Mr. Padien,

Enclosed please find two hard copies of the Chapter 91 Waterways License Application for the proposed Forest River Pool Replacement in Salem, MA.

Should you have any questions or comments concerning this document, please do not hesitate to contact me at the above number, or by email at erexford@epsilonassociates.com.

Thank you,

Erik Rexford
FOREST RIVER POOL REPLACEMENT

Submitted to:
Massachusetts Department of Environmental Protection
Waterways Regulation Program
One Winter Street
Boston, MA 02108

Submitted by:
City of Salem
Salem City Hall Annex
98 Washington Street
Salem, Massachusetts 01970

Prepared by:
Epsilon Associates, Inc.
3 Mill & Main Place, Suite 250
Maynard, MA 01754

In Association with:
Anser Advisory
Bargmann Hendrie + Archetype, Inc
Hancock Associates
Kyle Zick Landscape Architecture
Norian / Siani Engineering, Inc.

March 24, 2020
Chapter 91 Waterways License Application

FOREST RIVER POOL REPLACEMENT
SALEM, MASSACHUSETTS

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Waterways Regulation Program
One Winter Street
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March 24, 2020
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## CHAPTER 91 WATERWAYS LICENSE APPLICATION FORMS

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Enter your transmittal number

Your unique Transmittal Number can be accessed online:
http://www.mass.gov/eea/agencies/massdep/service/approvals/transmittal-form-for-payment.html

Massachusetts Department of Environmental Protection
Transmittal Form for Permit Application and Payment

A. Permit Information

BRP WW01b
1. Permit Code: 4 to 7 character code from permit instructions
Waterways License
2. Name of Permit Category
Water-dependent - Public Service Project
3. Type of Project or Activity

B. Applicant Information – Firm or Individual

City of Salem
1. Name of Firm - Or, if party needing this approval is an individual enter name below:
City Hall Annex, 98 Washington Street

2. Last Name of Individual

3. First Name of Individual

4. MI

5. Street Address

6. City/Town

7. State

8. Zip Code

9. Telephone #

10. Ext. #

Jenna Ide
11. Contact Person
jide@salem.com
12. e-mail address

C. Facility, Site or Individual Requiring Approval

Forest River Pool Replacement
1. Name of Facility, Site Or Individual
51 Clifton Avenue
2. Street Address

3. City/Town

4. State

5. Zip Code

6. Telephone #

7. Ext. #

8. DEP Facility Number (if Known)

9. Federal I.D. Number (if Known)

10. BWSC Tracking # (if Known)

D. Application Prepared by (if different from Section B)*

Epsilon Associates, Inc.
1. Name of Firm Or Individual
3 Mill & Main Place, Suite 250
2. Address

Maynard
3. City/Town

4. State

5. Zip Code

6. Telephone #

7. Ext. #

Erik Rexford
8. Contact Person

9. LSP Number (BWSC Permits only)

E. Permit - Project Coordination

1. Is this project subject to MEPA review? ☑ yes ☐ no
If yes, enter the project’s EOEA file number - assigned when an Environmental Notification Form is submitted to the MEPA unit:

EOEA File Number
16147

F. Amount Due

DEP Use Only

Special Provisions:
1. ☑ Fee Exempt (city, town or municipal housing authority)(state agency if fee is $100 or less).

2. ☐ Hardship Request - payment extensions according to 310 CMR 4.04(3)(c).

3. ☐ Alternative Schedule Project (according to 310 CMR 4.05 and 4.10).

4. ☐ Homeowner (according to 310 CMR 4.02).

Permit No:
Rec'd Date:
Reviewer:

Check Number Dollar Amount Date
### A. Application Information (Check one)

**NOTE:** For Chapter 91 Simplified License application form and information see the Self Licensing Package for BRP WW06.

<table>
<thead>
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<td>$1,335.00</td>
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B. Applicant Information Proposed Project/Use Information

1. Applicant:

<table>
<thead>
<tr>
<th>City of Salem</th>
<th><a href="mailto:jide@salem.com">jide@salem.com</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>E-mail Address</td>
</tr>
<tr>
<td>City Hall Annex, 98 Washington Street</td>
<td></td>
</tr>
<tr>
<td>Mailing Address</td>
<td></td>
</tr>
<tr>
<td>Salem</td>
<td>MA</td>
</tr>
<tr>
<td>City/Town</td>
<td>MA</td>
</tr>
<tr>
<td>Telephone Number</td>
<td>617-727-5363</td>
</tr>
<tr>
<td>Fax Number</td>
<td>617-727-5363</td>
</tr>
</tbody>
</table>

Note: Please refer to the “Instructions”

2. Authorized Agent (if any):

<table>
<thead>
<tr>
<th>Epsilon Associates, Inc.</th>
<th><a href="mailto:erexford@epsilonassociates.com">erexford@epsilonassociates.com</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Name</td>
<td>E-mail Address</td>
</tr>
<tr>
<td>3 Mill &amp; Main Place, Suite 250</td>
<td></td>
</tr>
<tr>
<td>Mailing Address</td>
<td></td>
</tr>
<tr>
<td>Maynard</td>
<td>MA</td>
</tr>
<tr>
<td>City/Town</td>
<td>MA</td>
</tr>
<tr>
<td>Telephone Number</td>
<td>978-897-0099</td>
</tr>
<tr>
<td>Fax Number</td>
<td>978-897-0099</td>
</tr>
</tbody>
</table>

C. Proposed Project/Use Information

1. Property Information (all information must be provided):

<table>
<thead>
<tr>
<th>Owner Name (if different from applicant)</th>
<th>33-0743</th>
<th>42°30'18.33&quot;N</th>
<th>70°53'1.93&quot;W</th>
</tr>
</thead>
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<tr>
<td>Tax Assessor’s Map and Parcel Numbers</td>
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</tr>
<tr>
<td>Street Address and City/Town</td>
<td>51 Clifton Avenue, Salem</td>
<td>MA</td>
<td>01970</td>
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2. Registered Land

☐ Yes
☒ No

3. Name of the water body where the project site is located:

Salem Harbor

4. Description of the water body in which the project site is located (check all that apply):

- ☐ Nontidal river/stream
- ☐ Natural
- ☐ Area of Critical Environmental Concern
- ☒ Flowed tidelands
- ☐ Enlarged/dammed
- ☐ Designated Port Area
- ☒ Filled tidelands
- ☐ Uncertain
- ☐ Ocean Sanctuary
- ☐ Uncertain
- ☐ Great Pond
- ☐ Uncertain
C. Proposed Project/Use Information (cont.)

5. Proposed Use/Activity description
   The Project includes the rehabilitation of an existing bathhouse, including the construction of a 1,030 sf building expansion to serve as a community room, replacement of the existing pool and construction of a splash pad, construction of an approximately 820 sf support building for filtration equipment and life guard facilities, and restoration of portions of the historically altered shoreline.

6. What is the estimated total cost of proposed work (including materials & labor)?
   $10.0 Million

7. List the name & complete mailing address of each abutter (attach additional sheets, if necessary). An abutter is defined as the owner of land that shares a common boundary with the project site, as well as the owner of land that lies within 50’ across a waterbody from the project.

