Walk Bridge Replacement Project
Bridge No. 04288R, Norwalk Connecticut
State Project No. 0301-0176

Structures, Dredging & Fill, and Tidal Wetlands and 401 Water Quality Certificate Application
Permit No. 201909990-TWSDF

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Walk Bridge Replacement Project Bridge Number 04288R
Norwalk CT
State Project Number 0301-0176

Part III: Project Information
(continued)
Question 1

1. Describe the proposed regulated work and activities in a detailed narrative, including the number and dimensions of structures. Refer to both the instructions and Appendix A of the instructions (Activity Specific Instructions).

In cooperation with the Federal Transit Administration (FTA), the Connecticut Department of Transportation (CTDOT) proposes to replace the New Haven Line Railroad Bridge (Walk Bridge, Bridge No. 04288R) crossing the Norwalk River in Norwalk, Connecticut. The existing Walk Bridge over the Norwalk River, constructed in 1896, is a four-track movable railroad bridge consisting of a 200-foot swing span, supported by a center pivot pier, and two fixed approach spans to the west of the swing span and one fixed approach span to the east of the swing span. The structure carries four tracks of Metro-North Railroad (MNR) commuter rail, Amtrak, and two freight carriers. The fixed spans consist of eight 15-feet deep Warren trusses, two per track; and the swing span consists of three planes of double intersection Warren trusses with stringers and floorbeams.

The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, and deactivated electrical and railroad submarine cables; and construction of the replacement bridge. The four-span replacement bridge includes two side-by-side, 240-foot vertical lift spans across the Norwalk River, each with independently operated mechanical and electrical equipment. The pair of 240-foot vertical lift spans provides a horizontal clearance of approximately 220 feet between the pier-mounted fenders; however, the project does not alter the 170-foot federal navigation channel. The lift spans provide 60.73 feet vertical clearance above mean high water (MHW) when the span is fully raised, and 25.73 feet vertical clearance above MHW when the span is closed. There are two western approach spans and one eastern approach span. The approach spans are side-by-side, two-track structures; the north structure carries Tracks 1 and 3 and the south structure carries Tracks 2 and 4. Each structure is comprised of a precast concrete composite ballasted deck supported on four simply supported built-up welded plate girders. The lift spans are 40-foot deep through trusses, each with a double-intersection Warren truss configuration without verticals. Each lift span is an open-deck two-track structure made up of trusses with floor beams supporting track stringers. Tower structures at the end of the lift spans support the lifting mechanisms and counterweights for both lift spans. Short deck-girder spans through the towers at each end provide continuity from the approach spans to the movable spans.

In addition to replacement of Walk Bridge, the project will include other improvements within the railroad right-of-way, including replacement of track and ballast and overhead catenary and supports from

approximately the Washington Street Bridge to approximately 300 feet east of the Fort Point Street Bridge; realignment and replacement of the Fort Point Street Bridge; replacement of retaining walls on both sides of the railroad corridor to the west of Walk Bridge; construction of new support walls at the west abutment; and construction of a new retaining wall to the southeast of Walk Bridge. The project will include construction of a pedestrian/bicycle trail connection to the Norwalk River Valley Trail's Harbor Loop Trail in East Norwalk. Additionally, demolition of existing buildings will be required to support the project. Part III, Question 2, Section 9 describes these activities.

The following provides a summary of the overall project construction approach, construction restrictions, construction methodology, existing bridge removal and disassembly, channel dredging and earthwork, and material management.

Overall Construction Approach: A primary goal of the Walk Bridge design and construction is to minimize disruptions to rail and river traffic. As such, the lift span was designed and configured to allow for four-track service to continue well into the construction period and for the swing span to remain operational for boat traffic until the first of the two lift spans is ready to be installed. For most of the project duration, it is anticipated that the river will remain open to traffic by restricting construction activity to one existing channel and keeping the other channel open to marine traffic (partial channel closure). There will be certain construction activities that will require either a vertical restriction or a complete channel closure. A vertical (height) navigation restriction of 16 feet from mean high water (MHW) is introduced when construction activity prevents the safe movement of the existing swing span. In a complete channel closure, the channel is closed to all navigation due to construction equipment or temporary works in the channel preventing safe vessel passage. Coordination with the United States Coast Guard (USCG) Sector Long Island Sound and the Norwalk Harbormaster of channel restrictions and closures will be required for overall staging of barges and equipment during the following construction activities:

- removal of the existing pivot pier and rest piers;
- removal of the existing swing span;
- removal of the existing submarine cables;
- dredging of the navigation channel;
- installation of the south lift span;
- installation of the north lift span;
- installation and removal of the slide rail assemblies;
- installation of the independent fender system to protect the control house;
- installation of the pier-mounted fendering system.

Initial construction activities include installation of construction work platforms in the four quadrants of the bridge site, installation of mooring piles and temporary fender systems, and demolition of the existing control house. Cranes and other construction equipment placed on the temporary work platforms will be used to build the new lift span piers and lift span towers. The replacement bridge lift spans will be assembled at the Manresa Island Staging and Storage Yard (Parcel 5/86/1), located approximately 2 nautical miles south of the bridge, and transported upstream along the Norwalk River via barge to the bridge site where they will be prepared for final installation. Removal of the existing bridge swing span will be coordinated with the installation of the lift spans and other construction activities. CTDOT has developed

two schemes to remove the existing swing span and is requesting authorization for both schemes to provide CTDOT with flexibility during construction. Anticipated impacts to the navigation channel due to the swing span removal would vary from a full channel closure to an intermittent partial channel closure with a navigation restriction depending upon the selected removal scheme. The lift span installations will require a full navigation channel closure and channel restrictions.

Environmental Protection Measures: CTDOT has coordinated with the National Oceanic and Atmospheric Administration/National Marine Fisheries Service/Greater Atlantic Regional Fisheries Office (NOAA/NMFS/GARFO), CTDEEP Division of Wildlife, CTDEEP Division of Fisheries -Marine Fisheries Program, CTDEEP Natural Diversity Data Base (NDDB), Norwalk Shellfish Commission (NSC), and the U.S. Army Corps of Engineers (USACE) in developing environmental protection measures for the project (**Attachments C and M**). Through coordination with NOAA/NMFS/GARFO, CTDEEP Wildlife, CTDEEP Marine Fisheries, CTDEEP NDDB, NSC, and USACE, CTDOT has agreed to implement the following environmental protection measures, consisting of time of year restrictions and resource protection measures, during construction of the project.

Construction of the Walk Bridge Replacement Project will include land-based activities and in-water work. In-water work will consist of, but not be limited to, the installation of permanent and temporary structures, removal of permanent and temporary structures, placement of fill, and dredging below the Coastal Jurisdiction Line (CJL). Incidental activities such as, but not limited to, the placement of mooring buoys, movement of construction vessels, and spudding (securing of) construction vessels is not considered in-water work.

***Time of Year Restrictions*:**

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset. (Per coordination with CTDEEP Marine Fisheries, shaft drilling and micro pile drilling conducted within a caisson and marine enclosure are not subject to this TOY restriction.)
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, whether located within or outside of a marine enclosure, as well as following cessation of activity for a period of 30 minutes or longer. A soft start is defined as follows:
    - For impact pile driving: pile driving will commence with an initial set of three strikes by the hammer at 40% energy, followed by a one-minute wait period, then two subsequent three-strike sets at 40% energy, with one-minute waiting periods, before initiating continuous impact driving.
    - For vibratory pile installation: pile driving will be initiated for 15 seconds at reduced energy followed by a one-minute waiting period. This sequence of 15 seconds of reduced energy driving, one-minute waiting period will be repeated two additional times, followed immediately by pile-driving at full rate and energy.
- Dredging will be conducted within a turbidity curtain between December 1st and January 31st. Dredging from February 1st through November 30th will be conducted within a marine enclosure enclosed by a turbidity curtain.

- No construction and/or inspection activities which are within 400 feet of an identified peregrine falcon (*Falco peregrinus*) nest will be permitted during nesting season, between April 1st and July 31st.
- Use of the Manresa Island Staging and Storage Yard will be started before April 15th or after August 1st to allow for the nesting ospreys (*Pandion haliaetus*), to acclimate to this new activity within their nesting areas.
- Special precautions will be implemented during the Northern diamondback terrapin's (*Malaclemys t. terrapin*) active season from April 1st through October 31st, in accordance with CTDOT Section 1.10 Environmental Compliance.

Resource Protection Measures:

- Pile driving/extraction and drilled shaft and micropile drilling activities will be coordinated to ensure that the navigation channel is available for marine traffic and fish passage; activities will occupy less than 50% when working in the middle of the navigation channel.
- Barge movements will take place such that there will be no adverse impacts to the river bottom or increase in ambient turbidity beyond that allowed by permit conditions.
- Marine enclosures will be installed prior to the start of certain construction activities as indicated in the response to **Question 2a** and shown in **Attachment I.** Marine enclosures are steel sheet pile structures that are not to be considered as being watertight. The sheeting allows low velocity flow between the enclosure and the outer tidal waters; the elevation of water inside the enclosure is isolated from tidal waters and therefore lags the tide. The marine enclosure will be installed so that the top of the enclosure is at, or above, Elevation 6.2 (NAVD88), one foot above the high tide line. All marine enclosures will be protected from navigation impacts with a temporary fender system. The temporary fender system, consisting of mooring piles and floating fenders between the mooring piles, will line the channel faces of the marine enclosure. To further prevent siltation outside of the marine enclosure, a turbidity curtain will be deployed around its exterior perimeter.
- All pile driving and extraction (including sheet piles) activity will be enclosed within turbidity curtains.
- Type 3 Permeable Turbidity Barriers will be used (CTDOT Specification Items #021030XA, #021031XA, #021032XA, Turbidity Control Curtains). If needed, pin piles will be used to hold the turbidity curtains in place. Turbidity curtains will be installed prior to the start of the following activities:
    - Marine enclosure installation,
    - Pier construction (with marine enclosure),
    - Pier removal (with marine enclosure),
    - Existing submarine cable removal,
    - Slide rail installation and removal for swing span removal,
    - Control house independent fender system installation and existing fender removal,
    - Navigational/maintenance dredging,
    - Construction platform pile driving,
    - Pile installation and removal at the temporary vessel dock relocation site,
    - New dredging (with marine enclosure if outside the dredging work window) at the temporary vessel dock relocation site [waterward of 68 and 90 Water Street (Parcels 2/84/19 and 2/84/33)] and at the permanent vessel dock location site [waterward of 4 North Water Street (Parcel 2/19/1)],
    - Bulkhead installation at 68 and 90 Water Street (Parcels 2/84/19 and 2/84/33),
    - Sheet pile installation and outfall reconstruction at the IMAX,
    - IMAX Theater foundation removal (with marine enclosure),

  - Wetland restoration.
- The marine enclosures and turbidity curtains will be installed and maintained by the contractor. Prior to removal of the marine enclosure following each activity, the water inside the marine enclosure will be monitored for total suspended solids. Once the turbidity readings reach equilibrium with those readings outside of the turbidity curtain, then the marine enclosure can be removed. The turbidity curtains will remain in place until that portion of the project is complete and the turbidity has settled to no more than pre-construction conditions.
- Explosives and hydraulic breakers (e.g., jackhammers and hoe rams) will not be used below the high tide line (HTL).
- Water quality monitoring for turbidity, specific conductivity, salinity, dissolved oxygen, pH, temperature and water level (at one location) will be conducted whenever in-water work is being performed, as directed by CTDOT Section 1.10 Environmental Compliance and further described in **Part III, Question 2c**.

Construction Methodology: Construction of the in-water portions of the project will be primarily completed with cranes and other equipment placed on construction work platforms in the four quadrants of the bridge site. Crawler-type cranes positioned on the work platforms will facilitate the following: removal of the existing approach superstructure; erection of new approach superstructure and substructure; installation of the pier-mounted fender system; and erection of new lift span foundations, towers, counterweights and bridge mechanical and electrical components. The cranes will be accompanied by material barges and a collection of helper boats and work shuttle vessels. The placement of the floating marine construction equipment will be such that either the east or west channel of the existing swing span will remain accessible for navigation prior to the installation of the first vertical lift span truss. (Refer to "Dredging and Earthwork" for a description of impacts to the existing channel during dredging operations). Once the first lift span truss is in service, barge placement will be predicated on accessing the existing substructure units during their removal while maintaining at least half of the channel for navigation.

Barges will also be used for the installation of the new vertical lift spans and the removal of the existing swing span. The new lift spans will be transported by barges from the Manresa Island Staging and Storage Yard for final placement at the Walk Bridge location. These activities are further described in **Part III, Question 2a.** CTDOT has prepared a Marine Use Plan in coordination with the USCG, to coordinate the use of construction barges with existing commercial and recreational traffic in the Norwalk River.

Existing Bridge Removal and Disassembly: Removal and disassembly of existing Walk Bridge includes the bridge superstructure and substructure. The existing bridge superstructure consists of the bridge approach spans, swing span, open deck track, control house, and seven overhead contact systems (OCS) structures (Structures 529A, 529B, 529C, 529D, 529E, 529F, and 529G). These elements will be removed in their entirety; details of their removal are described in **Part III, Question 2a, Sections 1.5, 2.3, 2.4, 3.5, and 9.3**. The existing bridge substructure consists of the east and west abutments, Pier 1 (east of North Water Street), Pier 2 (west swing span rest pier), the pivot pier, and Pier 3 (east swing span rest pier). The east and west abutments and Pier 1 are landward of the Coastal Jurisdiction Line (CJL); Piers 2 and 3 and the pivot pier are below the CJL. The piers in the river consist of stone masonry founded on timber piles and timber matting. The pier masonry and timber matting will be removed to the bottom of the timber mat, Elevation -20.0 (NAVD88). Pier 1 will be removed to approximately Elevation 4.0 to 6.0 (NAVD88),

which is 2 feet below ground elevation, which varies between Elevation 6.0 and 8.0 (NAVD88). The existing bridge foundations in the river (Piers 2 and 3 and the pivot pier) will be removed to Elevation -14.98 (NAVD88), which is 1 foot below the authorized dredge Elevation of -13.98 (NAVD88), to accommodate an allowance for over-dredging.

Existing bridge part substructure and superstructure, as well as other components previously cited, will be loaded onto a barge and hauled to approved upland construction staging parcels, prior to off-site disposal. Initially, the eastern construction work platforms will be used for initial loading of the material from the barges. The Manresa Island Staging and Storage Yard (Parcel 5/86/1) and the construction yard at the bridge site (1 Goldstein Place; Parcel 3/1/25) will be used for off-loading of materials from the construction barges and temporary staging and storage prior to off-site disposal.

Transmission towers (Structures 529 and 530) on the east and west sides of the bridge will be removed in their entirety, along with the overhead lines that cross the navigation channel. All open deck track on the existing bridge will be removed with the structure. Three existing submarine cables will be deactivated and removed in their entirety; these include the cable providing electrical power and control to the existing swing span, a temporary railroad signal and communication cable installed as part of the CP-243 Interlocking Project (an advance construction project), and the signal express cable.

The existing timber fender protection system includes timber protection for Piers 2 and 3 and the pivot pier. At each pier, the protection system, including the timber piles, will be completely removed.

Dredging and Earthwork: The areas immediately north and south of the pivot pier and the surface around the piers will be dredged to the final channel depth to match the existing federal navigational channel as approved by the USACE. The dredging activity will include a crane with a clamshell bucket and/or excavator working from the crane barge and loading the material barge to one of the platforms for off-loading. During channel/maintenance dredging operations, the existing east channel will be closed, and with the exception of a partial restriction of the existing west channel for a period of time, the west channel will otherwise remain open during the dredging. Dredged material will be loaded onto a modified, contained barge and moved off-site, as further described in **Part III, Question 2a, Sections 1.8, 2.6, and 3.7; and Appendix A.** The construction yard at the bridge site (1 Goldstein Place; Parcel 3/1/25) will be used for initial off-loading of material.

Material Management: Sediment handling will be conducted per the contract specifications and permits. Sediment removed from the Norwalk River will be transported to CTDOT-designated upland Waste Stockpile Areas (WSAs) for testing and off-site disposal. Dredged material will not be reused on the project site. For other excavation in the river [with the exception of the recently installed CP-243 Interlocking Project submarine cable removal, Construction Activity (CA)12], the top four feet of material excavated from the current top of river sediment will be transported to the WSAs, where the material will be tested and disposed of per the specifications. Material below the top four feet of excavation can be returned to the trench from where it came.

Excavated materials from upland locations, such as the railroad embankment, may be reused on the project site. Material removed from these locations will be transported to CTDOT-designated upland Reuse

Stockpile Areas (RSAs) for testing. The RSAs will be used to stockpile excavated material and blend stone (if needed) until reuse of the material on the project site.

Project-generated material at the stockpile areas will be managed in accordance with the CTDEEP General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer). Additionally, the stockpile areas will be included in the Walk Bridge Program Stormwater Pollution Control Plan (SWPCP) and covered under the CTDEEP General Permit for Stormwater Discharges from Construction Activities. Wastewater generated during dewatering activities will be managed in accordance with CTDEEP requirements.

Drawing SUM-2 provides Walk Bridge Replacement Project summaries of temporary and permanent impacts to coastal resources and dredging volumes. **Appendix A** provides additional descriptions of specific activities required for the Walk Bridge Replacement Project regarding 1) dredging and disposal of dredged material and 2) shoreline erosion or stabilization structure. Construction activity details, including impacts, are described and quantified in response to **Question 2a**.

Walk Bridge Replacement Project Bridge Number 04288R
Norwalk CT
State Project Number 0301-0176

Part III: Project Information
Question 2
(continued from application form)

2a. Describe the construction activities involved for the project in detail, including methods, sequencing, equipment, and any alternative construction methods that might be employed.

The Walk Bridge Replacement Project will involve project construction and related activities at Sites 1 through 10, including compensatory wetland mitigation at Site 6 (consisting of multiple areas). Detailed permit plates are provided in **Attachment I**. Attachment I includes general plans showing existing conditions (EP), proposed conditions (PP), and details of project construction activities (CAs).

Figures 1 and 2 present the ten project sites. Sections 1 through 8 describe project construction and related activities at each site, referencing the permit plates and identifying time of year (TOY) restrictions applicable to each activity.

For each activity within a site, resource impacts are identified according to temporary impacts and permanent impacts. Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration. Resource impacts are shown for vegetated tidal wetlands, intertidal flats, the intertidal zone, and below the Coastal Jurisdiction Line (CJL). Intertidal zone impacts represent areas that are in the intertidal zone but are not defined as either a vegetated tidal wetland or intertidal flat. Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

The impacts reported in **Question 2a** are for each individual activity only; they are not additive and do not account for multiple activities occurring at the same location. In some instances, the same impacts are reported for two separate activities. For example, impacts reported for the submarine cable removal (CA-12), which is reported as a Site 1 activity (Section 1.7), a Site 2 activity (Section 2.2), and a Site 3 activity (Section 3.4), also are reported in dredging operations (CA-17) at Site 1 (Section 1.8), Site 2 (Section 2.6) and Site 3 (Section 3.7). **Drawing SUM-2 in Attachment I** reports the aggregate of project impacts to resources by area (square footage) and volume (cubic yards). Impacts reported in **Drawing SUM-2** are additive and account for multiple activities occurring at the same location.

Section 9 describes project construction activities within the 100-year floodplain, including temporary and permanent impacts below the 100-year floodplain. The total for impacts below the 100-year floodplain also identifies impacts below the CJL elevation. **Drawing FP-1 in Attachment I** reports the impacts to the 100-year floodplain by volume (cubic yards), identifying the total fill, cut, and net volumes.

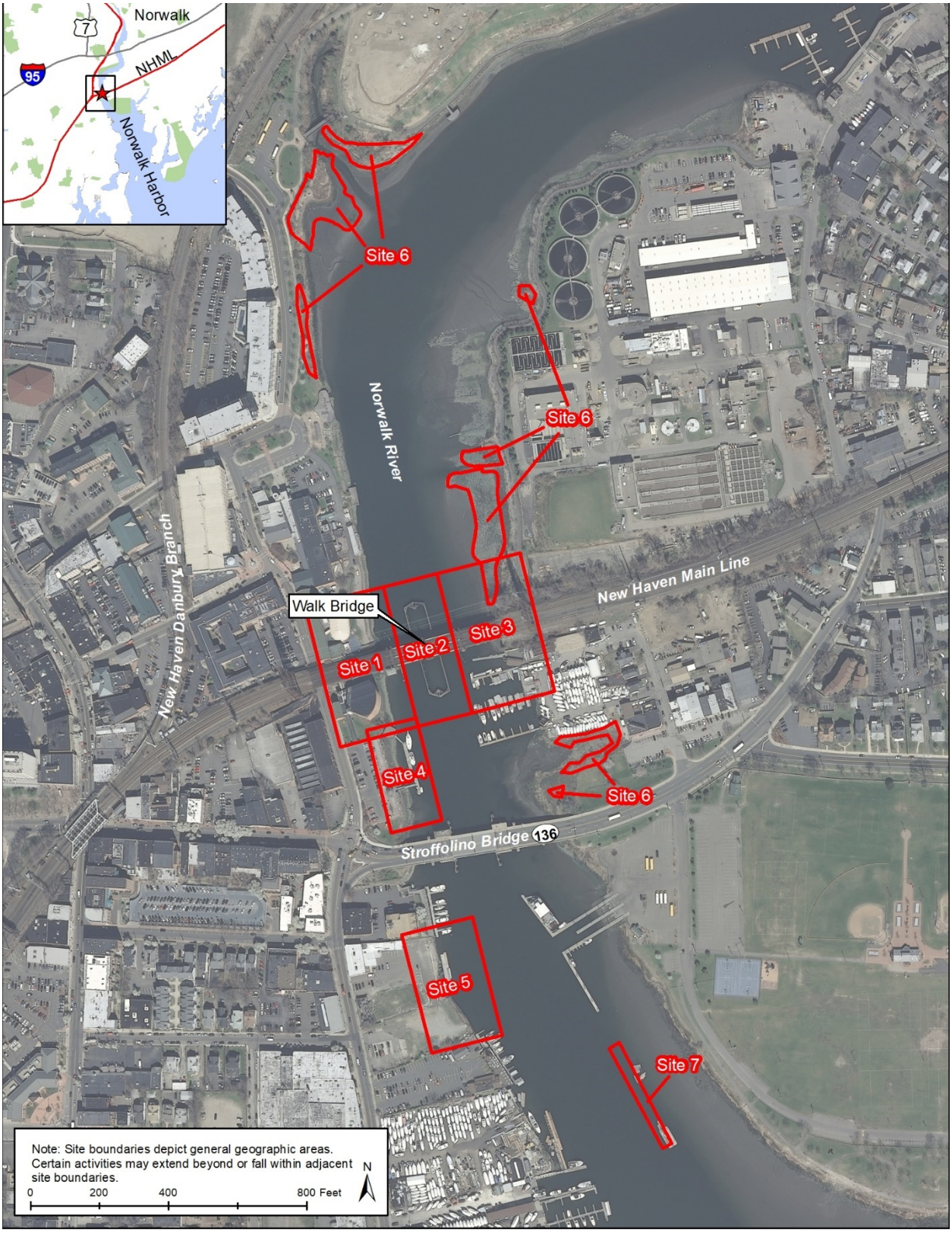

Figure 1 – Project Sites 1 through 7

Figure 2 – Project Sites 8 through 10

1. Site 1 Construction Activities - West of the Navigation Channel

Site 1 is at the bridge site west (outside) of the navigation channel (Figure 1). Site 1 includes two parcels at 10 North Water Street (Parcel 2/19/3, the Maritime Aquarium; and Parcel 2/19/2, the IMAX Theater), encompassing the 100-year floodplain and extending waterward to include the Mean Low Water (MLW), but landward of (outside) the navigation channel. Table 1 lists the ten construction activities (CAs) that will occur at Site 1.

Table 1 –Site 1 Construction Activities

Construction Activity	Description	Construction Activity (CA) # / Permit Plates
IMAX Removal	Removal of the existing IMAX Theater, site improvements for construction staging, and site restoration upon project completion. Also includes the realignment of the existing stormwater outfall; demolition of the foundation and superstructure of the Pedestrian Link, the existing covered walkway connecting the IMAX Theater and the Maritime Aquarium; removal of City of Norwalk diesel tank (Parcels 2/19/2 and 2/19/3; 10 North Water Street).	CA1 / CA1-1 through CA1-7
Duct Bank Installation	Installation of the Metro-North Railroad (MNR) traction power and signal power, communication and signal, and bridge power and control cabling, crossing beneath the river via micro-tunneling. Also includes installation of the micro-tunneling pit for the receiving shaft on the west bank of the Norwalk River.	CA2 / CA2-1 through CA2-4
Northwest Trestle	Installation and removal of construction work platforms on the west side of the Norwalk River at the bridge site to be used for primary access to the bridge throughout construction.	CA5 / CA5-1 through CA5-5
Southwest Trestle		CA6 / CA6-1 through CA6-5
Pier 2 Construction	Construction of Pier 2 lift span tower foundation.	CA9 / CA9-1 through CA9-7
Existing Pier Removal	Removal of existing Pier 2 in the river after removal of the swing span, including removal of existing fender and excavation around the pier.	CA14 / CA14-4 through CA14-6, CA14-8
Pier 2 Fender System Installation	Installation of the fender system after removal of the existing fenders and rest Pier 2.	CA15 / CA15-1, CA15-3 through CA15-4
Existing Submarine Cable Removal	Removal of three existing submarine cables that will no longer be used upon completion of the replacement bridge.	CA12 / CA12-1, CA12-3, CA12-4
Dredging Operations	Maintenance dredging at the bridge site to match the existing federal navigation channel depths.	CA17/CA17-1, CA17-2, CA17-6
Structure Demolition and Removal	Removal of City of Norwalk Maritime Aquarium tent superstructure and foundation and State of Connecticut septic tank on Parcel 2/19/3 (10 North Water Street).	GEN-14

1.1 CONSTRUCTION ACTIVITY: IMAX Removal and Relocation of Stormwater Outfall

*Permit Plates***:** EP-4, PP-4, CA1, SUM-3
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.

Demolition of the IMAX Theater will be from land and the river and will require excavators, front-end loaders, and disposal trucks. Superstructure demolition will be staged from the land. During superstructure demolition activities, protection measures will be used to prevent/minimize debris from falling into the waterway. The IMAX superstructure is above the CJL; with these protections, its demolition will not impact protected resources. The site will be secured during the interim between superstructure and foundation demolition.

The existing IMAX Theater is adjacent to the Norwalk River. Its eastern wall foundation below grade is on the riverbank bordering tidal wetlands and its removal will require containment. Before starting foundation demolition activities, a marine enclosure and temporary fender (marine enclosure/temporary fender) will be installed around the eastern edge, landward of mean low water (MLW). The marine enclosure/temporary fender will be surrounded by a turbidity curtain (all turbidity curtains will be Type 3 and conform to Items # 021030X6A, X21031XA, 021032XA -Turbidity Control Curtains, in Attachment M6). During low tides and as needed, the existing stone riprap will be adjusted in place along the bank to allow the installation of a sheet pile marine enclosure/temporary fender to contain the outer wall demolition. The marine enclosure will involve the installation of steel templates, steel sheet piles, and bracing, driven with a vibratory hammer. The demolition of the eastern wall foundation will follow the installation of this sheet pile containment. The stormwater outfall at the northern end of the parcel will be realigned to avoid conflict with the proposed bridge foundation, and the site will be graded to Elevation 8.0 (NAVD88). Following the duct bank installation (CA2) and southwest trestle construction (CA6), crane mats will be installed on the IMAX parcel at Elevation 9.0 (NAVD88) to facilitate construction staging.

Prior to the realignment of the existing stormwater outfall, a turbidity curtain and marine enclosure/ temporary fender will be installed. To install the marine enclosure, a vibratory hammer will be used to drive temporary sheet piles around the proposed outfall location in a U configuration from Elevation 0.0 (NAVD88) to Elevation 6.5 (NAVD88). Within the marine enclosure, steel wales and struts will be installed followed by the end wall and modified riprap. A 24-inch reinforced concrete pipe (RCP) and manhole will then be installed and backfilled, with a modified riprap apron installed for slope stabilization. The temporary sheeting will then be removed.

IMAX Theater demolition activities also will include demolition of the foundation and superstructure of the Pedestrian Link, the existing covered walkway connecting the IMAX Theater and the Maritime Aquarium, and removal of No. 21 City of Norwalk diesel tank.

Activities to create permanent conditions at the IMAX site will begin following removal of the southwest work trestle (CA6). The crane mats and fill material will be removed to final elevation and grade. Riprap will be placed to match existing materials and the slope will be treated with fertilizer, seed, and mulch for erosion control.

Table 2 presents impacts due to IMAX foundation removal and relocation of the stormwater outfall.

Table 2 – Resource Impacts: IMAX Foundation Removal and Relocation of Outfall

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	100	0
Permanent	2,300	0	2,900	100

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

1.2 CONSTRUCTION ACTIVITY: Duct Bank Installation

Permit Plates: PP-4, CA2, SUM-3
Time of Year Restrictions: None

Metro-North Railroad (MNR) traction power and signal power, communication and signal, and bridge power and control cabling will be routed on the south side of the bridge. The cables for the north half of the bridge and the south half of the bridge will be separated into two pipes which will meet MNR's separation requirements for the north and south circuits. Each fully grouted high-density polyethylene (HDPE) pipe will be filled with an inner bundle of smaller, individual fusible polyvinyl chloride (PVC) pipes. The pipes making up the inner bundle will carry the various cables.

