the ferry. Also, this location will limit access to the southern portion of the inner harbor.

There are three basic options for the how the pier terminates: a straight end, a “T”, or an “L” with the “L” oriented toward either the north or the south. How the pier terminates will determine the orientation of vessels, how many research vessels can be moored to it and the amount of protection the pier will provide to the moored vessels; the “T” configuration provides the most options and the straight configuration the least. How the pier terminates will be determined, in part, by how it conflicts with other navigational needs, with the straight end posing the fewest conflicts and the “T” the most conflicts.

Regardless of the length and orientation of the fixed pier, an access road to the fixed pier would need to be built from Red Flynn Drive (probably via the ferry landing area) along the length of the City property and between the Red Barn and the shoreline. Alternatively, if an agreement could be made with Scenic Hudson/Foss Group Beacon to use the Long Dock Beacon property, it may be possible to gain access to the fixed pier from the main east-west roadway through Long Dock Beacon via a connector road located on the west side of the Red Barn.

The City property is undeveloped and offers a natural setting comprised of scattered trees, shrubs, and invasive plants; the understory has been cleared and replaced with grass. The City wants to maintain a park-like setting on the property and it should be relatively easy to meet this requirement while still providing access to the fixed pier; The Beacon Institute has discussed with the City their commitment to enhancing this natural area and increasing public access here as part of their potential use of this area.

The access road to the pier will need to be designed and situated to maintain the natural qualities of the property. It should be placed as close as possible to the Long Dock Beacon north property line in order to create as large an area of shoreline between the road and Beacon Harbor as possible and to minimize the fragmentation of the property. It should be constructed of gravel or other pervious material in order to minimize stormwater runoff and to minimize its visual intrusiveness. The shoreline where the fixed pier will originate would probably need to be bulkheaded in order to create a stable transition from the land onto the fixed pier. Depending upon its proximity to the shore and the load bearing capacity of the soils, the access road might require the stabilization of the shoreline in order to prevent it from collapsing into Beacon Harbor; the shoreline stabilization, if needed, might pose environmental and regulatory issues but also habitat restoration opportunities.

Regarding this option, which extends the fixed pier from the City land along the north edge of Long Dock peninsula, in the future fixed pier alternatives siting study and impact analysis must include an analysis of the criteria and variables regarding the extent of the impact and the resultant compatibility or incompatibility of pier activities. This assessment will include elements such as effects on lighting, noise, and hours of activity, and impacts from pier and vessel operations on the Long Dock Beacon north pier, hotel, conference center component activities currently undergoing permit review with the City of Beacon, and impacts on natural resources.

4.4.2. Fixed pier as an extension of the Existing Ferry Dock (Figure 11-D)

This option is a long extension of the existing ferry dock, taking the pier into the deeper water it requires.

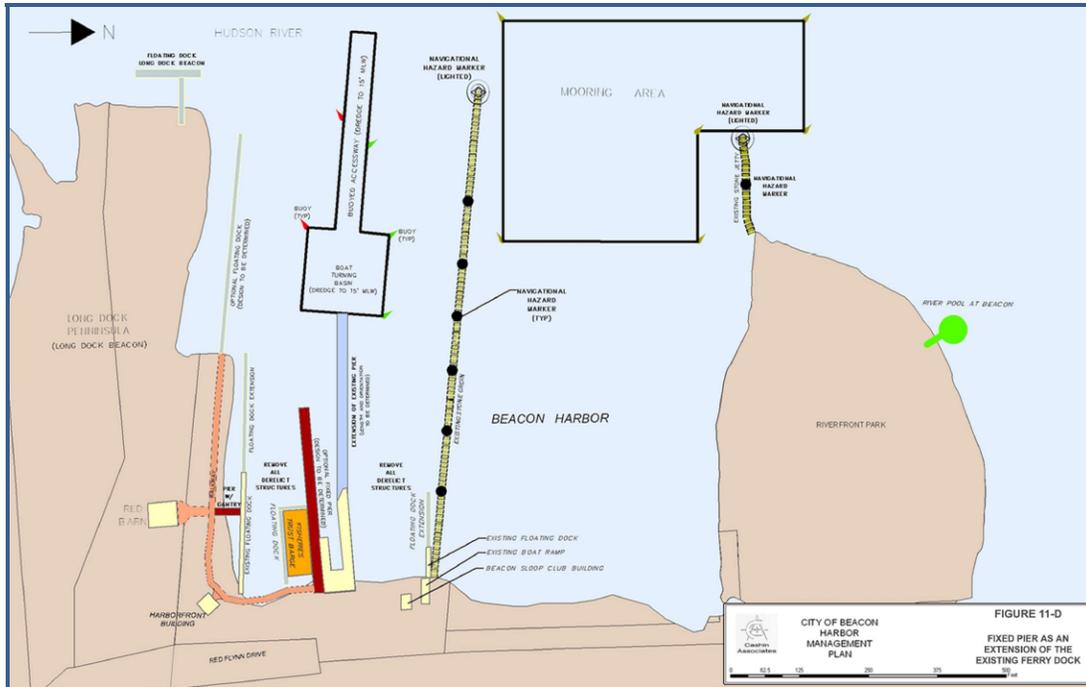


Figure 11D – Fixed Pier as an Extension of the Existing Ferry Dock

The benefits of this option are summarized below.

- There would be flexibility for the use of the pier by others in addition to the research vessel; such as the Clearwater, the Woody Guthrie, visiting tour boats and large recreational vessels.
- This option is compelling as it makes the pier the centerpiece of the harbor, activating a larger area of waterfront.
- No dredging would be necessary.
- Shoreline access is easy, though the mixed use aspect would need to be managed with care.
- Connectedness with activities at the pier would draw attention and visitors easily, being so visible within the harbor area and train station.
- It would allow adjacent space for the Hudson Fisheries Trust barge.
- Visual and use conflicts with Long Dock Beacon would be lessened.

The disadvantages of this option are summarized below.

- Length: construction costs would be higher than for a short pier.

- The potential for environmental impacts is increased due to its length.
- The "mixed-use" aspect: the public and scientific uses could conflict. These different uses would need to be carefully analyzed and potential conflicts minimized through good design and attentive harbor management.
- There is a potential for ice damage, as the pier is less sheltered
- The shared co-existence with the Ferry would need to be examined in depth.

A thorough examination of the variables and impacts is necessary to assess this location's feasibility. The primary benefit is the lack of dredging required. Impacts to the current ferry system and anticipated harborfront improvements are among the many aspects that will need to be considered.

4.4.3. Fixed Pier off City Property South of Ferry Landing (Figure 11E)

Another potential location for the fixed pier is south of the ferry dock, off City property adjacent to Red Flynn Drive. The ferry docking facility consists of two docks, a longer north dock used to access the ferry, and a shorter south dock that provides public access to the harborfront. The research vessel fixed pier could be located either to the south of the ferry dock complex or might replace the shorter south dock that is part of the existing dock complex. Ideally, a pier at this location would be situated 50 to 75 feet south of the north ferry dock so that a research vessel could dock between it and the north ferry dock.

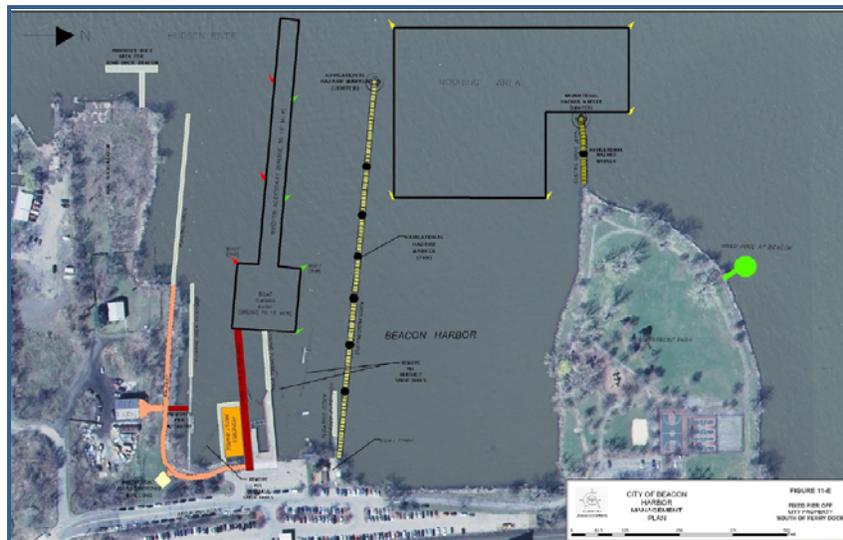


Figure 11E – Fixed Pier off City Property South of Ferry Dock

The research vessels would share the turning basin and accessway with the ferry in order to get access to the Hudson River. In this location activities associated with shore side support for the research vessels can be kept separate and distinct from all ferry docking activities and mitigate potential user conflicts.

There are numerous benefits associated with locating the fixed pier at this site.

- Length: The fixed pier would only be as long as the north ferry dock, approximately 300 linear feet. This would reduce costs and provide more efficient access from the shoreline onto the pier.
- Less potential ice damage: The fixed pier would be sheltered from ice movement in the Hudson River and a research vessel could berth at the dock all winter.
- Shoreline access: It would be easy for vehicles to access the fixed pier from Red Flynn Drive via the existing parking lot. The parking lot could also be used as a temporary loading/unloading area. Where the fixed pier makes landfall will need to be stabilized to ensure that the shoreline does not collapse from the weight of vehicles accessing the pier; this will likely require a short extension of the existing bulkhead.
- Connectedness with activities center: Any research vessels at the fixed pier would be easily visible from shore and pedestrians could easily walk from the shore to the research vessel. This would enable a research vessel to be a focal point and anchor in the harbor, although it is possible that there would be some constraints to research vessel activities due to the public traffic in this location.
- Hudson Fisheries Trust barge: The Hudson Fisheries Trust barge could be moored alongside the fixed pier, providing an accessible location for the barge and enhancing the “working waterfront” character of the harbor. In addition, floating docks could be secured to the west and south sides of the barge, providing additional facilities for sailing and small boats.
- Long Dock Beacon: Placing the fixed pier next to the ferry dock would eliminate most surface water access and visual conflicts with Long Dock Beacon and Long Dock Beacon development.
- Water column shading: Because the pier at this location would be shorter than at other potential locations, the extent of water column shading from the pier would also be reduced.