   Carl J. Decotis Revocable Trust
   35 Belleau Road, Salem, MA 01970
   Address

   Judith A. Janvrin
   38 Shore Avenue, Salem, MA 01970
   Address

D. Project Plans

1. I have attached plans for my project in accordance with the instructions contained in (check one):
   - ☒ Appendix A (License plan)
   - ☐ Appendix B (Permit plan)

2. Other State and Local Approvals/Certifications
   - ☒ 401 Water Quality Certificate
     Date of Issuance
     DEP No. 064-0693
     File Number
   - ☒ Wetlands
     DEP No. 064-0693
     File Number
   - ☐ Jurisdictional Determination
     JD-
     File Number
   - ☒ MEPA
     EEA No. 16147
     File Number
   - ☒ EEOA Secretary Certificate
     2/28/2020
     Date
   - ☐ 21E Waste Site Cleanup
     RTN Number
E. Certification

All applicants, property owners and authorized agents must sign this page. All future application correspondence may be signed by the authorized agent alone.

"I hereby make application for a permit or license to authorize the activities I have described herein. Upon my signature, I agree to allow the duly authorized representatives of the Massachusetts Department of Environmental Protection and the Massachusetts Coastal Zone Management Program to enter upon the premises of the project site at reasonable times for the purpose of inspection."

"I hereby certify that the information submitted in this application is true and accurate to the best of my knowledge."

[Signature]

March 24, 2020

[Signature]

March 24, 2020
F. Waterways Dredging Addendum

1. Provide a description of the dredging project

☐ Maintenance Dredging (include last dredge date & permit no.)  ☐ Improvement Dredging

N/A

Purpose of Dredging

2. What is the volume (cubic yards) of material to be dredged?

__________________________

3. What method will be used to dredge?

☐ Hydraulic  ☐ Mechanical  ☐ Other

4. Describe disposal method and provide disposal location (include separate disposal site location map)

__________________________

5. Provide copy of grain size analysis. If grain size is compatible for beach nourishment purposes, the Department recommends that the dredged material be used as beach nourishment for public beaches. Note: In the event beach nourishment is proposed for private property, pursuant to 310 CMR 9.40(4)(a)1, public access easements below the existing high water mark shall be secured by applicant and submitted to the Department.
G. Municipal Zoning Certificate

City of Salem

Name of Applicant

51 Clifton Avenue  Salem Harbor  Salem

Project street address  Waterway  City/Town

Description of use or change in use:

The Project includes the rehabilitation of an existing bathhouse, including the construction a 1,030 sf building expansion to serve as a community room, replacement of the existing pool and construction of a splash pad, construction of an approximately 820 sf support building for filtration equipment and life guard facilities, and restoration of portions of the historically altered shoreline.

To be completed by municipal clerk or appropriate municipal official:

“I hereby certify that the project described above and more fully detailed in the applicant’s waterways license application and plans is not in violation of local zoning ordinances and bylaws.”

Printed Name of Municipal Official

Date

Signature of Municipal Official  Title

Salem  City/Town
Massachusetts Department of Environmental Protection
Bureau of Resource Protection - Waterways Regulation Program

Chapter 91 Waterways License Application - 310 CMR 9.00

Water-Dependent, Nonwater-Dependent, Amendment

H. Municipal Planning Board Notification

Notice to Applicant:

Section H should be completed and submitted along with the original application material.

City of Salem
Name of Applicant
51 Clifton Avenue
Project street address
Salem Harbor
Waterway
Salem
City/Town

Description of use or change in use:
The Project includes the rehabilitation of an existing bathhouse, including the construction a 1,030 sf building expansion to serve as a community room, replacement of the existing pool and construction of a splash pad, construction of an approximately 820 sf support building for filtration equipment and life guard facilities, and restoration of portions of the historically altered shoreline.

To be completed by municipal clerk or appropriate municipal official:

“I hereby certify that the project described above and more fully detailed in the applicant’s waterways license application and plans have been submitted by the applicant to the municipal planning board.”

Printed Name of Municipal Official
Date

Signature of Municipal Official
Title
City/Town

Note: Any comments, including but not limited to written comments, by the general public, applicant, municipality, and/or an interested party submitted after the close of the public comment period pertaining to this Application shall not be considered, and shall not constitute a basis for standing in any further appeal pursuant to 310 CMR 9.13(4) and/or 310 CMR 9.17.
Attachment A

Project Narrative
1.0 Introduction

After several years of planning and design work, the City of Salem ("City") is proposing to undertake a substantial rehabilitation of the Forest River Park ("Park") pool and bathhouse, including to construct a 1,030 square foot ("sf") building expansion of the bathhouse to serve as a community room, to replace the existing pool with a smaller more manageable and functional pool, to incorporate a splash pad, to construct an approximately 820 sf support building for filtration equipment and life guard facilities, and to restore portions of the historically altered shoreline, resulting in a more sustainable, resilient, and functional public amenity (the "Project"). The Project will also remove the existing tennis courts, elevate the pool deck approximately 3.0 feet above the current FEMA 100-year flood elevation, reconfigure site access for emergency vehicles, and provide parking for handicap accessibility and staff in proximity to the Project Site.

The Project has been designed to support flexible programming, including outdoor educational opportunities whereby the bathhouse will support classroom and hands-on education in topics such as kayaking, nature exploration and identification, and coastal ecology. The City will run much of the programming but will also partner with local schools and non-profit organizations, including: YMCA, Salem Sound Coastwatch, Salem State University, public schools, and the North Shore Community Development Corporation. The new community room may also support smaller functions and classes that generate revenue to support operations. This facility will also provide a cooling area for residents during heat waves.

1.1 Existing Conditions

The Project is located within the 29-acre Park on Pickering Point at the southerly end of Salem Harbor in Salem, Massachusetts (see Figure 1). The Park is an important recreational and community asset for the City and surrounding communities. The Park encompasses several features including recreational fields, park buildings, parking areas, paved driveways, forested uplands, and a small pond. Also located within the Park is Pioneer Village, a recreated 17th century village that serves as a living history museum.

The Project Site is an approximately 3.5-acre area of the Park that comprises an existing pool, bathhouse, tennis courts, landscaped open space, and vehicular access drives ("Project Site") as shown on Figure 2. The tidal portions of the Project Site feature coastal beach, rocky inter-tidal shoreline, and small areas of saltmarsh along with miscellaneous rubble and fill material presumably remaining from the construction of the seawall and pool.

1.2 Site Context and Use

The Park’s pool has existed in several configurations since the Park was acquired by the City in 1907. Circa 1910, the City lined what was then a tidal inlet with cement and constructed a bathhouse and other facilities. The original bathhouse was replaced with the existing structure in
LEGEND

Project Site

Scale 1:2,400
1 inch = 200 feet

Basemap: 2019 Nearmap Aerial Imagery

Figure 2
Aerial Locus Map

Forest River Pool
Salem, Massachusetts
the 1920s or 1930s, which continued to serve pool patrons. A renovation of the bathhouse was conducted in 1972 along with the construction of the existing concrete pool form and the addition of a shallow “kiddie” pool. In constructing the existing pool form, a concrete seawall was erected at the mouth of the tidal inlet and fill material was placed behind the seawall and at the toe of the seawall.

The pool remained saltwater until 1999 and was filled by a concrete pipe extending into the adjacent Salem Harbor. The concrete pipe remains abandoned in place. The pool has since been converted to freshwater and largely remains in its original configuration.

In 2018, the pool and bathhouse facilities were taken out of public service by the City following damage to the pool’s filtration equipment caused by flooding during a coastal storm event. Additionally, the pool’s concrete form has deteriorated to the extent that during its final operating seasons it was estimated to leak approximately 30,000 gallons per day of treated pool water. Due to the porosity of the pool, charging of groundwater levels from tidal action in the harbor continuously affect the water level in the pool. Additionally, the pool’s proximity to the harbor and its elevation below Mean High Water (“MHW”) make it no longer possible to completely drain the pool to conduct necessary repairs and safety maintenance.