A slurry-type Micro-Tunnel Boring Machine (MTBM) will install the HDPE pipes through the medium to dense sand/gravel layer. The micro-tunnel will be approximately 5-feet in diameter and approximately 490 feet long, running entirely beneath the Norwalk River in which the top of the pipes will be placed no higher than 13-feet below the authorized dredge elevation. There will be a pit constructed on each side of the channel (launching shaft and receiving shaft) excavated down to the level of the crossing pipe. The pits will be located landward of the CJL but within the 100-year floodplain. They will be dewatered and will contain the MTBM during the boring operation. The excavated material will be managed in accordance with the CTDEEP General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer). Based on existing environmental investigations and field observations, contaminated groundwater will be managed in accordance with either the General Permit for Discharge from Miscellaneous Industrial Users (MIU General Permit) or the General Permit for the Discharge of Groundwater Remediation Wastewater (Remediation General Permit). The duct bank installation will not impact existing resources below the CJL.

1.3 CONSTRUCTION ACTIVITY: Installation and Removal of Northwest and Southwest Trestles (Construction Work Platforms)

Permit Plates: CA5, CA6, SUM-3
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1.**

To facilitate access to the bridge site and support construction of Pier 2 and other construction operations, while presenting the least impact to rail or marine traffic, two construction work platforms, one north and one south of the bridge, will be constructed on the west side of the river and completely outside the limits of the navigation channel. The platforms will consist of pipe piles driven to bearing on rock and capped with steel beams and timber decking. The top decks of the work platforms are anticipated to be at Elevation 10.5 (NAVD88). The structural depth of the work platforms will be approximately 7 feet. For lift span installation (CA18the temporary slide rail system will be incorporated into the southwest construction work platform. A temporary fender system and navigational lighting will be installed at each platform. Equipment will include cranes, excavators, vibratory and impact hammers, manlifts, push/work boats, and various barges. Prior to work start, turbidity curtains will be installed around the work area. The pile driving activities will be coordinated to ensure activities are only taking place on one half of the navigation channel at a time.

When construction of the replacement bridge is complete, the platform decks, bulkheads, and materials will be removed using similar construction means and methods as required for installation. The turbidity curtains will be removed once the river bottom is no longer being impacted. The impacted shoreline will be restored to preconstruction conditions. Platforms will remain in place for the duration of construction and then removed. While the platforms will be in Site 1 and outside the navigation channel, at times, material barges used for their construction and removal will be situated in the existing west navigation channel (Site 2).

Table 3 – Resource Impacts: Installation and Removal of Northwest and Southwest Trestles (Construction Work Platforms)

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	0
Permanent	2,200	0	200	400

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

1.4 CONSTRUCTION ACTIVITY: Pier 2 Construction

Permit Plates: PP-4, CA9, SUM-3
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset. Shaft drilling and micro pile drilling conducted within a caisson and marine enclosure are not subject to this restriction.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.

Pier 2 construction will require the west channel to be closed at times to navigation. Prior to work start, a marine enclosure/temporary fender and turbidity curtain will be installed around the work area. Equipment will include cranes, hydraulic oscillator, sedimentation tanks, backhoe, and excavator. The pile driving and drilled shaft and micropile drilling activities will be coordinated to ensure activities are only taking place on one half of the navigation channel at a time.

Pier 2 will be supported by four drilled shafts and two micropile clusters constructed within marine enclosures. The Pier 2 foundations will be constructed in the tidal zone between low and high tide elevations. The four drilled shafts are each 12 feet in diameter and consist of a minimum 1-inch thick permanent steel round casing that extends from above the high-water line at the top to a bottom seated and sealed into rock at the bottom. The casing is seated a few feet into rock and has a watertight seal keeping the water inside the casing separate from any outside water. This is a crucial step in being able to maintain a head of water higher inside the casing than outside. Since the drilled shaft casing is sealed into bedrock, the water within the drilled shaft rock socket and casing will be separate and independent of any river water. Water will be pumped in and out of the drilled shaft in a closed system that facilitates removal of drill cuttings. The fluid in the closed system will be contained and disposed of properly in compliance with requirements of the Remediation General Permit or the MIU General Permit pending existing environmental investigations and field observations. After drilling of the rock socket, the shaft is cleaned by circulating clean water to remove the debris on the bottom and the suspended solids in the fluid contained in the sealed casing. A reinforcing cage is assembled and lowered to the bottom of the shaft. A watertight tremie pipe is inserted to the bottom of the shaft and concrete is continuously placed from the bottom while displacing water to the top. The water is pumped out of the drilled shaft casing and returned to the holding tanks.

At the two micropile cluster locations, a 10-foot diameter steel casing will be installed within the marine enclosure, with the casing extending from Elevation -7.0 (NAVD88) to the bottom of the lift span pier. Inside the steel casing, ten 13-inch diameter micropiles will be installed using a low-headroom micropile rig. Micropile installation will include steel casing installation, drilling into rock, and placement of reinforcing steel and cementitious grout. Once the ten micropiles have been installed, the area within the 10-foot diameter casing will be filled with reinforcing steel and concrete to the top of the casing.

The four drilled shafts and two micropile clusters comprising the Pier 2 foundation will be surrounded by a sheet pile marine enclosure/temporary fender during installation. Each steel sheet is interlocked with the adjacent sheet and forms an almost watertight barrier. Water levels within the marine enclosure will lag

the rising and falling tidal water in the river, producing a minor flow, or seepage, through the walls of the enclosure. This seepage will transmit little to no sediment and will not create a turbid condition. As added protection to the drilled shaft casing and marine enclosure, a turbidity curtain will surround all sides of the enclosure and rise and fall with the outside water levels.

Once the group of Pier 2 foundation elements within the marine enclosure is complete, there may be excavation within the marine enclosure to construct the concrete caps which span between the tops of the drilled shafts and micropile clusters. Prior to removal of the marine enclosure, the water inside the marine enclosure will be monitored for total suspended solids. Once the turbidity readings reach equilibrium with those readings outside of the turbidity curtain, then the marine enclosure can be removed. Any excavation within the marine enclosure will be backfilled with organic/backfill material to the original ground surfaces.

Prior to installing the drilled shafts at the south side of Pier 2, demolition of the existing control house will be required. Activities will begin by relocating swing span controls to the motor control center at the swing span, followed by removal of all furnishings and equipment from the existing control house. Debris shields will be used to catch and contain debris from control house removal. Working from the IMAX pad/southwest work platform, the control house will be detached and removed from the existing truss supporting Track 4.

Table 4 – Resource Impacts: Pier 2 Construction

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	0
Permanent	700	0	4,200	3,900

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

1.5 CONSTRUCTION ACTIVITY: Existing Pier 2 - Pier and Fender Removal

Permit Plates: EP-9, CA14, SUM-3
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.

Prior to pier removal, a marine enclosure/temporary fender and turbidity curtain will be installed around the work area. Existing Pier 2 and its timber mat will be removed to an elevation no higher than the authorized over dredge limit. Pier removal work is anticipated to be performed using an excavator with a

thumb; hydraulic breakers (e.g., jackhammers and hoe rams) will not be used below the high tide line (HTL). Prior to removal of the marine enclosure, the water inside the marine enclosure will be monitored for total suspended solids. Once the turbidity readings reach equilibrium with those readings outside the turbidity curtain, then the marine enclosure can be removed. Removal of Pier 2 will be conducted so that one channel remains open to marine traffic.

Once the blocks and rubble stone are dismantled from Pier 2, they will be loaded onto a barge and hauled to approved upland construction staging parcels prior to off-site disposal. Initially, the eastern construction work platforms will be used for loading of the material from the barges. The Manresa Island Staging and Storage Yard (Parcel 5/86/1) and the construction yard at the bridge site (1 Goldstein Place; Parcel 3/1/25) will be used for off-loading of materials from the construction barges prior to off-site disposal.

Prior to fender removal, a turbidity curtain will be installed around the work area. The fender system around existing Pier 2 consists of vertical piles and walers (horizontal members). It will be removed via a crane or an excavator situated on a crane barge stabilized by spuds. The walers extend below the waterline, depending on the tide. The walers will be cut into sections with a chainsaw, removed, and loaded on a material barge. A debris shield will be deployed below the cuts to help prevent wood chips and saw dust from entering the water. The timber piles will be fully removed with an excavator and/or crane using a vibratory pile extractor. The pile extraction activities will be coordinated to ensure activities are only taking place on one half of the navigation channel at a time.

Removal of existing Pier 2 and fender will involve pile driving and removal, and pier demolition and removal using cranes, excavators, vibratory and impact hammers, clamshell and digging buckets, push/work boats, and various barges. When demolition is complete, and the pier has been removed, the marine enclosure will be removed using similar construction means and methods as required for installation.

Table 5 – Resource Impacts: Existing Pier 2 - Pier and Fender Removal

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	100
Permanent	0	0	0	2,200

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.
Impacts shown for this activity are also reported in CA-17 (Dredging)

1.6 CONSTRUCTION ACTIVITY: Pier 2 Fender Installation

Permit Plates: PP-4, CA15, SUM-3
Time of Year Restrictions:

- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.

The permanent fender for Pier 2 will be a pier-mounted fendering system. A Super Cone/panel unit fender system, which provides a high energy absorption capacity, will be installed to the Pier 2 pile cap with grouting/concrete. The bottom of the pier-mounted fenders will be located underwater and may require underwater drilling into concrete to secure the fender system to the pier. Equipment will include a work barge with a crane, man-lift, compressor, and hand tools. Installation of the pier-mounted fendering system at Pier 2 will not impact existing resources.

1.7 CONSTRUCTION ACTIVITY: Submarine Cable Removals

Permit Plates: PP-4, CA12, SUM-3
Time of Year Restrictions:

- Dredging will be conducted within a turbidity curtain between December 1st and January 31st.

Three existing submarine cables will be deactivated and removed in their entirety; these include the cable providing electrical power and control to the existing swing span, a temporary railroad signal and communication cable installed as part of the CP-243 Interlocking Project, and the signal express cable. The removal of the existing submarine cables will be completed by hoisting the cables through the existing soil layers using a crane or an excavator. If this method is not successful for fully removing one or more of the cables, then a trench for the cable will be dredged, working during the winter excavation window (December and January) using a crane on a crane barge, excavating with a clamshell bucket and loading the material barge. The material barge will be contained; it will be modified to include side boards and containment fabric as a holding area. This work will be completed within a turbidity curtain. Dredging will only continue until enough soil is removed to allow pulling the cables.

With the exception of the removal of the submarine cable recently installed as part of the CP-243 Interlocking Project, sediment excavated from the top four feet from the top of river sediment along the submarine cable routes cannot be reused.[1] The excavated material will be loaded onto the material barge, initially off-loaded to the construction yard at the bridge site, and then transported to CTDOT-designated upland waste stockpile areas (WSAs), where it will be stockpiled, managed, and tested prior to off-site disposal per the contract specifications. Sediment excavated below the top four feet along the submarine cable routes may be reused to backfill the trench from which it came.

As needed, the remaining trenches will be backfilled with soils of similar structural and organic characteristics as the material removed. During removal of the submarine cables, work will progress from one channel to another, with one channel remaining open for marine traffic.

The removal of the submarine cables extends into Sites 1, 2, and 3; Table 6 identifies resource impacts to Site 1 only.

[1] New material was used to backfill the trench in the recently installed CP-243 Interlocking Project submarine cable; therefore, all existing material over this cable can be reused to backfill the trench.

Table 6 – Resource Impacts: Submarine Cable Removals (Site 1)

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	0
Permanent	200	0	600	4,600

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.
Impacts shown for this activity are also reported in CA-17 (Dredging).

1.8 CONSTRUCTION ACTIVITY: Channel (Maintenance) Dredging

Permit Plates: CA17, SUM-3
Time of Year Restrictions:
- Dredging will be conducted within a turbidity curtain between December 1st and January 31st

Maintenance dredging will be conducted at the bridge site to match the existing federal navigation channel depths. Over several seasons and during the winter excavation window (December and January), maintenance dredging will occur within turbidity curtains. If needed outside of the winter excavation window, this work will be performed within a marine enclosure/temporary fender enclosed by a turbidity curtain. Maintenance dredging will be conducted using a crane on a spudded crane barge, excavating with a clamshell bucket, and loading onto material barges. The material barges will be contained; they will be modified to include side boards and containment fabric as a holding area. Sediment spoils will be dewatered/decanted on barges or work platforms and the dewatered wastewater will be treated as necessary prior to being discharged back into the river. When the barge is fully loaded it will be moved off-site, where it will be off-loaded with an onshore crane or excavator. The construction yard at the bridge site will be used for initial off-loading of dredged material. The excavated material will be managed per CTDEEP General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer) guidelines, including placement into watertight trucks for transport to the WSAs for testing and management prior to off-site disposal.

The western portion of the navigation channel will be dredged to a minimum depth of -13.98 feet NAVD88, or 10 feet below MLLW. Most of the existing navigational channel currently meets authorized depths, but additional dredging at and around the existing Pier 2 after its removal will be required. During the dredging, the west channel may be partially restricted, but will otherwise remain open during this work.

Maintenance dredging occurs within Sites 1, 2 and 3; Table 7 identifies resource impacts in Site 1 only.

Table 7 – Resource Impacts: Channel Dredging (Site 1)

Impact	Removal		Fill (cy)	Net (cy)
	(sf)	(cy)		
Maintenance Dredging	4,900	330	0	330

Impacts shown for this activity are also reported in CA12 and CA14.

2. Site 2 Construction Activities - Navigation Channel

Site 2 is at the bridge within the navigation channel (Figure 1). Site 2 resources include the 100-year floodplain and subtidal area. Table 8 lists the six construction activities that will occur at Site 2.

Table 8 – Site 2 Construction Activities

Construction Activity	Description	Construction Activity (CA) # / Permit Plates
Duct Bank Installation	Installation of the MNR traction power and signal power, communication and signal, and bridge power and control cabling, crossing beneath the river via micro-tunneling.	CA2/ CA2-2 through CA2-4
Existing Submarine Cable Removal	Removal of three existing submarine cables that will no longer be used upon completion of the replacement bridge.	CA12/CA12-1 through CA12-4
Existing Swing Span Removal	Removal and disassembly of the existing swing span.	CA13/CA13-1 through CA13-7
Existing Pier Removal	Removal of the existing pivot pier in the river after removal of the swing span, including removal of existing fender and excavation around the pier.	CA14/CA14-1 through CA14-3, CA14-7
Dredging Operations	Maintenance dredging at the bridge site to match the existing federal navigation channel depths, including removal of existing fender system and installation of temporary fender system at the pivot pier.	CA17/CA17-1 through CA17-3, CA17-6
Lift Span Installation	Slide-in and float-in operations for installation of the proposed lift spans.	CA18/CA18-1 through CA18-6

2.1 CONSTRUCTION ACTIVITY: Duct Bank Installation

Permit Plates: PP-4, CA2, SUM-3
Time of Year Restrictions: None

The installation of the MNR traction power and signal power, communication and signal, and bridge power and control cabling cables is described in Section 1.2. This activity extends into Sites 1, 2 and 3. As previously cited, the duct bank installation will not impact existing resources below the CJL.

2.2 CONSTRUCTION ACTIVITY: Submarine Cable Removals

Permit Plates: EP-4, PP-4, CA12, SUM-3
Time of Year Restrictions:

- Dredging will be conducted within a turbidity curtain between December 1st and January 31st.

Removal of the three existing submarine cables is described in Section 1.7. These activities extend to include Sites 1, 2, and 3; Table 9 identifies resource impacts to Site 2 only.

Table 9 – Resource Impacts: Submarine Cable Removals (Site 2)

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	0
Permanent	0	0	0	16,500

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.
Impacts shown for this activity are also reported in CA-17 (Dredging).

2.3 CONSTRUCTION ACTIVITY: Swing Span Removal

Permit Plates: EP-4, CA13, SUM-3
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles), activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.

Removal of the swing span will be coordinated with the installation of the lift spans and other construction activities.

CTDOT has developed two schemes to remove the existing swing span and is requesting authorization for both schemes to provide CTDOT with flexibility during construction. Both schemes would completely remove the swing span structure, while creating the physical space needed to install the new south lift span (CA18).

Scheme 1 would consist of moving the existing swing span from its current location to a temporary position approximately 60 to 100 feet north on a slide rail system to enable the removal of the swing span from the site. The slide rail system would be supported by temporary piles in the navigation channel. Once the swing span is supported on the slide rails north of the bridge, the swing span would be disassembled both in place and off-site. Prior to installation of the slide rail system, a turbidity curtain would be placed around the work area. Equipment for the installation and removal of the piles and slide rail system could include a crane, vibratory and impact hammers, and barges. Equipment for removing and disassembling the swing span could include an excavator, hydraulic sheer, crane, loader, and barges.

In Scheme 1, there would be an approximate 90-day full navigation channel closure. Under this condition, the channel is closed to all navigation due to construction equipment or temporary works in the channel preventing safe vessel passage. The channel closure for Scheme 1 would result from the installation and removal of the slide rail system and removal of the swing span; these operations would be coordinated with removal of the pivot pier (CA14) and installation of the new south lift span (CA18).

Scheme 2 would consist of the staged removal of the existing swing span, in place, prior to the installation of the south lift span (CA18). The first stage of removal would consist of the southern portion of the existing swing span truss. Once the south lift span is in place, the remaining northern portion of the existing swing span would be removed. The staged removal of the swing span would include both in place and off-site disassembly. Equipment for the removal of the swing span could include hydraulic sheer, crane, loader, and barges.

In Scheme 2, there would be intermittent partial channel closures and an approximate 180-day vertical navigation restriction. Once the staged removal of the swing span commences, the swing span operation would cease, creating a vertical restriction for the navigation channel. A vertical (height) navigation restriction of 16 feet from mean high water (MHW) is introduced when construction activity prevents the safe movement of the existing swing span. In Scheme 2, work would be performed in one side of the navigation channel at a time (partial channel closures), leaving the opposite navigation channel clear for low headroom vessel passage. The vertical navigation restriction in Scheme 2 would end when the remaining portion of the existing swing span is removed and the new lift span is operational.

For both schemes, barges will be positioned beneath the existing swing span in the navigation channel for working and catching demolition debris. The construction work platforms will be used for initial off-loading of debris and existing bridge components from the barges. The Manresa Island Staging and Storage Yard and the construction yard at the bridge site will be used for off-loading of materials from the construction barges prior to off-site disposal.

The permit plates and the impacts shown in Table 10 are for Scheme 1, which reflects the greater impacts to resources of the two construction methods. In Scheme 2, there would be no slide rail system or temporary supports placed in the waterway. Scheme 2 is the preferred method for removal of the swing span. This construction method will eliminate resource impacts and will allow for continued, albeit reduced, navigation through the bridge site.

Table 10 – Resource Impacts: Swing Span Removal

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	200
Permanent	0	0	0	0

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

2.4 CONSTRUCTION ACTIVITY: Pivot Pier Removal

Permit Plates: EP-4, CA14, SUM-3
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.

- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.

Prior to work start, a marine enclosure/temporary fender, and turbidity curtain and will be installed around the pivot pier. Removal of the pivot pier will involve pile driving and removal, and pier demolition and removal using cranes, excavators, vibratory and impact hammers, clamshell and digging buckets, push/work boats, and various barges. When demolition is complete, and the pier has been removed, the marine enclosure will be removed using similar construction means and methods as required for installation.

The existing pivot pier and timber mat will be removed to an elevation no higher than the authorized over dredge limit. Pier removal work is anticipated to be performed using an excavator with a thumb; hydraulic breakers (e.g., jackhammers and hoe rams) will not be used below HTL. Prior to removal of the marine enclosure, the water inside the marine enclosure will be monitored for total suspended solids. Once the turbidity readings reach equilibrium with those readings outside of the turbidity curtain, then the marine enclosure can be removed.

Following excavation, the area will be backfilled with organic/backfill material to the authorized dredge elevation [Elevation -14.98 (NAVD88)]. Demolition and removal of the pivot pier will involve an excavator working from a crane barge, accompanied by a material barge outfitted with a corral for containing the stone and concrete demolition debris.

Once the blocks and rubble stone are dismantled from the pivot pier, they will be loaded onto a barge and hauled to approved upland construction staging parcels prior to off-site disposal. Initially, the eastern construction work platforms will be used for loading of the material from the barges. The Manresa Island Staging and Storage Yard (Parcel 5/86/1) and the construction yard at the bridge site (1 Goldstein Place; Parcel 3/1/25) will be used for off-loading of materials from the construction barges.

Table 11 – Resource Impacts: Pivot Pier Removal

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	200
Permanent	0	0	0	6,100

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.
Impacts shown for this activity are also reported in CA-17 (Dredging)

2.5 CONSTRUCTION ACTIVITY: Removal of Existing Fender and Installation of Temporary Fender at Pivot Pier

Permit Plates: EP-4, CA14, SUM-3
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.

Prior to work start, a turbidity curtain will be installed around the work area. The fender around the existing pivot pier consists of vertical piles and walers and will be removed via a crane or an excavator situated on a crane barge stabilized by spuds. The fender system walers extend below the waterline, depending on the tide. The walers will be cut into sections with a chainsaw, removed, and loaded on a material barge. A debris shield will be deployed below the cuts to help prevent wood chips and saw dust from entering the water. The timber piles will be completely removed with an excavator and/or crane using a vibratory pile extractor. The pile extraction activities will be coordinated to ensure they occupy only 50 percent of the navigation channel at a time. Following total removal of the existing fender system, a temporary fender system will be installed around the existing pivot pier, consisting of floating bumpers secured to the center pier using chains and mounting plates at the pier. The temporary fender system will be installed using a crane and a work barge.

Table 12 – Resource Impacts: Removal of Existing Fender and Installation of Temporary Fender at Pivot Pier

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	0
Permanent	0	0	0	500

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

2.6 CONSTRUCTION ACTIVITY: Channel (Maintenance) Dredging

Permit Plates: CA17, SUM-3
Time of Year Restrictions:

- Dredging will be conducted within a turbidity curtain s between December 1st and January 31st.

Maintenance dredging will be conducted immediately north and south of the pivot pier to match the existing federal navigation channel depths. At Site 2, the navigation channel will be dredged to a minimum depth

of -13.98 feet NAVD88, or 10 feet below MLLW. Maintenance dredging is described in Section 1.8. Maintenance dredging includes Sites 1, 2, and 3; Table 13 identifies resource impacts in Site 2 only.

Table 13 – Resource Impacts: Channel Dredging (Site 2)

Impact	Removal		Fill (cy)	Net (cy)
	(sf)	(cy)		
Maintenance Dredging	40,800	4,210	0	4,210

Impacts shown for this activity are also reported in CA12 and CA14

2.7 CONSTRUCTION ACTIVITY: Lift Span Installations

Permit Plates: CA18, PP-4, SUM-3
Time of Year Restrictions: None

The lift span installations will require a full navigation channel closure and channel restrictions. This activity will be coordinated with removal of the existing swing span and other construction activities. The south lift span will be supported by a slide rail system which is built in place on the southwest and southeast construction work platforms. The north lift span will be floated into place.

The new lift spans will be fully assembled, one at a time, at the Manresa Island Staging and Storage Yard and transported by barge to the Walk Bridge location for their final installation. Once the existing swing span has been moved to the north (described in Section 2.3), it will be replaced by the first (south) lift span being slid in from the south. Once the south lift span is in place, the channel will reopen to river traffic with a vertical restriction of 25 feet until the span can be operated. The second, north lift span will then be floated under the new south lift for float-in installation from the north. During this phase, the channel may be vertically restricted for a brief period prior to the north lift span becoming fully operational, but otherwise it will open for river traffic. The installation of the lift spans will not impact existing resources.

3. Site 3 Construction Activities – East of the Navigation Channel

Site 3 is at the bridge site east of the navigation channel (Figure 1). Site 3 includes two parcels at 21 Goldstein Place (Parcel 3/2/6) and 1 Goldstein Place (Parcel 3/1/25), both of which are designated for construction staging. From the east, Site 3 encompasses the 100-year floodplain and extends waterward to include the Mean Low Water (MLW), but landward of (outside) the navigation channel. Table 14 lists the nine construction activities that will occur at Site 3.

Table 14 –Site 3 Construction Activities

Construction Activity	Description	Construction Activity (CA) # / Permit Plates
Site 3		
Duct Bank Installation	Installation of the MNR traction power and signal power, communication and signal, and bridge power and control cabling, crossing beneath the river via micro-tunneling. Also	CA2/ CA2-1 through

Construction Activity	Description	Construction Activity (CA) # / Permit Plates
	includes installation of micro-tunneling pit for the launching shaft on the east bank of the Norwalk River.	CA2-4
Northeast Trestle	Installation and removal of work platforms on the east side of the river at the bridge site to be used for primary access to the bridge throughout construction.	CA7/CA7-1 through CA7-6
Southeast Trestle		CA8/CA8-1 through CA8-5
Pier 3 Construction	Construction of Pier 3 lift span tower foundation.	CA10 / CA10-1 through CA10-7
Existing Submarine Cable Removal	Removal of three existing submarine cables that will no longer be used upon completion of the replacement bridge – east bank of the river.	CA12 / CA12-2, CA12-4
Existing Pier Removal	Removal of existing Pier 3 in the river after removal of the swing span, including removal of existing fender and excavation around the pier.	CA14/ CA14-4 through CA14-6, CA14-8
Pier 3 Fender System Installation	Installation of the fender system after removal of the existing fenders.	CA15/CA15-1 through CA15-6
Dredging Operations	Maintenance dredging at the bridge site to match the existing federal navigation channel depths.	CA17/CA17-2, CA17-3, CA17-6
Structure Demolition and Removal	Removal of the SONO Wharf marina buildings and tent on Parcel 3/1/25 (1 Goldstein Place). East of Site 3, removal of the City of Norwalk Water Pollution Control Authority's temporary Contaminated Groundwater Treatment facility, east of Parcel 3/2/6 (21 Goldstein Place); removal of a building on Parcel 3/1/29 (4 Goldstein Place); and removal of a building on Parcel 3/1/19 (6 Goldstein Place).	GEN-14

3.1 CONSTRUCTION ACTIVITY: Duct Bank Installation

Permit Plates: PP-4, CA2, SUM-3
Time of Year Restrictions: None

The installation of the MNR traction power cables and communication and signal cables and the bridge power and controls cables is described in Section 1.2. This activity extends to include Sites 1, 2 and 3. As previously cited, the duct bank installation will not impact existing resources below the CJL.

3.2 CONSTRUCTION ACTIVITY: Installation and Removal of Northeast and Southeast Trestles (Construction Work Platforms)

Permit Plates: CA7, CA8, SUM-3
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.

To facilitate access to the bridge site and support construction of Pier 3 and other construction operations, while minimizing impacts to rail or marine traffic, two construction work platforms, one north and one south of the bridge, will be constructed on the east side of the river. The platforms will consist of pipe piles driven to bearing on rock and capped with steel beams and timber decking. The top decks of the work platforms are anticipated to be at Elevation 10.5 (NAVD88). The structural depth of the work platforms will be approximately 7 feet. Prior to work start, a marine enclosure/temporary fender and turbidity curtain will be installed around each work area. For lift span installation (CA18), the temporary slide rail system will be incorporated into the southeast construction work platform. A temporary fender system and navigational lighting will be installed at each platform. Equipment will include cranes, excavators, vibratory and impact hammers, manlifts, push/work boats, and various barges. The pile driving activities will be coordinated to ensure activities are only taking place on one half of the navigation channel at a time.

When construction of the replacement bridge is complete, the platform decks, bulkheads, and materials will be removed using similar construction means and methods as required for installation. The turbidity curtains will be removed once the river bottom is no longer being impacted. The impacted shoreline will be restored to preconstruction conditions. Platforms will remain in place for the duration of project construction. While the platforms will be in Site 3 and outside the navigation channel, at times, material barges used for their construction will be situated in the existing east navigation channel (Site 2).

Table 15 – Resource Impacts: Installation and Removal of Northeast and Southeast Trestles (Construction Work Platforms)

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	100	0
Permanent	3,700	100	700	800

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

3.3 CONSTRUCTION ACTIVITY: Pier 3 Construction

Permit Plates: PP-4, CA10, SUM-3
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset. Shaft drilling and micro pile drilling conducted within a caisson and marine enclosure are not subject to this restriction.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.

Pier 3 construction will require the east channel to be closed at times to navigation. Prior to work start, a marine enclosure/temporary fender within a turbidity curtain will be installed. Equipment will include cranes, hydraulic oscillator, sedimentation tanks, backhoe, and excavator. The pile driving and drilled shaft and micropile drilling activities will be coordinated to ensure activities are only taking place on one half of the navigation channel at a time.

Pier 3 will be supported by four drilled shafts and two micropile clusters constructed within marine enclosures. The Pier 3 foundations will be constructed in the tidal zone between low and high tide elevations. The four drilled shafts are each 12 feet in diameter and consist of a minimum 1-inch thick permanent steel casing that extends from above the high-water line at the top to a seated and sealed into rock at the bottom. The casing is seated a few feet into rock and has a watertight seal keeping the water inside the casing separate from any outside water. This is a crucial step in being able to maintain a head of water higher inside the casing than outside. Since the drilled shaft casing is sealed into bedrock, the water within the drilled shaft rock socket and casing will be separate and independent of any river water. Water will be pumped in and out of the drilled shaft in a closed system that facilitates removal of drill cuttings. The fluid in the closed system will be contained and disposed of properly in compliance with CTDEEP General Permit requirements. After drilling of the rock socket, the shaft is cleaned by circulating clean water to remove the debris on the bottom and the suspended solids in the fluid contained in the sealed casing. A reinforcing cage is assembled and lowered to the bottom of the shaft. A watertight tremie pipe is inserted to the bottom of the shaft and concrete is continuously placed from the bottom while displacing water to the top. The water is pumped out of the drilled shaft casing and returned to the holding tanks.

At the two micropile cluster locations, a 10-foot diameter steel casing will be installed within the marine enclosure, with the casing extending from Elevation -7.0 (NAVD88) to the bottom of the lift span pier. Inside the steel casing, ten 13-inch diameter micropiles will be installed using a low-headroom micropile rig. Micropile installation will include steel casing installation, drilling into rock, and placement of reinforcing steel and cementitious grout. Once the ten micropiles have been installed, the area within the 10-foot diameter casing will be filled with reinforcing steel and concrete to the top of the casing.