There are, however, also a number of disadvantages to placing the fixed pier at this location.

- Dredging: The water depths between where the pier would be situated and the Hudson River are not deep enough for larger vessels; depths in this area are only five to nine feet. These depths are sufficient for vessels that are less than 40 feet in length; however, The Beacon Institute intends to serve vessels up to 120 feet in length. Thus, the berth area along the pier and the ferry accessway would likely have to be dredged in order to accommodate larger vessels. To facilitate safe navigation, this channel must be 100 feet wide and six to 10 feet of material would have to be removed from the bottom of the harbor. This amount of material corresponds to approximately 15,000 and 20,000 cubic yards of dredged material. It should be noted that dredging this channel would also benefit the operation of the Newburgh-Beacon ferry, as there are several locations where the existing water depths are barely adequate for ferry passage.

- Pile removal: All of the derelict piles located in this area would have to be removed to accommodate the berthing areas of the vessels utilizing the pier.

When this potential location is compared with the location along Long Dock peninsula, it appears that there are more benefits and fewer conflicts associated with the “ferry dock” location. The primary drawback to this location is the need for dredging and its potential to be a regulatory roadblock.

4.4.4. Wharf along the North Shore of Long Dock Peninsula (Figure 11F)

An additional vessel siting option was presented by McLaren Engineering Group, the consultant hired to provide the City of Beacon with the professional services to study and assess specific opportunities and constraints on the location and orientation of the proposed Center’s research vessels and associated facilities identified in the Harbor Management Plan.

McLaren’s proposed alternate is to construct a wharf along the northern shore of Long Dock Peninsula. (See Figure 11-D) This option would require the dredging of berthing areas to accommodate the draft of the research vessels. Additional floating docks would be installed to accommodate other planned vessels.

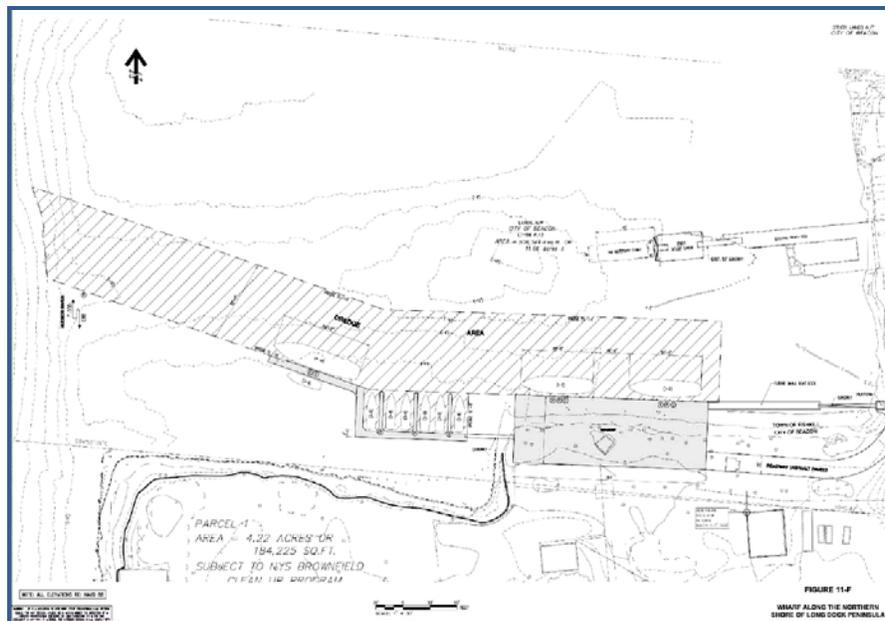


Figure 11F - Wharf along the Northern Shore of Long Dock Peninsula

The benefits of the wharf option are:

- The wharf would be sheltered from ice floe forces in the river because it is within the harbor and relatively close to the shoreline.
- Maintenance costs are decreased due to the minimization of in-water structures.
- Shoreline access for vehicles servicing the research vessels is increased, and circulation on the wharf would be accommodated with greater ease than on a narrower pier.

- There would be increased proximity to the proposed service/education building
- Access for the public is increased due to the wharf's proximity to the shore.
- The impact on the view corridor from the Long Dock Beacon complex is minimized.
- There is minimal impact to the existing ferry service.
- Allows greater future development and use of the inner harbor between the northern shoreline of Long Dock Peninsula and the existing ferry pier location
- The wharf adds the least amount of overwater shading to the existing river area, minimizing the environmental impact.
- The inner harbor east and north of the wharf will be left open for small boats and other activities
- Visual and use conflicts with the Long Dock Beacon development would be lessened

All alternatives are exposed to regular wave impacts from the existing ferry service; however, the wave impacts are minimized with this alternative as the berthing locations are further into the harbor where the ferry has already reduced its speed.

The disadvantages of the wharf option are:

- Dredging is required in order to construct the wharf and to accommodate the draft of research vessels and other larger boats
- Maintenance dredging would be costly
- Shoreline stabilization would be required
- Provisions would be required to physically separate the public during research vessel loading and unloading
- Removal of derelict piles may be required to accommodate the wharf structure
- Operation and program area for the berthed vessels is primarily on land, reducing the available land surface area for other uses. Combined uses are possible, however, so the disadvantages are minimal.

This proposed location has a number of advantages in that it provides an accessible, protected location for the research vessels and balances the needs of stakeholders. Should this location be selected, careful analysis of the design in relation to the Long Dock Beacon development needs to be performed. The most significant drawback to this option is the dredging requirement its potential for regulatory difficulties.

4.4.5. Floating Docks, using a portion of the existing Ferry Dock for intermittent and scheduled bulk loading (Figure 11G)

McLaren Engineering Group, the consultant hired by the City of Beacon with the professional services to study and assess specific opportunities and constraints on the location and orientation of the

proposed Center’s research vessels and associated facilities identified in the Harbor Management Plan, presented an additional option that developed as the large wharf option was being examined.

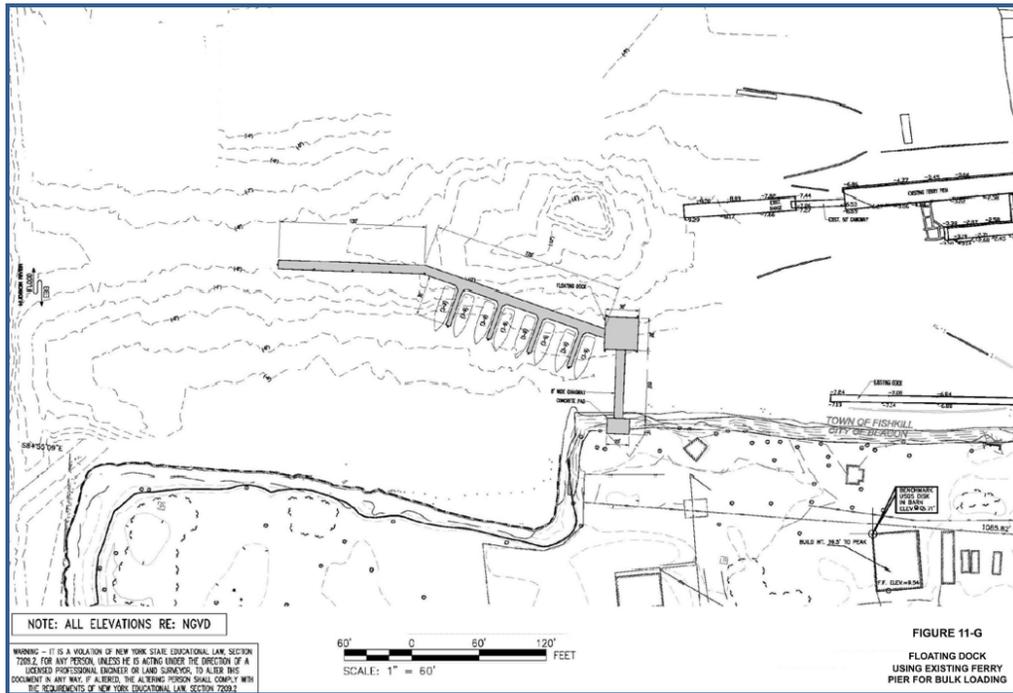


Figure 11G - Floating Dock Using Existing Ferry Pier for Bulk Loading

This proposed alternate is to construct a gangway landing at the end of the City property near the northern shore of Long Dock Peninsula. The concept is to provide sufficient floating docks to serve most vessels during the initial development of the research harbor. This concept intends to allow expansion of facilities and services in the future to address growing needs of the Institute, the Harbor, and the public. There would be a large ramp leading from this “education area” to a publicly accessible platform at water level, then a floating pier, which will accommodate the small/mid-sized research vessels, the Clearwater, and the Woody Guthrie. Additionally, there would be finger docks for smaller boats off of this pier. The largest of the research vessels and the Clearwater would use the southern arm of the existing ferry dock for bulk loading at high tide. This option supports the incorporation of additional floating docks in the “inner harbor”, creates a flexible shore-side public space, enhances public access to the water, and does not require dredging.

The benefits of the floating dock option are:

- The docks would be sheltered from ice floe forces in the river because it is within the harbor and relatively close to the shoreline.
- Shoreline access for vehicles servicing the research vessels is increased,
- There would be increased proximity to the proposed service/education building
- The impact on the view corridor from the Long Dock Beacon complex is minimized.

- One possible design concept allows the Clearwater to moor broadside at the pier, enhancing the public view from the train, station and harborfront.
- There is minimal impact to the existing ferry service.
- Allows greater future development and use of the inner harbor between the northern shoreline of Long Dock Peninsula and the existing ferry pier location
- This option requires no initial dredging, minimizing the environmental impact. This results in a reduced level of service for the facility until further need and funding is obtained from expanded services and dredging
- The inner harbor east and north of the docks will be left open for small boats and other activities
- Visual and use conflicts with the Long Dock Beacon development would be lessened
- All alternatives are exposed to regular wave impacts from the existing ferry service, however the wave impacts are minimized with this alternative as the berthing locations are further into the harbor where the ferry has already reduced its speed.
- Opportunities abound for interpreting and explaining the operation and equipment of the educational vessels to the public (at a safe distance when necessary).
- No dredging maintenance dredging is required. This saves time, there is less regulatory time and energy, and there is a substantial cost savings. All of these factors increase the projects' feasibility.