The existing, approximately 4,270 sf bathhouse is a single-story building located at the northeast edge of the pool. As noted above, the bathhouse was constructed during the 1920s or 1930s and has had few modifications and renovations. The bathhouse is constructed of block and stucco and sits on a concrete slab. In general, the structural components of the bathhouse are in serviceable condition; however, the building systems and envelope are in need of repair or replacement. For public safety, the pool and bathhouse are currently secured from public access by a chain link fence.

1.3 **Chapter 91 Jurisdiction**

The Project Site is located on filled tidelands, abuts flowed tidelands, and is not separated from the water by a public way. As such, uses and structures on this site are subject to Chapter 91, the Public Waterfront Act, and the regulatory provisions thereof at 310 CMR 9.00 et seq. (Waterways Regulations). Figure 3 shows the location of the Project Site in relation to the former extent of the flowed tidelands of Salem Harbor. As shown in Figure 3, the Historic High Water Mark (“HHWM”) encompasses portions of the existing pool, pool deck and adjacent landscaped open space, and the westerly portion of the existing bathhouse.

1.3.1 **Chapter 91 Licensing History**

No prior authorizations for fill placed seaward of HHWM, the existing pool or its prior iterations, or the bathhouse were identified at the Southern Essex Registry of Deeds, in MassDEP’s license records, or in records of the Massachusetts General Court.
Figure 3

DEP Tidelands Jurisdiction

Forest River Pool     Salem, Massachusetts

LEGEND

- **Project Site**
- **Historic High Water/Chapter 91 Jurisdiction**

Scale 1:2,400
1 inch = 200 feet

Basemap: 2019 Nearmap Aerial Imagery

Salem Harbor

Forest River Park

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services
1.3.2 Chapter 91 Setting and Jurisdictional Considerations

The Waterways Regulations establish review and performance standards for projects based upon a number of criteria; key among these are a project’s status as a “water-dependent” or “nonwater-dependent” project. As defined by §9.12 of the Waterways Regulations, water-dependent uses typically have a clearly established need to be located at or on the water. Water-dependent uses also include parks and pedestrian facilities that promote the use and enjoyment of the water by the general public and are located at or near the water's edge, including but not limited to, any park adjacent to a waterway and created by a public agency. Therefore, the Park is considered a water-dependent use. The Waterways Regulations at §9.12(3) also find uses customarily associated with and necessary to accommodate a principal water-dependent use to be “accessory to a water-dependent use.” In that a public pool has been a feature of the Park for more than 100 years and that its operation is both integral to the function of and commensurate in scale with the Park, itself a water-dependent use, the Project is considered an “accessory to a water-dependent use.”

As a water-dependent use, the Project is not subject to the design and use standards of the Waterways Regulations at §9.51, Conservation of the Capacity for Water-Dependent Use and §9.52, Utilization of Shoreline for Water-Dependent Purposes.

1.3.3 Public Service Project

The Project is being advanced by the City, a public agency as defined at §9.02 and, the Project meets the Chapter 91 definition of a “public service project.”

A “public service project” is defined by the Waterways Regulations at §9.02, in part, as “a project: (a) whose entire control, development, and operation is undertaken by a public agency for the provision of facilities or services directly to the public (or to another public agency for such provision to the public) by the public agency...”.

1.4 Massachusetts Environmental Policy Act Review

An Environmental Notification Form (“ENF”) was filed for the Forest River Pool Replacement project pursuant to the Massachusetts Environmental Policy Act (“MEPA”) on January 15, 2020 (EEA No. 1647). On February 28, 2020, the Secretary of Energy and Environmental Affairs issued a Certificate on the ENF stating that the Project did not require the preparation and filing of an Environmental Impact Report (“EIR”). A copy of the MEPA Certificate is included as Attachment B.
1.5 Massachusetts Wetlands Protection Act

The coastal wetland resource areas at the Project Site consist of: Coastal Bank, Coastal Beach, Tidal Flat, Rocky Intertidal Shore, Salt Marsh, Land Under the Ocean and the overlay wetland resource of Land Containing Shellfish. A Notice of Intent ("NOI") for work within these resource areas was submitted to the City of Salem Conservation Commission on March 3, 2020.

2.0 Project Description

The Project consists of three primary elements: 1) the replacement of the existing pool with a smaller more manageable and functional pool, the incorporation of a splash pad, and the construction of an approximately 820 sf support building for filtration equipment and life guard facilities; 2) the rehabilitation of the existing bathhouse and the construction of an approximately 1,030 sf addition to serve as a community room; and, 3) the removal of the existing seawall and the restoration of portions of the filled tidelands to coastal beach and coastal bank planted with high marsh species.

As noted above, only portions of the Project Site are within Chapter 91 jurisdiction. The Project Site plan, including the HHWM and limit of Chapter 91 jurisdiction, is depicted on Figure 4 and identifies project elements within Chapter 91 jurisdiction for which the City seeks a Chapter 91 license.

2.1 Pool and Splashpad

The Project will provide a new public pool and splashpad for the residents of Salem and neighboring communities that currently lack this public amenity. Unlike natural swimming facilities, the Project’s facilities will be designed in compliance with the Americans with Disabilities Act ("ADA"). The existing pool will be replaced with a new 5,000 sf combination lap and recreational pool, a 2,300 sf kiddie pool, a new pool deck area of approximately 13,000 sf, and a 2,400 sf splash pad. The splash pad will also allow for extended seasonal operations earlier in June and later in September when the pool may not be open. Most of the kiddie pool, the southerly portion of the combination lap pool, and portions of the pool deck are within Chapter 91 jurisdiction.

2.2 Bathhouse Improvements

The City endeavors to rehabilitate the single-story bathhouse to achieve net zero energy consumption by incorporating sustainable and energy efficient building design measures and systems across all elements of the Project. Additionally, the City will strive to achieve certification under the Sustainable Sites Initiative (SITES) V2 Rating System through strategies that include reduction in water demand, filtration and reduction of stormwater runoff, reduced energy consumption, and increased recreational opportunities.
Forest River Pool Replacement     Salem, Massachusetts

Pool Information:
- Pool water area 4,910 s.f.
- Kiddie Pool water area 2,260 s.f.
- Splash pad area 2,400 s.f.
- Cove restoration area ~14,000 s.f.

Building Information:
- Existing bathroom building area 4,268 s.f.
- Additions 1,030 s.f. (entry and community room)
- Support Building 620 s.f.
- Proposed deck area 13,000 s.f.
- 475 bathers per pool water area (6 showers, 6 WCs & 4 wash basins)

Parking Information:
- Proposed parking count 16 spaces
  (staff and accessible parking)
The pool and bathhouse are intended for seasonal use. During the shoulder seasons limited areas of the bathhouse, including the proposed community room, will be used for various community-based activities. Most of the bathhouse will not be heated during the off-season and those portions of the building will not require an insulated thermal envelope. The primary function of the bathhouse, in service to pool and Park patrons, will be restored upon completion of the Project. Only the westerly portion of the bathhouse, which will include public changing rooms and lockers, is within Chapter 91 jurisdiction. Nonetheless, the entirety of the bathhouse will be accessible to the public when it’s operational. The community room and the proposed public access paths will also be used by the community for coastal based educational opportunities including naturalist programs, birding, kayaking, and swimming. The community room can be used for indoor education to complement the outdoor education programming.