The four drilled shafts and two micropile clusters comprising the Pier 3 foundation are surrounded by a sheet pile marine enclosure during installation. Each steel sheet is interlocked with the adjacent sheet and forms an almost watertight barrier. Water levels within the marine enclosure will lag the rising and falling tidal water in the river, producing a minor flow, or seepage, through the walls of the enclosure. This seepage will transmit little to no sediment and will not create a turbid condition. As added protection to the drilled

shaft casing and marine enclosure, a turbidity curtain will surround all sides of the enclosure and rise and fall with the outside water levels.

Once the group of Pier 3 foundation elements within the marine enclosure is complete, there may be excavation within the marine enclosure to construct the concrete caps which span the tops of the drilled shafts and micropile clusters. Prior to removal of the marine enclosure, the water inside the marine enclosure will be monitored for total suspended solids. Once the turbidity readings reach equilibrium with those readings outside of the turbidity curtain, then the marine enclosure can be removed. Any excavation within the marine enclosure will be backfilled with organic/backfill material to the original ground surfaces.

Table 16 – Resource Impacts: Pier 3 Construction

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	0
Permanent	0	0	7,600	7,700

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.
Impacts shown for this activity are also reported in CA-17 (Dredging)

3.4 CONSTRUCTION ACTIVITY: Submarine Cable Removals

Permit Plates: EP-4, PP-4, CA12, SUM-3
Time of Year Restrictions:

- Dredging will be conducted within a turbidity curtain between December 1st and January 31st.

Removal of the three existing submarine cables is described in Section 1.7. These activities extend to include Sites 1, 2, and 3; Table 17 identifies resource impacts in Site 3 only.

Table 17 – Resource Impacts: Submarine Cable Removals (Site 3)

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	0
Permanent	1,200	100	2,000	4,700

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

3.5 CONSTRUCTION ACTIVITY: Existing Pier 3 - Pier and Fender Removal

Permit Plates: EP-4, PP-4, CA14, SUM-3
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.

Prior to pier removal, a marine enclosure and turbidity curtain will be installed around the work area. Existing Pier 3 and its timber mat will be removed to an elevation no higher than the authorized over dredge limit. Pier removal work is anticipated to be performed using an excavator with a thumb; hydraulic breakers (e.g., jackhammers and hoe rams) will not be used below HTL. Prior to removal of the marine enclosure, the water inside the marine enclosure will be monitored for total suspended solids. Once the turbidity readings reach equilibrium with those readings outside of the turbidity curtain, then the marine enclosure can be removed. Removal of Pier 3 will be conducted so that one channel remains open to marine traffic.

Once the blocks and rubble stone are dismantled from Pier 3, they will be loaded onto a barge and hauled to approved upland construction staging parcels prior to off-site disposal. Initially, the eastern construction work platforms will be used for off-loading of the material from the barges. The Manresa Island Staging and Storage Yard (Parcel 5/86/1) and the construction yard at the bridge site (1 Goldstein Place; Parcel 3/1/25) will be used for off-loading of materials from the construction barges prior to off-site disposal.
Prior to fender removal, a marine enclosure/temporary fender and a turbidity curtain will be installed around the work area. The fender around existing Pier 3 will be removed via a crane or an excavator situated on a crane barge stabilized by spuds. The fender system will be cut into sections with a chainsaw, removed, and loaded on a material barge. A debris shield will be deployed below the cuts to help prevent wood chips and saw dust from entering the water. The timber piles will be fully removed with an excavator and/or crane using a vibratory pile extractor. The pile extraction activities will be coordinated to ensure activities are only taking place on one half of the navigation channel at a time.

Removal of existing Pier 3 and fender will involve pile driving and removal, and pier demolition and removal using cranes, excavators, vibratory and impact hammers, clamshell and digging buckets, push/work boats, and various barges. When demolition is complete, and the pier has been removed, the marine enclosure will be removed using similar construction means and methods as required for installation.

Table 17 – Resource Impacts: Existing Pier 3 – Pier and Fender Removal

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	100
Permanent	0	0	0	2,200

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

3.6 CONSTRUCTION ACTIVITY: Pier 3 Fender Installation

Permit Plates: PP-4, CA15, SUM-3
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.

The permanent fender for Pier 3 will be a pier-mounted fendering system. A Super Cone/panel unit fender system, which provides a high energy absorption capacity, will be installed to the Pier 3 pile cap with grouting/concrete. The bottom of the pier-mounted fenders will be located underwater and may require underwater drilling into concrete to secure the fender system to the pier. Equipment will include a work barge with a crane, man-lift, compressor, and hand tools. Installation of the pier-mounted fendering system at Pier 3 will not impact existing resources.

In addition to the pier-mounted fendering system for Pier 3, a pile-supported fender system will be installed to protect the control house, situated on the northern end of Pier 3. Prior to work start, a turbidity curtain will be installed around the work area. The fender system for the control house will be comprised of hollow Fiberglass Reinforced Polymer (FRP) pipe piles and dolphin clusters. Equipment will include a crane and vibratory and impact hammers. A work barge with a man-lift, compressor, and hand tools will be utilized for access to the work.

Table 19 – Resource Impacts: Pile-Supported Fender Installation

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	0
Permanent	0	0	0	300

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

3.7 CONSTRUCTION ACTIVITY: Channel (Maintenance) Dredging

Permit Plates: CA17, SUM-3
Time of Year Restrictions:

- Dredging will be conducted within a turbidity curtain between December 1st and January 31st.

Maintenance dredging will be conducted at the bridge site to match the existing federal navigation channel depths. The eastern portion of the navigation channel will be dredged to Elevation -13.98 NAVD88, or 10 feet below MLLW. Maintenance dredging is described in Section 1.8. This activity occurs in Sites 1, 2, and 3; Table 20 identifies resource impacts in Site 3 only.

Table 20 – Resource Impacts: Channel Dredging (Site 3)

Impact	Removal		Fill (cy)	Net (cy)
	(sf)	(cy)		
Maintenance Dredging	7,500	770	0	770

Impacts shown for this activity are also reported in CA12, and CA14.

4. Site 4 Construction Activities - Vessel Dock Relocation

Site 4 is located approximately 100 yards south of the bridge site, to the west of the navigation channel (Figure 1). Site 4 is waterward of 4 North Water Street (Parcel 2/19/1) and includes activities waterward of the Coastal Jurisdiction Line (CJL) but landward of (outside) the navigation channel. Table 21 lists the two construction activities that will occur at Site 4.

Table 21 –Site 4 Construction Activities

Construction Activity	Description	Construction Activity (CA) # /Permit Plates
Vessel Dock Relocation	Permanent reconfiguration of the Maritime Aquarium and Sheffield Island Lighthouse Ferry vessel docks, including construction of an accessible gangway.	CA3/ CA3-1 through CA3-4

Construction Activity	Description	Construction Activity (CA) # /Permit Plates
Dredging Operations	New dredging to facilitate vessel access to and facilitate continuous use of the reconfigured dock during low tide periods.	CA17/CA17-4, CA17-7

4.1 CONSTRUCTION ACTIVITY: Vessel Dock Relocation

Permit Plates: EP-6, PP-6, CA3, CA17, SUM-4
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.
- Dredging will be conducted within a turbidity curtain between December 1st and January 31st. Dredging from February 1st through November 30th will be conducted within a marine enclosure enclosed by a turbidity curtain.

Existing berthing facilities for the Sheffield Island Lighthouse Ferry and the Maritime Aquarium's research vessel, Spirit of the Sound, located waterward of Parcel 2/19/1, consist of two 65-foot long docks, each with a non-accessible gangway.[2] To minimize the effects of project construction, the existing docks and passenger loading and unloading operations will remain in their general current location during project construction; however, adjustments to passenger operations and berthing will be required. The two existing docks will be removed and replaced with a new 213-foot long dock; the footprint of the new dock will be slightly reconfigured and generally overlap the footprints of the existing docks. The two existing gangways will be removed and reused on the single dock and supplemented with an 80-foot accessible gangway constructed at the southern end of the reconfigured dock. The single, longer dock will provide the operators with flexibility to adjust vessel berthing to the northern or southern end of the dock. The reconfigured single long dock and new gangway will be permanent improvements available to both vessel operators, to provide operational flexibility as needed.

In addition to Site 4, Site 5, located waterward of 68 and 90 Water Street, will be available for passenger loading and unloading during certain project construction operations and for vessel berthing. Section 5.2 describes the construction of temporary dock facilities at Site 5 (CA4). Following bridge construction, the temporary dock facilities at Site 5 will be removed and all operations of the Sheffield Island Ferry and the Maritime Aquarium vessel will resume waterward of Parcel 2/19/1.

To replace and reconfigure the berthing facility, existing pile removal (as needed), existing dock and gangway removal, new pile driving, new dock and gangway construction, dredging, and existing gangway

[2] Accessible refers to compliance with The Americans with Disabilities Act (ADA). Non-accessible indicates non-compliance with ADA.

installation will be required. Equipment will include cranes, excavators, vibratory and impact hammers, push/work boats, and various barges. This activity is primarily in Site 4, with a small portion of the activity overlapping with Site 1.

The removal of the existing docks and gangways for the Maritime Aquarium and Sheffield Island Ferry vessels will take place on the west bank (waterward of Parcel 2/19/1) and will involve a crane or an excavator situated on the crane barge. The docks and gangways will be hoisted onto a material barge and off-loaded at Site 5, the Marine Staging Yard (68, to and 90 Water Street; Parcels 2/84/19, 2/84/63, and 2/84/33), which is 700 feet south of the work area. Following the removal of the dock and gangway sections at Site 4, a turbidity curtain will be installed around the work area. Existing timber piles will be removed as needed.

Dredging will be required in two areas at Site 4: at the southern end of the realigned dock, to facilitate access to the reconfigured docks by the Maritime Aquarium and Sheffield Island Ferry vessels; and at the northern end of the realigned dock, to facilitate continuous use of the dock during low tide periods. Dredging will be performed to an elevation approximately 4.0 feet below mean low low water (MLLW), or Elevation -8.0 NAVD88. Depending upon the time of year, dredging will be conducted either within a turbidity curtain (December and January) or within a marine enclosure surrounded by a turbidity curtain (February through November). Dredging will be completed using a crane on a crane barge excavating with a clamshell bucket and loading the modified material barge. The material barges will be contained; they will be modified to include side boards and containment fabric as a holding area. Sediment spoils will be dewatered/decanted on barges or work platforms and the dewatered wastewater will be treated as necessary prior to being discharged back into the river. When the barge is fully loaded, it will be moved off-site where it will be off-loaded with an onshore crane or excavator. The construction yard at the bridge site will be used for initial off-loading of dredged material. The excavated material will be managed per CTDEEP General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer) guidelines, including placement into watertight trucks for transport to the CTDOT-designated WSAs for testing and management prior to off-site disposal.

Table 22– Resource Impacts: Vessel Dock Relocation

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	200	6,400
Permanent	100	0	0	4,800

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

Table 23– Resource Impacts: New Dredging

Impact	Removal		Fill (cy)	Net (cy)
	(sf)	(cy)		
New Dredging	4,600	300	0	300

5. Site 5 Construction Activities - Marine Staging Yard

Site 5 is south of the Route 136/Stroffolino Bridge, directly waterward of 68 and 90 Water Street [Parcel 2/84/19 (portion) and Parcel 2/84/33], and west of the navigation channel (Figure 1). Site 5 also includes 70 Water Street (Parcel 2/84/63). Site 5 is less than 0.2 mile from the bridge location. Work at Site 5 includes activities waterward of the Coastal Jurisdiction Line (CJL) but landward of (outside) the navigation channel. Table 24 lists the three construction activities that will occur at Site 5.

Table 24 –Site 5 Construction Activities

Construction Activity	Description	Construction Activity (CA) # /Permit Plates
Marine Staging Yard Improvements	Construction of permanent improvements (bulkhead) to properties on the west bank of the river south of the Stroffolino Bridge (68 and 90 Water Street); development of a construction staging and storage yard (68, 70 and 90 Water Street; Parcels 2/84/19, 2/84/63, and 2/84/33), including demolition and removal of an existing warehouse at 70 Water Street (Parcel 2/84/63).	CA4/CA4-1 through CA4-4
Dredging Operations	New dredging to facilitate bulkhead construction and to provide a consistent river bottom elevation for vessel access to the temporary docking facilities .	CA17/CA17-5, CA17-7
Temporary Storage Dock Construction and Removal	Construction of temporary passenger loading and unloading facilities and dock facilities for the Maritime Aquarium and Sheffield Island Lighthouse Ferry vessels, including removal of these temporary facilities following project completion.	CA4/CA4-1 through CA4-4

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5.1 CONSTRUCTION ACTIVITY: Marine Staging Yard Improvements

Permit Plates: EP-8, PP-8, CA4, CA17, SUM-5
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.
- Dredging will be conducted within a turbidity curtain between December 1st and January 31st. Dredging from February 1st through November 30th will be conducted within a marine enclosure enclosed by a turbidity curtain.

A staging and storage yard will be developed at 68, 70, and 90 Water Street to provide a project staging location close to the existing bridge for land-based storage of materials and equipment. Construction materials, such as formwork, rebar, and precast concrete drainage structures, will be delivered and stored at the staging and storage yard until required on site. Contractor employee parking also will be incorporated

into the yard. Landward of the CJL, ground improvements at 90 Water Street will consist of 12-inches of crushed stone overlaying geotextile fabric. Waterward of the CJL by approximately 20 feet, existing piles in the waterway, including some from abandoned and deteriorated docks, will be removed or cut off 2-feet below the mudline. Equipment for removal of piles will include a crane situated on a barge.

To provide flexibility for potential marine access during project construction, CTDOT is requesting authorization for the construction of a new bulkhead waterward of 68 and 90 Water Street. Construction of a new bulkhead would require work above and below the CJL, described as follows.

The existing bulkhead (waterward of 68 and 90 Water Street) and timber piles located along the shoreline would be removed and a new permanent sheet pile bulkhead would be installed. The new bulkhead would be located above the CJL and would consist of sheet piles or H-piles that are driven into the ground. **Appendix A** includes an assessment of the Marine Staging Yard bulkhead as a shoreline erosion or stabilization structure.

Installation of a bulkhead at the Marine Staging Yard would involve pile removal, pile driving (including sheet piles), existing bulkhead excavation, new bulkhead installation, and dredging. Equipment would include cranes, excavators, vibratory and impact hammers, clamshell and digging buckets, manlifts, push/work boats, and various barges. Prior to work start, a turbidity curtain would be installed to minimize impacts to existing resources during the removal of existing material and construction of the new bulkhead.

New dredging would be required to facilitate bulkhead construction. Depending upon the time of year, dredging would be conducted either within a turbidity curtain (December and January) or within a marine enclosure surrounded by a turbidity curtain (February through November). Dredging would be conducted to Elevation -11.0 (NAVD88) between the bulkhead and the marine enclosure, using a crane on a spudded crane barge, excavating with a clamshell bucket, and loading onto a modified material barge. The material barge would be contained; it would be modified to include side boards and containment fabric as a holding area. Sediment spoils would be dewatered/decanted on barges or work platforms and the dewatered wastewater would be treated as necessary prior to being discharged back into the river. When the barge is fully loaded it would be moved off-site, where it would be off-loaded with an onshore crane or excavator.. The excavated material would be managed per CTDEEP General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer) guidelines, including placement into watertight trucks for transport to the CTDOT-designated upland WSAs for testing and management prior to off-site disposal.

Impacts due to construction of the bulkhead and required dredging to Elevation -11.0 (NAVD88), as shown in Tables 25 and 26, reflect the worst-case impacts to project resources. However, CTDOT is anticipating that construction of the bulkhead and dredging to Elevation -11.0 (NAVD88) will not be required.

Without the bulkhead, dredging waterward of the Marine Staging Yard would be limited to the depth needed to facilitate vessel access to the temporary docking facilities (described in Section 5.2), thereby resulting in a smaller dredge footprint and volume than that shown in Table 26. Further, without the bulkhead construction, the removal of derelict piles would be reduced; piles located along the shoreline that currently provide embankment support would not be removed.

Table 25 – Resource Impacts: Marine Staging Yard Improvements

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	100	200
Permanent	1,900	0	8,100	9,900

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

Table 26– Resource Impacts: New Dredging

Impact	Removal		Fill	Net
	(sf)	(cy)	(cy)	(cy)
New Dredging	21,600	6,400	0	6,400

5.2 CONSTRUCTION ACTIVITY: Temporary Dock Facilities Construction and Removal

Permit Plates: EP-8, PP-8, CA4, CA17, SUM-5
Time of Year Restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.
- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles), as well as following cessation of activity for a period of 30 minutes or longer. Soft starts for impact pile driving and vibratory pile installation are defined in **Question 1**.
- Dredging will be conducted within a turbidity curtain between December 1st and January 31st. Dredging from February 1st through November 30th will be conducted within a marine enclosure enclosed by a turbidity curtain.

A temporary dock facility will be constructed at Site 5 for the berthing and passenger loading and unloading operations of the Maritime Aquarium and Sheffield Island Lighthouse Ferry vessels. The temporary dock facilities will include a 165-foot floating dock and two gangways, one of which will be accessible. Based on certain construction operations, the temporary facilities at Site 5 also will be available for passenger loading and unloading operations. Access to the dock facilities will be provided from Water Street.

Following the dredging, temporary pipe piles, dock and two gangways will be installed. At the completion of the project, the site will be restored. Pervious surfaces will be treated with fertilizer and mulch in accordance with CTDEEP guidelines for soil erosion and sediment control. Impacts due to the installation of the temporary pilings are included in Table 25.

6. Site 6 Construction Activities – Compensatory Wetland Mitigation Areas

Site 6 consists of six individual wetland mitigation sites in various locations along both riverbanks near the bridge. A portion of Site 6 will overlap with Site 3. Table 27 lists the construction activity that will occur at Site 6.

Table 27 –Site 6 Construction Activities

Construction Activity	Description	Construction Activity (CA) # /Permit Plates
Compensatory Wetland Mitigation	Wetland restoration at six areas in the vicinity of Walk Bridge, consisting of treatment and removal of invasive species, restoration of shoreline and salt marsh; including access requirements	CA16/ CA16-1 through CA16-20

6.1 CONSTRUCTION ACTIVITY: Wetland Mitigation

Permit Plates: EP-1 – EP-7, PP-1 – PP-7, CA16

Compensation for permanent impacts to the vegetated tidal wetlands and intertidal mudflats due to construction of the Walk Bridge replacement project will be in the form of mitigating tidal wetland areas within the intertidal zone. The loss of vegetated tidal wetlands and intertidal mudflats will be mitigated through treatment and removal of invasive common reed (*Phragmites australis*) in existing tidal wetlands, the restoration of degraded vegetated tidal wetlands dominated by *Phragmites*, and by restoration of a low-functioning intertidal flat previously impacted by riprap placement. All tidal wetland mitigation areas are within the intertidal zone of the Norwalk River or adjacent to the high tide line.

Prior to work start, a turbidity curtain will be installed around the work area. Work will be timed to occur during periods of low tide to avoid increasing turbidity in the river. Vegetated tidal wetland mitigation activities will include the following, shown on Figure 3:

- Invasive Phragmites treatment (Mitigation Areas 1, 3, 6B)
- Invasive Phragmites treatment with subsequent shrub planting (Mitigation Areas 4 & 5)
- Tidal salt marsh restoration through invasive Phragmites removal, living shoreline riprap sill installation, grading and topsoil placement, salt marsh restoration through vegetation planting, and establishment of a northern diamondback terrapin (Malaclemys terrapin terrapin) habitat area in the buffer above the high tide line (Mitigation Area 2)
- Excavation and removal of in-water rock riprap, living shoreline riprap sill installation from reused existing riprap, regrading and topsoil placement, and salt marsh restoration through vegetation planting (Mitigation Area 6). A portion of Area 6A will be replanted vegetation as mitigation for shading under a construction trestle.

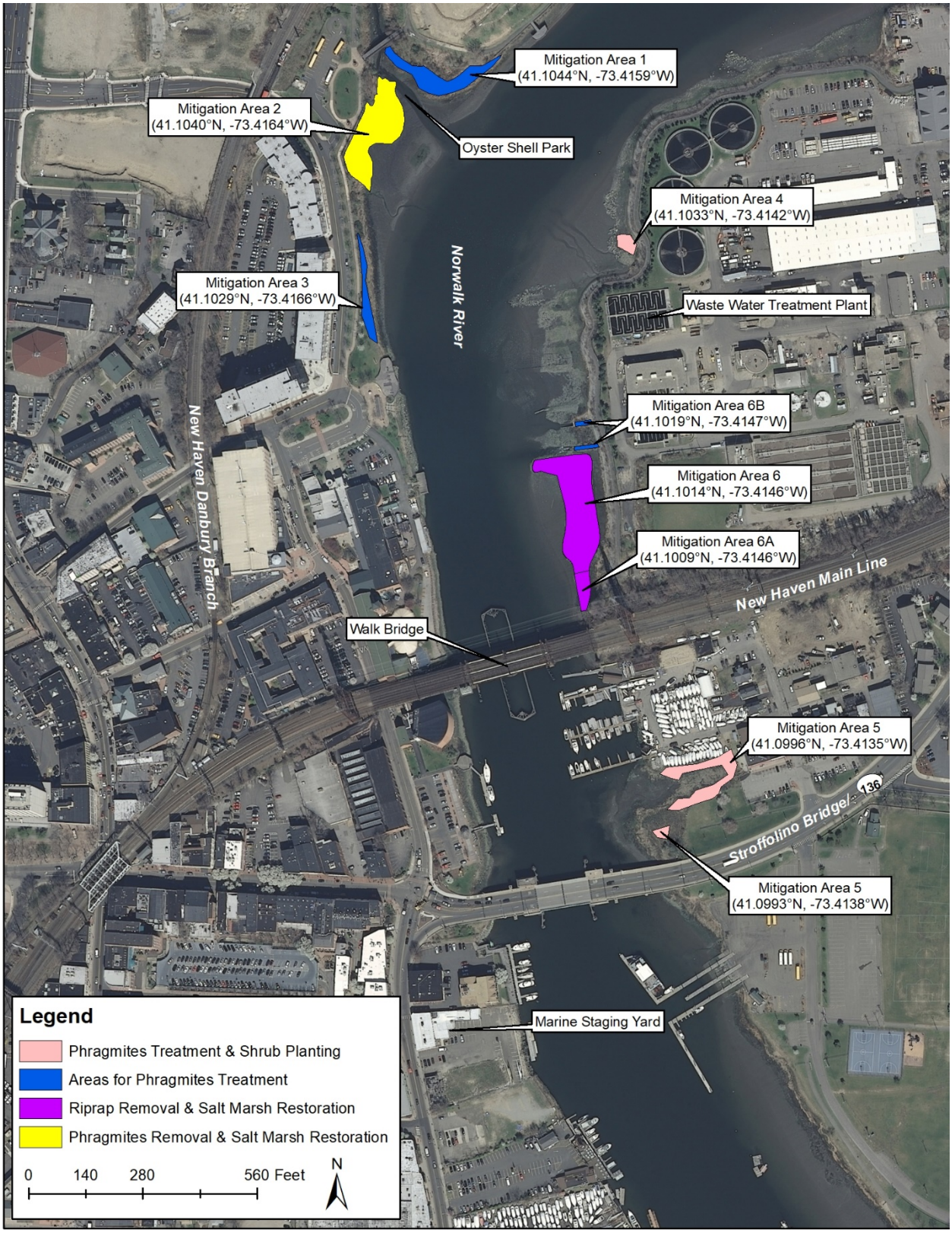

Figure 3 – Compensatory Wetland Mitigation Sites

At Mitigation Area 2 and Mitigation Area 6, the proposed mitigation will consist of developing "Living Shorelines," the components of which are a rock riprap sill/berm, with establishment of low salt marsh vegetation on the landward side of the sill. In addition, oyster cultch will be placed among the exposed rocks on the waterward side of the riprap sill, in accordance with CTDOT's Specification Item # 0948013A, Tidal Wetland Creation, located in **Attachment M6**. **Appendix A** contains additional information about the Living Shoreline development.

The restored vegetated tidal wetland areas will be dominated by smooth cordgrass (*Spartina alterniflora*). This type of salt marsh is one of the most valuable habitat types in the estuarine environment and performs many functions including fish and shellfish habitat, wildlife habitat, sediment/toxicant retention, nutrient removal, shoreline stabilization and production export. The root system and structure of the vegetation in the tidal wetlands can help to stabilize the shoreline, as well as to retain sediments and toxicants. The City of Norwalk's Wastewater Treatment Plant and local runoff are potential sources of nutrients in the river and the salt marsh vegetation can locally aid in nutrient removal, thereby improving water quality.

The wetland mitigation areas will be monitored in accordance with CTDEEP and USACE requirements. The monitoring effort will include assessments of planting success, presence of invasive species, natural establishment of native species, and any concerns regarding the success of the mitigation efforts. The frequency of the assessments can vary. CTDOT OEP will oversee monitoring. Monitoring reports are required after each assessment and must include recommendations for corrective actions if the mitigation areas are not making acceptable progress toward becoming established within the first five years.

All wetland mitigation areas will be constructed and treated for invasives during the first growing season of Bridge construction. This will allow for any tweaks or corrections to be accomplished during the 4-5 years of active construction. As part of the overall tidal mitigation package CTDOT will be including 2 weatherproof interpretive signs, one on each side of the Norwalk River, describing the important role of the low saltmarsh in the ecosystem and the overall functionality of tidal wetlands. The following provides a description of the *Phragmites* treatment and tidal salt marsh restoration activities at each mitigation area. **Attachment M6** contains CTDOT's Specification Item # 0948013A –Tidal Wetland Creation and includes all compensatory wetland mitigation specifications, which are cited for each mitigation area.

Invasive Species (Phragmites) Treatment – Areas 1, 3 and 6B. One of the restoration components, and recommended through consultation with CTDEEP, includes treatment and eradication of invasive common reed (*Phragmites australis*) stands embedded within or adjacent to areas of existing salt marsh dominated by smooth cordgrass (*Spartina alterniflora*) along the Norwalk River banks in the project vicinity. These include Area 1 at the edge of Oyster Shell Park, Area 3 along North Water Street just south of Area 2, and Area 6B on top of the stormwater outfalls north of Area 6. The exact boundaries of each of the *Phragmites* treatment sites will be located and refined at the time of treatment. Although some of the *Phragmites* to be treated is on the slope above the coastal jurisdiction line (CJL), the objective is to control and prevent the spread of the invasive species into other areas with desirable species. Additionally, Areas 1 and 3 are on property owned by the City of Norwalk, are adjacent to a public trail and public recreation, and are highly visible.

For areas identified for *Phragmites* treatment, annual herbicide spraying of these areas will require walk-in access, which can be attained via adjacent walking paths or roadways. After plants have died, the debris will be cut and removed from the areas. The process will be repeated, as necessary, throughout the construction period until project completion. It is anticipated that these areas will naturally establish with

volunteer native vegetation. The type(s) of herbicide and methods of cutting and spraying will be completed in accordance with contract specifications for control and removal of invasive vegetation.

CTDOT specifications which apply to Areas 1, 3, and 6B include CTDOT Specification Item #0952051A Control and Removal of Invasive Vegetation, located in **Attachment M6**.

Invasive Species (Phragmites) Treatment and Shrub Planting – Areas 4 and 5. *Phragmites* that has invaded two additional existing salt marsh areas will be treated, cut and removed in the same process as that described for Areas 1,3, and 6B. These include Area 4 near the WWTP and Area 5 in Constitution Park, southeast of Walk Bridge. The treatment process will be repeated, as necessary, throughout the construction period. It is anticipated that these areas will naturally establish with volunteer native vegetation. However, during the final year of construction, and if determined to be necessary by an Environmental Scientist from CTDOT Office of Environmental Planning (OEP), the areas will be enhanced with strategic locations of native shrub plantings, including Eastern baccharis (*Baccharis halimifolia*) and marsh elder (high-tide bush) (*Iva frutescens*).

CTDOT specifications which apply to Areas 4 and 5 include: CTDOT Specification Item #0952051A, Control and Removal of Invasive Vegetation; and CTDOT Specification Item #0949875A, Wetland Plantings; these specifications are located in **Attachment M6**.

Phragmites Removal and Salt Marsh Restoration – Area 2. Vegetated tidal wetlands restoration at Mitigation Area 2 (adjacent to Oyster Shell Park) will include removing invasive *Phragmites* and regrading the area to elevations more suitable for tidal low marsh vegetation. The areas will be over excavated to a minimum of 3 feet deep to remove the rhizomes. In the area above the *Phragmites*, other invasive species will also be controlled and removed. The over excavated soil and rhizomes and all invasive species debris will then be disposed of at an approved offsite location. Where needed, these areas will be backfilled with topsoil/planting soil and regraded. The low marsh area will be regraded to the elevation conducive to low salt marsh vegetation growth and at which elevation *Spartina alterniflora* is currently growing. The area will be graded to also include salt panne depressions that will initially remain unplanted to create a microhabitat to provide refuge for forage and juvenile fish species as well as forage areas for wading birds and waterfowl. The remainder of the low marsh area will be planted with salt marsh vegetation including smooth cordgrass and sea lavender (*Limonium carolinianum*).

At the landward edge of the low marsh area, a slope will be graded and sea lavender will be planted on the slope approximately one foot above the low marsh area where cord grass will be planted. The slope above the sea lavender area will be seeded with a salt tolerant shoreline grass mixture, and plantings of eastern baccharis shrubs, marsh elder shrubs, and seaside goldenrod (*Solidago sempervirens*) an herbaceous perennial, will be interspersed throughout. The CJL elevation of 5.4 feet (NAVD88) (for State jurisdictional water resources) was used as the upper boundary of the proposed vegetated tidal wetland. (Note that this elevation is 0.2 feet above the HTL elevation of 5.2 feet (NAVD88), which is the USACE's jurisdiction for Tidal Waters of the U.S. in the project area.)