The disadvantages of the floating dock option are:

- Pre-scheduling and timing will be necessary for the larger research vessels and the Clearwater to use the southern ferry dock at high tide.
- Provisions would be required to separate the public during research vessel loading and unloading; though the real bulk loading will be at the southern ferry dock; which will be easier to cordon for that short time.
- Removal of derelict piles may be required to accommodate the docks.
- Removal of derelict piles may be required at the southern arm of the ferry dock
- Load-bearing capacity and the construction of the southern arm of the ferry pier will need to be reviewed and possibly modified, or additional berthing dolphins installed to minimize additional loads on the existing pier.

The program area for the berthed vessels is primarily on land, reducing that available land surface area for other uses. This option does however provide public access both shore-side and on the water, and allows for larger and more diverse, combined uses, so this disadvantage is minimal. This is particularly true in light of the abundance of adjacent public parks; Riverside Park and the soon-to-be-constructed Scenic Hudson Park at Long Dock Beacon.

This proposed location has a number of advantages in that it provides an accessible, protected location for the research vessels and balances the needs of stakeholders. Should this location be selected, careful analysis of the design in relation to the Long Dock Beacon development needs to be performed. The most significant benefits of this option are that no dredging is required, and it represents a substantial cost savings.

The figures on the following pages show the five vessel siting pier option described above:

4.5. Floating Docks

One of the surface water uses that is currently unavailable, but that could be provided in order to make Beacon a destination by water, is dockage for transient boats. It is inconvenient for transient vessels to moor or anchor offshore because people would need either a small boat or livery service to transport them to and from their boats. Floating docks could offer both short term use or overnight stays and while not necessary, electric and water could be provided. The City could generate revenue by charging fees for transient dock use.

Floating docks (it is assumed that all floating docks will be comprised of eight foot wide by 20 foot long modules) can meet a number of needs including docking for small rowing and sailing boats and storage for dinghies used to access moorings. Floating docks can also provide seasonal and transient dockage for recreational boats. The Woody Guthrie could be docked at a floating dock which will provide easy access. The floating docks would also provide a temporary tie up for boats using the ramp and further out small boats or dinghies could be stored or moored on or adjacent to the floating docks.

The floating docks could be operated by the City or their operation could be turned over to another entity such as the Beacon Sloop Club. The floating docks would probably need to be removed seasonally to prevent damage by ice. There are three locations that could accommodate floating docks: along the north side of Long Dock Beacon, along the north side of the City property, and adjacent to the stone groin. Each of these locations is discussed below.

4.5.1. Along Long Dock Peninsula

If the fixed pier is not constructed at this location, and Long Dock Beacon's use facilities are accommodated, a floating dock could be placed along the north side of the Long Dock Beacon property. The floating dock would be limited to 400 feet in length and thus would not extend beyond the end of Long Dock Beacon peninsula. In this configuration, the floating docks would be accessible by dinghies and small boats tied up either alongside or perpendicular to the floats; approximately 15 (parallel) and 40 (perpendicular) boats could be accommodated. This dock could be accessed either by a pathway the length of the City property leading to a gangway or by a gangway from Long Dock Beacon or both.

Floating docks at this location might be used to showcase and facilitate access to the Woody, which is currently docked at a floating dock that can only be accessed by another boat. Scenic Hudson and Foss Group Beacon have also offered to dock the Woody in the Quiet Harbor that is part of Long Dock Beacon's overall development proposal.

4.5.2. Along City Property on the Long Dock Peninsula

The existing floating dock along the north side of the City property should remain and consideration should be given to providing additional access to it from the shore by placing a gangway in the vicinity of the Red Barn, as indicated in Beacon Institute Vessel Pier option 4.4.5. The floating dock may need to be reconfigured to allow for the gangway option. The use and accessibility of this floating dock, however, may be somewhat limited if the fixed pier and the Hudson Fisheries Trust barge are placed south of the ferry dock, thus occupying surface water that would otherwise be available to users of the floating dock. Two uses that could be accommodated at this floating dock are an emergency response vessel and a harbormaster boat, because of its proximity to shore and to the proposed harborfront building.

4.5.3. Along Stone Groin

Another potential location for the installation of floating docks is along the south side of the stone groin. A ramp would be needed to connect the floating dock to the land on the north side of the public launching ramp. The floating dock at this location would be well-suited to provide a temporary tie up for boats using the public launching ramp, and small boats or dinghies could also be stored or moored at the floating dock.

4.5.4. Along the Beacon Institute Research Vessel Pier

Floating docks could be installed parallel to the fixed pier along its north and/or south sides to provide docking for smaller research and recreational vessels. Because the fixed pier will be several feet above the water surface, the floating docks would need to be accessed from the fixed pier via one or more cantilevered landings built off of the fixed pier that would be connected to ramps leading to the floating docks. In order to minimize conflicts with research vessels, the floating docks would not be installed within 200 feet of the terminus of the fixed pier. Depending upon the length of the fixed pier and its orientation, together with the size of boats, the floating docks could provide docking for between five and 30 boats. Finger docks off of the floating docks would probably not be feasible as they would occupy too much surface water area. Floating docks could also be installed off of the proposed gangway option.

4.6. Long Dock Beacon Dock

If constructed, this dock could be used for long or short-term docking by recreational boaters wishing to visit Long Dock Beacon or the City (Figure 12). It might also be possible to use this dock, depending upon its stability and carrying capacity, to access excursion type vessels. The design of this dock would not meet the requirements for use by The Beacon Institute's research vessels as it could not provide vehicular access to vessels and might not be strong enough to secure large vessels during periods of high winds or currents, although it could probably be used for temporary access. The dock would be susceptible to ice damage and might need to be removed for the winter.

This dock could be a fixed pier which might be capable of docking the research vessels of The Beacon Institute. This option would tightly constrain research vessel activities, and create difficulties with

equipment access to the vessels, proximity to Long Dock Beacon hotel activities, and the complex issues of pier management and maintenance.

The dock should be designed as to not pose a risk to navigation in the Hudson River or in Beacon Harbor. The dock should be designed to minimize the distance small boats, canoes, and kayaks traveling south from Beacon Harbor or north to Beacon Harbor go into the Hudson River than they might otherwise need to.

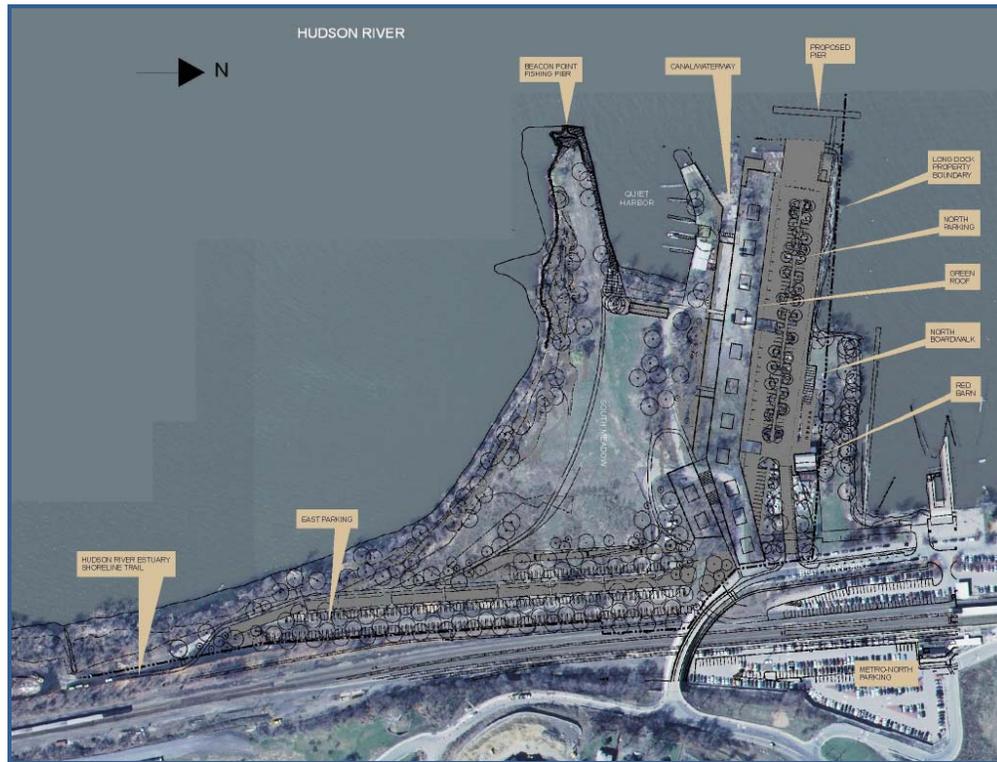


Figure 12 - Aerial Photograph of Proposed Project at Long Dock Beacon

4.7. Mooring Fields

It is proposed that one mooring area be formally established, located approximately 600 feet from shore, between the stone groin and the jetty at Riverfront Park; it would extend several hundred feet into the Hudson River. This area has sufficient water depths and moorings would not conflict with other uses. Moorings should not be placed between the ferry accessway and the stone groin because they will block access to the public launching ramp. Moorings should also not be placed between Long Dock peninsula and the ferry accessway, because they would limit the use of the open water area in the harbor, and would likely block access to the proposed fixed pier that would be located in this area.

There is sufficient area at the proposed location to establish a four acre mooring field, accommodating a minimum of 40 boats depending on size and orientation. This mooring field is intended to accommodate existing moorings and vessels relocating from the Dutchess Boat Club. The mooring field should be formally established and permitted so that it will be shown on navigation charts and delineated by buoys.

It will be necessary to provide for access to the mooring field from shore. Access to the existing moorings is currently accomplished by using dinghies and small boats which are stored on the shoreline. Since space along the waterfront is limited, an efficient way to store dinghies, such as racking, should be established. Consideration might also be given to establishing a livery service to transport boat owners between the shore and the mooring field.