2.3 Site Improvements and Resiliency

Due to the Project’s location adjacent to Salem Harbor, the future impacts of climate change may affect the Project Site in a number of ways, both directly and indirectly. One significant effect of climate change is an increase in the mean sea level. Sea level rise increases the risk of flooding posed to infrastructure and ecosystems resulting from both coastal storm events and high tides. The existing pool floods during coastal storm events. Most notably, during the winter storms of 2018 when the pool’s filtration equipment was damaged during a flood event. As shown on Figure 5, upland areas of the Project Site are located within FEMA Zone AE (Elevation 11-feet NAVD88) and seaward areas of the Project Site are within Zone VE (Elevation 16-feet NAVD88).

During the design process, the City evaluated a range of strategies to mitigate the effects of climate change on the facility and to lessen the Project’s contribution to climate change. As a result of this deliberative design process, the City has integrated strategies which ensure the Project adequately addresses near- and long-term coastal resilience concerns caused by sea level rise and coastal flooding. The primary strategy being adopted to address the Project Site’s resiliency is elevating the lower-lying areas of the Project Site, including the pool, pool deck, support building, and the surrounding landscaped areas. By constructing the pool deck and support building approximately three feet above the current FEMA 100-year flood elevation, the facilities will be located well above flood levels experienced in recent years and those anticipated in the coming years. The existing bathhouse is already elevated approximately four feet above the current FEMA 100-year flood elevation and has not been subject to flooding from coastal storms.

As described above, the City is focused on minimizing the Project’s contributions to climate change by striving to achieve net zero energy consumption by incorporating sustainable and energy efficient building design measures and systems across all elements of the Project.
LEGEND

- Project Site
- FEMA Flood Zone AE
- FEMA Flood Zone VE

Scale 1:2,400
1 inch = 200 feet

Basemap: 2019 Nearmap Aerial Imagery

Forest River Park
Belleau Road
Salem Harbor

Data Source: Bureau of Geographic Information (MassGIS), Commonwealth of Massachusetts, Executive Office of Technology and Security Services

Figure 5
FEMA Flood Zones
2.4 Shoreline Restoration

The City and design team evaluated several design alternatives to both restore the shoreline at the Project Site and to increase its resiliency. The preferred approach is to return a section of the Project Site to a condition that more closely represents the historic form of the shoreline by removing fill material landward of MHW and reconstructing areas of Coastal Beach and Coastal Bank. The Coastal Bank will be planted with high marsh and other Coastal Bank plantings suitable for the Project Site. The restored shoreline will enhance natural resource function and will provide storm damage protection by removing the deteriorating seawall and increasing the elevation of the Project Site at the top of the Coastal Bank and upland portions of the Project Site.

Public access walkways and signage will be installed in areas around the pool, bathhouse, and in proximity to the top of the coastal bank. Other amenities such as seating areas, trash receptacles, and “mutt mitt” stations will also be provided. The City anticipates that the shoreline restoration will incorporate interpretive signage describing the surrounding ecosystem and history of the Project Site.

Additional detail on the shoreline restoration is shown on the draft license plans included as Attachment C. No fill is proposed to be placed or removed seaward of MHW. The abandoned concrete pipe, gravel wash from the toe of the seawall, and other debris will be removed seaward of MHW.

To the extent feasible, site grading and non-structural stabilization landward of the existing seawall will be performed prior to removal of the seawall. The City will work with contractors to minimize the duration of construction activities in wetland resource areas and will ensure that equipment access routes to those areas are located to minimize construction impacts to the extent practicable. Contractors will be expected to define manageable work areas seaward of the seawall in which activities can be completed within three hours of either side of low tide. Work seaward of the existing seawall will be timed to commence once tidal waters have fallen sufficiently and at no time will work occur within open water of the intertidal area. The use of mechanical equipment within wetlands resource areas will be minimized and the removal of existing concrete debris and gravel washed from the toe of the seawall, for example, will be removed by hand when feasible.

3.0 Public Benefits

The Project offers a variety of public benefits that will mitigate the temporary impacts related to the construction of the Project, including:

◆ A reduction in impervious area and the installation a new stormwater management system that will increase on-site stormwater recharge, decrease site stormwater runoff, and improve the quality of stormwater runoff;
♦ An expanded area of Coastal Beach and restored Coastal Bank with vegetation that will provide habitat for coastal species and increase coastal resilience for the Project Site;

♦ The preservation and rehabilitation of the historic bathhouse;

♦ Improved pedestrian access through the Project Site and along the harbor’s edge;

♦ New, accessible public restrooms within the bathhouse;

♦ New public meeting space within the bathhouse; and

♦ A new, state-of-the-art public swimming pool and splash pad.

4.0 Chapter 91 Licensing Review

The Project Site is located on filled tidelands, abuts flowed tidelands, and is not separated from the water by a public way. As such, activities and structures on portions of the Project Site are subject to Chapter 91, the Waterfront Protection Act, and the Waterways Regulations. The following sections review the Project in relation to the principal provisions of Chapter 91 and its implementing regulations.

4.1 Massachusetts General Laws Chapter 91

Chapter 91, as implemented through regulations promulgated and administered by the MassDEP Waterways Regulation Program, provides for the protection of the public’s rights to navigation along, and access to, the Massachusetts shoreline. The Waterways Regulations establish standards for jurisdictional projects based on a number of criteria. Key among these are a project’s status as water-dependent or nonwater-dependent, its location on flowed or filled tidelands, and its location on tidelands identified as either Private or Commonwealth Tidelands.

The following sections review Chapter 91 jurisdiction and the proposed uses and activities on those portions of the Project Site subject to the licensing provisions of Chapter 91 relative to the applicable standards referenced above.

4.1.1 Limit of Filled Tidelands

The limits of the filled tidelands on the Project Site and the filled and flowed tidelands proximate to the Project Site are shown on Figure 3. These limits were established utilizing the presumptive Chapter 91 jurisdictional lines developed for MassDEP by the Massachusetts Office of Coastal Zone Management.

4.1.2 Water Dependency

As noted in Section 1.3 and pursuant to §9.12(3)(a), the Project is an “accessory to a water-dependent use” and the Project meets the definition of a Public Service Project pursuant to §9.02.
4.1.3 Commonwealth Tidelands

The Waterways Regulations at §9.02 define Commonwealth Tidelands as those “tidelands held by the Commonwealth, or by its political subdivisions or a quasi-public agency or authority, in trust for the benefit of the public.” The Project Site is held by the City of Salem, a political subdivision of the Commonwealth of Massachusetts, and can be deemed to overlie Commonwealth Tidelands.

4.1.4 Water-Dependent Use Zone

The Chapter 91 regulations at §9.51 stipulate that nonwater-dependent use projects on any tidelands shall not unreasonably diminish the capacity of such lands to accommodate water-dependent uses. Toward this end, the regulations provide for the recognition of a water-dependent use zone within which new or expanded nonwater-dependent buildings are not allowed.

As a water-dependent project, the Project Site does not include a Water-Dependent Use Zone.

4.2 Chapter 91 Licensing / Regulatory Standards Review

This Chapter 91 license application is being submitted for the replacement of the existing pool and its associated facilities, renovation of the bathhouse, restoration of the shoreline, and authorization of the existing fill to remain, and increasing the elevation of the Project Site.