The area above the CJL, which is considered a buffer between the vegetated wetland area and the City park, will be backfilled with topsoil where necessary and regraded. It will be seeded with a salt tolerant shoreline grass mixture and planted with the same species of shrubs and perennials described above. In addition, a portion of this buffer area above the HTL (17 feet wide by 110 feet in length) will be constructed as a northern diamondback terrapin (*Malaclemys terrapin terrapin*) habitat area, consisting of a minimum 30-

inch deep sand layer over a 6-inch granular layer. This area will also be moderately planted with American beachgrass (*Ammophila breviligulata*).

As a component of a living shoreline, the waterward perimeter of Area 2 will be lined with a riprap sill to initially retain the soils for the marsh plantings, ensuring that the root systems mature enough to achieve long-term stability and resist wave energy. The riprap sill will also function to provide shoreline stabilization, erosion control, and protection of the salt marsh edge by absorbing wave energy. Water quality can also be improved from settling or trapping sediment on the landward side of the sill and filtering pollution. The riprap sill will be constructed of 24-inch to 30-inch diameter rock embedded 6-inches to 12-inches in the soil substrate, with a minimum 3-foot wide base and an approximate 18-inch to 24-inch height placed at or slightly above the proposed final grade of the low marsh area. In addition, oyster cultch will be placed among the exposed rocks on the waterward side of the riprap sill, in accordance with CTDOT's Tidal Wetland Creation Specification.

CTDOT specifications which apply to Area 2 include: CTDOT Specification Item #0952051A, Control and Removal of Invasive Vegetation; CTDOT Specification Item #0949875A, Wetland Plantings; CTDOT Specification Item #0950202A, Shoreline Grass Establishment; CTDOT Specification Item #0948013A, Tidal Wetland Creation; and CTDOT Specification Item #0949315A, Fiber Roll. The specifications are located in **Attachment M6**.

Riprap Removal and Salt Marsh Restoration – Area 6. Vegetated tidal wetland restoration at Mitigation Area 6 will include restoring salt marsh vegetation at an area within the river currently containing low-functioning rock riprap on the surface of the intertidal flat area, along the shoreline northeast of the bridge. Scattered individual plants of smooth cordgrass are growing within some of the voids of the riprap in locations with suitable elevation and substrate. The restoration activities will involve excavation of the existing riprap, placing topsoil/planting soil, establishing appropriate elevations, and planting native low salt marsh vegetation to create a higher functioning salt marsh.

The low marsh area will be regraded to the elevation conducive to low salt marsh vegetation growth and at which elevation *Spartina alterniflora* is currently growing. The area will be graded to also include salt panne depressions that will initially remain unplanted to create a microhabitat to provide refuge for forage and juvenile fish species as well as forage areas for wading birds and waterfowl. The remainder of the low marsh area will be planted with salt marsh vegetation including smooth cordgrass and sea lavender.

Area 6B is an area of Phragmites treatment on top of stormwater outfalls. In addition, Area 6A is an existing tidal wetland area of cord grass which will be shaded by a construction trestle and will therefore not survive during the construction period. After the trestle is removed when construction has ended in that area, dead vegetation will be removed, and the area will be replanted with cord grass plugs. No excavation or other disturbance will take place in that area during or after construction.

As a component of a living shoreline, the waterward edge of Area 6 will include a riprap sill to initially retain the soils for the marsh plantings, ensuring that the root systems mature enough to achieve long-term stability and resist wave energy. The riprap sill will also function to provide shoreline stabilization, erosion control, and protection of the salt marsh edge by absorbing wave energy. Water quality can also be improved from settling or trapping sediment on the landward side of the sill and filtering pollution.

A portion of the existing riprap in this area will remain along the waterward boundary to provide a substrate base for placing and reusing some of the existing excavated riprap to construct the sill. The configuration of the riprap sill will vary in height from 2 feet to 3 feet, with a 1:1 side slope on the landward side and 1.5:1 side slope on the waterward side. The width of the base will vary from 7 feet to 9.5 feet, depending on the height. The reused rock will be an average size of 18 inches in diameter, although some rock could be as small as 12 inches or as large as 24 inches in diameter. In addition, oyster cultch will be placed among the exposed rocks on the waterward side of the riprap sill, in accordance with CTDOT's specification.

CTDOT specifications which apply to Area 6 include: CTDOT Specification Item #0949875A, Wetland Plantings; and CTDOT Specification Item #0948013A, Tidal Wetland Creation; these specifications are located in **Attachment M6**.

7. Sites 7, 8, and 9 Construction Activities – Barge Mooring

Mooring locations for project construction vessels will occur at Sites 7, 8, and 9. Site 7 is south of the Stroffolino Bridge, on the eastern shore of the Norwalk River along the west side of Veteran's Memorial Park. Site 8 is within the south anchorage basin east of the Norwalk Harbor navigational channel. Site 9 is in Long Island Sound, just west of Sheffield Island. The mooring locations are outside the limits of the federal navigation channel for the Norwalk River. Table 28 lists the construction activity that will occur at Sites 7, 8 and 9.

Table 28 –Sites 7, 8 and 9 Construction Activities

Construction Activity	Description	Construction Activity (CA) # /Permit Plates
Barge Mooring	Mooring location for small work boats south of the Stoffolino Bridge on the eastern shore of the Norwalk River (Site 7).	CA11/ CA11-4, CA11-5
Barge Mooring	Mooring location for construction barges east of Norwalk Harbor (Site 8).	CA11/ CA11-3, CA11-5
Barge Mooring	Mooring location for construction barges in Long Island Sound (Site 9).	CA11/CA11-2, CA11-5

7.1 CONSTRUCTION ACTIVITY: Barge Mooring

Permit Plates: GEN 8-10, SUM-1, CA11
Time of Year Restrictions: None

In addition to the barge mooring location at the Manresa Island Staging and Storage Yard (Site 10 and CA19, described in Section 8.1), three additional mooring locations will be required for staging small work boats and construction material and equipment barges for the Walk Bridge Replacement Project. Small work support boats will be moored at Site 7. Larger construction material and equipment barges will be moored at Sites 8 and 9. Typical barge widths range from 30 feet to 54 feet, and typical barge lengths range from 72 feet to 280 feet (as shown of the Vessel Berthing Plan, GEN 8-10). Each mooring will consist of a 60-inch diameter mooring buoy and a 5-ton anchor. The anchors will be lowered to the streambed or

seabed from barges and properly secured to prevent migration. No dredging will be required for installation of the moorings. Temporary aids to navigation will be installed at each mooring location in coordination with the U.S. Coast Guard. None of the proposed construction boats/barges will be moored in areas where there is a potential for grounding.

Table 29 – Resource Impacts: Barge Mooring – Site 7

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	0
Permanent	0	0	0	100

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts.

Table 30 – Resource Impacts: Barge Mooring – Site 8

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	0
Permanent	0	0	0	300

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts

Table 31 – Resource Impacts: Barge Mooring – Site 9

Impacts	Vegetated Tidal Wetland (sf)	Intertidal Flat (sf)	Intertidal Zone* (sf)	Below CJL** (sf)
Temporary	0	0	0	0
Permanent	0	0	0	400

Temporary impacts are construction impacts less than 24 months duration. Permanent impacts include temporary impacts of 24 or more months duration.
*Represents areas in the intertidal zone that are not defined as a vegetated tidal wetland or intertidal flat.
**Impacts below the CJL include areas below the CJL elevation, shore to shore, that are not included as vegetated tidal wetlands, intertidal flat, or intertidal zone impacts

8. Site 10 Construction Activities – Manresa Island Staging and Storage Yard

Site 10 is approximately 2.1 nautical miles south of Walk Bridge on the southern portion of Manresa Island. Site 10 consists of approximately 4.7 acres on Parcel 5/86/1, the site of the de-commissioned NRG Energy power plant. Work at Site 10 includes barge mooring waterward of the Coastal Jurisdiction Line (CJL) but landward of (outside) the navigation channel. Staging and storage yard activities at Site 10 are landward of the CJL and located in the 100-year floodplain; these activities are described in Section 9.10. Table 32 lists the construction activity below the CJL that will occur at Site 5.

Table 32 –Site 10 Construction Activities

Construction Activity	Description	Construction Activity (CA) # /Permit Plates
Manresa Island Staging and Storage Yard	Use of an existing dock at Parcel 5/86/1 for the assembly of the replacement bridge lift spans and transfer of materials to and from the existing bridge site via barge, including berthing of construction and material barges and safety vessels as needed.	CA19/CA19-1 through CA19-3

8.1 CONSTRUCTION ACTIVITY: Manresa Island Staging and Storage Yard Improvements

Permit Plates: EP-8A-8E, PP-8A-8E, CA19
Time of Year Restrictions:

- No work will be conducted between April 1st and July 31st within 400 feet of any active peregrine falcon (*Falco peregrinus*) nest.
- Use of the Manresa Island Staging and Storage Yard will be started before April 15th or after August 1st to allow for the nesting ospreys (*Pandion haliaetus*), to acclimate to this new activity within their nesting areas.
- Special precautions will be implemented during the Northern diamondback terrapin's (*Malaclemys t. terrapin*), active season from April 1st through October 31st, in accordance with CTDOT Section 1.10 Environmental Compliance.

An approximate 4.7-acre area with docking facilities on Manresa Island will be used for the assembly of the replacement bridge lift spans. Site 10 will used for approximately 60 months. Work activities below the CJL consist of barge mooring at the existing dock. The existing dock will be used for the temporary berthing of construction vessels and barges, including a lift span assembly barge, work barge, and various material barges, and berthing of safety boat vessel(s) and emergency rescue operations that are associated with construction of the lift spans. The barges will be anchored by spud piles. No dredging will be required for use of the existing dock/wharf area. Site 10 will also include staging and storage activities, described in Section 9.10. Site 10 activities will not impact existing resources below the CJL.

9. Construction Activity Impacts to the 100-Year Floodplain

Project construction activity impacts to the 100-year floodplain have been calculated for ten floodplain areas, listed in Table 33 and shown in Figures 4 and 5 (and included in **Attachment I** [FP-2- FP-11]). Temporary floodplain impacts are construction impacts less than 24 months duration. Permanent floodplain impacts include temporary impacts of 24 or more months duration.

In addition to the construction elements previously described in Sites 1 through 10, the project will include activities in the 100-year floodplain, as described in Sections 9.1 through 9.10. The construction of non-bridge related railroad elements, including replacement of approach track, overhead catenary and supports, and signal work will be within the existing state right-of-way, which is higher than the 100-year floodplain.

Table 33 – Floodplain Impact Areas

Floodplain Area	Location	Description of Activities
FP-2	Wetland Mitigation Area 2	Wetland restoration activities along the west bank of the Norwalk River, in the river bend north of the bridge.
FP-3	Wetland Mitigation Area 6	Wetland restoration activities along the east bank of the Norwalk River, north of the bridge.
FP-4	From west approach to east of Navigation Channel	All construction activities previously identified in Site 1 (West of Navigation Channel), Site 2 (Navigation Channel), and Site 3 (East of Navigation Channel) and additional areas in west and east. In the west: installation of MNR and bridge cabling receiving shaft; repaving of North Water Street; removal of existing Pier 1; construction of new Pier 1; development of MNR duct bank and vaults; and portions of the marine enclosure required for dredging in the northern portion of Site 4. In the east: construction of pedestrian/bicycle trail north of bridge, trail and construction access road south of railroad, and MNR duct bank; use of construction yard at 1 Goldstein Place (Parcel 3/1/25); and northern limit of Mitigation Area 6.
FP-5	East Approach	Installation of MNR and bridge cabling launching shaft; construction of pedestrian/bicycle trail and construction access road south of railroad; development of MNR duct bank; and use of construction yards east and west of Goldstein Place (multiple parcels).
FP-6	From Vessel Dock Area to Goldstein Place	All construction activities previously identified in Site 4 (Vessel Dock Relocation). In the west: repaving of parking lot (4 North Water Street); installation of accessible gangway, maintenance dredging in navigation channel. In the east: use of construction yards east and west of Goldstein Place (multiple parcels); repaving of Goldstein Place/Route 136.

Floodplain Area	Location	Description of Activities
FP-7	Marine Staging Yard	All construction activities previously identified in Site 5 (Marine Staging Yard); and use of temporary construction yard for storage of construction equipment and material at 68, 70, and 90 Water Street.
FP-8	Barge Mooring on eastern river front	All construction activities previously identified in Site 7.
FP-9	Barge Mooring east of Norwalk Harbor	All construction activities previously identified in Site 8.
FP-10	Barge Mooring in Long Island Sound	All construction activities previously identified in Site 9.
FP-11	Manresa Island Staging and Storage Yard	All construction activities previously identified in Site 10; development of and use of staging and storage yard for lift span construction; development and use of construction staging and temporary storage activities.

Figure 4 – Project Floodplain Areas, FP-2 through FP-8

Figure 5 – Project Floodplain Areas, FP-9 through FP-11

9.1 FLOODPLAIN IMPACT AREA FP-2: Wetland Mitigation Area 2

Permit Plans: FP-2

Floodplain Impact Area FP-2 consists of temporary and permanent impacts to the 100-year floodplain associated with Wetland Mitigation Area 2, located northwest of the bridge site and south of Oyster Shell Park. Included in the temporary impacts are site access to the mitigation area. Note that Wetland Mitigation Area 1 is also in FP-2 (north of Mitigation Area 2 at Oyster Shell Park), however, it does not require any temporary or permanent fill in the floodplain.

Table 34 – Floodplain Impacts: Wetland Mitigation Area 2

Impacts	Below CJL (sf)	100-year Floodplain* (sf)	Total Below 100-Year Floodplain
Temporary	300	400	700
Permanent	16,400	3,100	19,500

*Impacts below the 100-Year Floodplain include areas below the 100—Year Floodplain that are not included as impacts below the CJL elevation.

9.2 FLOODPLAIN IMPACT AREA FP-3: Wetland Mitigation Area 6

Permit Plans: FP-3

Floodplain Impact Area FP-3 consists of temporary and permanent impacts to the 100-year floodplain associated with Wetland Mitigation Area 6, along the eastern bank of the Norwalk River fronting the Waste Water Treatment Facility. Included in the temporary impacts are site access to the mitigation area. Note that Wetland Mitigation Area 3 is also in FP-3, located on the western bank of the Norwalk River, however, it does not require any temporary or permanent fill in the floodplain.

Table 35 – Floodplain Impacts: Wetland Mitigation Area 6

Impacts	Below CJL (sf)	100-year Floodplain* (sf)	Total Below 100-Year Floodplain
Temporary	0	0	0
Permanent	10,500	0	10,500

*Impacts below the 100-Year Floodplain include areas below the 100—Year Floodplain that are not included as impacts below the CJL elevation.

9.3 FLOODPLAIN IMPACT AREA FP-4: From west approach to east of Navigation Channel

Permit Plans: FP-4

Floodplain Impact Area FP-4 includes all construction activities previously identified in Site 1 (West of Navigation Channel), Site 2 (Navigation Channel), and Site 3 (East of Navigation Channel). Additional floodplain impacts to the west include installation of the MNR and bridge cabling duct banks, vault, and

receiving shaft; milling and paving of North Water Street; removal of existing Pier 1 to Elevation 4.0 to 6.0 (NAVD88), which is 2 feet below the ground surface of Elevation 4.0 to 6.0 (NAVD88); construction of new Pier 1; and preparation of the construction staging area at 10 North Water Street (Parcel 2/19/2). Floodplain impacts also include the contractor's access area from North Water Street/Ann Street to the east side of the Maritime Aquarium (Parcel 2/19/3).

Floodplain impacts to the east include the northern limit of Mitigation Area 6, construction of a portion of the pedestrian/bicycle path north of the bridge (connecting to the Norwalk Harbor Loop Trail), and construction of a portion of the pedestrian/bicycle path and construction access road immediately south of railroad corridor (including Parcel 3/1/25). Temporary floodplain impacts include the use of the construction yard at the bridge site (1 Goldstein Place; Parcel 3/1/25).

Table 36 – Floodplain Impacts: From west approach to east of Navigation Channel

Impacts	Below CJL (sf)	100-year Floodplain* (sf)	Total Below 100-Year Floodplain
Temporary	2,000	9,800	11,800
Permanent	142,200	58,300	200,500

*Impacts below the 100-Year Floodplain include areas below the 100—Year Floodplain that are not included as impacts below the CJL elevation.

9.4 FLOODPLAIN IMPACT AREA FP-5: East Approach

Permit Plates: FP-5

Floodplain Impact Area FP-5 includes the installation of MNR and bridge cabling launching shaft; construction of a portion of the pedestrian/bicycle path and the construction access road immediately south of the railroad corridor; and development and use of the construction yard east of Goldstein Place. Temporary floodplain impacts due to the construction staging and storage area in FP-5 east and west of Goldstein Place include multiple parcels, including 1, 5, and 10 Goldstein Place (Parcels 3/1/25, 3/1/24, and 3/1/30, respectively).[3] .

Note that the partial removal of the existing eastern bridge abutment (and reuse for the pedestrian/bicycle path) is located in FP-5. However, the bridge abutment will be removed to Elevation 12.0 (NAVD88), therefore, there will be no floodplain impacts.

Table 37 – Floodplain Impacts: East Approach

Impacts	Below CJL (sf)	100-year Floodplain* (sf)	Total Below 100-Year Floodplain
Temporary	0	0	0
Permanent	0	61,400	61,400

*Impacts below the 100-Year Floodplain include areas below the 100—Year Floodplain that are not included as impacts below the CJL elevation.

[3] Parcel numbers from City of Norwalk GIS Mapping, March 2021.

9.5 FLOODPLAIN IMPACT AREA FP-6: From Vessel Dock Area to Goldstein Place

Permit Plates: FP-6

Floodplain Impact Area FP-6 includes construction activities previously described in Site 4. Additional floodplain impacts to the west include temporary impacts due to milling and overlay of the Norwalk Parking Authority (4 North Water Street) lot; a new accessible gangway to the reconfigured dock; and a portion of maintenance dredging within the navigation channel. To the east, temporary floodplain impacts due to the construction staging and storage area in FP-6 east and west of Goldstein Place include multiple parcels, including 1, 3, 4, and 6 Goldstein Place (Parcels 3/1/25, 3/1/16, 3/1/29 and 3/1/19, respectively).[4] Additional floodplain impacts to the east include roadway milling and overlay of Goldstein Place/Route 136 following project completion.

Table 38 – Floodplain Impacts: From Vessel Dock Area to Goldstein Place

Impacts	Below CJL (sf)	100-year Floodplain* (sf)	Total Below 100-Year Floodplain
Temporary	17,600	39,800	57,400
Permanent	11,100	22,300	33,400

*Impacts below the 100-Year Floodplain include areas below the 100—Year Floodplain that are not included as impacts below the CJL elevation.

9.6 FLOODPLAIN IMPACT AREA FP-7: Marine Staging Yard

Permit Plates: FP-7

Floodplain Impact Area FP-7 includes construction activities previously described in Site 5. Additional floodplain impacts include development of a land-based construction and staging area and laydown area at 70 and 90 Water Street through site clearing and grading to approximately Elevation 8.0 (NAVD88) to allow site drainage. As presented in Section 5.1, the Marine Staging Yard will be used to store materials and equipment.

Table 39 – Floodplain Impacts: Marine Staging Yard

Impacts	Below CJL (sf)	100-year Floodplain* (sf)	Total Below 100-Year Floodplain
Temporary	200	0	200
Permanent	19,300	70,900	90,200

*Impacts below the 100-Year Floodplain include areas below the 100—Year Floodplain that are not included as impacts below the CJL elevation.

[4] Parcel numbers from City of Norwalk GIS Mapping, March 2021

9.7 FLOODPLAIN IMPACT AREA FP-8: Barge Mooring Site 7

Permit Plates: FP-8

Floodplain Impact Area FP-8 includes construction activities previously described in Site 7.

Table 40 – Floodplain Impacts: Barge Mooring Site 7

Impacts	Below CJL (sf)	100-year Floodplain* (sf)	Total Below 100-Year Floodplain
Temporary	0	0	0
Permanent	100	0	100

*Impacts below the 100-Year Floodplain include areas below the 100—Year Floodplain that are not included as impacts below the CJL elevation.

9.8 FLOODPLAIN IMPACT AREA FP-9: Barge Mooring Site 8

Permit Plates: FP-9

Floodplain Impact Area FP-9 includes construction activities previously described in Site 8.

Table 41 – Floodplain Impacts: Barge Mooring Site 8

Impacts	Below CJL (sf)	100-year Floodplain* (sf)	Total Below 100-Year Floodplain
Temporary	0	0	0
Permanent	300	0	300

*Impacts below the 100-Year Floodplain include areas below the 100—Year Floodplain that are not included as impacts below the CJL elevation.

9.9 FLOODPLAIN IMPACT AREA FP-10: Barge Mooring Site 9

Permit Plates: FP-10

Floodplain Impact Area FP-10 includes construction activities previously described in Site 9.

Table 42 – Floodplain Impacts: Barge Mooring Site 9

Impacts	Below CJL (sf)	100-year Floodplain* (sf)	Total Below 100-Year Floodplain
Temporary	0	0	0
Permanent	400	0	400

*Impacts below the 100-Year Floodplain include areas below the 100—Year Floodplain that are not included as impacts below the CJL elevation.

9.10 FLOODPLAIN IMPACT AREA FP-11: Manresa Island Staging and Storage Yard

Permit Plates: FP-11

Floodplain Impact Area FP-11 includes the use of the existing docking facilities as previously described in Site 10. Additional floodplain impacts include development of an approximate 4.7-acre staging and storage yard. The staging and storage yard at Manresa Island will consist of two general areas: an approximate 120,000 square foot (sf) work area and an approximate 87,500 sf construction equipment and material laydown area. The work area will be used for pre-assembly of structural components (i.e. lift tower) and full assembly of both lift span trusses (south and north trusses) before float-in to the bridge site. The laydown area will be used for storage of construction materials for trestles (pipe piles, girders, etc.) and sheet piles for marine enclosures (if space is available). It will also be used as a temporary storage and transfer site for components from the demolition of the existing bridge and the project site including components that are free of hazardous materials, such as stone masonry and concrete debris, and components that may contain hazardous materials, such as treated or painted timber cribbing/pilings, structural steel members, and timber ties. Component handling will include off-loading and transfer of material from barges to trucks for off-site disposal. No dredged material will be transported to or stored on the site.

Additional fill associated with the storage of material and equipment will be placed on the site. Prior to work start, a layer of geotextile fabric covered with six inches of crushed stone that will be placed over the entire surface area of the Staging and Storage Yard, to provide a level surface and to provide a layer of separation from the existing Areas of Concern (AOCs) associated with the de-commissioned energy plant. Additionally, in the material laydown area, a polyethylene covering will be placed directly beneath existing bridge components with potentially hazardous materials (e.g., lead paint; creosote) as an additional layer of protection against contact with the ground surface. The fill will be removed following project completion and the site will be restored to pre-construction conditions.

The Staging and Storage Yard at Manresa Island will incorporate flood proofing. The materials and equipment will be properly secured or removed, if flooding or coastal storms are anticipated. Flood-proof containers will be used on the site for secure storage and to provide weather protection. Critical activities, such as petroleum fuels, oil tanks for site generators, and other construction related hazardous or flammable materials, will be stored within double-walled and flood-proof containers. The size of containers will be limited to less than 1,300 gallons. In the event of a forecasted storm, containerized materials will be moved off-site. The Flood Contingency Plan for Parcel 5/86/1 will be incorporated into the application for Flood Management Certification for the project.

Table 43 – Floodplain Impacts: Manresa Island Staging and Storage Yard

Impacts	Below CJL (sf)	100-year Floodplain* (sf)	Total Below 100-Year Floodplain
Temporary	0	0	0
Permanent	0	168,700	168,700

*Impacts below the 100-Year Floodplain include areas below the 100—Year Floodplain that are not included as impacts below the CJL elevation.

2b. Describe any erosion and sedimentation or turbidity control installation and maintenance schedule and plans in detail.

Where demolition and removal activities do not take place over a barge, solid work platform, or within a marine enclosure, debris shields will be installed prior to performing the removal operations to prevent debris from falling into the waterway. The debris shields will be installed to maintain at least 1 foot of freeboard above the 2-year tidal elevation, except above the navigation channel where the debris shields must be located as close to the low chord as practical. The contract specifications will require any debris that accidentally falls into the waterway to be immediately removed.

Marine enclosures/temporary fenders will be installed prior to the start of certain construction activities as indicated in the response to **Question 2a** and shown in **Attachment I**. Marine enclosures are steel sheet pile structures that are not to be considered as being watertight. The sheeting allows low velocity flow between the enclosure and the outer tidal waters; the elevation of water inside the enclosure is isolated from tidal waters and therefore lags the tide. The marine enclosure will be installed so that the top of the enclosure is at, or above, Elevation 6.2 (NAVD88), one foot above the high tide line. The marine enclosure will be protected from navigation impacts with a temporary fender system. The temporary fender system, consisting of mooring piles and temporary floating fenders between the mooring piles, consisting of mooring piles and temporary floating fenders between the mooring piles, will line the channel faces of the marine enclosure. To further prevent siltation outside of the marine enclosure, a turbidity curtain will be deployed around its exterior perimeter.

Type 3 Permeable Turbidity Barriers will be used (CTDOT Specification Item #0210306A, Turbidity Control Curtains). If needed, pin piles will be used to hold the turbidity curtains in place. Turbidity curtains will be installed prior to the start of the following activities:

- Marine enclosure installation
- Pier construction (with marine enclosure)
- Pier removal (with marine enclosure)
- Existing submarine cable removal
- Slide rail installation and removal for swing span removal
- Control house independent fender system installation and existing fender removal
- Navigation/maintenance dredging
- Construction platform pile driving
- Pile installation and removal at the temporary vessel dock relocation/storage site
- New dredging (with marine enclosure if outside the dredging work window) at the temporary vessel dock relocation site [(waterward of 68 and 90 Water Street (Parcels 2/84/19 and 2/84/33)] and at the permanent vessel dock location site [(waterward of 4 North Water Street (Parcel 2/19/1)]
- Bulkhead installation Marine Staging Yard
- Sheet pile installation and outfall reconstruction at the IMAX
- IMAX Theater foundation removal
- Wetland restoration

The marine enclosures and turbidity curtains will be installed and maintained by the contractor. Prior to removal of the marine enclosure following each activity, the water inside the marine enclosure will be monitored for total suspended solids. Once the turbidity readings reach equilibrium with those readings

outside of the turbidity curtain, then the marine enclosure can be removed. The turbidity curtains will remain in place until that portion of the project is complete and the turbidity has settled to no more than pre-construction conditions.

The project area will incorporate soil erosion and sediment control (SESC) measures consistent with the CTDEEP 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. Standard erosion control measures such as hay bales, silt fence, turbidity curtains, and inlet filters will be implemented during construction. In addition, confined in-water work will occur within turbidity curtains and marine enclosures/temporary fenders to isolate the sediment-generating work zones from the river. Since the temporary staging and material storage yards consist primarily of asphalt surfacing with some locations of stone aggregate, stabilized construction access will only be used at the temporary staging and material storage yards where soils will be exposed. All SESC measures will be installed prior to construction activities that will result in soil disturbance. In accordance with the contract specifications, the marine enclosures, temporary fenders, turbidity curtains, and SESC measures will be inspected and maintained throughout the project construction period. [Section 1.10 Environmental Compliance; Section 2.10 Water Pollution Control (Soil Erosion)]. The project will be included in the Walk Bridge Program SWPCP, and construction activities with earth disturbance will be covered under the CTDEEP General Permit for Stormwater Discharges from Construction Activities

Further, barge movements will take place such that there will be no impact to the river bottom or increase in ambient turbidity beyond that allowed by permit conditions.

CTDOT will implement water quality monitoring whenever in-water work is being performed. Water quality monitoring will consist of monitoring for turbidity on a continuous basis in the vicinity of each turbidity producing activity. Additionally, CTDOT will monitor for specific conductivity, salinity, dissolved oxygen, pH, temperature and water level (at one location) to determine if marine life and other natural conditions may be contributing to turbidity levels. Monitoring will be conducted for turbidity as required by CTDEEP.

CTDOT completed baseline monitoring at three locations within the proposed project area (Walk Bridge, Stroffolino Bridge, and the City of Norwalk Police Dock) to establish baseline conditions. The baseline monitoring will be utilized to establish trends and background levels that will assist in the exceedance reporting and investigations during construction monitoring. Turbidity monitoring during construction will be conducted on a continuous basis in the vicinity of each turbidity producing activity. Monitoring will be conducted upstream via two fixed monitors to act as a baseline and two floating monitoring locations both upstream and downstream of the marine enclosures/turbidity curtains to serve as the monitors during the ebb and flow of the river. If there is a spike in turbidity levels above the action levels, a CTDOT OEP-approved environmental inspector will investigate the cause of the exceedance to determine if the condition is due to natural conditions of the river, background traffic in the area, or from the construction activities. The results of the exceedance investigations will be coordinated with the resident engineer to adjust the BMPs implemented by the contractor, if necessary. The results of the investigations and the corrective actions implemented will be transmitted to the Norwalk Shellfish Commission and the Norwalk Harbor Management Commission on a monthly basis.

To simulate conditions during installation of the piles for the work trestles, a test pile program was planned and executed for the project. The program consisted of driving 30-inch diameter pipe piles and pairs of 40-foot long sheet piles at eight different locations across the site. The intent of the program was to measure

pile capacity and pile length, for cost estimates and constructability. Additionally, as part of this program, noise and vibration levels were measured in the adjacent air and water and vibration effects on adjacent historic structures and the existing bridge were measured. Turbidity created by pile driving and extraction was measured via two sets of test piles, including a pair of sheets and pipe pile at two locations, and pile extraction at one location. Results from turbidity testing indicate that the turbidity impacts due to pile driving and removal are minimal; very little or no increase (less than 2 NTUs) was recorded at any of the test gauges during or after the pile driving activity. Per the Connecticut Water Quality Standards (effective October 10, 2013), Class SB Waters do not have a minimum turbidity threshold, "other than of natural origin except as may result from…construction activity,…dredging activity or discharge of dredged of fill materials provided all reasonable controls and Best Management Practices are used to control turbidity and none exceeding levels necessary to protect and maintain all designated uses."