4.8. Support Facilities

There is a need to support the surface water uses recommended in this section and to provide a land-based focus for the waterfront. A new harborfront building could be constructed to provide a shelter/waiting area, restrooms, an office for a harbormaster, and meeting space. It would house the support and storage facilities for The Beacon Institute's research vessels and classrooms for the harbor-oriented public educational program of The Beacon Institute. The facility would need a small parking area for use by The Beacon Institute personnel and the harbormaster during weekdays when parking is limited in the waterfront area.

Locating the harborfront building on the City property south of the ferry landing offers several benefits including.

- Close proximity to the Red Barn: A boatbuilding program is proposed for the Red Barn and placing the harborfront building in vicinity of Red Barn would allow for programmatic tie-ins and support and potentially shared uses.
- Proximity to Red Flynn Drive and existing parking: The site is too small to provide more than a few parking spaces so the existing parking will have to be used; the building's proximity to Red Flynn Drive will make visitor drop-off and pickup easier.
- The site's topography: The site is a natural depression which would allow for two stories that would be partially screened from view and not block views of the Hudson River from the east; an observation area could be constructed on the building's roof.

The harborfront building is envisioned as a two story building. The ground floor would provide a research equipment storage and work area for The Beacon Institute as well as facilities for staff including restrooms and a shower/changing area for crew and researchers (smaller research vessels do not have these facilities onboard). It would have an indoor and outdoor waiting area and possibly public restrooms. Informational kiosks could be placed around the building to provide information on the Hudson River.

The second floor would be more like a community center. There would be an office for the harbormaster and meeting areas that would accommodate the Beacon Sloop Club and the Dutchess Boat Club (the Dutchess Boat Club will be losing its meeting building when Long Dock Beacon begins construction). The Beacon Institute for Rivers and Estuaries has proposed an interactive educational classroom space at Beacon Harbor related to their programs at Denning's Point and the research activities in the harbor. The opportunity to share community use of this space will benefit the public, other users, and the City of Beacon. However, a more in depth study beyond the scope of this document should be conducted prior to any decisions related to the construction of a support facility.

4.9. Red Barn

The Red Barn is an existing structure that is proposed to become a boat building center. Discussions have been held between The Beacon Institute and Scenic Hudson which have concluded that there is potential to accommodate some of the storage requirements of the boat building activities on the City property; however, future discussions between the City, The Beacon Institute and Scenic Hudson will need to be held to determine the best use of the property for various activities.

Access to the water would be desirable and could be provided across the City property to a gangway leading to the floating dock that is proposed for along the City property. A hoist could possibly be constructed on the land that would be capable of launching and retrieving small wooden boats built or refurbished at the Red Barn. However, it is doubtful that all attendant boat building activities can be accommodated within this small area, as the City had offered to make this property available to primarily accommodate The Beacon Institute's research activities and their public educational component. Parking at the Red Barn will be an issue, as there is extremely limited space for any parking on the City property, both at the Red Barn or the proposed harborfront building. A more in depth study of the proposed uses for Red Barn should be conducted in order to determine which uses would be best suited for this location.

4.10. Hudson Fisheries Trust Barge

The proposed Hudson Fisheries Trust (HFT) barge could be moored on either side of the ferry dock or on the south side of The Beacon Institute's fixed pier if it is constructed in this area. Based on available information, the water depths will be deep enough for the proposed barge so that no dredging is required, although the derelict piles in this area would have to be removed. It should be possible to place floating docks along the west and south sides of the barge to provide more small boat docking and dinghy storage. The docks would have to be easily disassembled for whenever the barge needs to be moved.

The area west of Red Flynn Drive in the vicinity of the ferry landing might have to be modified to allow for a bus loading zone as it is likely that school groups will be visiting the barge during school days. It should be possible to create a loading zone without eliminating any parking spaces. Alternatively, the loading zone could be in the parking area on the west side of Beacon Station provided the entranceway and exitway were modified to let buses easily enter and leave the parking lot.

4.11. River Pool

The north side of Riverfront Park is a suitable location and will not conflict with other uses of the harbor. It is important that no activities, such as dredging, be undertaken in the harbor area if they would adversely impact water quality during the swimming season and result in the prohibition of swimming.

4.12. Water Chestnuts

The northern section of Beacon Harbor is a protected area that is well-suited for small boat use. However, during the late spring and early summer, the surface waters of the harbor are covered with

water chestnuts making the area's use by canoes, kayaks and small boats nearly impossible. Although some studies have suggested that water chestnuts have habitat value, an evaluation should be conducted on the possibility of "waterscaping" the water chestnuts to the extent needed to facilitate canoe, kayak and small boat use and its impact on the water chestnut habitats natural values.

4.13. Jetty

The stone jetty extending into the Hudson River from the southwest corner of Riverfront Park is not well marked which makes it a hazard to navigation. Markers should be placed at its terminus and along its length to warn boaters of the potential navigational hazard.

4.14. Stone Groin

The stone groin, except for the rocks at its terminus in the Hudson River, is not visible during high water and barely visible during low tide which makes navigation unsafe, particularly for boaters who are not familiar with the area. This situation could affect the attractiveness of Beacon Harbor as a destination for transient boaters. A prominent lighted marker, either a buoy or piling, should be placed at the terminus of the groin advising boaters of its presence and markers should also be placed at intervals along its length.

4.15. Vessel Pumpout

The Hudson River is a vessel no discharge zone which means that the discharge of treated and untreated sanitary waste from vessels is prohibited. There are no vessel pumpouts in Beacon Harbor. A pumpout should be available for boats using the mooring field and the launching ramp as well as for transient boats. In addition to a pumpout, a dump station for portable toilets should be available. The proximity of pumpouts suitable for large vessels like the research vessels and visiting excursion boats has still to be analyzed; providing pumpout facilities at the Harbor may become an option worth investigating.

4.16. Summary of Recommendations

Specific recommendations to achieve the three goals of the Harbor Management Plan that will minimize, mitigate or eliminate the issues identified in Section III of the this report are described below.

4.16.1 Goal 1:

Promote the economic well-being of the City through appropriate waterfront redevelopment.

- The City should continue to coordinate with all current and potential users of the harbor to avoid conflicts over surface water usage.
- The City should continue to coordinate with Metro-North in making the parking areas west of the railroad track available for harbor usage including a designated area for loading and unloading boats using the public boat ramp.
- The City should continue to work with the Beacon Sloop Club to reconfigure the floating docks and mooring areas to meet revitalization needs and to accommodate all users.

- The City should continue to coordinate with Scenic Hudson and the Dutchess Boat Club to identify potential areas in the harbor for recreational boat dockage.
- The City should continue to coordinate with Scenic Hudson and Foss Group Beacon for the successful completion of the Long Dock Beacon project.
- The City should develop a plan to remove derelict structures in the harbor to improve boating safety.
- The City should continue to work with The Beacon Institute for the successful completion of the Research Vessel pier and related water- dependent support facility.

4.16.2 Goal 2:

Conserve the City's Hudson River heritage as a small, working harbor.

- The City should continue to coordinate with The Beacon Institute for Rivers and Estuaries to construct the research vessel fixed pier and to support research, educational outreach programs and revitalization of the harbor.
- The City should continue to coordinate with the Hudson Fisheries Trust in establishing a museum barge in the harbor.

4.16.3 Goal 3:

Protect important habitats and open spaces, and maintain the pastoral character of the southern water front.

- The City should continue protecting and enhancing (where applicable) the important habitats found in the HMA during the revitalization of the harbor and the surrounding area.
- The City should continue to evaluate the existing sanitary wastewater system and address the overflows into Fishkill Creek during heavy rain events.
- The City should implement best management practices to address stormwater inflows from the stormwater pipe in the northern section of the harbor to reduce untreated stormwater runoff from entering the harbor's surface water.
- The City should consider a conducting a pilot project to control water chestnuts to determine how best to manage this invasive species.

4.17. Proposed Surface Water Use Map

A number of surface water uses are proposed for Beacon Harbor. The Beacon Institute's research vessel pier is a major proposed use, and its configuration and location may affect the final location of the other proposed uses. Figures 11A through 11G depict five different options for The Beacon Institute's pier. The following Surface Water Use Map (Figure 13) generally indicates locations for the proposed surface water uses throughout the harbor area.



Figure 13 - Proposed Surface Water Use Map

Section 5 - Implementation Techniques

5.1. Implementation Actions

In order to advance the recommendations of the HMP and to address the various issues and opportunities in the HMA, a number of projects and studies have been identified.

5.1.1. Finalize Fixed Pier Location

The City of Beacon should continue to work with The Beacon Institute for Rivers and Estuaries on identifying a location and design for the fixed research vessel pier located in Beacon Harbor. The establishment of a desired siting and design for the pier is imperative to implementing the long term visions of the harbor's revitalization.

Establishing a new pier in the harbor would likely involve multi-agency coordination and regulatory compliances (USACE, USFWS, USCG, NYSDOS, NYSDEC, City of Beacon and Town of Fishkill). Once a pier location and design have been established, the next step is to initiate the permitting process. Because the permitting process is likely to require a considerable amount of time, this phase of the pier development should be initiated as soon as possible.

Several criteria, especially when dredging will be required, must be established to initiate regulatory compliances (i.e., design and siting of pier, method of dredging and estimation of dredge material to be removed, testing soil to be dredged for containments, location of an approved dredge disposal site and evaluation of whether there will be impacts to any essential fish and wildlife habitat). Dependent on the siting of the pier, collection of the data to meet these criteria could require a considerable amount of time; the City and The Beacon Institute should initiate this data collection as soon as possible. It is recommended that before the design and location are finalized, the City and The

Beacon Institute have a pre-application meeting with the various regulatory agencies to identify regulatory concerns that can be addressed in the final siting and design. As part of the pre-application process, the types of data needed to support the application should be identified.

5.1.2. Upgrade of Existing Storm Drain

The stormwater outfall pipe located in the northern section of the harbor is likely to be a significant contributor to the shoaling in the north part of the harbor as well as being a source of nutrients that enhance the growth of the water chestnuts. To prevent further siltation and to reduce the input of nutrients, this storm drain should be upgraded.

There are a large number of options available for stormwater treatment including: natural systems such as localized depressional storage, soil infiltration, gravitational settling, detention and retention basins, artificial wetlands, swales, and rain gardens, manufactured systems such as hydrodynamic separators and catch basin inserts. However, the extent of urbanization within the harborfront area presents significant challenges in proposing effective remedial strategies for addressing stormwater pollution.