This work also includes the removal of the on-site tennis courts, provision of on-site parking, and improvements to landscaped public open space. The following subsections review the proposed improvements to the Project Site for consistency with applicable Chapter 91 regulatory standards.

4.2.1 §9.15 Extended Term Chapter 91 License

The Project will be licensed for an unlimited term in accordance with the Chapter 91 regulations at 310 CMR 9.15(c), which state:

“The Department shall issue a license for an unlimited term for any project whose entire control, development, and operation is undertaken by a public agency for the provision of services directly to the public (or to another public agency for such provision to the public) by the public agency, its contractor or agent, unless an unlimited term is not deemed appropriate by the Department.”

In support of the unlimited term of the license, it is of note that the Project provides the following public benefits:

♦ While not a regulatory requirement, the bathhouse will include a new community room for use by public interest and neighborhood groups for meeting and consultation space. In addition, the Project will offer public restrooms and other facilities during the operating hours of the pool and bathhouse.
The Project will result in the conversion of a portion of the existing, paved open space on the Project Site to new public open space in the form of open lawn and landscaped parkland, and creates a number of new pedestrian walkways through the Project Site.

The bathhouse and other facilities are being designed to achieve net zero energy consumption by incorporating sustainable and energy efficient building design measures and systems across all elements of the Project. Such measures may include a highly efficient building envelope, high albedo roofing, photovoltaic solar panels (“PV”), air source heat pumps (“ASHP”), energy recovery ventilators (“ERV”), LED lighting with occupancy and daylight sensors or time limits, and heating, ventilation, and air conditioning (“HVAC”) which utilize energy efficient electronically commutated motors (“ECMs”). The net zero energy goal is consistent with the City of Salem’s Clean Energy and Green Community goals, and the City may offset some consumption on site with offset credits.

Additionally, the City will strive to achieve certification under the SITES V2 Rating System through strategies that include: reduction in water demand, filtration and reduction of stormwater runoff, reduced energy consumption, and increased recreational opportunities.

4.2.2 §9.32 Categorical Restrictions on Fill and Structures

None of the proposed uses or improvements is categorically restricted in previously filled tidelands.

4.2.3 §9.33 Environmental Protection Standards

In accordance with §9.33, all projects must comply with the applicable environmental regulatory programs of the Commonwealth. Regulatory programs specifically applicable to the Project, and the status of the Project with respect to those programs, are summarized below.

- **The Massachusetts Environmental Policy Act.** An ENF was filed for the Project pursuant to the MEPA on January 15, 2020 (EEA No. 16147). On February 28, 2020, the Secretary of Energy and Environmental Affairs issued a MEPA Certificate on the ENF stating that the Project did not require the preparation and filing of an EIR. A copy of the MEPA Certificate is included as Attachment B of this application.

- **Massachusetts Wetlands Protection Act.** The coastal wetland resource areas at the Project Site consist of: Coastal Bank, Coastal Beach, Tidal Flat, Rocky Intertidal Shore, Salt Marsh, Land Under the Ocean and the overlay wetland resource of Land Containing Shellfish. A NOI for work within these resource areas was submitted to the City of Salem Conservation Commission on March 3, 2020.

- **Massachusetts Historical Commission Review.** The Massachusetts Historical Commission was formally notified of the Project through the submittal of the above-referenced MEPA
ENF. Although the Massachusetts Historical Commission (“MHC”) did not formally comment on the Project during the designated review period, the City anticipates further consultations with the Salem Historical Commission and MHC related to the proposed rehabilitation of the bathhouse.

♦ Coastal Zone Management Consistency Review. The Project Site is located within the coastal zone as identified in the regulations of the Coastal Zone Management Program at 301 CMR 20.00 et seq. A review of the Massachusetts Office of Coastal Zone Management Policy Guide (October 2011) and the Coastal Zone Management Policies indicate that the Project is fully consistent with the policies detailed therein.

4.2.4 §9.34 Conformance with Municipal Zoning and Harbor Plans

The Project is not subject to local zoning and there is no Municipal Harbor Plan for the Project Site or surrounding lands. The previously developed Salem Harbor Plan covers the property from Winter Island to Palmer Cove, north of the Project Site.

4.2.5 §9.35 Standards to Preserve Water-Related Public Rights

The Chapter 91 Waterways regulations at §9.35 are designed to preserve the public’s rights to navigation along the water, free passage over and through the water, and access to Town Landings, and are also designed to ensure that jurisdictional public waterfront open spaces are properly managed and maintained.

The Project is an accessory to a water-dependent use and is therefore consistent with the concept of preserving the public’s rights in tidelands. The Project is also deemed a “public service project” that provides “services directly to the public,” in this case services that support the public recreational use of the Forest River Park and adjacent Salem Harbor.

4.2.6 §9.36 Standards to Protect Water-Dependent Uses

The Chapter 91 regulations at §9.36 are designed to protect any water-dependent uses occurring at or proximate to a project site. This includes water-dependent uses within the five years prior to the filing of the license application.

The Project is an accessory to a water-dependent use and, as such, will protect and preserve the water-dependent uses surrounding the site. The pool and bathhouse will be restored to public service, while the improvements to the Project Site, including mitigating the risks of sea level rise and coastal storms, will maintain and enhance the public’s access to the Salem Harbor shoreline and the public spaces and amenities of the Park.

4.2.7 §9.37 Engineering Construction Standards

All structures associated with Project will be designed and constructed in a manner that is structurally sound and will be certified by a registered Professional Engineer. No new seawalls or
other coastal structures are proposed. Improvements to the site will provide those measures necessary to ensure resiliency to future flooding event, as well as measures to prevent the Project from exacerbating the effects of any flood event.

4.2.8 §9.51 Conservation of Capacity for Water-Dependent Use

The regulations at §9.51 are specific to nonwater-dependent projects and are therefore not applicable to the Project.

4.2.9 §9.52 Utilization of Shoreline for Water-Dependent Purposes

The regulations at §9.52 are specific to nonwater-dependent projects and are therefore not applicable to the Project.

4.2.10 §9.53 Commonwealth Tidelands

The regulations at §9.53 are specific to nonwater-dependent projects and are therefore not applicable to the Project.

4.2.11 §9.54 Consistency with Coastal Zone Management Policies

The Chapter 91 regulations at §9.54 state that “nonwater-dependent use projects located in the coastal zone shall be consistent with all policies of the Massachusetts Coastal Zone Management Program, pursuant to 310 CMR 20.05(3).”

As noted in Section 4.2.3, the Project Site is located in the coastal zone but is an accessory to a water-dependent use. Therefore, a review of the Massachusetts Office of Coastal Zone Management Policy Guide (October 2011) indicates that the Project is fully consistent with the Coastal Zone Management Policies as detailed therein.

5.0 Summary and Conclusion

The Project has been determined to be an accessory to a water-dependent and will preserve and enhance the water-dependent public service aspects of the Park and return to service an important community asset that provides public recreational opportunities and access to Salem Harbor. The Project is fully compliant with the purpose and intent of the Public Waterfront Act and the Waterways Regulations.
Attachment B

Existing Conditions Plan
Certificate of the Secretary of Energy and Environmental Affairs on the MEPA Environmental Notification Form
The Commonwealth of Massachusetts
Executive Office of Energy and Environmental Affairs
100 Cambridge Street, Suite 900
Boston, MA 02114

February 28, 2020

CERTIFICATE OF THE SECRETARY OF ENERGY AND ENVIRONMENTAL AFFAIRS
ON THE
ENVIRONMENTAL NOTIFICATION FORM

PROJECT NAME : Forest River Pool Replacement
PROJECT MUNICIPALITY : Salem
PROJECT WATERSHED : Cape Cod
EEA NUMBER : 16147
PROJECT PROPONENT : City of Salem
DATE NOTICED IN MONITOR : January 22, 2020

Pursuant to the Massachusetts Environmental Policy Act (MEPA; M.G.L. c. 30, ss. 61-621) and Section 11.06 of the MEPA regulations (301 CMR 11.00), I hereby determine that this project does not require an Environmental Impact Report (EIR).