2c. Indicate the length of time needed to complete the project and identify any anticipated time period restrictions.

The Walk Bridge Replacement Project is anticipated to begin after regulatory approval and will have a construction duration of approximately 5 to 6 years.

CTDOT has coordinated with the National Oceanic and Atmospheric Administration/National Marine Fisheries Service/Greater Atlantic Regional Fisheries Office (NOAA/NMFS/GARFO); CTDEEP Division of Wildlife, CTDEEP Division of Fisheries - Marine Fisheries Program; CTDEEP Natural Diversity Data Base (NDDB); Norwalk Shellfish Commission (NSC), and the U.S. Army Corps of Engineers (USACE) in developing environmental protection measures for the project. Through coordination with NOAA/NMFS/GARFO, CTDEEP, NSC, and USACE, CTDOT has agreed to implement the following time of year restrictions:

- All pile driving and extraction (including sheet piles) activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset. Per coordination with CTDEEP Marine Fisheries, shaft drilling and micro pile drilling conducted within a caisson and marine enclosure are not subject to this TOY restriction.

- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.

- A soft start will be required between March 16th and October 31st. A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles) activities, whether located within or outside of a marine enclosure, as well as following cessation of activity for a period of 30 minutes or longer. A soft start is defined as follows:
    - For impact pile driving: pile driving will commence with an initial set of three strikes by the hammer at 40% energy, followed by a one-minute wait period, then two subsequent three-strike sets at 40% energy, with one-minute waiting periods, before initiating continuous impact driving.
    - For vibratory pile installation: pile driving will be initiated for 15 seconds at reduced energy followed by a one-minute waiting period. This sequence of 15 seconds of reduced energy driving, one-minute waiting period will be repeated two additional times, followed immediately by pile-driving at full rate and energy.

- Dredging will be conducted within turbidity curtains between December 1st and January 31st. Dredging from February 1st through November 30th will be conducted within a marine enclosure enclosed by a turbidity curtain.

- No construction and/or inspection activities which are within 400 feet of an identified peregrine falcon (*Falco peregrinus*) nest will be permitted during nesting season, between April 1st and July 31st.

- Use of the Manresa Island Staging and Storage Yard will be started before April 15tht or after August 1st to allow for the nesting ospreys (*Pandion haliaetus*), to acclimate to this new activity within their nesting areas.

- Special precautions will be implemented during the Northern diamondback terrapin's (*Malaclemys t. terrapin*), active season from April 1st through October 31st, in accordance with CTDOT Section 1.10 Environmental Compliance.

Required protocols and other BMPs for the protection of State-listed species and habitats are included in **Attachment C.**

Additionally, pile driving/extraction and drilled shaft and micropile drilling activities will be coordinated to ensure that the navigation channel is available for marine traffic and fish passage; activities will occupy less than 50% when working in the middle of the navigation channel. Further, hydraulic breakers (e.g., hoe rams) will not be used below the high tide line.

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Part III: Project Information
(continued)
Question 3

3. Describe the purpose of, the need for, and intended use of the proposed activities (For example, private recreational boating, marina, erosion protection, public infrastructure, etc.).

3.1 Project Purpose

Walk Bridge is a critical piece of public infrastructure on the New Haven Line/Northeast Corridor (NHL/NEC). Walk Bridge carries Amtrak intercity and high-speed passenger service on the NEC, is used for Metro-North Railroad (MNR) commuter rail service, and Providence and Worcester Railroad Company (P&W) through freight service. Replacement of the existing Walk Bridge will support Amtrak, MNR and freight service. Additionally, Walk Bridge is the northern boundary of the Norwalk Harbor, rated as a small commercial port by the USACE, with over 2,300 moorings and berthing spaces, and between 2,000 to 3,000 commercial vessel trips per year to port facilities. The replacement bridge will support marine use and operations on the Norwalk River. The purpose of the project is to replace the existing deteriorated bridge with a resilient bridge structure which will enhance the safety and reliability of rail service, offer operational flexibility and ease of maintenance, and provide for increased capacity and efficiencies of rail transportation along the New Haven Line/Northeast Corridor, while maintaining or improving navigational capacity and dependability for marine traffic in the Norwalk River. Upgrades to the Walk Bridge, through replacement, are needed to increase bridge reliability, incorporate bridge redundancy, and provide a sustainable bridge for significant weather events, thereby accommodating current and future rail and marine traffic.

3.2 Need for the Project

In coordination with the FTA, CTDOT is undertaking the Walk Bridge Replacement Project to address the following needs, or deficiencies, of the existing Walk Bridge.

Structure Age and Deterioration. The existing bridge is approximately 120 years old and has deteriorated. Section loss (loss of original structural material) due to corrosion has been observed in some locations and to varying extents and indicates that the structure is nearing the limit of its design life. Cumulative fatigue damage (damage due to repetitive train loadings) of the main load carrying elements of the bridge has occurred. The electrical systems are generally obsolete. Existing and projected deterioration and wear of mechanical systems are key elements which affect the reliability of the bridge.

Decreasing Reliability. In 2011, Walk Bridge failed 12 times out of 138 openings, and in 2013, the bridge failed 16 times out of 271 openings. Failure means that the bridge fails to open or close properly in a timely manner. Failures have occurred in both the opened and closed positions. When failure occurs in the opened

position, train traffic cannot cross the bridge until the bridge is completely closed and locked. If the bridge fails in the closed position, marine traffic taller than the vertical clearance under the bridge cannot pass under the bridge. When the bridge fails by only partially opening or closing, both train and marine traffic are stopped. Without action to rehabilitate or replace the bridge, failures are expected to increase.

Closing the bridge after a failure can take up to two hours. In May and June 2014, in two separate but similar incidents within a two-week time span, Walk Bridge failed to properly close. The failures prevented trains from crossing the bridge for extended periods of time, and impacted thousands of passengers.

Lack of Resiliency. System resiliency for Walk Bridge is described as the ability to return the bridge to use, either partially or completely, in a relatively short period of time in the aftermath of a compromising event. It also refers to minimizing the vulnerability of critical elements of the bridge to facilitate its return to use.

The existing bridge is not designed to current standards for flooding events or storm events. In its current condition, the bridge is highly vulnerable to damage from a storm surge or high wind event, and it is also at risk for malfunction due to extreme temperatures. The bridge also does not meet current standards with regard to its ability to withstand the magnitude of seismic forces and frequency of seismic events for this geographic area.

Safety Standards. The existing bridge does not meet current design standards which reflect improved safety aspects compared to when the bridge was originally designed and built. Minimum requirements (loading, safety margins, etc.) for the design of railroad bridges have evolved throughout the twentieth century to reflect increases in demands on the infrastructure and advances in materials, methods, and technology. Current train loads used for design are commonly-accepted loads representing modern-day freight rail traffic in the United States. These design loads are significantly heavier than design loads used over a hundred years ago. As a result, structures designed to pre-1900 standards do not typically provide the same margin of safety as bridges designed in accordance with current practice.

Lack of Redundancy. Operational redundancy for Walk Bridge is described as the ability to maintain train service on a limited number of tracks following an event that would have otherwise rendered all tracks inoperable. A failure of the existing bridge results in all four tracks being out of service, affecting train traffic in both directions and with far reaching effects on the NEC.

Limited Operational Flexibility. Existing operational constraints include the curvature of the track on the west end, narrow track centers, and miter rails on the movable span, all of which force trains traversing Walk Bridge to reduce their speed.

Difficulty of Maintenance. *S*ome maintenance activities require opening the structure, and therefore require the bridge to be closed and all four tracks be taken out of service which presents logistical challenges for both maintenance and rail mobility.

Reduced Rail Capacity and Efficiency. Failures of the bridge opening/closing cause reduced efficiency of train service in terms of increased delays and reduced on-time performance (OTP) of Metro-North and Amtrak passenger trains. This reduced efficiency can in turn reduce the line capacity of the rail lines.

Reduced Dependability and Capacity for Marine Traffic. As previously noted, when the bridge fails in the closed or partially opened position, some or all marine traffic cannot pass under the bridge and renders navigation unreliable and unpredictable. The existing vertical clearance also limits vessel passage in the bridge closed position, which affects navigation capacity.

Lack of Sustainability. The existing bridge is not sustainable as continued deterioration will cause bridge failures. Increased routine bridge maintenance will not extend the useful life of the bridge, so without major rehabilitation or replacement, the existing bridge will cease to function and result in more frequent train delays or even full shut-downs of the bridge, adversely affecting both rail and marine traffic. Increasing routine and major maintenance costs, combined with the cost associated with correcting a bridge failure, result in high life cycle costs to operate this bridge.

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Part III: Project Information
(continued)
Question 4

4. Identify and describe all coastal or aquatic resources on the site by checking the appropriate box and describe the expected impact on these resources. You may add addenda as necessary as Attachment M.

Drawing SUM-2 in Attachment I provides Walk Bridge Replacement Project summaries of temporary and permanent impacts to coastal resources and dredging volumes. Project impacts consist of temporary construction impacts of less than 24 months (temporary < 24 mo. impacts), temporary construction impacts of 24 months or more (temporary ≥ 24 mo. impacts), and permanent impacts. Temporary impacts of 24 months or more are permitted as permanent impacts.

4.1 Intertidal Flats

4.1.1 Description of Existing Intertidal Flats

Intertidal flats exist upstream and downstream from Walk Bridge on both sides of the river with the closest affected by construction consisting of a large intertidal flat along the eastern shoreline of the Norwalk River, north of the Walk Bridge, adjacent to the City of Norwalk's Waste Water Treatment Plant (WWTP). Figure 1 shows delineated intertidal flats in the vicinity of Walk Bridge; Figures 2 and 3 show aerial photography of selected intertidal flat areas north and south of the bridge. Additionally, there are smaller exposed intertidal areas on both the east and west shores of the Norwalk River near the abutments of Walk Bridge. However, by definition, these areas do not qualify as mudflats; the substrate of these areas is comprised more of a coarse sand/cobble mix and the grade of these areas is not gently sloping or flat.

The following describes existing intertidal flats in three quadrants of Walk Bridge. No mudflats are present in the southwest quadrant.

Bridge Northwest Quadrant. No mudflats are present in the southern portion of this quadrant. However, some cobble/shell mudflats are present directly under the Walk Bridge. Other mudflats found within this quadrant are associated with areas adjacent to Oyster Shell Park. The mudflats in this area are up to 100 feet wide adjacent to the vegetated tidal wetland areas.

Bridge Northeast Quadrant. Based on review of available aerial photography taken at low tide, the mudflats in this quadrant are from 100 feet to 150 feet wide (Figure 2). Sea lettuce was observed growing on the mudflats and rocky shoreline in this quadrant. Sea lettuce is found in waters that are nutrient rich such as those located near the WWTP outfall.

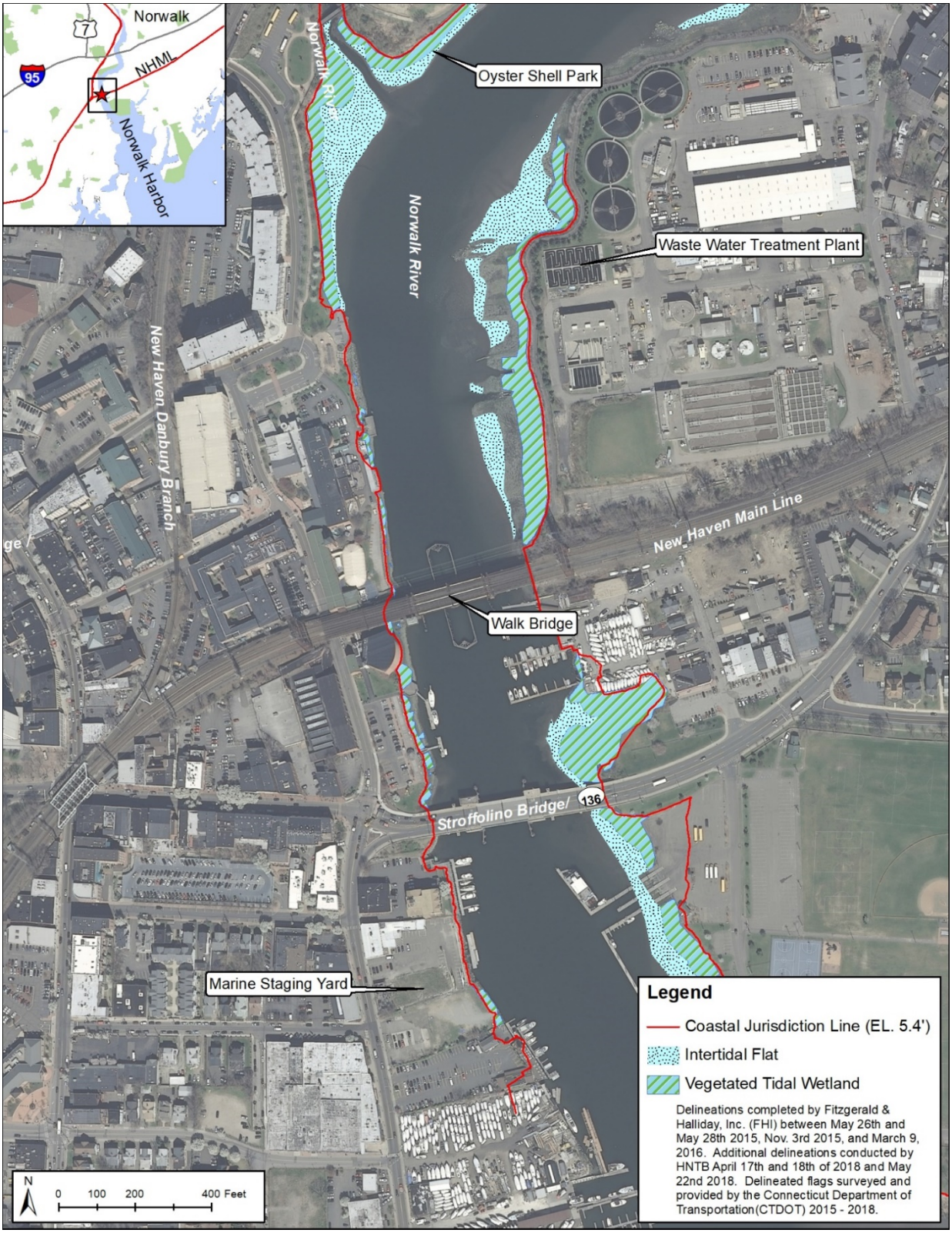

Figure 1 – Delineated Intertidal Flats and Vegetated Tidal Wetlands in the Vicinity of Walk Bridge

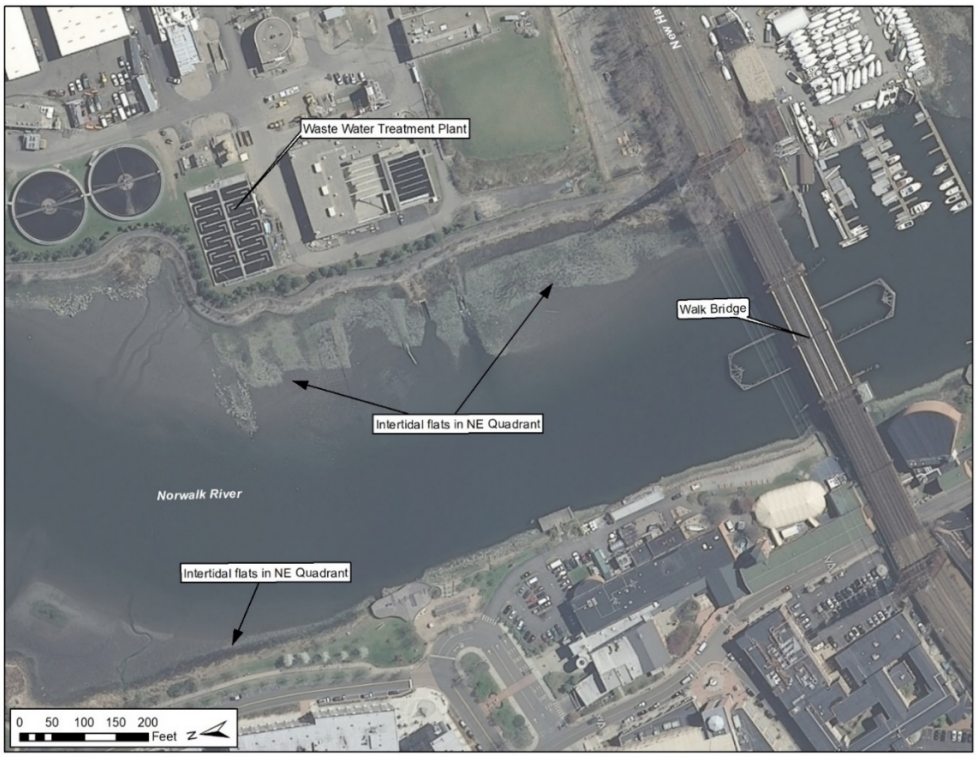

Figure 2—Aerial photo of intertidal flats north of the bridge site

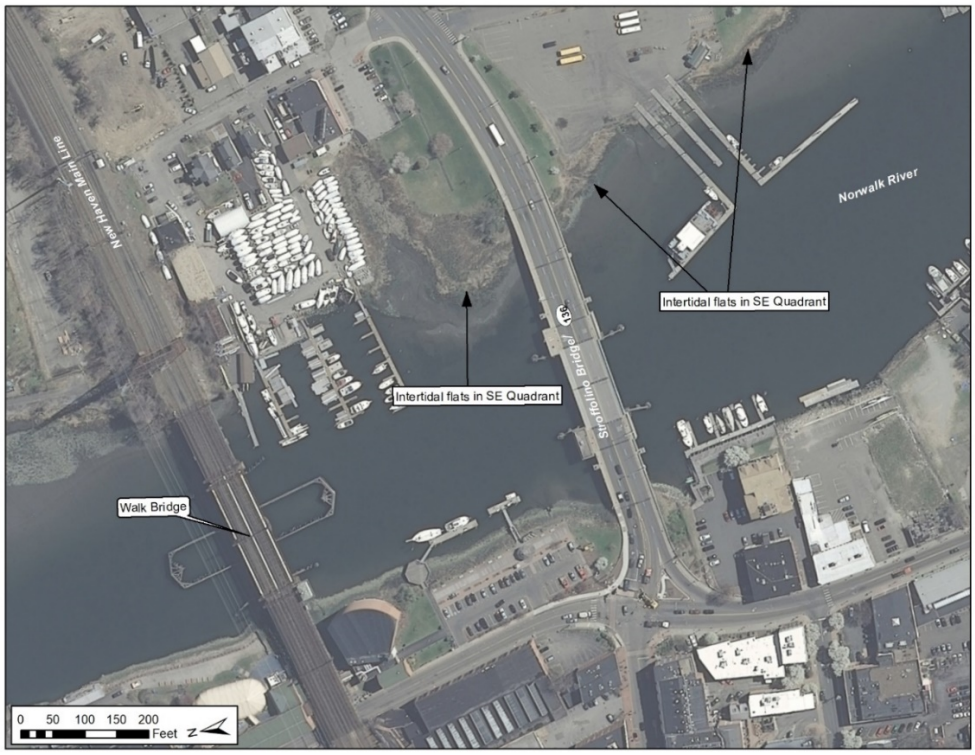

Figure 3—Aerial photo of intertidal flats south of the bridge site

Bridge Southeast Quadrant. Based on review of available aerial photography taken at low tide, the mudflats in this quadrant are from 100 feet to 150 feet wide.

Intertidal flats exist on the eastern and western sides of Manresa Island. Figures 4 and 5 show photographs of representative intertidal flats and the developed shoreline in the vicinity of the Manresa Island Staging and Storage Yard. On the eastern side of Manresa Island, intertidal flats border the Norwalk River on the northern parcel (Parcel 5/86/2), north of the Staging and Storage Yard. On the western site of Manresa Island, intertidal flats border the Outer Harbor area, extending from the southern parcel (Parcel 5/86/1) north to the inlet at the northern parcel (refer to Figures 4 and 7).

4.1.2 Impacts and Compensatory Mitigation

Temporary ≥ 24 months (permanent) impacts to intertidal flats north of the bridge will result from piles driven for construction work platforms and temporary construction trestle piles that are in place longer than 24 months. Temporary < 24 months impacts to the mudflat areas north of the bridge will result from existing submarine cable removal. Neither temporary nor permanent impacts will occur at Manresa Island.

Permanent impacts to intertidal flats (mudflats) will require a 4:1 mitigation ratio; the compensatory mitigation plan, described in Section 4.2.4, accounts for impacts to intertidal flats and vegetated tidal wetlands. Temporary impacts to intertidal flats will require a 1:1 mitigation ratio. Mitigation will be in the form of replacing soil material in the same location after the submarine cable is removed.

Total amounts of impact also are provided on **Drawing SUM-2 in Attachment I** by construction site and impacts by construction activity are provided in **Question 2a**. The proposed mitigation plan is described in **Section 6.1 in Question 2a**.

Figure 4—Photo of intertidal area on western shore of Manresa Island, view south

Figure 5—Photo of dock and rocky intertidal area at Manresa Island, view southeast

4.2 Vegetated Tidal and Freshwater Wetlands

Vegetated tidal wetlands are located along the east and west sides of the Norwalk River, both north and south of Walk Bridge, as shown in Figure 1 and Figure 6. In the vicinity of the bridge, vegetated tidal wetlands are representative of estuarine vegetative communities typically deemed salt tolerant, such as smooth cordgrass [*Spartina alterniflora*, Obligate Wetland (OBL)], salt meadow grass [*Spartina patens*, Facultative Wetland (FACW)], high-tide bush (*Iva frutescens*, FACW), water hemp (*Amaranthus cannabinus*, OBL), seaside goldenrod (*Solidago sempervirens*, FACW), and marsh orach (*Atriplex patula*, FACW). The prominent species in the vicinity of the bridge is smooth cordgrass. No freshwater wetlands are located in the vicinity of the bridge. Both tidal and freshwater wetlands are located in the undeveloped, overgrown, and wooded northern parcel of Manresa Island (Parcel 5/86/2), and along the shore on both sides of the island, as shown in Figure 7.

4.2.1 Description of Existing Wetlands

Wetlands were delineated in the surrounding areas of the project according to both the federal and State of Connecticut definitions. Twenty-two vegetated tidal wetlands exist near the bridge site on both sides of the Norwalk River (Figure 6). Two vegetated tidal wetlands and one freshwater wetland exist near the northern border of Parcel 5/86/1, in the vicinity of the staging and storage yard at Manresa Island (Figure 7).

At the bridge site, federal wetland resources were delineated in the field according to the U.S. Army Corps of Engineers (USACE) 1987 Wetland Delineation Manual (USACE, 1987) and the USACE 2012 Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Northcentral and Northeast Region (USACE, 2012). The fieldwork to identify and delineate wetlands and watercourses proximate to the bridge site initially was conducted during fall/winter of 2014, spring/fall of 2015, and spring 2016. Additional delineations were performed in the summer of 2018 to verify any changes in the distribution of invasive species and to facilitate wetlands compensation/mitigation planning. Wetlands proximate to the Manresa Island Staging and Storage Yard were field verified in March 2020.

The following describes existing wetlands in the four quadrants of Walk Bridge and proximate to the Manresa Island Staging and Storage Yard. Attachment J provides site photographs.

Bridge Northwest Quadrant. The shoreline in the northwest quadrant of the bridge site consists of riprap, rocks, and boulders with some bulkheads and fixed docks. Eleven vegetated tidal wetland areas were delineated in this quadrant. The soils in the wetlands and uplands in this quadrant are highly disturbed and are mapped by the Natural Resources Conservation Service (NRCS) as Urban land. Nine vegetated tidal wetland areas are located adjacent to the parking areas of the Maritime Aquarium property. Two vegetated tidal wetland areas are within Oyster Shell Park that is located north of the Maritime Aquarium property. The vegetated tidal wetlands in this quadrant are vegetated with typical saltmarsh species (wetland indicator status also provided) that include smooth cordgrass (*Spartina alterniflora*, OBL), seaside goldenrod (*Solidago sempervirens*, FACW), marsh orach (*Atriplex patula*, FACW), water hemp (*Amaranthus cannabinus*, OBL) and high tide bush *(Iva frutescens*, FACW) with smooth cordgrass being the dominant species. Several of the individual vegetated tidal wetlands consist of small clumps of smooth cordgrass. The largest wetland in this quadrant continues north into Oyster Shell Park. In addition to the native salt marsh species, the invasive haplotype of common reed (Phragmites australis, FACW) is present in areas adjacent to Oyster Shell Park. Common reed was not present in any of the other tidal wetlands south of

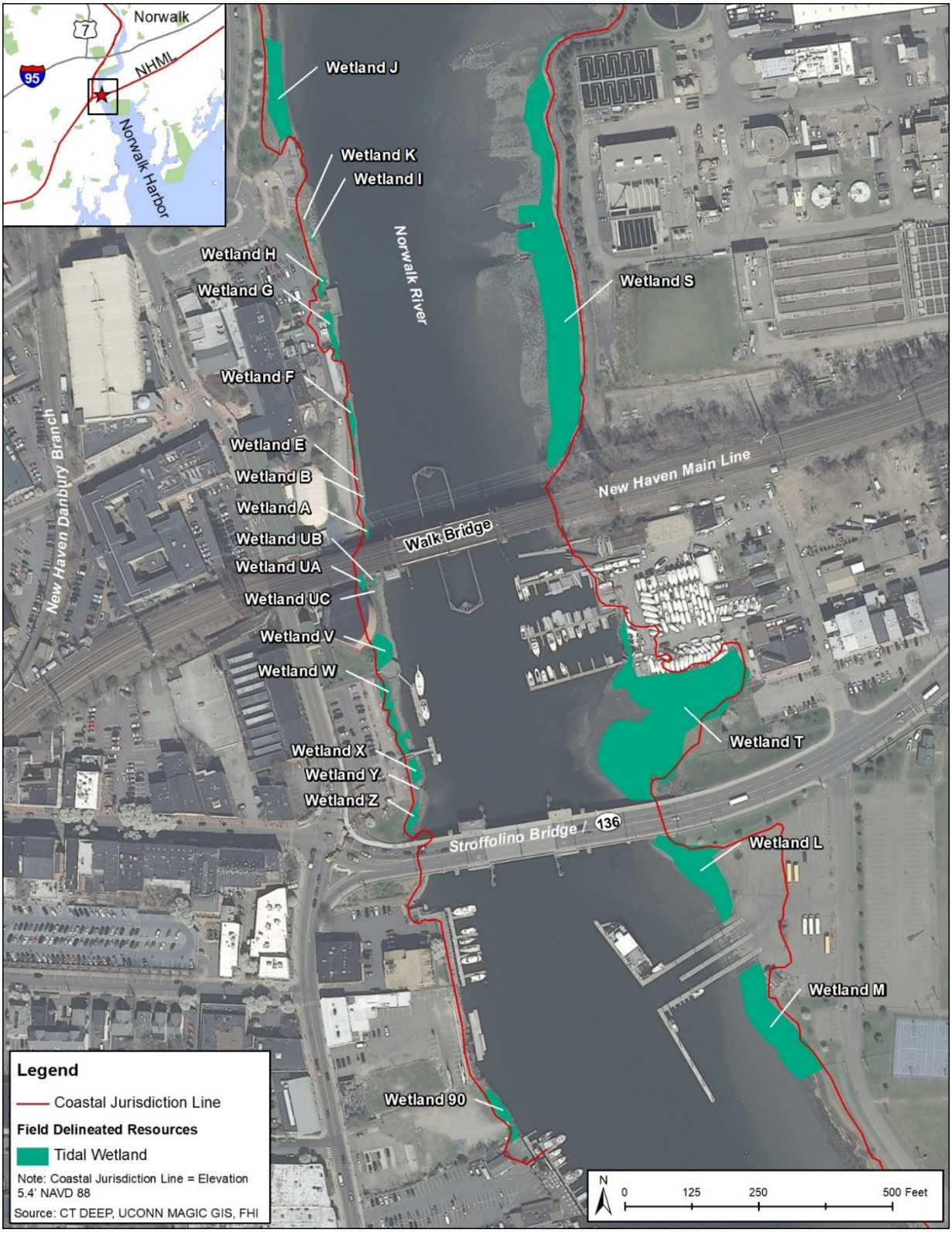

Figure 6—Delineated Wetlands in the Vicinity of Walk Bridge

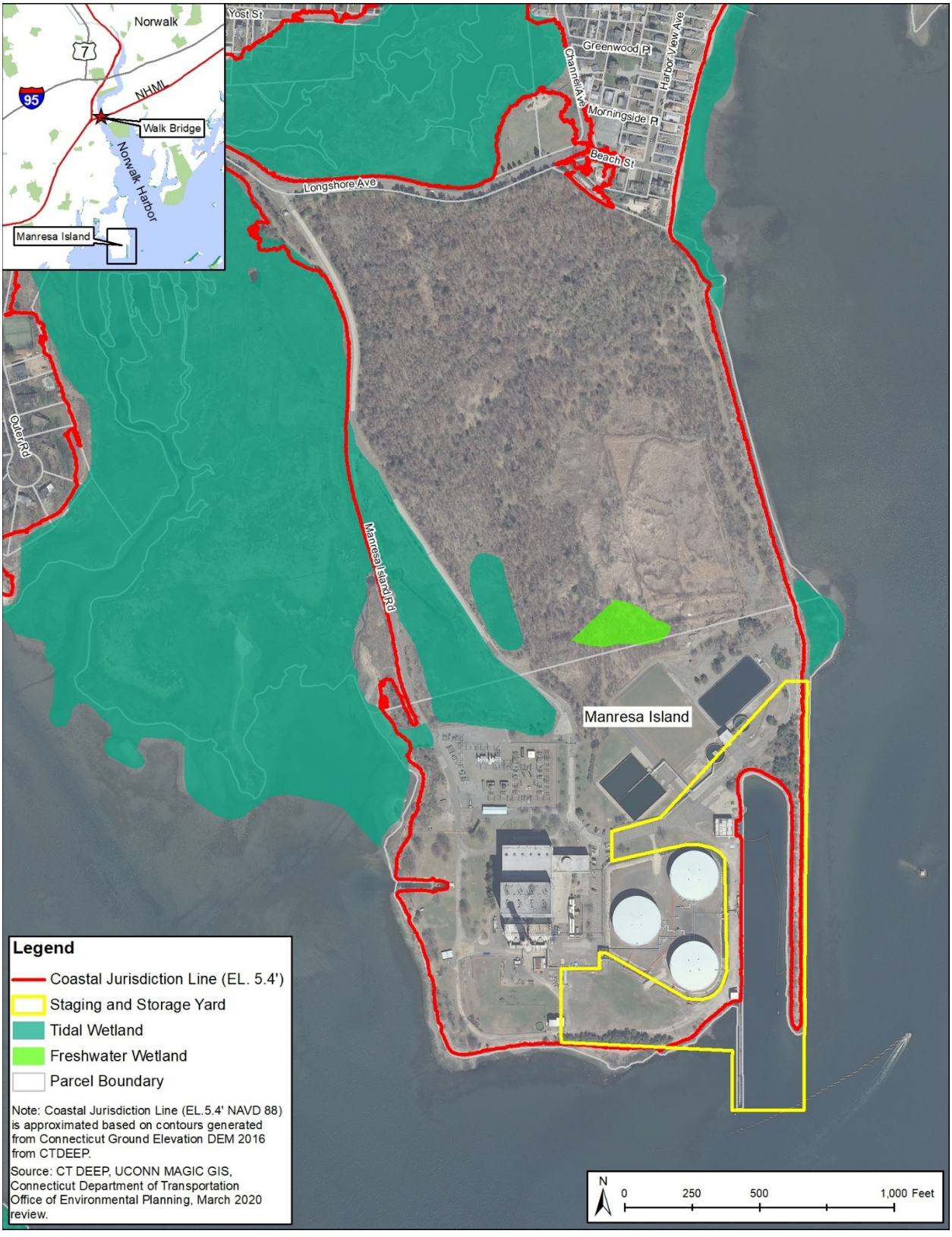

Figure 7—Wetlands in the Vicinity of Manresa Island Staging and Storage Yard

Oyster Shell Park in the northwest quadrant. The adjacent uplands consist of buildings and paved parking lots, with lawn and landscape plantings.