Limited availability of undeveloped land prevents considering natural systems as a practical option for stormwater treatment. However, some structural stormwater treatment practices, such as water quality inlet catch basin, water quality inlet catch basin with sand filter, infiltration trenches and wells, leaching wells, fluid flow regulators, and roof runoff systems, may be applicable in the remediation of the stormwater outfall pipe in the northern section of the harbor and should be studied.

5.1.3. Remove Derelict Structures

Most of the near shore area in the southern portion of the harbor is lined with derelict structures. The various derelict structures, particularly those associated with the old Newburgh-Beacon ferry terminal, are visually unattractive and are a potential hazard to navigation. Some of them limit access to the shoreline, especially during low tide events.

Similar to the construction of a new pier, removal of derelict structures within the harbor could involve multi-agency coordination and multiple permits and approvals. If the removal of these structures is adopted as part of the harbor's revitalization, a detailed plan should be developed to address structure locations, environmental impacts, and debris control methods to be used during removal. Particularly, essential fish and wildlife habitats and possible contaminants that may be introduced into the surface waters as a result of this project must be evaluated.

5.1.4. Establish Buoys and Markers

As the harbor revitalizes and harbor usage increases, particularly by transient boats, marking obstructions to navigation by installing buoys and markers may be warranted. The corners of the ferry's turning basin should be marked with buoys as should the accessway. The mooring locations should be identified and buoys placed at the corners of each mooring field. Hazard markers should be placed at the end and along the stone jetty and the stone groin. Any derelict structures and obstructions that are not removed should be marked. All navigational markers should meet United States Coast Guard specifications.

5.1.5. Repair Existing Boat Ramp

There are a number of actions that should be undertaken that would greatly improve the use of the City's boat launching ramp.

- The floating dock for boats using the ramp should be replaced with a dock that is more stable, longer, and easier to access from land.
- The paved area in front of the launching ramp and the curbing should be reconfigured and marked to improve vehicle/trailer access to the ramp and to direct traffic flow and movement.
- The channel leading from the ramp to deep water should be marked with buoys and signage.
- Signage should be placed on the stone groin advising ramp users of its location.

- Obstructions on the bottom and shoals should be removed.
- If water depths at low tide do in fact limit navigation, the use of the ramp should be restricted to those times before and after high water when a vessel is not likely to be damaged; there should be signage to this effect placed at the ramp.
- All of the old pilings and in-water structures should be removed to provide safer navigation and easy access. Minor dredging may be needed to eliminate shoal spots.

5.1.6. Construct Additional Floating Docks

Floating docks (it is assumed that all floating docks will be comprised of eight foot wide by 20 foot long modules) can meet a number of needs including docking for small rowing and sailing boats and storage for the dinghies used to access the moorings. Floating docks can also provide seasonal and transient dockage for recreational boats. The floating docks could be operated by the City or their operation could be turned over to another entity such as the Beacon Sloop Club. The floating docks should be seasonal (removed for the winter) so as to minimize damage by ice.

One of the surface water uses that is currently unavailable, but that should be provided in order to make Beacon a destination by water, is dockage for transient boats. It is inconvenient for transient vessels to anchor or moor and floating docks could offer either short term use or overnight stays. While not necessary, electric and water could be provided. Fees could be charged to use this dock.

5.1.7. Control Water Chestnut

Selective clearing of water chestnuts should be undertaken as a pilot project to evaluate the feasibility of implementing a water chestnut control program. Although, biological control methods have been investigated since the early 1900s, physical control methods, both mechanical and manual, are the primary means of controlling water chestnuts. Repetitive mechanical harvesting over a number of years of floating mats by means of weed harvesters can be an effective method to control water chestnuts. Manual removal is an effective means of controlling smaller populations: water chestnut roots are easily uplifted and hand harvesting from canoes and raking have been useful and are a means to promote community involvement. However, it should be noted that these methods will only serve to open up surface waters on an interim basis and will not provide a long-term solution in heavily infested areas.

5.1.8. Assess Support Facility Needs

A needs assessment for a building in the harborfront to support the surface water uses and to provide a land-based focus for the waterfront should be conducted.

5.1.9. Repair the Stone Groin

The stone groin which was constructed to prevent ice damage has deteriorated and needs refurbishing. As the harbor revitalizes, the over-wintering of vessels in Beacon Harbor may be warranted and controlling ice flow within the confines of the harbor may be necessary. In order to rebuild the ice break, the state requires that prior to undertaking actions for ice management, an assessment must be made

of the potential effects of such actions upon the fish and wildlife, flood levels and damage, rates of shoreline erosion damage and effects on natural protective features. Following such an examination, adequate methods of avoidance or mitigation of such potential effects must be utilized if the proposed action is to be implemented.

5.1.10. Comprehensive Bathymetry Study

The only bathymetric survey of water depths in Beacon Harbor was undertaken prior to the initiation of the Newburgh-Beacon ferry operations and it was not a complete survey of the harbor. A detailed bathymetric survey of Beacon Harbor is needed to identify where various uses could be situated, where dredging might be needed and the volume of sediment that would be generated from dredging operations. The bathymetric survey should include the area on the north side of the stone jetty. All existing and potential users of the harbor and surrounding surface waters should assist in this study.

5.1.11. Sediment Quality

The quality of the sediments in Beacon Harbor is unknown and there is concern that that it may have some chemical contamination given the surrounding land uses and the transport of sediments by the Hudson River. Knowing the quality of the sediments is essential for assessing the feasibility and potential environmental impacts of dredging. A survey of the sediments should be undertaken to identify any chemical contaminants and to map the distribution of sediment grain sizes and biological habitats. Both surface and sub-surface sediments should be tested. All existing and potential users of the harbor and surrounding surface waters should assist in this study. The NYSDEC could be consulted regarding the types of testing that should be performed.

5.1.12. Sediment Engineering Characteristics

The load bearing capabilities and other engineering considerations of the sediment in Beacon Harbor is unknown and will need to be determined for the siting and design of several options for The Beacon Institute for Rivers and Estuaries fixed pier. This is less of a concern for the gangway option 4.4.5. Load bearing capability is important because the fixed pier could be a large structure that will need to support considerable weight and also resist the environmental stressors associated with the Hudson River. The Beacon Institute should take the lead role in this study.

5.1.13. Transportation

The expansion of the limited parking in the harborfront area might not be enough to support future activities along the waterfront and ensure access. City of Beacon, in conjunction with the Poughkeepsie-Dutchess County Transportation Council and the NYS Department of Transportation, will seek funding from the Federal Highway Administration and the Federal Transit Administration for planning and operating an adequate transportation system connecting the waterfront with neighboring places.

5.2. Implementation Actions by Others

Achieving the goals and objectives of the HMP will require actions and cooperation by others outside the City of Beacon’s municipal government. Shared and multiple uses are particularly important given the limited amount space that is available.

5.2.1. The Beacon Institute for Rivers and Estuaries

The Beacon Institute’s fixed pier, research activities, and educational programming will be a major element in the revitalization of Beacon Harbor. The Beacon Institute should continue to move forward and coordinate with the City as to the siting and the design of the proposed fixed pier.

5.2.2 Long Dock Beacon

The redevelopment of Long Dock peninsula will restore a degraded brownfield site, revitalize the waterfront, create public access to the peninsula, and help reconnect the city to the waterfront. It is imperative that Scenic Hudson, Foss Group Beacon and the City continue to coordinate as to the design and placement of the various facilities and operations of this project in order to be integrated with those of the other uses and users of the harbor.

5.2.3 Metro-North

In order to assist in addressing the parking issues on the west side of the train station, Metro-North should continue with the process of planning a parking garage on the east side of the train station. The City should encourage Metro- North to pursue the necessary funding and to incorporate this new parking facility into its long term redevelopment plans.

5.3 City of Beacon Implementation Actions and Local Laws

The first part of Section 5 – Implementation Techniques, offers specific recommendations for further study and action to address the issues and achieve the goals identified in the Harbor Management Plan. The City of Beacon should take the following steps to implement the goals of the Harbor Management Plan:

1. The City Administrator should present the Harbor Management Plan to the City Council for review.
2. The City Council should review the Harbor Management Plan and set up a public hearing.
3. The City Council should formally adopt the Harbor Management Plan.
4. The City Council should review the Generic Environmental Impact Statement prepared in conjunction with this HMP. Action on the GEIS should be taken once the City determines which Beacon Institute of rivers and Estuaries Vessel Pier alternative to implement.

5. The City of Beacon currently has an ordinance entitled “Harbor Management” (Chapter 33 of the City of Beacon Code of Ordinances) that addresses activities in the Harbor Management Area. The City Council should review and adopt language, in coordination with the City Attorney and the City’s Planning Consultant, to amend the existing Harbor Management Chapter (Chapter 33) of the City of Beacon Code, with the following specific goals in mind:
 - a. Adopt the Surface Water Map contained in the Harbor Management Plan
 - b. Designate the authority to create a mooring permit system to control the placement of moorings in the harbor.
 - c. Review the fee structure for mooring registration and docking permits; and set up a separate account for these fees.
 - d. Provide the authority for a permanent management structure for Harbor activities, operations, and implementation actions; including the establishment of a Harbor Manager position as described in Section 33-7 of the Beacon Code. Review the duties, authorities, and responsibilities of the Harbor Manager.
 - e. Provide for continuing coordination with stakeholders involved in the Harbor Management Area.
 - f. Because of potential noise and safety issues associated with motorized boats and personal watercraft, review and strengthen existing laws regulating speed, wake and noise from motorized boats and personal watercraft (i.e. jet skis) at a distance from shore to be determined by stakeholders at public meetings.

(See the copy of Chapter 33 Harbor Management that follows Section 6-Policies.)

6. The City should institute a plan of action and designate an authority to address the specific recommendations for study and action described in Section 5 – Implementation Techniques.

Section 6 - Policies

As part of the City of Beacon's Local Waterfront Revitalization Program (LWRP), this Harbor Management Plan (HMP) will address the policies of the LWRP that are directly applicable to the management activities in the Harbor Management Area (HMA). The following reviews the policies set forth in the LWRP, and evaluates the HMP compliance with these policies.