Project Description

As described in the Environmental Notification Form (ENF) and supplemental information\(^1\), the City of Salem (City) proposes rehabilitation of a bathhouse, including an expansion of 1,030 square feet (sf) to create a new community room; removal and replacement of a pool with a smaller pool; addition of a splash pad; construction of a 820-sf support building for filtration equipment and life guard facilities; and restoration of the historically altered shoreline. The project will also remove tennis courts, elevate the pool deck to approximately three feet above the current 100-year flood elevation, reconfigure site access for emergency vehicles, and provide additional parking. The project includes removal of approximately 150 cubic yards (cy) of material from areas above mean high water (MHW). No dredging is proposed. The project is proposed to create a more sustainable, resilient, and functional public amenity and has been designed to support flexible programming, including outdoor educational opportunities, where the bathhouse will support classroom and hands on education.

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\(^1\) Email from Erik Rexford, Epsilon Associates, Inc, on behalf of the City, on February 13, 2020.
Project Site

The 3.5-acre project site is located within the 29-acre Forest River Park on Pickering Point at the southerly end of Salem Harbor in Salem. The Park is a recreational and community asset for the City of Salem (City) and surrounding communities and includes recreational fields, park buildings, parking areas, paved driveways, forested uplands, a small pond, and Pioneer Village, which is a recreated 17th century village that serves as a living history museum. The project site contains a pool, a 4,270 square foot (sf) bathhouse, tennis courts, landscaped open space, and vehicular access drives.

The pool has undergone several reconfigurations since the Park was acquired by the City in 1907. In the early part of the 20th century, the City lined a tidal inlet with cement and constructed a bathhouse and other facilities. The original bathhouse was replaced in the 1920s or 1930s with the existing structure, which continued to serve pool patrons. The City conducted a major renovation of the bathhouse, constructed the existing concrete pool form and added a shallower kiddie pool in 1972. A concrete seawall was constructed at the mouth of the tidal inlet and fill material was placed behind and at the toe of the seawall to construct the pool form. The pool was filled with saltwater via a concrete pipe extending into the Salem Harbor. The concrete pipe is abandoned in place. The pool was closed off from the tidal influence and converted from saltwater to freshwater in 1999.

The pool and bathhouse facilities were taken out of service following damage to the pool’s filtration equipment caused by flooding sustained during a coastal storm event in 2018. The pool’s concrete form has deteriorated to the extent that recent estimates indicate leakage of approximately 30,000 gallons per day of treated pool water. The bathhouse is a single-story building located at the northeast edge of the pool and has undergone several modifications and renovations. The bathhouse is generally in good condition; however, the building systems and envelope require repair or replacement.

Coastal wetland resource areas on-site include Coastal Bank, Coastal Beach, Rocky Intertidal Shore, Land Containing Shellfish (LCS), Land Under Ocean (LVO), Land Subject to Coastal Storm Flowage (LSCSF) and Salt Marsh. These resource areas contain rubble and fill material presumably remaining from the construction of the seawall and pool.

The project site is located within filled and flowed tidelands of Salem Harbor. The project site lies within mapped shellfish habitat for soft-shell clam, within an area prohibited for shellfishing. The project site is located within Zone AE with a base flood elevation (BFE) of 11 feet North American Vertical Datum of 1988 (NAVD88) according to FEMA’s Flood Insurance Rate Map (FIRM) (No. 25009C0419G, effective July 16, 2014).

Environmental Impacts and Mitigation

According to the ENF, the project originally proposed alteration of 40 linear feet (lf) of Coastal Bank, 50 sf of Salt Marsh, 4,500 sf of Coastal Beach, 4,000 sf of Rocky Intertidal Shores, 1,600 sf of LCS and 56,800 sf to LSCSF; and dredging of 440 cf of fill. Supplemental information indicates that revised project designs would eliminate direct impacts to Salt Marsh and Rocky Intertidal Shores, and that the plantings previously proposed seaward of the seawall will not proceed. Based on these revisions, the updated impact calculations include proposed alteration of 40 lf of Coastal Bank, 2,500 sf of Coastal

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2 The City provided clarification on February 21, 2020 that the ENF incorrectly identifies 8,500 sf of impacts to LVO. No work is proposed below Mean Low Water, meaning that no LVO will be impacted.
Beach, 700 sf of LCS, and 56,800 sf of LSCSF (16,100 sf permanent). No dredging is proposed.

Measures to avoid, minimize and mitigate project impacts include: restoration and expansion of temporarily disturbed Coastal Beach; removal of a concrete pipe and approximately 150 cy of fill from the Coastal Beach seaward of the removed seawall; grading of the area landward of the removed seawall so that periodic tidal inundation will allow for high marsh species such as salt meadow hay and marsh elder; use of construction period best management practices (BMPs); rehabilitation of a historic building; and implementation of sustainability and energy efficiency measures.

Permitting and Jurisdiction

This project is subject to MEPA review and preparation of an ENF pursuant to 301 CMR 11.03(3)(b)(1)(a), 301 CMR 11.03(3)(b)(1)(e), 301 CMR 11.03(3)(b)(1)(f) and 301 CMR 11.03(10)(b) because it requires an Agency Action and it will alter Coastal Bank, require new fill or structure in a velocity zone, alter one-half of more acres of other wetlands (LSCSF), and demolish all or any exterior part of any Historic Structure listed in or located in any Historic District listed in the State Register of Historic Places or the Inventory of Historic and Archaeological Assets of the Commonwealth. The project requires a Chapter 91 (c. 91) License and Section 401 Water Quality Certification (WQC) from the Massachusetts Department of Environmental Protection (MassDEP). The project will require federal consistency review from the Massachusetts Office of Coastal Zone Management (CZM). The project will receive Financial Assistance from the Massachusetts Department of Energy Resources (DOER) for evaluating Zero Net Energy and other sustainability strategies.

The project will also require an Order of Conditions from the Salem Conservation Commission (and, on appeal only, a Superseding Order of Conditions from MassDEP), review by the Massachusetts Historical Commission (MHC) in accordance with M.G.L. Chapter 9, sections 26-27C, as amended by Chapter 254 of the Acts of 1988 (950 CMR 71.00), a National Pollutant Discharge Elimination System (NPDES) Construction General Permit (CGP) from the U.S. Environmental Protection Agency (EPA), and a Massachusetts General Permit from the U.S. Army Corps of Engineers (ACOE).

Because the project will receive Financial Assistance from the Commonwealth, MEPA jurisdiction is broad in scope and extends to all aspects of the project that may cause Damage to the Environment, as defined in the MEPA regulations.

Review of the ENF

The ENF provides a description of existing and proposed conditions, project plans, a brief discussion of project alternatives, and identifies measures to avoid, minimize, and mitigate project impacts. At the MEPA site visit, CZM requested additional information to clarify the location of wetland resource areas on-site, the proposed impacts to these resource areas, construction sequencing and post-construction monitoring. The City provided this information on February 13, 21 and 26, 2020.