Bridge Northeast Quadrant. The landward side of the shoreline in the northeast quadrant of the bridge site consists almost entirely of chain link fencing (gabion slope/Reno mattress-like) atop riprap on a relatively steep slope. The only upland that is adjacent to the vegetated tidal wetlands that does not consist of chain link fencing on riprap is a small area immediately north of the railroad bridge. Water-ward of the toe of the slope of the riprap, the shoreline consists of areas of rocks and mudflats. Also included in this quadrant are the outfalls for the City of Norwalk WWTP. A continuous band of saltmarsh vegetation extends along the entire shoreline in this quadrant. Smooth cordgrass is by far the dominant species, with seaside goldenrod and high tide bush also present. Adjacent to these areas are some areas that are sparsely vegetated with smooth cordgrass within the mudflats. There are also areas where common reed is present with the largest stand located near the WWTP outfall. The soils in the wetlands and uplands in this quadrant are highly disturbed and are mapped by the NRCS as Udorthents-Urban land complex.

Bridge Southwest Quadrant. The shoreline in the southwest quadrant of the bridge site consists of riprap, rocks, and boulders, along with fixed and floating docks. The IMAX Theater building, part of the Maritime Aquarium complex that is just south of the railroad bridge, is also located immediately adjacent to the vegetated tidal wetlands. Eight vegetated tidal wetlands were delineated in this quadrant. Additionally, one vegetated tidal wetland was delineated at the Marine Staging Yard, south of the Stroffolino Bridge. The soils in the wetlands and uplands in this quadrant are highly disturbed and are mapped by the NRCS as Urban land. Smooth cordgrass is the dominant species in the vegetated tidal wetlands with seaside goldenrod and high tide bush also being common species. Vegetated tidal wetlands located under the railroad bridge are sparsely vegetated with seaside goldenrod, smooth cordgrass, marsh orach and saltmeadow cordgrass (*Spartina patens*, FACW). The vegetated tidal wetland adjacent to the Marine Staging Yard consists of a narrow strip of smooth cordgrass and high tide bush growing on the landward side of a dilapidated bulkhead. Non-vegetated portions of the shoreline are exposed at low tide with the dominant benthic substrate observed to be shell hash. The seaweeds rockweed (*Fucus sp*.) and sea lettuce (*Ulva lactuca*) are present in the intertidal area. The adjacent uplands predominantly consist of buildings, paved parking lots along with lawn and landscaped areas.

Bridge Southeast Quadrant. The southeast quadrant of the bridge site includes naturally vegetated shoreline in Constitution Park and the site formerly occupied by a private marina, with the shoreline made up of a bulkhead north of the Washington Street Bridge. South of the Washington Street Bridge, the southeast quadrant includes the area along the Norwalk River in the vicinity of the municipal boat ramp associated with Veteran's Park. One vegetated tidal wetland was identified north of the Washington Street Bridge. Two vegetated tidal wetlands were identified south of the bridge, on either side of the municipal boat ramp. The dominant species in the southern portion of vegetated tidal wetland north of the Washington Street Bridge is smooth cordgrass, with seaside goldenrod, saltmeadow grass, poison ivy and high tide bush also common. Groundsel tree (*Baccharis halimifolia*, FACW) is also present but not common. Common reed is present around the higher elevation fringe portion of this vegetated tidal wetland. Included in the northern part of this vegetated tidal wetland is a portion of the bulkhead in the marina where a narrow, broken strip of high tide bush and smooth cordgrass is present. South of the Washington Street Bridge, the vegetation includes smooth cordgrass, saltmeadow grass, saltgrass (*Distichlis spicata*, FACW), blackgrass (*Juncus gerardii*, OBL), seaside goldenrod, poison ivy and high tide bush. There is also a small stand of common reed present. Vegetation south of the municipal boat ramp includes smooth cordgrass, seaside goldenrod, blackgrass and some common reed. The soils in the wetlands and uplands in this quadrant are highly disturbed and are mapped by the NRCS as Udorthents-Urban land complex and Udorthents, smoothed. Mudflats are present in the southern portion of the quadrant north of the Washington Street

Bridge as well as south of the bridge. The uplands adjacent to the vegetated tidal wetlands adjacent to the municipal boat ramp consist of paved parking areas or mowed grass.

Manresa Island. Tidal wetlands are present in the Manresa Island northern parcel, Parcel 5/86/2. CTDOT OEP confirmed in a site walk conducted in March 2020 that there are no tidal wetlands in the proposed Staging and Storage Yard; however, tidal wetlands are in the southern parcel, Parcel 5/86/1, adjacent to the north side of the work area. Adjacent tidal marshes include low marsh vegetation consisting of smooth cordgrass (*Spartina alterniflora*) and high marsh vegetation consisting of salt hay (*Spartina patens*) and high tide bush (*Iva frutescens*), with a common reed (*Phragmites australis*) perimeter as the marsh slopes to the upland area.

4.2.2 Functions and Values

The following provides a description of the functions and values of the vegetated tidal wetland resources and the subtidal habitats of the Norwalk River. Smooth cordgrass-dominated salt marshes are one of the most valuable habitat types in the estuarine environment and perform many functions including fish, shellfish and wildlife habitat, sediment/toxicant retention, nutrient removal, shoreline stabilization and production export. Coastal salt marshes are one of the most productive ecosystems in the world. When smooth cordgrass decomposes, the resulting organic matter is fed upon by a myriad of small organisms that in turn support a broad food chain that, in turn again supports shellfish and finfish populations (Dreyer and Niering, 1995). Therefore, production export is a principal function performed by tidal marshes. The tidal wetlands and river in the study area provide fish and shellfish habitat evidenced by the presence of ribbed mussels (*Geukensia demissa*), American oyster (*Crassostrea virginica*) and hard-shelled clam (*Mercenaria mercenaria*). Fish species collected in the study area by Harbor Watch during their 2014 juvenile benthic marine trawling program include winter flounder (*Pseudopleuronectes americanus*), northern sea robin (*Prionotus carolinus*), cunner (*Tautogolabrus adspersus*), hogchoker (*Trinectes maculatus*) and northern pipefish (*Syngnathus fuscus*) (Harbor Watch, 2014). Additionally, schools of Atlantic menhaden (*Brevoortia tyrannus*) were observed in the river during the field investigation and local fisherman stated that they had caught striped bass (*Morone saxatilis*) in the study area as well. The mudflats that are adjacent to the vegetated wetlands as well as the open water areas in the river provide foraging habitat for a number of waterfowl, shore birds and long-legged waders. Great Blue Heron (*Ardea herodias*), Great Egret (*Ardea alba*) and Snowy Egret (*Egretta thula*) were observed foraging on the mud flats and unvegetated rocky shoreline while a Black-crowned Night-heron (*Nycticorax nycticorax*) was observed roosting in trees adjacent to the bridge in the Northeast Quadrant on more than one occasion. Double-crested Cormorant (*Phalacrocorax auritus*), Mallard (*Anas platyrhynchos*), Herring Gull (*Larus argentatus*), Ring-billed Gull (*Larus delawarensis*), Mute Swan (*Cygnus olor*) Osprey (*Pandion haliaetus*), and Common Tern (*Sterna hirundo*) were observed utilizing the open water areas of the river.

The root system and structure of the vegetation in the tidal wetlands can help to stabilize the shoreline as well as to retain sediments and toxicants. The City WWTP and local runoff are potential sources of nutrients in the river and the salt marsh vegetation can locally aid in nutrient removal. Although the tidal wetlands in the study area have the high potential to perform the functions discussed above most are relatively narrow fringes of vegetation along the river which somewhat limits their overall capacity to perform those functions when compared to wider, more extensive salt marshes. This is particularly true for the small, sparsely vegetated tidal wetlands that are located on the west side of the Norwalk River near the Walk Bridge.

The primary value provided by the tidal wetlands and river in the vicinity of the bridge is the opportunity for recreation. There are City parks on the east and west sides of the river in the vicinity of the bridge that provide public access for fishing, bird watching, walking, and boating. The Harbor Loop Trail that is adjacent to the river in the bridge's northeast quadrant also provides walking and bird watching opportunities for the public. Fishermen were observed along the shores of the bridge's northwest quadrant while rowers and recreational boats were observed on the river. Additionally, the Maritime Aquarium educational research vessel as well as the ferry boat for Sheffield Island are docked in the bridge's southwest quadrant, providing public access to these tidal wetlands.

4.2.4 Impacts to Wetlands

The project will result in permanent impacts to vegetated tidal wetlands at and in the vicinity of the bridge site. No wetlands will be impacted by the temporary Staging and Storage Yard at Manresa Island. Direct impacts to vegetated tidal wetlands at and in the vicinity of the bridge site will be unavoidable. The total amounts of impact also are provided on **Drawing SUM-2 in Attachment I** by construction site and impacts by construction activity are provided in **Question 2a**. Permanent impacts to vegetated tidal salt marsh wetland will result from fill material for new bridge piers and abutments, permanent excavation, installation of the bulkhead at 68 and 90 Water Street (Parcels 2/84/19 and 2/84/33), temporary construction trestle piles that are in place longer than 24 months, and shading from work platforms that are in place longer than 24 months.[1] Permanent impacts to vegetated tidal salt marsh wetland will require a 4:1 mitigation ratio. No temporary impacts to vegetated tidal wetlands will occur.

4.2.5 Compensatory Mitigation

Compensation for permanent impacts to the vegetated tidal wetlands and intertidal mudflats due to construction will be provided through mitigating tidal wetland areas within the intertidal zone. The loss of vegetated tidal wetlands and intertidal flats will be mitigated through treatment and removal of invasive common reed (*Phragmites australis*) in existing tidal wetlands, by restoration of degraded vegetated tidal wetlands dominated by *Phragmites*, and by restoration of a low-functioning intertidal flat previously impacted by riprap placement. The proposed compensatory mitigation strategies were developed by CTDOT OEP biologists through site visits, meetings, and correspondence with CTDEEP and USACE. Local stakeholder representatives from the City of Norwalk and the Maritime Aquarium of Norwalk had opportunities to review the mitigation plans.

Vegetated tidal wetland mitigation activities are described in **Section 6.1 of Part III, Question 2a.** Mitigation consists of four elements in six areas as follows:

- Invasive *Phragmites* treatment;
- Invasive *Phragmites* treatment with subsequent shrub planting;
- Tidal salt marsh restoration through invasive *Phragmites* removal, living shoreline riprap sill installation, grading and topsoil placement, salt marsh restoration through vegetation planting, and establishment of a northern diamondback terrapin (*Malaclemys terrapin terrapin*) habitat area in the buffer above the high tide line; and

[1]Permanent impacts include impacts due to construction of a new bulkhead, representing worst-case impacts to project resources.

- Excavation and removal of in-water rock riprap, living shoreline riprap sill installation from reused existing riprap, regrading and topsoil placement, and salt marsh restoration through raising the elevation and vegetation planting.

The proposed mitigation areas are along the Norwalk River, proximal to, but outside of the immediate vicinity of Walk Bridge.

The restored vegetated tidal wetland areas will be dominated by smooth cordgrass (*Spartina alterniflora*). This type of salt marsh is one of the most valuable habitat types in the estuarine environment and performs many functions including fish and shellfish habitat, wildlife habitat, sediment/toxicant retention, nutrient removal, shoreline stabilization and production export. The root system and structure of the vegetation in the tidal wetlands can help to stabilize the shoreline, as well as to retain sediments and toxicants. The City wastewater treatment plant (WWTP) and local runoff are potential sources of nutrients in the river and the salt marsh vegetation can locally aid in nutrient removal, thereby improving water quality.

Coastal salt marshes are one of the most productive ecosystems in the world. The decomposed organic matter of the salt marsh vegetation is fed upon by several small organisms that support a broad food chain, eventually supporting shellfish and finfish populations. Essential Fish Habitat (EFH) is designated for ten species in the area inclusive of the Walk Bridge site (and continuing further upstream). In addition to these ten species, additional species have designated EFH reaching the Stroffolino Bridge and continuing south to include Norwalk Harbor and Long Island Sound. Since this is a regulatory boundary rather than a physical barrier, it is likely that these species also use the adjacent area in the Walk Bridge vicinity at various stages of their life cycles.

4.3 Estuarine Embayments/Nearshore Waters

Located within the tidally influenced Norwalk River, the project is partially protected and maintains an open connection to the sea. The project site is also a small area within a much larger estuarine embayment, as shown in Figure 8 and Figure 9, and is defined as nearshore waters. There will be a net increase in available estuarine embayment and in available nearshore water benthic habitat following this project. Construction period impacts are anticipated from construction work platforms, marine enclosures, dredging/excavation along the bottom of the Norwalk River and channel; however, these activities will not adversely impact the overall estuarine environment/nearshore waters. Adverse construction impacts to water quality will be minimized to the maximum extent practicable by employing turbidity curtains and, in some cases, marine enclosures around the work areas prior to work start. Further, water quality will be monitored during active work in the waterway.

Based on subsurface investigations in the Norwalk River conducted in June 2018, the Norwalk River is identified as a preliminary Area of Environmental Concern (AOEC). The sediment contains Extractable Total Petroleum Hydrocarbons (ETPH), Semi-Volatile Organic Compounds (SVOCs), pesticides, and/or metals (arsenic and/or chromium) at concentrations exceeding the RSR criteria; and is therefore classified as contaminated material. Based on the *Norwalk Power Economic Impact Analysis Findings & Recommendations Report* (City of Norwalk and Manresa Association, 12/14/18), Long Island Sound sediment is determined to be an Area of Concern (AOC), an area where hazardous substances and/or hazardous substances (including petroleum) could have been disposed of or spilled and released to the environment, associated with the decommissioned NRG Energy Manresa Island Power Plant and the site's

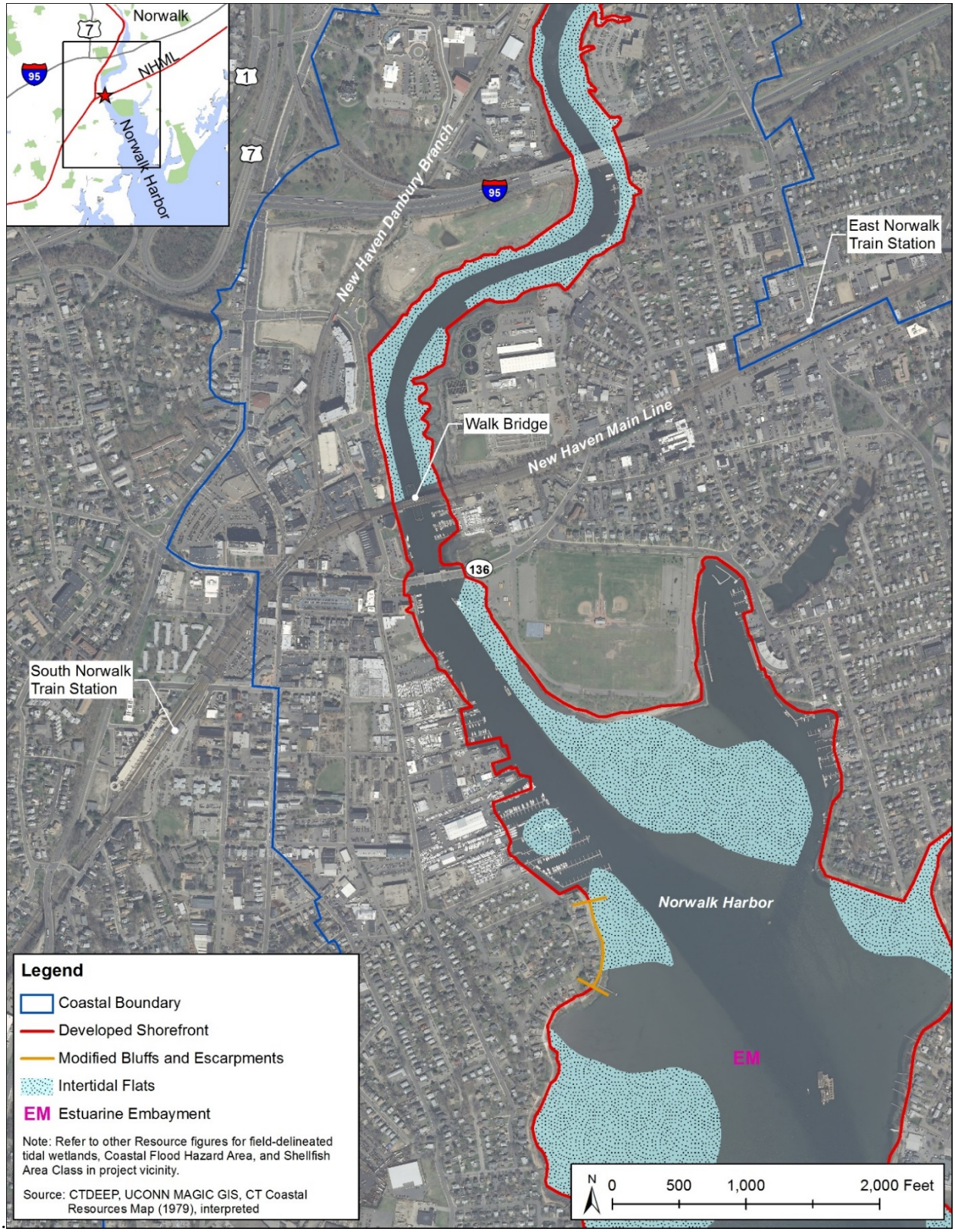

Figure 8- Coastal Resources in the Vicinity of Walk Bridge

Figure 9- Coastal Resources in the Vicinity of Manresa Island Staging and Storage Yard

previous identification as a large quantity generator of hazardous waste. The sediment contains TPH, polycyclic aromatic hydrocarbons (PAHs), and metals. Any sediment dredged from the Norwalk River at the bridge site, including Sites 1, 2, 3, 4, and/or 5, will therefore be handled as controlled material. No dredging will be required at Manresa Island, Site 10.

Sediment removed from the Norwalk River will be transported to the CTDOT-designated upland WSAs for testing and disposal per the contract specifications and permits. Dredged material will not be reused on the project site. For other excavation in the river (with the exception of the recently installed CP-243 Interlocking Project submarine cable removal, CA12), the top four feet of material excavated from the current top of river sediment will be transported to the WSAs, where the material will be tested and disposed of per the specifications. Material below the top four feet of excavation can be returned to the trench from where it came. Project-generated material at the WSAs will be managed in accordance with the General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer). Wastewater generated during dewatering activities will be managed in accordance with CTDEEP requirements. **Appendix A** provides further information about the management of project-generated material.

4.4 Coastal Hazard Areas

The project site is located within the tidal reach of the Norwalk River near the river's mouth into Long Island Sound. As such, the bridge is influenced by both riverine events and coastal storm surges. Based on the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) (July 8, 2013), Walk Bridge is located in Zone AE, defined as the 100-year floodplain or as areas subject to inundation by the 1-percent-annual-chance flood event, as shown in Figure 10. Walk Bridge is approximately 500 feet upstream of the Route 136 Bridge (Stroffolino Bridge); the boundary of Zone VE is just south of the Stroffolino Bridge and extends south to include the Norwalk Harbor at Manresa Island, as shown in Figure 11. Zone VE is defined as areas subject to inundation by the 1-percent-annual-chance flood event with additional hazards due to storm-induced velocity wave action. Upstream of Walk Bridge, the 100-year flood elevation is Elevation 10.0 feet (NAVD88). Immediately downstream of Walk Bridge, the 100-year flood elevation is Elevation 12.0 feet (NAVD88). East of the river, immediately downstream of Walk Bridge, the 100-year flood elevation is Elevation 13.0 feet (NAVD88). Downstream of the Stroffolino Bridge, the 100-year flood elevation is Elevation 14.0 feet (NAVD88). At Manresa Island, the 100-year flood elevation varies from Elevation 13.0 to 17.0 feet (NAVD88). For reference, the elevation of Walk Bridge when closed (at its lowest point) is approximately 18.0+/- feet (NAVD88).

The replacement of Walk Bridge within the 100-year and 500-year floodplains will not result in any adverse impacts to the floodplains, nor will it alter the hydraulic and erosive characteristics of the river within the project area. Hydraulic models of the bridge site in both the existing and proposed conditions have been performed to verify that replacement of the existing bridge will not adversely impact the hydraulic characteristics of the Norwalk River at and in the vicinity of the bridge site, including water surface elevations and flood velocities. The results of the models indicate that the 100-year water surface elevations will be reduced at and in the vicinity of the bridge site, except at the downstream face of Walk Bridge where water surfaces will increase by 0.01 feet. Due to the removal of the large existing pivot pier, the 100-year flood velocities will decrease between 0.02 and 0.38 feet/second through the project area. Therefore, the project will reduce the risk to future damage including property and loss of human life.

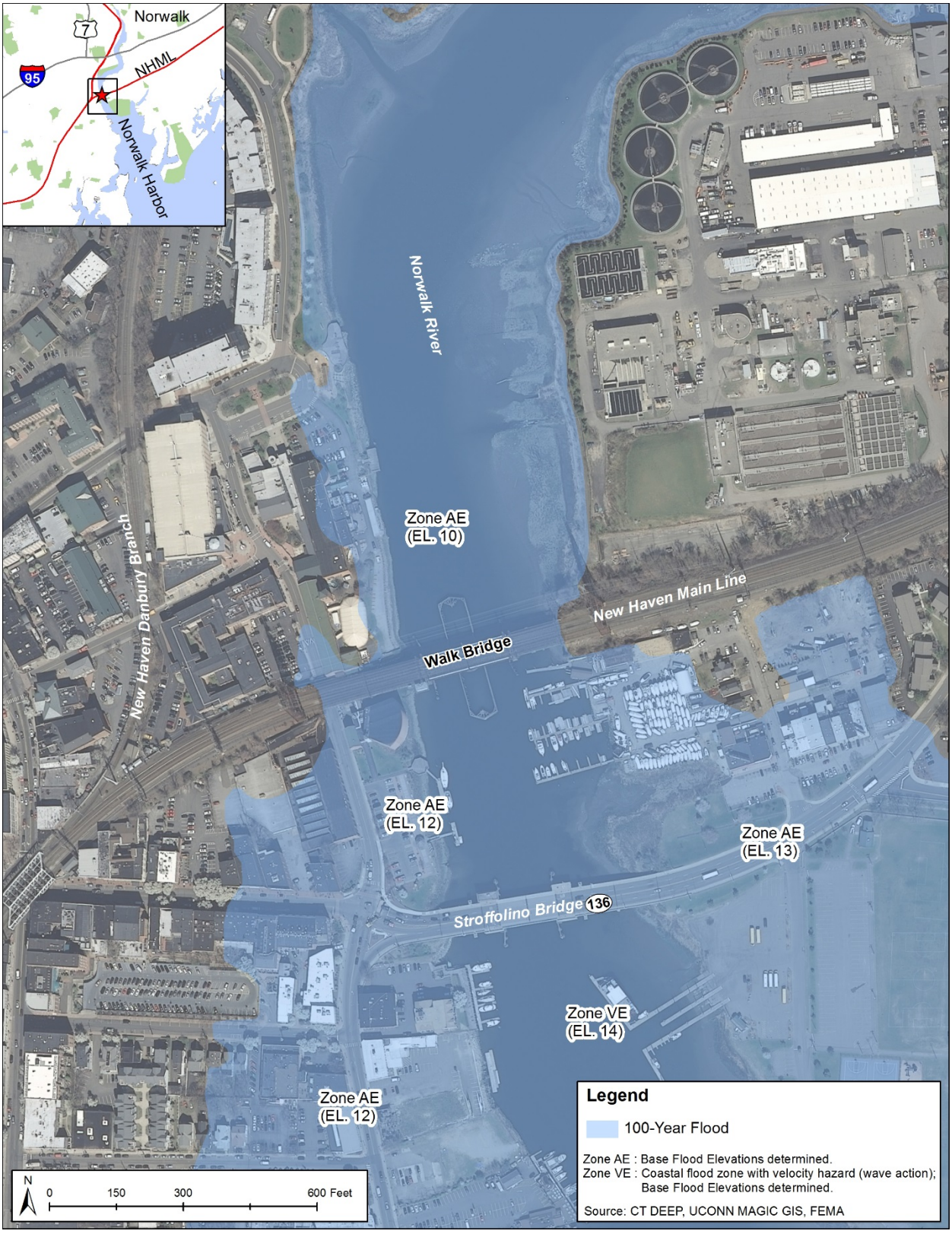

Figure 10 – Coastal Flood Hazard Areas in the Vicinity of Walk Bridge

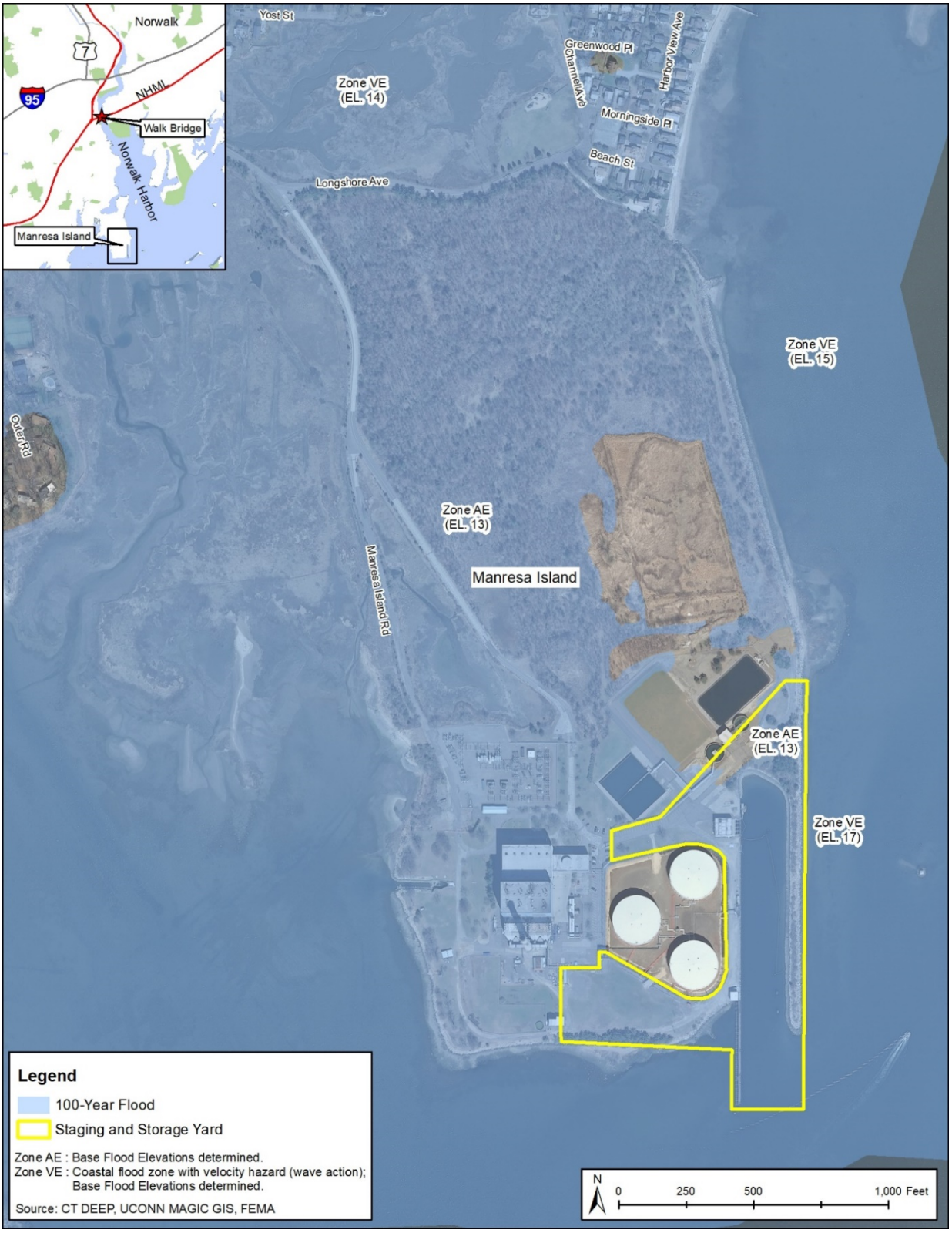

Figure 11 – Coastal Flood Hazard Areas in the Vicinity of Manresa Island Staging and Storage Yard

During construction, provisions will be made to protect the 100- and 500-year floodplains. Work in the regulated floodplains of the Norwalk River and Norwalk Harbor includes the storage of construction materials (railroad ties, rails, timber, structural steel, etc.); storage of fuels and other construction-related hazardous or flammable materials (waste oil, oxygen/acetylene, etc.); storage of construction equipment and vehicles; removal of existing buildings at the temporary staging and material storage yards; and hazardous or flammable materials (waste oil, oxygen/acetylene, etc.); storage of construction equipment and vehicles; removal of existing buildings at the temporary staging and material storage yards; and transfer, staging, and temporary storage of components from the existing bridge, including stone masonry, concrete debris, timber pilings, structural steel members, and track and catenary system components, prior to management at CTDOT-designated upland WSAs and transport off-site for disposal. Conex boxes (shipping containers) will be used on the temporary staging and material storage yards for secure storage and to provide weather protection. Critical activities, such as fuels and other construction-related hazardous or flammable materials, will be stored above the 500-year floodplain where practicable, or stored within appropriate flood-proof containers. At the temporary staging and material storage yards, where fuel and paint supplies will be located below the 500-year floodplain, they will be stored within double-walled and flood-proof containers. The size of containers will be limited to less than 1,300 gallons. In the event of a forecasted storm, containerized materials will be immediately moved off-site.