- *Restore, revitalize and redevelop deteriorated and underutilized waterfront areas for commercial, industrial, cultural, recreational and other compatible uses (Policy 1).*

This HMP addresses this policy by proposing the construction of a new fixed pier for The Beacon Institute for Rivers and Estuaries, removal of derelict structures in the harbor; repairing the existing City public boat ramp and the construction of a harborfront building on the City owned property.

- *Establish waterfront commercial and residential uses on Long Dock peninsula to serve as a catalyst for the economic and physical revitalization of the entire water area (Policy 1A).*

Scenic Hudson and Foss Group Beacon's Long Dock Beacon project has been designed to improve public access to the shoreline, provide a means of creating water-related recreational resources, and maintaining, when possible, natural and historic resources.

The Beacon Institute for Rivers and Estuaries proposed research vessel activities and satellite educational programs will be located in Beacon Harbor. From the conception of The Beacon Institute, it was planned that the research vessels would be docked in the harbor to help revitalize the City as a working harbor and to promote economic development.

- *Structurally and aesthetically improve the harbor area between Long Dock and Riverfront Park to a level compatible with surrounding residential uses (Policy 1B).*

There are several areas within the harbor that have deteriorating bulkheads and pilings, many of which are associated with old Newburgh-Beacon ferry dock. The appearance of these structures, especially during low tide, is aesthetically unpleasing. As part of the HMP, the removal of many of these derelict bulkheads and pilings is recommended.

- *Facilitate the siting of water-dependent uses on or near coastal waters (Policy 2).*

There are several projects being proposed in this HMP that will support water-dependent uses within the harborfront area. The construction of The Beacon Institute pier will not only provide dockage for The Beacon Institute's research vessels but also will encourage docking of visiting research vessels. The Red Barn will be used as part of the boat building and sailing school classroom. The Hudson Fisheries Trust proposed museum barge could attract other water-dependent uses. Long Dock Beacon project offers a wide variety of water-dependent uses.

- *Protect, preserve and restore fish and wildlife resources and their habitats (Policies 7, 8 and 8A).*

This HMP suggests the City upgrade its sanitary waste facility and stormwater control devices to minimize associated impairments to the surface waters. Also, the HMP suggests the establishment of a water chestnut control program be implemented to enhance the reestablishment of native submerged aquatic vegetation.

- Improve public access to the water for fishing and passive recreation uses through the acquisition of land and/or easements on the Hudson between Long Dock peninsula and Denning's Point and on the bank of the Fishkill Creek (Policy 9A).

Long Dock Beacon and The Beacon Institute both include projects that will improve public access to the waterfront. These projects include riverfront access for launching of non-motorized boats, interconnecting trails for passive recreational uses and public fishing piers.

- Maintain and improve public access to the shoreline and to water-related recreational resources, while protecting natural and historic resources and adjacent land uses (Policy 19).

Both Long Dock Beacon and The Beacon Institute include improved public access to the shoreline, provide a means of creating water-related recreational resources, and maintain, when possible, natural and historic resources. Scenic Hudson's Red Barn will become part of Long Dock Beacon's improvement and will serve as a location for a boat building classroom. Scenic Hudson and Dia's Beacon Point public artwork by George Trakas provides access to the river and its views. The former Denning's Point Brick Work building and former Noesting Pin Ticket Company building will be renovated and used by The Beacon Institute.

- Restore water access to the Beacon Riverfront to enable larger vessels to dock in the harbor through a program of careful dredging and stabilization of the harbor (Policy 19C).

The Beacon Institute's pier will provide docking for their research vessels as well as visiting vessels, including the Clearwater. The amount of dredging required to accommodate The Beacon Institute's pier is dependent on the final location of the pier. Once the location is determined, it will be necessary to evaluate the best method of dredging and dredge material disposal.

Long Dock Beacon includes a floating dock on the western point of Long Dock peninsula to allow for excursion boats and other vessels to dock. The proposed location of the dock will require minimal dredging and if dredging is required, all protocols required by regulatory agencies will be addressed.

- Water-dependent and water-enhanced recreation shall be encouraged and facilitated and shall be given priority over non-water-related uses along the coast, provided that it is consistent with the preservation and enhancement of other coastal resources and takes into account demand for such facilities (Policy 21).

This HMP discusses a wide variety of uses and facilities for Beacon Harbor. The future location of River Pool at the Riverfront Park and improvements to the accessway will increase the park's attractiveness and its capacity as an open space site. The Long Dock Beacon project will increase and promote water-dependent recreational uses such as fishing, walking and boating as well as

a recreational trailway connecting Long Dock peninsula with Denning's Point. The connection of the riverfront trail systems within the HMA, including the trail between Denning's Point and Madam Brett Park, will help in preserving the undeveloped valley floor along the Fishkill Creek for passive recreational uses. The Beacon Institute for Rivers and Estuaries long-term plan for Denning's Point includes the entire southern portion of the point to remain a passive park, with trail enhancements, on-site interpretation for visitors and habitat restoration.

- *Encourage the development of water-related recreational resources and facilities, as multiple uses, in appropriate locations within shore zone (Policy 22).*

The Long Dock Beacon project will provide a variety of water-related recreational resources and facilities as multiple uses on Long Dock peninsula. There will be a mixed use hotel and conference center and Scenic Hudson will develop approximately 16 acres of trails, pathways, a pier at Beacon Point with a public accessway and fishing access areas, enhanced and created wetlands, a day use launch for car-topped boats, lawns, meadow lands, and bird watching areas as well as other open space amenities.

Visitors to The Beacon Institute for Rivers and Estuaries will be able to participate in interactive learning opportunities that reveal the vital and dynamic world of estuaries. The entire southern portion of Denning's Point is to remain a passive park, with trail enhancements and maps, on-site interpretation for visitors, and habitat restoration.

The proposed Hudson Fisheries Trust barge will reconnect Hudson River communities with the history and lore of the working Hudson River. The barge will serve as a living museum and contain a series of learning stations with interactive exhibits and hands-on demonstrations.

- *Protect coastal waters from direct and indirect discharge of pollutants (Policies 30, 31, 32, 33, 34, 36 and 37).*

This HMP has identified and addressed two areas of concern for the direct and indirect discharge of pollutants into the Hudson River: the stormwater outfall located in the northeast corner of the harbor and the City's sewer main located along Fishkill Creek. This HMP suggests that both of these systems be upgraded as part of the harbor revitalization process.

- *Ensure that dredging and dredge spoil disposal are undertaken in a manner protective of natural resources (Policies 15 and 35).*

The maintenance of safe navigation channels and berthing areas is essential to the revitalization of the City's harborfront area. This HMP has detailed several proposed projects for the revitalization of the harbor that will require some degree of dredging.

In order to ensure that any dredging of sediments within the harbor does not significantly interfere with the natural coastal processes to the lands adjacent to the harbor, it will be necessary to analyze sediment transport along the Hudson River. Overall sediment transport along the Hudson River has been well studied and documented; however, localized sediment deposition patterns in Beacon Harbor have not. Understanding sediment movement within the harbor is essential to the location and designing of any piers in Beacon Harbor.

One of the main impediments to maintenance dredging most often involves the disposal of dredged material. The presence of organic pollutants in Hudson River sediments such as PCB's, dioxins and polycyclic aromatic hydrocarbons (PAHs), is a major impediment to dredge spoil disposal. Prior to the commencement of any dredging, proper protocols required by all governing agencies, including testing of sediment for containments, grain size analysis and locating an appropriate disposal site, will need to be addressed.

- *Preserve and protect tidal and freshwater wetlands (Policy 44).*

None of the projects proposed in this HMP involves the encroachment onto any existing wetlands. However, The Beacon Institute will be preserving and restoring Denning's Point and the neighboring Fishkill Creek estuary area, and the redevelopment of Long Dock peninsula does include the enhancement of existing wetlands and the creation of new wetlands.

Chapter 33. HARBOR MANAGEMENT

[HISTORY: Adopted by the Council of the City of Beacon 11-6-1995 by L.L. No. 9-1995. Amendments noted where applicable.]

GENERAL REFERENCES

Waterfront consistency review — See Ch. 220.

§ 33-1. Title.

This chapter shall be entitled "Harbor Management." It shall be entered in the City of Beacon Code of Ordinances as Chapter 33.

§ 33-2. Authority, intent and purpose.

- A. This chapter is enacted under the authority of § 10 of the Municipal Home Rule Law of New York State, the Waterfront Revitalization of Coastal Areas and Inland Waterways Act, *Editor's Note: See Art. 42 of the Executive Law.* and applicable sections of the New York State Navigation Law.
- B. The intent of this chapter is to regulate the speed, use, operation, anchoring, and mooring of vessels, and the use of waters within the jurisdiction of the City of Beacon in a manner to protect and promote the public health, safety and general welfare.

§ 33-3. Applicability.

[Amended 3-7-2011 by L.L. No. 1-2011]

- A. This chapter shall apply to all waters within the jurisdiction of the City of Beacon, including the Fishkill Creek from the confluence with the Hudson River upstream to the South Avenue bridge and the waters of the Hudson River that are within a distance of 1,500 feet from the City's shoreline. These waters shall be known as the "City of Beacon Harbor Management Area."
- B. The Beacon Harbor Area Existing Surface Water Uses and Structures Map contained in the City's Harbor Management Plan *Editor's Note: Said map and plan are on file in the City offices.* identifies and establishes existing surface water uses, structures, mooring areas, the boat turning basin and the ferry navigational accessway.

§ 33-4. Definitions and word usage.

- A. Definitions. As used in this chapter, the following terms shall have the meanings indicated:

ABANDONED VESSEL

Any vessel not moored, anchored or made fast to the shore and left unattended for a period greater than 24 hours, or left upon private property adjacent to the Harbor Management Area without consent of the property owner, for a period greater than 24 hours.

AIDS TO NAVIGATION

All markers on land or in the water placed for the purpose of enabling navigators in the Harbor Management Area to avoid navigation hazards, regulatory markers and/or fix their position.

ANCHORAGE

Any water area designated for anchoring or mooring.