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3 The ENF did not identify the threshold relating to alteration of one-half acre or more of other wetlands (LSCSF) pursuant to 301 CMR 11.03(3)(b)(1)(f), though it did disclose the fact that areas in LSCSF would be impacted.
4 An addendum to the alternatives analysis was submitted to the distribution list on January 29, 2020.
5 Email from Erik Rexford (Epsilon Associates, Inc.) on behalf of the City on February 13, 21 and 26, 2020.
**Alternatives Analysis**

The City evaluated three alternatives in a narrative and tabular format, including: No Build; Expanded Shoreline; and the Preferred Alternative (as described herein). The No Build Alternative would leave the project site in its existing inaccessible and deteriorating condition. The ENF indicates that it is no longer possible to completely drain the pool to conduct operational and safety repairs given the porosity of the pool, its proximity to the harbor and elevation below MHW. Although the No Build Alternative would not directly impact wetland resource areas or historic structures, it was dismissed because it would require additional funding to continue to secure the site; may ultimately require removal of the pool and bathhouse because these failing structures represent a public health and safety risk; preclude improvements in site resiliency and water quality associated with proposed stormwater management features; and fail to provide community benefits associated with the reactivation of the site. The City maintains that further degradation of the site including erosion and failure of the seawall from sea level rise and coastal storms would result in permanent environmental impacts. In addition, interim repairs to protect public health and safety, such as stabilization of the deteriorating seawall, would also impact wetland resource areas.

The Expanded Shoreline Alternative is similar to the Preferred Alternative except it would increase the size and tidal depth of the shoreline restoration area to create a more dynamic inter-tidal area with a more pronounced elevation change from the toe of the reconstructed coastal bank to the top of bank. This alternative would include a design that more closely replicates the condition shown in historic shoreline mapping and require extensive removal of fill material from around Mean Low Water (MLW) to the toe of the Coastal Bank (approximately 1,800 cy of material from a 10,500-sf area). It would include additional, temporary impacts to wetland resource areas compared to the Preferred Alternative. According to the ENF, the Expanded Shoreline Alternative was dismissed based on consultation with MassDEP and CZM in which they identified concerns that it may not function as designed, particularly considering projected sea level rise and coastal storm scenarios.

The Preferred Alternative will improve site resiliency by replacing an aged seawall, elevating portions of the site approximately 3.0 feet above the FEMA 100-year flood level and by constructing a stormwater management system that uses BMPs to meet stormwater quality standards. The project will include high-efficiency buildings that incorporate sustainable green building and design features. As previously mentioned, the City submitted supplemental information which identified changes to the Preferred Alternative based on feedback from CZM including: eliminating proposed dredging and proposed plantings seaward of the existing seawall; eliminating all impacts to Salt Marsh and Rocky Intertidal Shores; changes to the grading of the proposed shoreline restoration area including a decrease in impacts to Coastal Bank and LCS; and changes to grading landward of the removed seawall so periodic tidal inundation will allow for high marsh species.

**Wetlands and Waterways**

The Salem Conservation Commission will review the project for its consistency with the Wetlands Protection Act (WPA), Wetlands Regulations (310 CMR 10.00) and associated performance standards, including the Stormwater Management Standards (SMS). MassDEP will review the project to determine its consistency with the 401 WQC Regulations (314 CMR 9.00) and c. 91 Waterways Regulations (310 CMR 9.00). The City may choose to submit a MassDEP BRP WW26 Combined
Application for a c.91 Waterways License/Permit and a WQC.

Supplemental information includes updated plans and narrative which identify the elimination of direct impacts to salt marsh and any planting previously proposed seaward of the existing seawall. The revised project will impact approximately 40 lf of Coastal Bank and 2,500 sf of Coastal Beach associated with the removal of the seawall and restoration and expansion of the Coastal Beach in these areas; 700 sf of LCS associated with removal of a concrete pipe; and 56,800 sf of LSCSF. The project would also remove approximately 150 cy of coarse-grained gravel remaining from the pool’s construction in the early 1970s from the Coastal Beach seaward of the removed pool seawall, grade the area landward of the removed seawall so that periodic tidal inundation will allow for high marsh species such as salt meadow hay and marsh elder, and grade Coastal Bank up to approximately elevation 11.5 NAVD88.

Comments from State Agencies support the use of properly designed and implemented nature-based approaches to reduce storm damage adjacent to and within coastal resource areas wherever feasible. While State Agencies support the overall goals of removing the existing pool and structures and restoring the area, comments identify concerns with several proposed components of the revised project that must be addressed during permitting. The City should redesign the project to address State Agency concerns and provide more specific project plans which show both existing and proposed delineated wetland resource areas, including areas where there will be temporary or permanent alteration and areas of wetlands proposed for restoration. The City should consult with the MEPA Office to determine if any project revisions would warrant the submission of a Notice of Project Change (NPC).

The Coastal Beach provides storm damage prevention and flood control by dissipating wave energy and reducing the height of storm waves. MassDEP and CZM comments identify concerns with the proposed removal of coarse-grained gravel on the Coastal Beach as a restoration activity and emphasize the importance of maintaining the volume and form of the existing beach to avoid losing these functions. MassDEP comments indicate that the removal of coarse-grained gravel from Coastal Beach may not be permittable because it constitutes a change in the form and volume of the beach.

The project proposes to lower the elevation of Coastal Beach to accommodate appropriate elevations for Salt Marsh plantings landward of the beach. CZM comments indicate that this change in form and volume will decrease the ability of the Coastal Beach to dissipate wave energy and will diminish the resilience of the project. The City should consider increasing the function of the Coastal Beach with nourishment and plantings, and incorporating the existing elevation into the project design. Maintaining and enhancing this resource area, in addition to proposed Coastal Bank enhancements further landward will provide improved resilience. The City should reassess potential project-related impacts to adjacent resource areas based on examination of existing sediment and hydrologic characteristics of the site to ensure that the nature-based approach will be successful. This information should be provided to permitting agencies to support the selection of the Preferred Alternative.

The City describes the linear “set stone” feature depicted on revised plans which extends into the proposed created salt marsh area as an energy dissipater for one of the two proposed new outfalls from the proposed rain gardens. The ENF and supplemental information omit a rationale for only proposing this feature for one outfall and the updated plan does not identify the location of both outfalls. According to MassDEP comments, the ENF does not provide sufficient information to allow an evaluation of the
proposed stormwater design. MassDEP and CZM comments recommend that the City eliminate the hardened linear feature because it is likely to exacerbate wave energy impacts during storm events; relocate outfalls outside of the new bank or Salt Marsh planting area; and size any required energy dissipation features to minimize scour from the outfalls and impact from the structure.

MassDEP and/or CZM comments recommend the City incorporate the following BMPs into the design to maximize the likelihood of success of this nature-based design:

- natural (i.e. biodegradable) materials for erosion controls and anchors to avoid synthetic material washed into the ocean or entangling wildlife;
- duckbill anchors instead of stakes to anchor the rolls given high buoyancy of coir rolls and specify how far anchors need to extend into underlying substrate to hold rolls;
- galvanized steel instead of stainless-steel anchors/crimps which will break down;
- identify appropriate tightening of duckbill anchor cables that requires construction oversight from a Certified Ecological Restoration Practitioner in construction specifications;
- include a detailed monitoring and maintenance plan for monitoring plant establishment, tightening of cables anchoring coir rolls as needed, and replacement of plants and bioengineering material as needed (identify responsible parties for proposed monitoring and maintenance in the Plan and in the construction bid documents); and
- supervise monitoring and maintenance by a Certified Ecological Restoration Practitioner.