Temporary fill will be placed in the construction staging parcels. At the construction staging parcels where buildings will be removed, the areas will be stabilized with 1-1/4-inch processed aggregate to avoid increasing impervious cover on the site while providing a stable working surface. To provide a layer of separation from two Areas of Concern (AOCs) at the Manresa Island Staging and Storage Yard (a former ash disposal area and a former coal storage area), the ground surface will be covered with 6-inches of crushed stone over geotextile fabric.

Hydraulic modeling is not required for the project's construction staging and storage yards. The parcels at the bridge site are within the regulatory FEMA floodplain, but are located within the tidal floodplain with no riverine (fluvial) impacts. At the construction staging and storage yards, the temporary fill will be placed only in the tidal floodplain and not in the fluvial floodplain. Further, the volume of fill at the sites is not substantial enough to result in adverse impacts to the depth, velocity, or flow patterns during a storm surge event. The use of these sites as the project's temporary staging and storage yards will not result in any adverse impacts to the 100-year or 500-year floodplains, nor will it alter the hydraulic and erosive characteristics of the Norwalk River at and within proximity to the bridge site or Manresa Island.

The Flood Management Certification (FMC) application for this project, filed with CTDEEP on August 15, 2019, with revisions submitted on September 4, 2020, March 1, 2021, and May 2021, contains additional detail.

4.5 Developed Shorefront

The surrounding riverbanks in the vicinity of Walk Bridge and the Manresa Island Staging and Storage Yard are defined as developed shorefront, as depicted in Figure 8 and Figure 9. During construction at the bridge site, this project will include unavoidable construction phase shorefront disturbances and limitations to water access, primarily due to the use of construction work platforms throughout the duration of the project and the need for construction staging, storage areas, and access at and near the bridge site. At the Manresa Island Staging and Storage Yard, use of the developed shorefront will include berthing of

construction barges for assembly of the replacement bridge lift spans and transfer of existing bridge components for staging and temporary storage. At the completion of the project, the construction sites will be restored to their pre-construction conditions (Parcels 2/19/1, 2/19/3,3/2/3,3/2/6, 5/86/1); stabilized with seed and mulch for erosion control (Parcels 2/19/2 and 3/1/25); or improved (Parcels 3/2/6, 3/2/3, 2/84/19, 2/84/33).

The Walk Bridge Replacment Project will improve the Norwalk River's developed shorefront. A new waterside pedestrian/bicycle path will be constructed on the east bank of the Norwalk River (Parcels 3/2/6 and 3/2/3), connecting to the Norwalk River Valley Trail. The replacement of the existing docks for the Sheffield Island Lighthouse Ferry and the Maritime Aquarium's research vessel (waterward of 4 North Water Street [Parcel 2/19/1)]), will result in a new single, longer dock and accessible[2] gangway facility (in addition to the two relocated existing non-accessible gangways). The permanent dock reconfiguration will promote operational flexibility and improve waterfront facilities for these operators, and the accessible gangway will enhance this water-dependent use in downtown Norwalk. Additionally, the removal of derelict piles and docks waterward of the Marine Staging Yard (Parcels 2/84/19 and 2/84/33) will improve the waterfront and developed shorefront in Norwalk.

For those parcels with waterfront access that were acquired for project construction, upon construction completion, CTDOT will market the excess property indicating the highest priority and preference for water-dependent use of the site. Regarding the sale of the respective properties, State agencies are given first right of refusal. Thereafter, properties will be offered for sale by bid. Once the purchase price has been established, the City of Norwalk will be given the right of first refusal before they are offered to the public. Non-conforming parcels will only be offered to the abutting property owner(s). The development of waterfront parcels with water-dependent uses is a priority use per the Norwalk Harbor Plan and the Connecticut Coastal Management Act.

4.6 Shellfish Concentration Areas

The Norwalk River extending south to the Norwalk Outer Harbor is a State-designated natural shellfish bed. Shellfish of economic importance are not expected to occur along the bottom of the Norwalk River/Federal Navigation Channel in the soft unconsolidated sediment, however, shellfish resources do occur in the intertidal and subtidal zones adjacent to the channel. Spatial extent and distribution of the species present in the system change with substrate conditions, which are also variable. Ribbed mussels (*Geukensia demissa*) were observed in the upper intertidal zones growing in association with stands of *Spartina alterniflora* or as separate shell beds. Lower intertidal areas contain soft-shell clams *(Mya arenaria*) and hard-shell clams (quahog) (*Mercenaria mercenaria*). Eastern oyster (*Crassostrea virginica*) was observed growing on boulders in the intertidal zone and on the stone bridge abutments and piers of the Walk Bridge. Despite the observed presence of shellfish in the vicinity of the project, the Norwalk River estuary has been evaluated for indicator bacteria by CTDEEP and segments of it, including the location of the project site, are deemed to be impaired for shellfishing practices per the State total maximum daily load (TMDL) for indicator bacteria. Shellfish are therefore prohibited from being harvested at the project sites, as indicated in Figure 12 and Figure 13.

Because shellfishing currently is prohibited in the Norwalk River and Harbor, no adverse impacts to harvestable shellfish will result from the project. Additionally, any impact to natural shellfish beds in the area of Walk Bridge will be minimized as follows: dredging/excavation within a turbidity curtain will

[2] Accessible refers to compliance with The Americans with Disabilities Act.

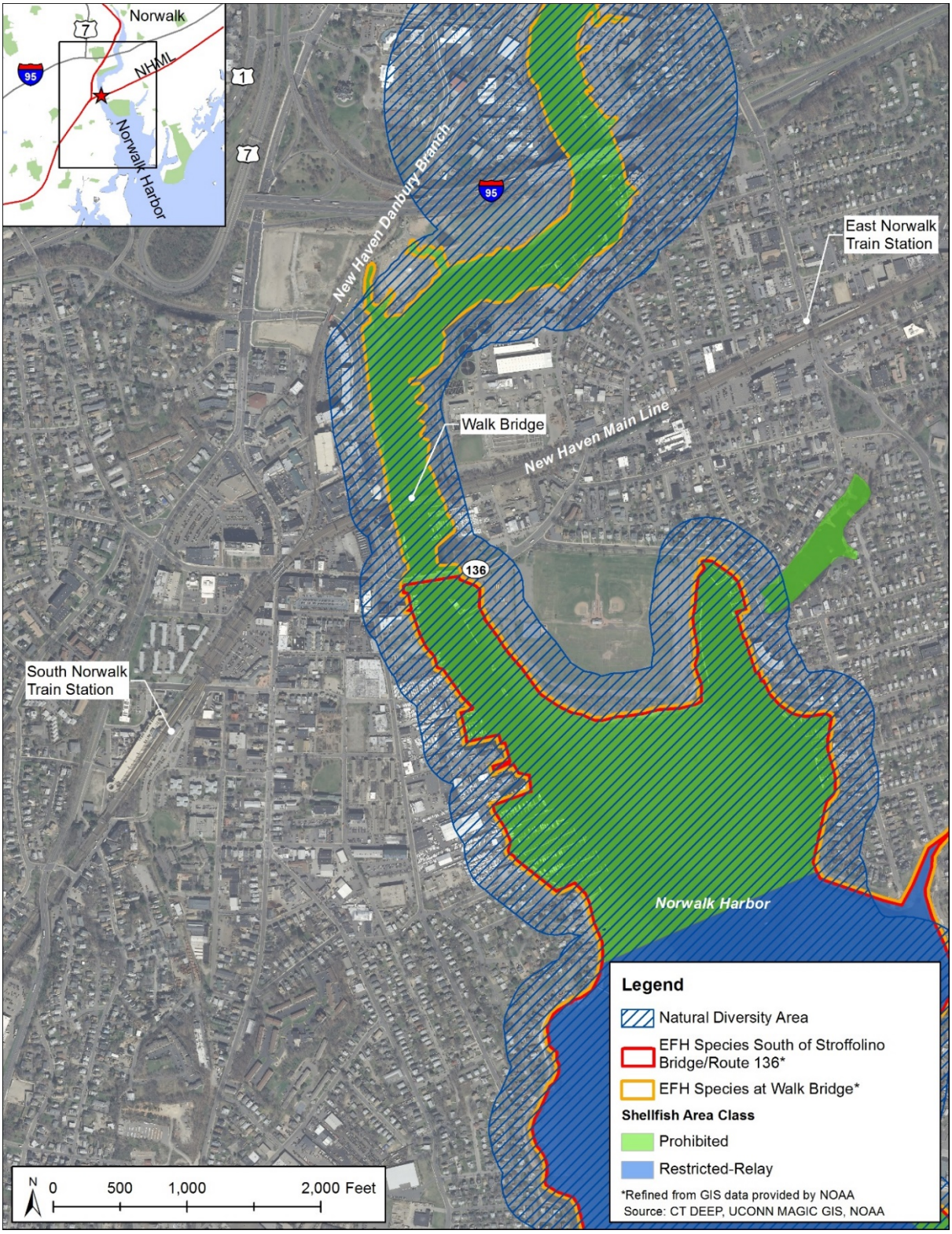

Figure 12 - Aquatic Resources in the Vicinity of Walk Bridge

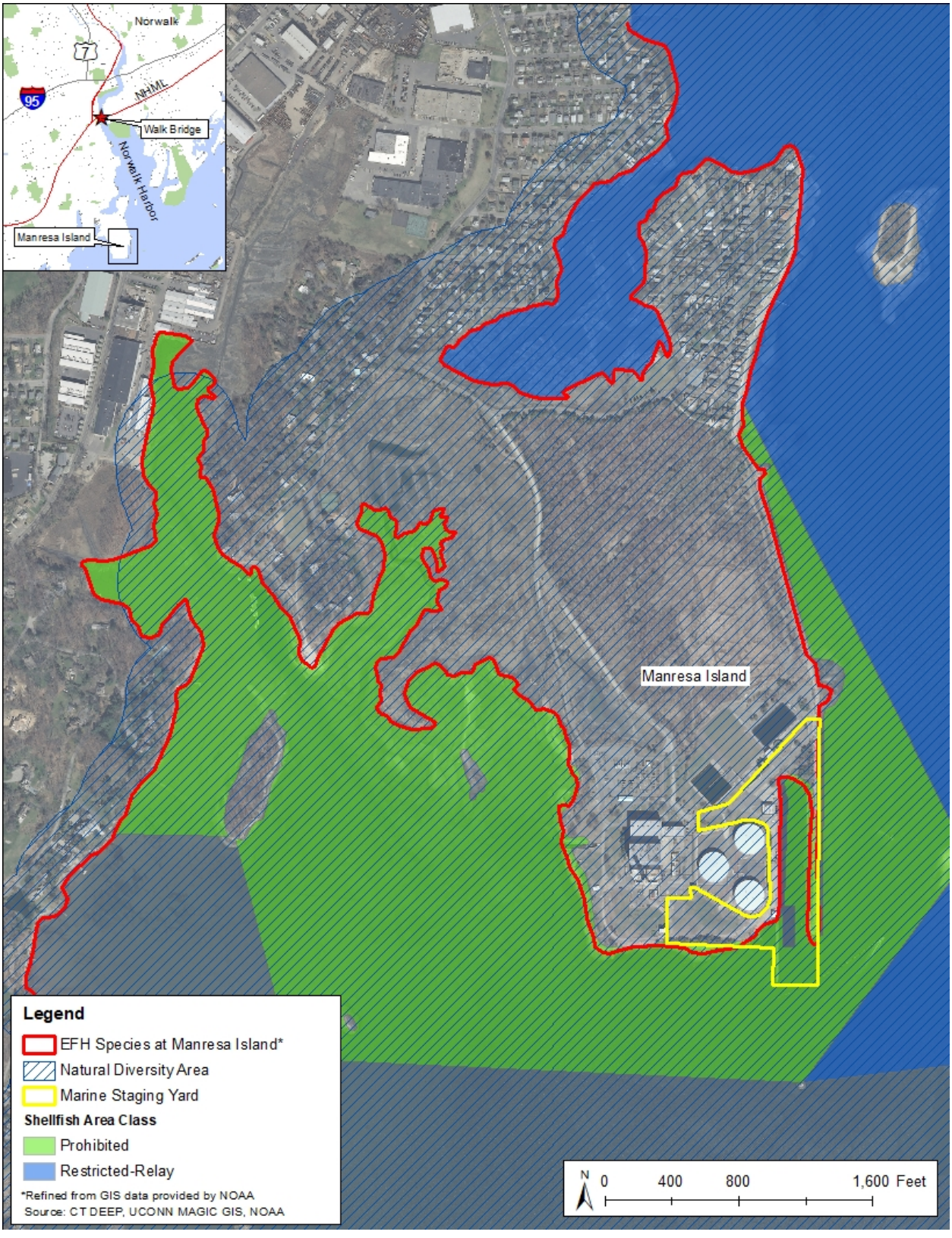

Figure 13 - Aquatic Resources in the Vicinity of Manresa Island Staging and Storage Yard

occur between December 1st and January 31st; 2) dredging/excavation outside of the December – January window will occur within a marine enclosure enclosed by a turbidity curtain; and 3) no unconfined turbidity-producing activities will be allowed between February 1st and September 30th. As previously cited, no dredging will occur at Site 10. Collectively, these measures will minimize any potential for impacts to nearby and downstream resources.

4.7 Aquatic and Terrestrial Resources and Habitat

Several species of plants, fish, birds, invertebrates, and mammals use the Norwalk River for food, shelter, and nursery grounds. Field investigations have documented the presence of schools of Atlantic menhaden (*Brevoortia tyrannus*), and local fisherman have stated that they had caught striped bass (*Morone saxatilis*) in the vicinity as well. The Norwalk River is also a known migratory route for diadromous species such alewife (*Alosa pseudoharengus*), blueback herring (*Alosa aestivalis*), and the American eel (*Anguilla rostrata*). The Norwalk Harbor Watch program's latest data from 2014 trawling of juvenile benthic marine fish species produced collections of winter flounder (*Pseudopleuronectes americanus*), northern sea robin (*Prionotus carolinus*), cunner (*Tautogolabrus adspersus*), hogchoker (*Trinectes maculatus*) and northern pipefish (*Syngnathus fuscus*) within the project site vicinity. Per the National Oceanic and Atmospheric Administration (NOAA) Essential Fish Habitat (EFH) mapper (April 2020), EFH for eighteen species exists in the project area, including Walk Bridge, the Norwalk River, Norwalk Inner Harbor, Norwalk Outer Harbor, and western Long Island Sound to Manresa Island. The EFH includes varying life stages for each of the following species: winter skate (*Leucoraja ocellata*), little skate (*Leucoraja erinacea*), summer flounder (*Paralichthys dentatus*), black sea bass (*Centropristis striata*), scup (*Stenotomus chrysops*), longfin inshore squid (*Loligo pealeii*), Atlantic mackerel (*Scomber scombrus*), bluefish (*Pomatomus saltatrix*), Atlantic butterfish (*Peprilus triacanthus*), Atlantic herring (*Clupea harengus*), pollock (*Pollachius virens*), red hake (*Urophycis chuss*), winter flounder (*Pseudopleuronectes americanus*), windowpane flounder (*Scophthalmus aquosus*), ocean pout (*Macrozoarces americanus*), silver hake (*Merluccius bilineris*), sand tiger shark (*Carcharias taurus*), and smoothhound shark complex (Atlantic stock) (as depicted in Figure 10 and Figure 11).

According to the December 2020 CTDEEP Natural Diversity Database (NDDB) map, the Walk Bridge project, inclusive of the wetland mitigation areas at Oyster Shell Park and extending south to the Manresa Island Staging and Storage Yard, is designated as state and federal species habitat. The northern parcel of Manresa Island (Parcel 5/86/2), generally west of Manresa Island Road, is shown as critical habitat on the December 2020 NDDB Areas Map for Norwalk. The CTDEEP NDDB critical habitat designation is for the Coastal Marine Community which will not be impacted at any stage of this project. In its *Northeast Coastal Areas Study: Significant Coastal Habitats of Southern New England and Portions of Long Island, New York*, the USFWS lists the Norwalk Islands and Tidal Wetlands Complex (Site 20), which includes Manresa Island extending north along the mainstem channel of the Norwalk River to the vicinity of the Silvermine River, as a significant and unique coastal habitat (1991). Potential impacts to wildlife resources and habitat are described in Section 4.9.

4.8 Benthic (bottom) Habitat

The waters in and around the project site, consisting of Norwalk River, the Norwalk Inner Harbor, and the Norwalk Outer Harbor, serve as habitat for multiple benthic species. The Norwalk Harbor Watch program inventoried crustacean collections and found the presence of common mud snail (*Ilyanassa obsoleta*), eastern mud snail (*Ilyanassa obsolete*), black fingered mud crab (*Panopeus herbstii*), blue crab (*Callinectes*

sapidus), common slipper shell (*Crepidula fornicata*), Atlantic oyster drill (*Urosalpinx cinerea*), shore shrimp (*Palaemonetes spp.*), and sand shrimp (*Crangon septemspinosa*). In the immediate vicinity of the Walk Bridge, field observations of ribbed mussels, eastern oyster, and hard-shelled clam provided direct evidence of benthic habitat utilization by bivalves. Other shellfish expected to occur within the river channel include blue mussel (*Mytilus edulis*) and softshell clam. Various other aquatic invertebrate species observed or expected to be present in the Norwalk River proximate to the project site include various amphipods, isopods, fiddler crabs (*Uca spp.*), shore crabs, pea crabs (*Pinnotheres* [*Tumidotheres*] *maculatus*), spider crabs (*Libinia spp.*), tunicates, barnacles (*Balanus spp.*), jellyfish, and bryozoans.

Marine algae, commonly called seaweeds, are rootless macroscopic benthic plants found from intertidal to subtidal regions of coastal environments. The more common seaweeds likely found in the project vicinity include green algae (phyla *Chlorophyta*) and brown algae (phyla *Phaeophyta*), both of which occupy the shallower areas. Observed at the project area were sea lettuce (*Ulva spp.*), as well as rock weed and knotted wrack (*Ascophyllum spp.*), although several other species are likely present. The seaweeds are typically found in association with boulders or larger cobbles that may or may not be embedded in the sediment, while sea lettuce predominates in unconsolidated sediment areas between the boulder and cobble. Many of the seaweeds are only visible during limited seasonal conditions.

Based on a research and field review of the Norwalk River and surrounding waters in the vicinity of Walk Bridge, CTDOT determined that no populations of submerged aquatic vegetation (SAV), such as common eelgrass (*Zostera marina*), widgeongrass (*Ruppia maritima*), or any other non-algae submerged aquatic plant species, exist in and around the Walk Bridge.[3] The CTDEEP Environmental Conditions Online resource map viewer was accessed to assess whether any eelgrass beds were identified in or around Manresa Island. This online database depicts eelgrass beds identified during the 2002, 2006, 2009, 2012, and 2017 surveys. No eelgrass beds were identified at the Manresa site. Therefore, no impacts to SAV species are anticipated to occur from the construction of the replacement bridge. Potential impacts to benthic (bottom) habitat are described in Section 4.9.

4.9 Potential Project Impacts and Avoidance and Mitigation Measures

4.9.1 Impacts to Benthic Environment

Direct removal of the benthic substrate at the bridge site, via dredging/excavation and drilled shaft/center support structure construction for the two lift piers, will be necessary. The resulting disturbance footprints will be small when compared to the total area of existing Norwalk River benthic habitat, which has been subject to larger scale disturbances in the past such as the U.S. Army Corps of Engineers' (USACE's) maintenance dredging conducted in 2014 for the portion of the Norwalk River federal channel just south of Walk Bridge and extending south to the Norwalk Harbor. Adverse impacts to benthic invertebrate communities and EFH from this project are therefore anticipated to be minor. These minor adverse permanent short-term impacts include the removal of benthic species inhabiting the footprints, as they will be excavated along with river bottom sediments and removed from the site for upland disposal. However, after dredging/excavation activities are completed, substrate of similar composition will be placed back. This will provide the opportunity for similar benthic species to return and recolonize the disturbance footprint.

[3] Stanton, Paul, Fitzgerald & Halliday, Inc. Summary of Research and Findings Regarding Sub-Aquatic Vegetation in the Norwalk River. June 2, 2015.

Recolonization of the disturbance footprints by algae and benthic organisms is expected to begin almost immediately following construction activities, especially given the proximity to colonizing biota. Larvae and other motile life stages and motile species will find the substrate available for settlement. Additionally, colonizing filter feeders will not be impeded from normal functioning and will flourish. Recruitment rates by algae and benthic fauna are tied to light penetration into the water column, water chemistry and temperature, substrate characteristics, and other factors such as wave or tidal energy, and bathymetry. The unconfined dredging activities will be scheduled to conclude before spring, allowing recolonization to coincide with steadily increasing water temperatures and light penetration with the onset of the spring and summer seasons.

4.9.2 Impacts to Indigenous Aquatic life, Including Shellfish and Finfish

Consultation with CTDEEP Fisheries Division – Marine Fisheries Program indicates that anadromous fish migration periods exist in the Norwalk River/Harbor from April 1st through June 30th, and the most sensitive period for winter flounder reproduction in the Norwalk River/Harbor is from February 1st through May 15th. Similarly, coordination with the NOAA/National Marine Fisheries Service/Greater Atlantic Regional Fisheries Office (NMFS/GARFO) indicates that from April through November, there is potential for Section 7 Endangered Species Act (ESA)-listed species (Atlantic sturgeon and shortnose sturgeon) to occur within the project action area, which includes construction barge traffic from vessel mooring locations in outer Norwalk Harbor (proximate to and south of Manresa Island) north on the Norwalk River to approximately 1.3 miles north of the bridge site.

Overall, minor adverse short-term impacts are anticipated to indigenous fish species during periods of active construction. Fish will be hindered from using habitat in the project area when barges and other construction equipment are actively excavating/dredging, pile driving/extracting, and/or shaft and micro pile drilling. Short term conditions potentially affecting fish include increased turbidity in the water column (which will be limited or controlled with the installation of turbidity curtains, marine enclosures, and/or unconfined during the months of December and January) and increased sound pressure levels from underwater construction activity.

Impacts from underwater construction noise have been documented through consultation with NOAA/NMFS for the protection of EFH and in the NOAA/NMFS Section 7 Informal Consultation (**Attachments M1 and M2**). The noise assessment considered underwater sound pressure levels from pile driving and extraction; clamshell and backhoe dredging/excavation; shaft and micro pile drilling; use of grinders, impact guns, jackhammers/rock breakers; from moving barges, as well as generators and compressors used on barges. As indicated in **Part III, Question 2b**, a test pile program was planned and executed for the project. As part of the test pile program, noise and vibration levels were measured in the water and assessed for impacts to fish. Based on the results of the hydro acoustic monitoring, it was determined that the use of the vibratory hammer did not generate significantly higher noise than background. For the use of impact hammers only, it was determined that the physiological threshold levels have been exceeded for the four turtle species of interest, and that the cumulative threshold levels have been exceeded for the sturgeon species. Per agreement with NOAA/NMFS/GARFO, impacts associated with underwater noise will be mitigated for implementing soft start protocols (as indicated in **Part III, Question 1**) for impact pile driving and vibratory pile installation activities that are conducted outside the November 1st through March 15th timeframe. Per guidance from CTDEEP Marine Fisheries Program, drilling operations within caissons and behind a marine enclosure are not subject to these restrictions (**Attachment M3**).

Coordination with NOAA/NMFS/GARFO/Habitat and Ecosystem Services Division (HESD) includes a recommendation for an unconfined dredging window behind turbidity curtain of December 1st through January 31st to minimize adverse impacts to EFH and Section 7 ESA-listed species. This construction window is aligned with the aforementioned CTDEEP Marine Fisheries Program time of year restriction. Additionally, in compliance with NOAA/NMFS/GARFO requirements, no unconfined in-water silt producing activities will be conducted from February 1st through September 30th, of any calendar year, to protect winter flounder sensitive life history stage EFH, diadromous fish passage, and shellfish resources (**Attachment M1**). Note that per agreement with NOAA/NMFS/GARFO, pile driving is not considered to be silt-producing work. Additionally, per agreement, turbidity generated by activities within marine enclosures will not affect the river outside the marine enclosure, and therefore activities within marine enclosures are not bound by the time of year restriction of silt producing activities.

Coordination with NOAA/NMFS/GARFO identified that shortnose sturgeon (*Acipenser brevirostrum*) and Atlantic sturgeon (*Acipenser oxyrinchus oxyrinchus*) have the potential to occur in the Norwalk River from April to November. Shortnose sturgeon and the New York Bight, Chesapeake Bay, South Atlantic, and Carolina distinct population segments (DPSs) of Atlantic sturgeon are listed as federally endangered, and the Gulf of Maine DPS of Atlantic sturgeon is listed as federally threatened. CTDOT has consulted with NOAA/NMFS/GARFO/Protected Resources Division (PRD) under Section 7 of the ESA. **Attachments M1 and M2** include correspondence from NOAA/NMFS/GARFO HESD and PRD concurring that the project is not likely to adversely affect any NMFS designated habitat and/or ESA-listed species in the project action area. Coordination includes initial concurrence determinations (July 17, 2018) and recommendations (August 30, 2018), and verification of findings due to design refinements with the potential to impact ESA-listed species and/or critical habitat (August 1, 2019, August 20, 2019, June 18, 2020, and January 8, 2021).

As a further protection of aquatic resources, CTDOT will conduct water quality monitoring through the duration of in-water project construction activities; water quality monitoring details are provided in **Part III, Question 2b**. **Part III, Question 1** lists the environmental protection measures to be implemented for the project, including time of year restrictions.

4.9.3 Impacts to Terrestrial Resources and Habitats

Attachment C and **Attachment M5** contain the May 16, 2021 response from CTDEEP NDDB for the project. CTDEEP NDDB has records for State Threatened *Falco peregrinus* (Peregrine falcon) and State Special Concern *Malaclemys t. terrapin* (Northern diamondback terrapin) from the vicinity of this project, including the Walk Bridge and Manresa Island sites. The State Threatened peregrine falcon has been known to nest up on High Tower 529 in South Norwalk, however, no confirmed nesting by the peregrine falcon has occurred since 2015 in the immediate vicinity of Walk Bridge. CTDOT has developed protocols [best management practices (BMPs)] for protection of the peregrine falcon during construction activities. Should the species be observed in the direct work area, CTDOT will implement its BMPs for protection of the peregrine falcon, including the stipulation that no work (including construction and/or inspection activities) will occur within 400 feet of an active nest between April 1st and July 31st.[4]

A field investigation of the Manresa site conducted by CTDOT in March 2020 revealed a peregrine falcon pair proximate to the Staging and Storage Yard, and up to three potentially active osprey (*Pandion*

[4] This BMP is included in Article 1.10.03 of Section 1.10 Environmental Compliance of CM/GC Division 1 – General Requirements and Covenants, revised 4-13-2020.

haliaetus) nests located within/adjacent to the yard which could be affected by project activities. Additionally, activities at the Manresa Island Staging and Storage Yard have the potential to intersect nesting habitat areas for the Northern diamondback terrapin via the site access roads, which are in close proximity to the turtles' habitat during breeding season.

Per the NDDB response, CTDEEP concurred with CTDOT's use of its BMPs for protecting the peregrine falcon and the Northern diamondback terrapin (included in **Attachment C**) as a means to lessen adverse impact on identified species.

Due to the presence of identified species on Manresa Island, CTDOT re-initiated consultation with CTDEEP Wildlife Division to implement protection strategies. Mitigative measures include: for the Northern diamondback terrapin, implementing speed restrictions along the access roads and educating personnel on site regarding the possible occurrence of the Northern diamondback terrapin; and for the osprey, starting use of the staging and storage yard outside the window of April 15th through July 31st to allow for nesting ospreys to acclimate to project activity within their nesting areas. These TOY restrictions and other BMPs will be incorporated into contract specifications. **Attachment M3** includes correspondence from CTDEEP Wildlife Division.