BOATHOUSE

Any building or similar superstructure used primarily for the storage and sheltering of watercraft, including such subordinate uses customarily incident to such primary use.

CHANNEL

Federal, state or locally designated water areas specifically reserved for unobstructed movement of vessels.

CITY COUNCIL

The City Council of the City of Beacon.

DOCK

Any dock, wharf, structure or fixed platform extending out over the water built on floats, columns, open timber, piles or similar open-work structures.

EMERGENCY

A state of imminent or proximate danger to life or property.

FAIRWAY

Any designated and/or maintained water area reserved for unobstructed movement of vessels, including an area at least 25 feet in width adjacent to both sides of the Federal Navigation Channel.

FEDERAL NAVIGATION CHANNEL

The designated navigation channel in the Hudson River authorized by an act of congress, specifically reserved for the unobstructed movement of vessels and which is marked in water by aids to navigation maintained by the United States Coast Guard.

FLOATING HOME

Any structure constructed on a raft, barge, hull or other platform and moored or docked in the Harbor Management Area and used primarily for single or multiple-family habitation or as the domicile of any individual(s).

HARBOR MANAGEMENT AREA

The area encompassing all waters designated by the Local Waterfront Revitalization Area within the jurisdiction of the City of Beacon, including Fishkill Creek from the confluence with the Hudson River upstream to the Wolcott Avenue Bridge and the waters of the Hudson River that are within a distance of 1,500 feet from the City's shoreline, and as depicted on the City's Official Harbor Management Map on file in the City Harbor Master's office. These waters shall be known as the "City of Beacon Harbor Management Area."

HARBOR MANAGEMENT LAW

This chapter of the City of Beacon establishing rules and regulations for the use and enjoyment of the waters of the City of Beacon Harbor Management Area and the lands immediately adjacent to the Harbor Management Area.

HARBOR MANAGER

That person appointed annually by the Mayor with the consent of the City Council who has full and primary responsibility and authority for implementing and enforcing all provisions of this chapter.

LITTER

Any bottles, glass, cans, scrap metal, junk, paper, garbage, rubbish, trash or similar refuse or human-generated or human-deposited debris.

MOORING

The attachment of or to attach a vessel to a pier or dock or other structure or the attachment of or to attach a vessel to the ground by means of tackle so designed that, when such attachment is terminated, some portion of the tackle remains below the surface of the water and is not under the control of the vessel or its operator. The term "mooring" shall also include the placing of a boat at anchor for more than 12 hours consecutively.

PERSONS

Individuals, corporations, societies, associations, and partnerships using the facilities and areas within the Harbor Management Area.

PUMP-OUT FACILITY

A facility for pumping sewage from vessel holding tanks and other devices and containing those wastes before proper disposal into the City of Beacon sewage system.

STATE

The State of New York.

TRANSIENT BOATERS

Persons traveling into the Harbor Management Area by boat and staying for a temporary period of time.

UNDERWAY

The condition of a vessel not at anchor and not made fast to the shore or ground.

VESSEL

Every floating device used or capable of being used as a means of transportation on water.

B. Word usage. "Shall" is mandatory; "May" is permissive.

§ 33-5. Severability; conflicts; penalties; liability.

- A. Invalidity of provisions. Should any provision of this chapter be held invalid or inoperative, the remainder shall continue in full force and effect.
- B. Conflict with other laws. In any case where a provision of this chapter is found to be in conflict with any other local provision, the article setting the higher standard in promoting the general public welfare shall be used.
- C. Enforcement. Authorized public servants of the City as designated by the Mayor with consent of the City Council, the City Police Department, the State Police, the Dutchess County Sheriff's Department, and any other police or peace officer as defined in the New York State Criminal Procedure Law shall have authority to enforce the provisions of this chapter.
- D. Penalties for offenses. *Editor's Note: See also § 33-14.*

- (1) A person who violates any of the provisions of or fails to comply with any conditions imposed by this chapter shall have committed a violation, punishable

by a fine not exceeding \$350 for a conviction of a first offense and punishable by a fine of \$700 for a conviction of a second or subsequent offense occurring within a period of five years. For the purpose of conferring jurisdiction upon courts and judicial officers, each week of continuing violation shall constitute a separate additional offense.

- (2) The City Attorney is authorized and directed to institute any and all actions and proceedings necessary to enforce this chapter. Any civil penalty shall be in addition to and not in lieu of any criminal prosecution and penalty.

E. Liability. Persons using the waters within the limits of the Harbor Management Area shall assume all risk of personal injury and loss or damage to their property. The City of Beacon assumes no risk on account of accident, fire, theft, vandalism or acts of God.

§ 33-6. Building permit required; exemptions; nontransferability.

Except as otherwise provided in this chapter, no person shall place, locate, construct, maintain, expand or use any dock, pier, boathouse, structure or mooring buoy in any waters within the Harbor Management Area without a building permit issued in accordance with this chapter, the City of Beacon Zoning Ordinance, and any other applicable local laws. Docks, piers, boathouses, or other structures under 200 square feet in area shall be exempt from the requirement for a building permit but shall comply with all other provisions of this chapter, the City of Beacon Zoning Regulations, and any other applicable local laws. Failure to comply with this section is a violation of this chapter. These permits are not transferable.

§ 33-7. Office of Harbor Manager.

[Amended 3-7-2011 by L.L. No. 1-2011]

- A. Establishment. The office of the City Harbor Manager may be established by the Mayor with the consent of the City Council. If established, the Mayor, with the consent of the City Council, shall appoint a Harbor Manager on an annual basis.
- B. Powers and duties. It shall be the duty of the Harbor Manager, or other public officer of the City so appointed by the Mayor with the consent of the City Council, to enforce the provisions of this chapter. The Harbor Manager or the Harbor Manager's designee, or other public officer of the City so appointed, shall:
 - (1) Examine all applications for all permits and issue permits only for construction and uses therein in accordance with the requirements of this chapter and also other laws, rules and regulations of the City enforced at the time of application.
 - (2) Create a mooring permit system to control the placement of moorings in the harbor.
 - (3) Establish a permanent management structure for harbor activities, operations and implementation actions consistent with the provisions of the City's Local Waterfront Revitalization Program and Harbor Management Plan.

§ 33-8. Permit applications and procedures.

- A. Form and content of application. In any instance in which a permit is required by this chapter, an applicant shall submit an application on a form prescribed by the Harbor

Manager or other public officer of the City so appointed. The application is hereby submitted with a fee as set forth in the City of Beacon fee schedule, *Editor's Note: The fee schedule is on file in the City offices.* accompanied by a plot plan drawn to scale, adequately dimensioned, showing the location of all existing docks, piers, boathouses, structures, mooring buoys, aids to navigation, abandoned vessels, anchorage areas, navigation channels or fairways. The applicant shall provide such other information as the Harbor Manager may require, including but not limited to filings with or permits from federal, state, City or county authorities, description of the manner of construction and installation, the materials to be used, evidence of ownership or possessory right, by easement, license, right-of-way or other, regarding the abutting shoreline and grant or leases pursuant to Article 6 of the Public Lands Law of the State of New York, regarding lands under water.

[Amended 7-6-2010 by L.L. No. 10-2010]

B. Issuance of permit. If the proposed activity conforms to all requirements of this chapter and does not impair navigational safety or unreasonably restrict public or private access to, on and within navigable waters within the Harbor Management Area, the Harbor Manager, or other public officer of the City so appointed, shall issue a permit for a one-year period commencing upon approval of the permit.

C. Beacon Ferry Pier.

[Added 7-2-2007 by L.L. No. 10-2007]

- (1) Scheduling. The scheduling of all tour boat berthing and departure times, dock usage and tourism-related events shall be through the Office of the City of Beacon Harbor Manager or City Administrator. Such scheduling will be on first-come, first-served basis and as determined by the City of Beacon.
- (2) General. The Harbor Manager or City Administrator and owner shall enter into a hold-harmless agreement with the City of Beacon and provide the necessary insurance certificates and registration/docking fees at the time of the scheduling of the usage of the dock.
- (3) Insurance. General liability and property damage shall name the City of Beacon. The policy shall be in a form acceptable to the City of Beacon. Coverage shall be as follows:
 - (a) For boats under 100 feet, \$1,000,000 aggregate and \$500,000 per occurrence.
 - (b) For boats over 100 feet, \$2,000,000 aggregate and \$1,000,000 per occurrence.
- (4) Fees and deposits. Such fees shall be placed in a separate account to be established as a specific repository for these fees. These fees shall be as set forth in the City of Beacon fee schedule. *Editor's Note: The fee schedule is on file in the City offices.*

[Amended 7-6-2010 by L.L. No. 10-2010; 3-7-2011 by L.L. No. 1-2011]

- (a) Permit registration fee.
- (b) Security deposit.

- [1] The annual security deposit shall be paid in cash or certified check at the time of the agreement.
- [2] This deposit will be returned at the end of each season subject to Subsection C(4)(b)[3] immediately below.
- [3] The purpose of this deposit is to assure that the dock and surrounding waterways are kept undamaged and clean of debris from the boat operation or boaters at all times when the boat is docked and upon arrival or departure of the boat. If damage or debris is found on the dock or around the waterway of the boat, and it is determined by the Harbor Manager that such damage or debris is because of the subject boat or boaters, this deposit will be used to repair and/or clean up the dock and waterway as necessary and will be nonrefundable.
- [4] Nothing contained herein shall prevent the City from charging the owner and/or operator of the boat such additional fees as are incurred by the City to clean up or repair the dock and waterway as determined necessary in the Harbor Manager's sole discretion.

(c) A dock fee shall also be collected.