The City should continue to consult with MassDEP and CZM as the design advances. Additional best practices can be found in CZM’s StormSmart Properties Fact Sheets. As requested by CZM, the City should clarify identification of the elevation of MHW and provide the methodology for the tidal datum used in the design for this location during the permitting processes.

The City will continue consultations with MassDEP, CZM, and the Massachusetts Division of Marine Fisheries (DMF) regarding recommendations from DMF to enhance Salt Marsh planting in the low marsh and mid-marsh zones because the project site may be a good candidate for a living shoreline salt marsh restoration.

The project is located within filled and flowed Commonwealth Tidelands of Salem Harbor and will require authorization through a c. 91 Waterways License and Permit. MassDEP comments indicate that although the ENF claims that MassDEP concurred that the project is “accessory to a water-dependent use” in a pre-filing meeting, the ENF does not provide sufficient detail to make a determination of water-dependency. I refer the City to MassDEP’s comment letter that provides additional guidance regarding information that should be included in the c. 91 application including consistency with the accessory use standards (310 CMR 9.12(3)(a)(1)) and the expected 25-year life of the facility relative to the requested term of the license. Prior to submittal of an application, the City should conduct a comprehensive search of all available records to identify any prior Legislative Acts and c. 91 Licenses for all fill and structures located on-site within c.91 jurisdiction. Project plans should be provided during permitting that depict the limits of c. 91 jurisdiction (Mean High Water Mark, MHW Line, MLW Line, etc) along the project site and quantify the limit of work (location and dimension) within jurisdictional areas.

MassDEP comments indicate that proposed fill associated with the outfall set in riprap extending
approximately to the MLW Line may exceed the ENF threshold pursuant to 301 CMR 11.03(3)(b)(6) for construction, reconstruction or expansion of an existing solid fill structure of 1,000 or more sf base area that occupies flowed tidalands or other waterways. Supplemental information indicates that the project will not include dredging. The City should confirm that the project will avoid dredging or provide verification which indicates that dredged material is appropriate for beach nourishment and address the standards pursuant to 310 CMR 9.40.

Climate Change and Resiliency

Energy Efficiency and Green House Gas Emissions

The City intends to design the project to achieve net zero energy consumption by incorporating sustainable and energy efficient building design measures and systems to achieve certifiability under the Sustainable Sites Initiative (SITES) V2 Rating System through reductions in water demand, stormwater runoff and energy consumption. The bathhouse will include a minimum of R-20 roof insulation and high albedo roof covering in insulated areas of the building, and wall and roof structures will be constructed with a minimum R-32 and R-50, respectively. The City is evaluating air source heat pumps (ASHPs) to condition those spaces and an energy recovery ventilator (ERV) (reclaim up to 80 percent of energy). The building will likely include HVAC systems using energy efficient electronically commutated motors (ECMs) and controls to minimize operation; high-performance windows and thermal curtains in the community room; ASHP or solar thermal systems for heating domestic hot water (DHW); instantaneous electric resistance DHW heaters at year-round bathroom sinks; and LED fixtures and lamps with lighting controls/sensors.

Solar photovoltaic (PV) systems will be used on the bathhouse and life-guard shelter to offset the predicted annual consumption. The size of the PV system will be calculated once a final design approach is selected for the electrical systems to determine an estimate of annual consumption. Additional PV may be installed on shade structures or other appurtenances. Preliminary analyses of on-site PV capacity suggest it can meet the facility’s annual electric demand.

Climate Change Adaptation

The site is vulnerable to the effects of climate change, including sea level rise, more frequent and intense storms and increases in temperature. The ENF identifies measures the Proponent will adopt to improve resiliency of the project and reduce vulnerability to these effects including removing an aging seawall, elevating portions of the site approximately 3.0 feet above the FEMA 100-yr flood level, constructing a stormwater management system that uses BMPs to meet the SMS, and constructing high-efficiency buildings that incorporate sustainable green building and design features.

Historic Resources

The project will include renovation and expansion of the circa 1920 Forest River Pool Bathhouse and removal and replacement of the existing Forest River pool. The Forest River bathhouse and pool are resources identified as part of the Forest River Park, which was added to the Inventory of Historic and Archaeological Assets of the Commonwealth in 1986 (SAL.916). As part of the project, an updated MHC Area Form (Form A) has been prepared for the Forest River Park. The City will continue
consultation with MHC and the Salem Historical Commission regarding proposed rehabilitation of the bathhouse.

Construction Period

Supplemental information provides a general outline of construction sequencing and post-construction monitoring of restoration areas, which will be further defined during procurement and permitting processes in consultation with contractors, the Salem Conservation Commission and regulatory agencies. Work below MHW will be timed around tides to ensure all equipment and machinery will remain out of tidal waters. All equipment and machinery should be inspected daily for fluid leaks. A Spills Contingency Plan should be developed and implemented if equipment is proposed to be refueled on-site to ensure proper containment and clean up. The City will employ erosion control measures to minimize runoff from the site during construction. The project must comply with MassDEP's Solid Waste and Air Pollution Control regulations, pursuant to M.G.L. c. 40, s. 54 and 310 CMR 7.00. All construction activities should be undertaken in compliance with the conditions of all State and local permits. Should oil and/or hazardous materials be identified during construction activities, the City should notify MassDEP in accordance with the Massachusetts Contingency Plan (310 CMR 40.00).

Conclusion

The ENF has sufficiently defined the nature and general elements of the project for the purposes of MEPA review. Based on review of the ENF and comments received, and in consultation with State Agencies, I have determined that no further MEPA review is required.

February 28, 2020
Date
Kathleen A. Theoharides

Comments received:

02/11/2020 Massachusetts Department of Environmental Protection (MassDEP) – Northeast Regional Office (NERO) (revised comments 02/21/2020)
02/11/2020 Salem Sound Coastwatch (SSCW)
02/20/2020 Massachusetts Office of Coastal Zone Management (CZM)
02/21/2020 Massachusetts Division of Marine Fisheries (DMF)
02/21/2020 MassDEP Waterways Regulation Program

KAT/PPP/PPP
EXISTING POOL STRUCTURE TO REMAIN
EXISTING COASTAL BEACH PROPOSED SLOPE LINE INFILL PORTION OF EXISTING POOL STRUCTURE TO BE REMOVED
LIMIT OF COASTAL BEACH RESTORATION COASTAL BEACH TO BE RESTORED EXISTING POOL DECK TO BE REMOVED

ANTHONY DONATO
MASS. P.E. NO. 40706
I CERTIFY THAT THIS PLAN HAS BEEN PREPARED IN ACCORDANCE WITH THE UNIFORM INSTRUCTIONS FOR THE PREPARATION OF PLANS AS SET FORTH BY THE REGISTERS OF DEEDS

DATE:
HANCOCK ASSOCIATES
ANTHONY DONATO
REG. PROFESSIONAL ENGINEER MASS. NO. 40706

SITE SECTION 1 FOREST RIVER POOL
PROPOSED CONDITIONS PLAN SECTION 4 FOREST RIVER POOL

SCALE: 1" = 30'
HORIZONTAL GRAPHIC SCALE IN FEET

FILE NAME: 22748_CH_91.dwg
SHEET OF 3

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ANTHONY DONATO
MASS. P.E. NO. 40706
MARCH 23, 2020
FILE NAME: 22748_CH_91.dwg
SHEET OF 3

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