- (5) Site verification. Prior to entering the harbor area and the slipway leading to the ferry dock from the Hudson River, the Harbor Manager or City Administrator and owner shall physically visit the site, examine all existing conditions, including but not limited to verifying the water depth, checking for underwater obstructions, checking the width and length of the slipway approach, checking the berthing conditions, and checking all other conditions that will affect the operation of the boat during berthing and departure. The Harbor Manager or City Administrator and owner shall perform the site verification work prior to entering into the hold-harmless agreement with the City of Beacon. By signing the hold-harmless agreement, the Harbor Manager or City Administrator and owner state that they accept the docking conditions found and hold the City of Beacon harmless from all injuries and damages resulting therefrom.
- (6) No person shall cause any barge, boat, ship or other vessel to be made fast to the public dock known as "Beacon Ferry Pier" or to be made fast to any ship or vessel lying at such dock without first obtaining a permit pursuant to this section.
- (7) The application as referred to in Subsection A of this section must be submitted to the office of the City Administrator at least two weeks prior to the date when the dock is sought to be used. The Harbor Manager or City Administrator shall have the discretion to approve or disapprove a permit or to subject the permit to such conditions as he deems necessary to protect the public health, safety, convenience and welfare.
- (8) Each permit issued by the Harbor Manager or City Administrator shall state the date and time that the use of the dock is permitted. No permittee shall utilize the dock outside of the time set forth in his permit unless the Harbor Manager or City Administrator shall, in his discretion, approve of an extension of the permit for good cause shown. Any such extension shall be made in writing and endorsed upon the original permit.

- (9) Any person in charge of a vessel docking at the Beacon Ferry Pier shall exhibit the permit required by this section to any person so requesting.

§ 33-9. Vessel operation.

A. Dangerous operation prohibited. No person shall operate any vessel in any manner that unreasonably interferes with the free and proper use of the Harbor Management Area or any property on, in or contiguous to the Harbor Management Area, or which endangers the users of the Harbor Management Area.

B. Identification.

- (1) No person shall operate or permit the operation of a vessel within the Harbor Management Area unless such vessel is required by law to be registered and numbered and bears a current validation sticker in accordance with the provisions of the New York State Vehicle and Traffic Law, if so required.
- (2) Every person operating a registered vessel shall, upon demand of any peace officer, federal officer or other person having authority to enforce the provisions of this chapter, produce the certificate of registration for inspection. Failure to produce the certificate of registration shall not be an offense, but shall be presumptive evidence of operating a vessel which is not registered as required by the New York State Vehicle and Traffic Law.

C. Vessel speed and restricted speed areas.

- (1) Every operator registered of a vessel shall at all times navigate the same in a careful and prudent manner in such a way as not to unreasonably interfere with the free and proper use of the navigable waters of the Harbor Management Area or unreasonably endanger any vessel or person. Reckless operation is prohibited as is operation under the influence of controlled substances.
- (2) No person shall operate a vessel within the Harbor Management Area at a speed greater than is reasonable and prudent under the conditions and having regard to the actual and potential hazards then existing.
- (3) No person shall operate a vessel within the Harbor Management Area at such a speed as to cause a dangerous wake. The operator of a vessel shall be held responsible for any damage caused by such wake.
- (4) No person shall operate a vessel within the Harbor Management Area at a speed in excess of five miles per hour or at a speed that will cause a dangerous wake, whichever is the lesser speed.

D. Mufflers. No person shall operate a power vessel without having the exhaust from the engine run through a muffling device, so constructed and used as to muffle the noise from the exhaust in a reasonable manner.

E. Vessel enforcement authority.

- (1) The City of Beacon Police Department, the State Police, the Dutchess County Sheriff's Department, and any other police or peace officer, as defined in the New York State Criminal Procedure Law, shall have the authority to enforce waterborne traffic in any part of the Harbor Management Area by use of

authorized regulatory markers, signals, orders or directions at any time when deemed necessary in the interest of the safety of persons and vessels or other property.

(2) No person shall moor or anchor any vessel so as to interfere with the free and unobstructed use of any channel, fairway, or berthing space in the Harbor Management Area.

F. Anchoring in Federal Navigation Channel prohibited. No person shall anchor any vessel in the Federal Navigation Channel, except in cases of emergencies.

G. Fishing. No person shall fish in the Harbor Management Area in such a manner so as to impede navigation. Vessel-based fishing in a manner that provides a hazard or inconvenience to navigation is prohibited.

§ 33-10. Sanitation.

A. Littering and discharge of pollutants prohibited. No person shall place, throw, deposit or discharge or cause to be placed, thrown, deposited or discharged into the Harbor Management Area any litter or other materials, including but not limited to any refuse or waste matter, sewage, petroleum products or by-products, paint, varnish, dead animals, fish parts or debris of any kind which renders the waters unsightly, noxious, unwholesome, or otherwise detrimental to the public health or welfare or to the enjoyment of the water for recreational purposes.

B. Marine toilets. No person shall operate a marine toilet at any time so as to cause or permit to pass or be discharged into the Harbor Management Area any untreated sewage or other waste matter or contaminant of any kind pursuant to § 33-c of the New York State Navigation Law.

C. Responsibility for sanitation of facilities. The owner, lessee, agent, manager or person in charge of a marine facility or water area shall at all times maintain the premises under his/her charge in a clean, sanitary condition, free from malodorous materials and accumulations of garbage, refuse, debris and other waste materials.

D. Marine facility sanitation requirements.

(1) The owner or other person vested with the possession, management and control of a marine facility shall provide and maintain a sufficient number of trash receptacles for the deposit of litter at locations convenient to vessel users of such marine facilities. A maximum spacing of 100 feet between receptacles shall be maintained on all piers and docks. Failure to comply with this provision is a violation of this chapter.

(2) The owner or other person vested with the possession, management and control of a marine facility shall maintain suitable toilet facilities on shore for the accommodation of vessel users who are patrons of their marine facility. Failure to comply with this provision is a violation of this chapter.

(3) The owner or other person vested with the possession, management and control of a marine facility shall post a sign, clearly visible to vessel owners and operators, that states: "The Navigation Law of the State of New York provides strict penalties for the discharge of sewage in the waters of New York State. The

local laws of the City of Beacon prohibit the discharge of litter, sewage, and refuse within the Beacon Harbor Management Area." Failure to comply with this provision is a violation of this chapter.

- (4) Any sewage pump-out facility required as a condition of City, state or federal approval of a marine facility in the Harbor Management Area shall be maintained in proper working order and available for use as specified in City, state or federal permits. Failure to comply with this provision is a violation of this chapter.

§ 33-11. Removal of abandoned or derelict vessels and structures.

A. Abandoned vessels and structures prohibited. No person shall abandon, sink or place a vessel, mooring or other structure within the Harbor Management Area where it may constitute a danger to navigation or to the safety of persons or property, or where it may prevent optimum use of the area.

B. Removal of abandoned vessels and structures.

- (1) Any vessel or other structure abandoned or sunk or so placed may be removed or relocated at the direction of the Harbor Manager if corrective action is not taken by the owner, if known, within seven days after notification, or, if not known, after notice has been posted for that period on the vessel or object.
- (2) Nothing herein contained shall prevent the Harbor Manager from taking measures with or without notice, if, in its judgment, such measures are necessary in order to provide for the safety of persons or property. The expense of such removal or relocation and any liability from injury to person or property incurred thereby shall be the responsibility of the owner.

§ 33-12. Living aboard vessels.

A. Regulation of floating homes. In order to provide for adequate access for vessels, for the safety of persons and property, for the protection of environmental quality, and for the optimum use of the Harbor Management Area, the City Council or its designated agent(s) may regulate the use of floating homes in the Harbor Management Area.

B. Living aboard vessels permitted on temporary basis.

- (1) Sleeping aboard vessels on a temporary basis is allowed as a secondary use to the vessel's principal commercial or recreational uses, provided that the vessel is berthed at a marine facility and where consistent with all City, state and federal requirements concerning anchoring, lighting, taxation and other pertinent concerns, and provided that land-based support facilities and utilities, including sewage disposal facilities, are available.
- (2) Sleeping aboard vessels moored or anchored within the Beacon Harbor Management Area on a temporary basis, not to exceed two weeks, is allowed as a secondary use to the vessel's principal commercial or recreational uses where consistent with all City, state, and federal requirements concerning anchoring, lighting, taxation and other pertinent concerns. For purposes here, the term "moored" shall only refer to vessels that are attached to the ground by means of

tackle so designed that, when such attachment is terminated, some portion of the tackle remains below the surface of the water and is not under the control of the vessel or its operator.

§ 33-13. Berthing, mooring and anchoring of vessels.

- A. Owner responsibility for secure berthing, mooring and anchoring. The owner of any vessel berthed, moored or anchored within the Harbor Management Area shall be responsible for causing such vessel to be tied and secured or anchored with proper care and equipment and in such manner as may be required to prevent the vessel from breaking away.
- B. Owner responsibility for damage. Each person anchoring or mooring a vessel in the Harbor Management Area shall be responsible for any damage to that vessel, or to any other vessel or any other property, caused by that vessel. The City of Beacon assumes no liability for personal injury or property damage that may result from the use of unsafe or otherwise inadequate anchoring or mooring tackle and assumes no risk on account of accident, fire, theft, vandalism or acts of God related to the anchoring or mooring of vessels in the Harbor Management Area.
- C. Locations for moorings. No person shall place a mooring or anchor such that the vessel moored or anchored, at full swing of its mooring or anchor line will be within 75 feet of the Federal Navigation Channel of the Hudson River, or within 25 feet of any City- or state-designated channel, fairway, or within 75 feet from any dock or other marine facility within the Harbor Management Area.
- D. Regulation of moorings. In order to provide for adequate access for vessels, for the safety of persons and property, for the protection of environmental quality, and for the optimum use of the Harbor Management Area, the City Council or its designated agent(s) may regulate the placement of all moorings in the Harbor Management Area in accordance with rules and procedures adopted by the Council.

§ 33-14. Penalties for offenses.

Editor's Note: See also § 33-5D.

- A. A person who violates any of the provisions of or who fails to comply with any conditions imposed by this chapter shall have committed a violation, punishable by a fine not exceeding \$350 for a conviction of a first offense and punishable by a fine of \$700 for a conviction of a second or subsequent offense occurring within a period of five years. For the purpose of conferring jurisdiction upon courts and judicial officers, each week of continuing violation shall constitute a separate additional offense.
- B. The City Attorney is authorized and directed to institute any and all actions and proceedings necessary to enforce this chapter. Any civil penalty shall be in addition to and not in lieu of any criminal prosecution and penalty.

§ 33-15. When effective.

This chapter shall take effect immediately upon its adoption by the City Council, approval by the New York State Secretary of State pursuant to Article 42 of the New York State

Executive Law and its filing with the New York State Department of State in accordance with the provisions of the Municipal Home Rule Law.

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