The project was submitted to the United States Fish & Wildlife Service (USFWS) under the Final 4(d) Rule streamlined consultation process for the Northern long-eared bat (*Myotis septentrionalis*). The USFWS determined that the project is consistent with the activities analyzed in the USFWS' January 5, 2016 Programmatic Biological Opinion on the Final 4(d) Rule for the Northern long-eared Bat and Activities Excepted from Take Prohibitions. On behalf of FTA, CTDOT OEP biologists have made a no effect determination for the threatened red knot (*Calidris canutus rufa*) and the endangered roseate tern (*Sterna dougallii dougallii*) based on the most current data from CTDEEP and a no suitable habitat determination. Construction will occur from barges located within the river, from work platforms above the river, from the railroad tracks, or from within the right-of-way. **Attachment M4** includes correspondence from USFWS.

Walk Bridge Replacement Project Bridge Number 04288R
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Part III: Project Information
(continued)
Questions 5 and 6

5. Identify whether the proposed activities will impact the following categories. If so, describe the expected impact, adding addenda as necessary as Attachment M.

5.1 Use and Development of Adjoining Uplands

The project will have minor impacts on adjoining upland communities/habitat. The minor impacts that will occur at the bridge site are associated largely with the loss of a narrow, ruderal upland habitat patch, which contains a high composition of invasive plant species, that has developed along the railway side slopes.

The project will not impact native upland soils or other valued surficial or bedrock geologic resources. The expansion of the bridge approach on the east side of the river may necessitate the import of suitable backfill material that will replace existing urban soils.

Existing upland vegetation will be lost due to clearing and grubbing during construction work along both bridge approaches. The entire area within the limit of disturbance will be cleared, resulting in the removal of existing vegetation and stumps. This removal is considered a permanent impact (i.e., loss of woody plant coverage within the project area). Although the existing trees and shrubs will be permanently removed, this is not anticipated to be a significant negative ecological impact due to the limited extent of the trees being removed, the largely non-native community composition, and the poor quality of the habitat affected (largely ruderal habitat that grew atop a filled slope).

Loss of herbaceous coverage will be temporary, since upon completion of the bridge approach widening construction activity, all exposed bare soil areas will be stabilized via re-seeding. Soil stabilization within the project area will be conducted as required to protect the water quality of the Norwalk River. Approved seed mixes for coastal locations will be used to return herbaceous cover to areas of disturbed soil. Invasive species control/removal will be provided as needed during the site stabilization.

5.2 Use and Development of Adjoining Lands and Properties

The project will require the use of lands and properties adjoining the project site, along the Norwalk River, and along the railroad ROW or the construction and operation of the replacement bridge, as shown in Figures 1, 2, and 3. The parcels will be used for temporary storage of construction equipment and supplies, assembly of large components of the new bridge and staging of equipment, storage of components of the dismantled existing bridge, access to the Norwalk River and streets for transport of equipment and materials, access to the railroad ROW, dredged/excavated sediment initial off-loading and transfer, access to the bridge for future maintenance, and to accommodate project designs and bridge operations.

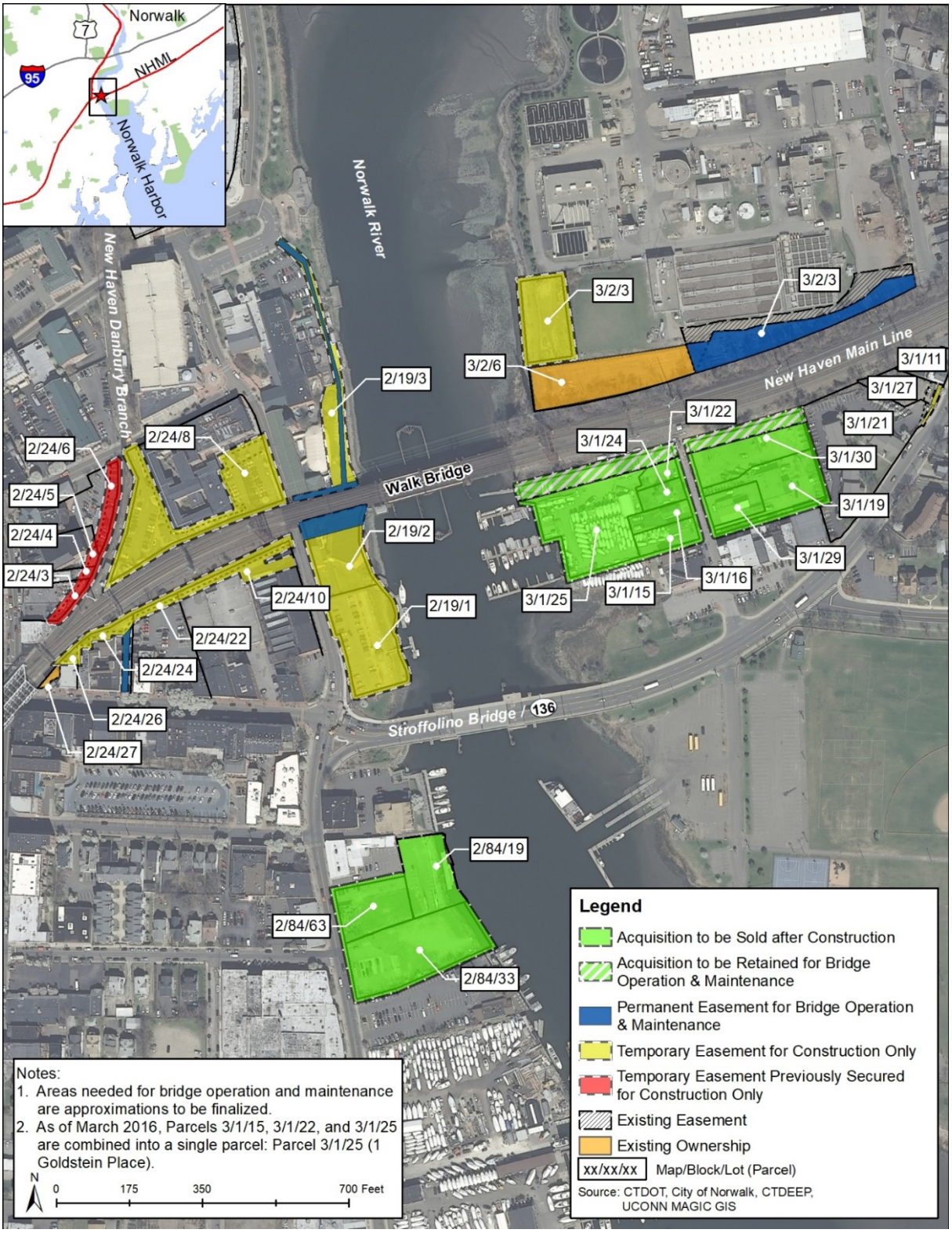

Figure 1 – Proposed Parcel Use in the Vicinity of Walk Bridge, 1 of 2

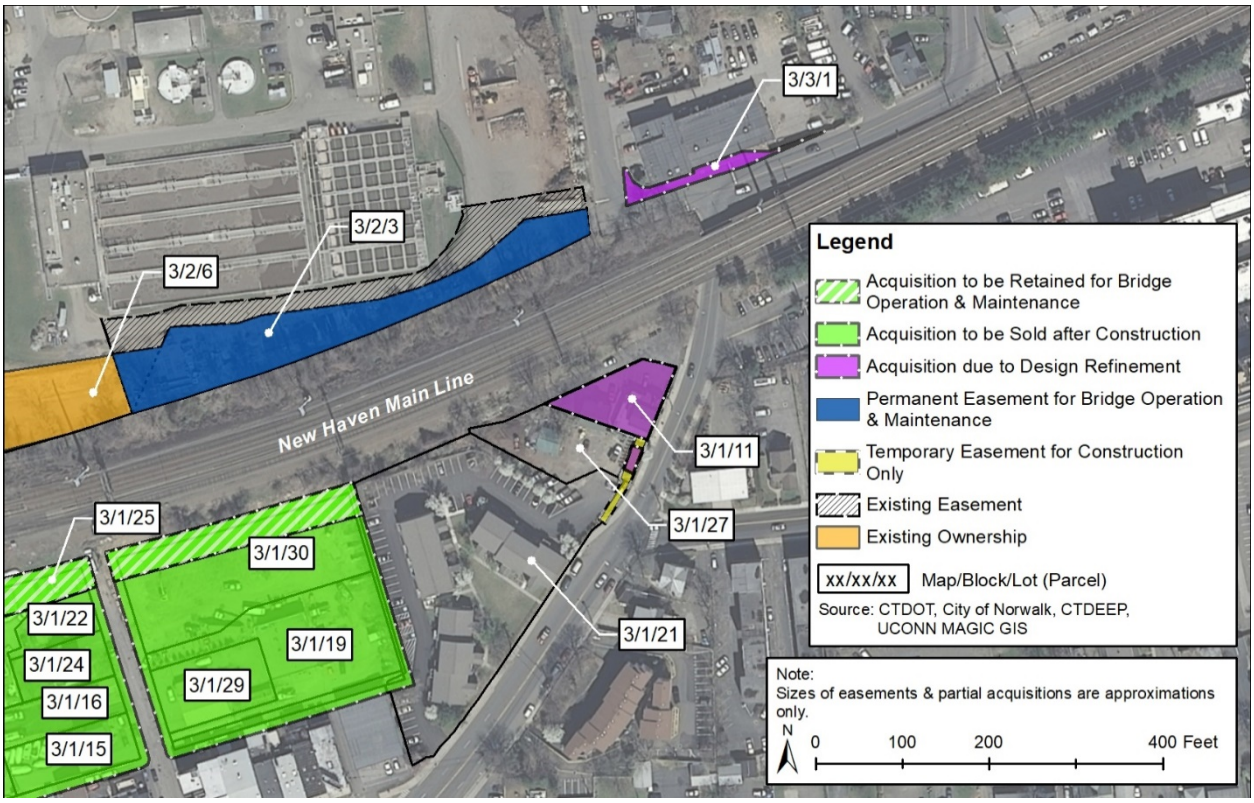

Figure 2 – Proposed Parcel Use in the Vicinity of Walk Bridge, 2 of 2

Figure 3 – Proposed Parcel Use at Manresa Island

CTDOT is acquiring parcels through full and partial parcel acquisitions and full or partial parcel construction easements. As noted in **Part III, Question 2a**, use of some construction parcels will require structure demolitions.

In the case of the parcels immediately adjacent to the bridge in the four quadrants of the bridge, CTDOT will need to maintain access to the bridge for future operations and maintenance (Figure 1). On the western riverbank, CTDOT will retain permanent easements of approximately 2,200 sf on Parcel 2/19/3 and approximately 12,000 sf on Parcel 2/19/2. On the eastern riverbank, permanent access to the bridge will be required from Parcel 3/2/6, which is already owned by CTDOT, and Parcels 3/1/25 and 3/1/30, which are full parcel acquisitions. The permanent easements required on Parcels 2/19/3 and 2/19/2 and the area of Parcels 3/1/25 and 3/1/30 to be retained for future bridge operations and maintenance will result in less available area for future development.

Due to the acquisition of Parcel 3/1/25 (1 Goldstein Place) for a construction staging (Figure 1), the Maritime Rowing Club, based out of Coastwise Boatworks (a private marina), was displaced. CTDOT relocated the Maritime Rowing Club to facilities at a nearby upstream location (3 Jennings Place).

Due to design refinement of the Fort Point Street Bridge replacement, CTDOT will require full parcel (Parcel 3/1/11) and partial parcel acquisitions and construction easements (Parcels 3/3/1, 3/1/27, and 3/1/21), as shown on Figure 2. CTDOT will provide monetary and other relocation assistance to displaced property owners in accordance with the procedures outlined in the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 and Connecticut's Uniform Relocation Assistance Act.

Following construction completion, the parcels acquired for construction use will be sold per CTDOT's Office of Rights of Way Property Management Division. For the waterfront parcels to be acquired, CTDOT will market the excess property indicating the highest priority and preference for water-dependent use of the site. Regarding the sale of the respective properties, State agencies are given first right of refusal. Thereafter, properties will be offered for sale by bid. Once the purchase price has been established, the City of Norwalk will be given the right of first refusal before they are offered to the public. Non-conforming parcels will only be offered to the abutting property owner(s). There are opportunities for these parcels to be redeveloped with water-dependent uses, a priority use of waterfront parcels per the Norwalk Harbor Plan and the Connecticut Coastal Management Act.

Construction easements will cease upon project completion. Except for 10 North Water Street (Parcel 2/19/2, IMAX Theater), properties will be restored to pre-construction conditions. The full use of Parcel 2/19/2 as a temporary easement will result in the displacement and demolition of the IMAX Theater. To mitigate impacts and compensate for the loss of the facility, CTDOT has entered into an agreement with the City of Norwalk allowing for the future development of a functional replacement facility. In coordination with the City of Norwalk, the Maritime Aquarium of Norwalk is responsible for constructing the functional replacement facility, including conducting environmental evaluations and preparing permit applications.

5.3 Improvement of Coastal and Inland Navigation for all Vessels, Including Small Craft for Recreational Purposes

The project will improve marine traffic conditions in the Norwalk River. With the new vertical lift bridge, the reliability of bridge operations will be substantially improved. The proposed increased bridge height will reduce the frequency of bridge openings, which will benefit commercial and recreational marine users.

The elimination of the center pivot pier that divided the navigation channel at the existing Walk Bridge will result in an effective increase in the width of the navigation channel of the replacement bridge, improving passage through the replacement bridge. The widened channel at Walk Bridge via the removal of the pivot pier and fender system also will improve rowing conditions and rower (and other small boat) safety, by providing more visibility for rowers and boaters. The required channel maintenance dredging to the authorized dredge depth will straighten the alignment between Walk Bridge and the Stroffolino Bridge and improve the navigability of the river between and through the two bridges, improving overall conditions for large and small vessel users.

A primary goal of the Walk Bridge Replacement Project design is to minimize disruptions to rail and river traffic during construction. As such, the lift span was designed and configured to allow for a minimum of two-track service to continue throughout the construction period and for the swing span to remain operational for boat traffic until the demolition of the existing swing span commences. For most of the project duration, it is anticipated that the river will remain open to traffic by restricting construction activity to one existing channel and keeping the other channel open to marine traffic (partial channel closure). There will be certain construction activities that will require either a vertical restriction or a complete channel closure. A vertical (height) navigation restriction of 16 feet from mean high water (MHW) is introduced when construction activity prevents the safe movement of the existing swing span. In a complete channel closure, the channel is closed to all navigation due to construction equipment or temporary works in the channel preventing safe vessel passage.

CTDOT has coordinated extensively with the City of Norwalk, the Norwalk Harbor Management Commission, the Norwalk Harbor Master, and waterway users regarding construction work in the water and potential impacts on navigation and water-dependent uses. Attachment E contains documentation of meetings with the Norwalk Harbor Management Commission, the Norwalk Harbor Master, and marine users. In consultation with water-dependent users of the Norwalk River, including rowing clubs, marinas, and other commercial interests, CTDOT has developed a Marine Use Plan to minimize the adverse impacts of construction on marine transportation and to develop water-dependent use/waterfront access strategies to mitigate impacts that cannot be avoided. Strategies include staging of Norwalk Fire Marine Unit and Police Marine Unit vessels upstream of Walk Bridge during full channel closures for emergency response access; utilizing the contractor's low-profile tug boats to assist with barge deliveries during periods of vertical restrictions; and incorporating contract specifications to address potential material spills at upstream commercial facilities. The Marine Use Plan is a living document that will be updated through project construction to minimize the impacts of construction on marine transportation.

CTDOT will coordinate the existing bridge removal and new bridge construction activities with the USCG Sector Long Island Sound to limit channel restrictions and outages. Aids to navigation will include Notices to Mariners, on-site signs, and lighting. Coordination with the USCG Sector Long Island Sound and the Norwalk Harbormaster is currently ongoing and will continue during the construction and pre-operational phases of the project. Additionally, the construction contractor is required to prepare a Marine Safety Plan for approval by CTDOT. This plan will be developed through consultation with the Norwalk Harbormaster and USCG Long Island Sector.

The Walk Bridge Replacement Project will improve coastal navigation and water-dependent uses. The new permanent dock reconfiguration for the Sheffield Island Lighthouse Ferry and the Maritime Aquarium's research vessel, waterward of 4 North Water Street (Parcel 2/19/1), will improve waterfront facilities for these operators. The new accessible gangway will enhance this existing water-dependent use in downtown

Norwalk. Additionally, removal of existing piles, including some from abandoned and deteriorated docks, waterward of 68 and 90 Water Street (Parcels 2/84/19 and 2/84/33) will improve the waterfront area and small craft navigation, including opportunities for future waterfront development.

5.4 Water Quality

The surface waters of the Norwalk River at the existing bridge site south to Manresa Island are identified as Class SB coastal and marine surface waters. Class SB waters have designated uses for marine fish, shellfish and wildlife habitat, recreation, industrial and other uses including navigation. Discharges into Class SB waters are restricted to those from public or private drinking water treatment systems, dredging and dewatering, and emergency and clean water discharges. This also includes cooling waters and discharges from industrial and municipal wastewater treatment facilities.

In June 2018 CTDOT conducted subsurface site investigations within the Norwalk River and at the proposed wetland mitigation areas in the vicinity of the existing bridge to determine whether dredging and other work within the river would require management of contaminated sediment. Based on the testing results, both the wetland mitigation areas and the Norwalk River are identified as a preliminary Areas of Environmental Concern (AOECs). The sediment contains Extractable Total Petroleum Hydrocarbons (ETPH), Semi-Volatile Organic Compounds (SVOCs), pesticides, and/or metals (arsenic and/or chromium) at concentrations exceeding the RSR criteria and therefore classified as contaminated material. Any sediment removed from the wetland mitigation sites and the Norwalk River is classified as contaminated material and will therefore be handled as controlled material.

The project includes specifications for the proper management of controlled and contaminated materials, including removal, handling, transporting, and reuse on site or disposal off-site, as well as specifications for establishment of appropriate worker health and safety protocols. Excavated material will be managed in accordance with the CTDEEP General Permit for Contaminated Soil and/or Sediment Management (Staging and Transfer). Wastewater generated during dewatering activities will be managed in accordance with CTDEEP requirements.

As described in **Part III, Question 2b**, CTDOT will implement water quality monitoring for all in-water work during the project. Water quality monitoring will consist of monitoring for turbidity on a continuous basis in the vicinity of each turbidity producing activity. Additionally, CTDOT will monitor for specific conductivity, salinity, dissolved oxygen, pH, temperature, and water level (at one location) to determine if marine life and other natural conditions may be contributing to turbidity levels.

Water quality within the Norwalk River will improve due to the wetland mitigation parcels being constructed. Native saltmarsh areas are being created to aid in sediment retention and water quality improvement through the thousands of plantings of shrubs and native grasses in the low marsh restoration areas.

At the site of the Manresa Staging and Storage Yard, site-wide groundwater has been impacted by historic power plant operations. The entire Manresa Island site (both the northern and southern parcels) was previously characterized as a large quantity generator of hazardous waste. It is currently enrolled in USEPA/CTDEEP's Property Transfer Program and RCRA Corrective Action Program, requiring regular groundwater monitoring. Installation of construction fencing required for the Staging and Storage Yard, including installation of fence and gate posts, will not impact site groundwater. Per CTDOT OEC, excess

materials from fencing posts will be handled in accordance with project specifications, including transport to CTDOT-designated upland Waste Stockpile Areas (WSAs) for characterization prior to off-site disposal.

5.5 Water Circulation and Drainage

CTDOT is applying for individual Flood Management Certification (FMC) concurrent with this application for a Structures, Dredging & Fill, and Tidal Wetlands and 401 Water Quality Certificate.

The following provides a summary of findings presented in the FMC application relative to hydraulic modeling and impacts to the 100-year and 500-year storm events at the Walk Bridge site.

Hydraulic models were developed of the existing and proposed conditions at the Walk Bridge site. To ensure that the proposed bridge will not have an adverse impact to the 100-year design floodplain, the proposed conditions hydraulic model was compared to the existing conditions model. The proposed 100-year water surface elevations (WSELs) were compared to determine the proposed bridge's impact on the Norwalk River. Upstream of the project bridge, the proposed model showed no adverse impact to the 100-year floodplain, as the proposed WSELs either matched or decreased 0.01 feet compared to existing conditions. Downstream of the project bridge, WSELs increased slightly (0.01 feet) in the sections immediately downstream of the bridge. Proposed WSELs match the existing elevations further downstream. The 100-year floodplain at these sections remains within the channel. Due to the minimal variance between the existing and proposed models, the proposed 100-year floodplain limits match the existing limits. The proposed bridge exceeds the CTDOT Drainage Manual's under clearance requirement of 2 feet for large tidal structures, as it provides over 15 feet of under clearance.

During the 500-year storm event, the proposed conditions model WSELs are shown within 0.03 feet of the existing elevations. Similar to the 100-year storm event, the proposed bridge will provide over 15 feet of under clearance during the 500-year storm event. No additional properties (commercial, industrial, or residential) or roadways will be impacted by the 500-year floodplain.

As described in **Part III, Question 2a**, during construction, temporary work platforms (trestles) and marine enclosures will be used within the Norwalk River, beneath and adjacent to the bridge. The proposed bridge is expected to take approximately five to six years to construct. For projects with a three year or longer construction duration, the CTDOT Drainage Manual recommends that temporary conditions be designed for the 25-year storm event. The first temporary condition (Temp 1) consists of the existing bridge, temporary work platforms, and the marine enclosures required to construct the lift piers. The second temporary condition (Temp 2) includes the existing pivot pier, existing rest piers, proposed bridge (foundation and superstructure), temporary work platforms and marine enclosures required to remove the swing span pier and rest piers. Upstream of Walk Bridge, both temporary conditions resulted in an increase in 25-year WSELs. Temp 1 25-year WSELs were up to 0.08 feet higher than existing elevations and Temp 2 25-year WSELs were up to 0.11 feet higher than existing elevations. Downstream of the bridge, Temp 1 WSELs matched existing elevations, while Temp 2 WSELs matched existing elevations for all but for one section (0.02-foot increase). The 25-year WSELs for both temporary conditions are contained within the Norwalk River's main channel. Neither of the temporary conditions will result in adverse flooding of any commercial, residential, or industrial structures upstream of the project; nor will they impact roadways or parking lots during the 25-year temporary design event.

As cited in Question 4.4, hydraulic modeling is not required for the project's construction staging and storage yards. While there will be fill within the FEMA floodplain at the parcels, the parcels at the bridge

site are located within the tidal floodplain with no riverine (fluvial) impacts. Similarly, at the Manresa Island Staging and Storage Yard, the temporary fill will be placed only in the tidal floodplain and not in the fluvial floodplain. Further, the volume of fill at the sites is not substantial enough to result in adverse impacts to the depth, velocity, or flow patterns during a storm surge event.

CTDOT is preparing a Stormwater Pollution Control Plan (SWPCP) for the Walk Bridge Program, which includes Walk Bridge and four nearby NHL improvement projects.[1] The SWPCP identifies soil erosion and control (SESC) measures to be installed prior to construction activities that will result in soil disturbance. The SESC measures will be consistent with the CTDEEP 2002 Connecticut Guidelines for Soil Erosion and Sediment Control. The SWPCP also identifies post-construction stormwater management, including post-construction performance standards. The General Permit for the Discharge of Stormwater and Dewatering Wastewaters from Construction Activities (Construction Stormwater General Permit) to be filed with CTDEEP will include these measures.

5.6 Recreational Use of Public Water

In the permanent condition, the project will improve the recreational use of the Norwalk River. The straightened channel alignment between Walk Bridge and the Stroffolino Bridge will greatly improve the navigability of the river between and through the two bridges, improving overall conditions for large and small vessel users. The widened channel at Walk Bridge and the removal of the pivot pier also will improve rowing conditions and rower (and other small boat) safety, by providing more visibility for rowers and boaters.

Project construction will impact the recreational use of the Norwalk River. Due to the acquisition of Parcel 3/1/25 (1 Goldstein Place) for a construction yard adjacent to the bridge site, the Maritime Rowing Club, based out of Coastwise Boatworks (a private marina), was displaced. CTDOT relocated the Maritime Rowing Club to facilities at a nearby upstream location (3 Jennings Place).

To the greatest extent practicable, construction activities will be coordinated to ensure activities are only taking place on one half (or occupy less than only 50% when working in the middle of the river) of the navigation channel at a time. As a result, smaller boats using the river, including rowing shells, generally will have access through the project construction area. With the exception of channel closures for specific bridge demolition and construction activities, as well as restrictions or closures due to construction equipment, one of the existing channels will be available for smaller boats without vertical clearance requirements.

As cited in Section 5.3, CTDOT has prepared a Marine Use Plan to minimize the adverse impacts of construction on marine transportation and to develop water-dependent use/waterfront access strategies to mitigate impacts that cannot be avoided. Strategies include engaging the presence of the Norwalk Fire and Police Marine Units to provide marine traffic control such as alternating one-way maritime traffic during partial channel closures, and to assist in communication and coordination with rowers and recreational vessels.

[1] In addition to the Walk Bridge Replacement Project, the Walk Bridge Program includes East Avenue Roadway Improvement Project (State Project No. 0102-0297), East Avenue Bridge Project (State Project No. 0301-0187), Osborne Avenue Bridge Project (State Project No. 0301-0188), and Retaining Wall No. 427 Project (State Project No. 0301-0190).

5.7 Protection of Life and Property from Flood, Hurricane, and other Natural Disasters

As cited in Section 4.4, Coastal Hazard Areas, measures will be implemented during construction to protect property from flood, hurricane, and other natural disasters.

6a. Identify and evaluate any potential beneficial and adverse impacts to navigation (include federal and local navigation channels and distance to nearby docks).

The project will improve marine traffic conditions in the Norwalk River. With the new vertical lift bridge, the reliability of bridge operations will be substantially improved. The proposed bridge height represents an increase from existing conditions, and will reduce the frequency of bridge openings, which will benefit commercial and recreational marine users. In the open position, the vertical clearance will match the clearance of the governing bridge (the Yankee Doodle Bridge). With the removal of the center pivot pier, the proposed bridge will increase the effective width of the navigation channel and decrease the hazard of passage through the proposed bridge by allowing marine traffic to use the entire navigation channel. The larger hydraulic opening will also result in a slight reduction in flood and tidal velocities. In sum, the vertical and horizontal clearances will provide for the safe, efficient passage of vessels through Walk Bridge.

The required channel maintenance dredging to the authorized dredge depth will straighten the alignment between Walk Bridge and the Stroffolino Bridge and improve the navigability of the river between and through the two bridges, improving overall conditions for large and small vessel users. The widened channel at Walk Bridge via the removal of the pivot pier will improve rowing conditions and rower (and other small boat) safety, by providing more visibility for rowers and boaters.

During construction, marine users will be adversely impacted at times. A primary goal of the Walk Bridge design is to minimize construction-related disruptions to rail and river traffic. As such, the swing span will remain operational for boat traffic until the first of the two lift spans is ready to be installed. For most of the project duration, it is anticipated that the river will remain open to traffic by restricting construction activity to one existing channel and keeping the other channel open to marine traffic. There will be certain construction activities that will require either a vertical restriction, a horizontal restriction, or a complete channel closure. A vertical restriction is introduced when a construction activity would prevent the safe movement of the existing swing span. A horizontal restriction is introduced when temporary works being implemented for new bridge construction are temporarily placed within the limits of the navigation channel, thereby reducing the horizontal clearance. As cited in Sections 5.3 and 5.6, CTDOT has developed a Marine Use Plan to minimize the adverse impacts of construction on marine transportation and to develop water-dependent use/waterfront access strategies to mitigate impacts that cannot be avoided. CTDOT will coordinate the existing bridge removal and new bridge construction activities with the USCG Sector Long Island Sound to limit channel restrictions and outages. Aids to navigation will include Notices to Mariners, on-site signs, and lighting. Ongoing coordination with the Norwalk Harbormaster and the USCG Sector Long Island Sound will continue during the operational phase of the project. Additionally, the project contract documents [Notice to Contractor (NTC)] direct the contractor to coordinate with the USCG, the Norwalk Harbormaster (for emergency services), the Marine Police, adjacent marina personnel, private marine users, and private dock owners concerning any closure of the navigation channel. Further, the NTC

directs the contractor to provide advance notification to marine users, adjacent marina personnel, and private dock owners regarding any closure/restriction of the navigation channel or the navigation clearance under the existing or replacement bridge.

The design of the southwest construction platform (trestle) has been revised to allow the existing docks of the Sheffield Island Ferry and Maritime Aquarium vessel to remain in their general current location (waterward of Parcel 2/19/1) during project construction. In coordination with the owners, the City of Norwalk, the Norwalk Harbor Management Commission, Norwalk Harbormaster, and federal and state regulators, CTDOT will take the following actions to provide for adjusting the passenger operations and vessel berthing to minimize the effects of project construction on vessel operations while maintaining safety for waterway users. The existing docking facilities will be replaced with a reconfigured single new dock and accessible gangway to provide operational flexibility as needed. Additionally, passenger operations during certain construction activities and vessel storage can be relocated to a new temporary docking facility to be built by CTDOT waterward of 68 and 90 Water Street (Parcels 2/84/19 and 2/84/33). To maximize both operator flexibility and vessel safety, both locations will be available during project construction. Following bridge construction, all operations of the Sheffield Island Ferry and the Maritime Aquarium vessel will resume waterward of Parcel 2/19/1 at the new reconfigured docking facility. The new dock reconfiguration for the Sheffield Island Lighthouse Ferry and the Maritime Aquarium's research vessel will enhance this water-dependent use in downtown Norwalk.

6b. Identify and evaluate any potential beneficial and adverse impacts to public access to, and public use of, public trust lands and waters waterward of mean high water.

CTDEEP's Coastal Access Guide identifies 32 public trust lands in the city of Norwalk, many of which are located along the Norwalk River in proximity to Walk Bridge. Upriver from Walk Bridge, public trust lands include locations at St. Ann's Club, Norwalk Rowing Club Association, Norwalk Boat Club, and Oyster Shell at Heritage Park. Downriver from Walk Bridge, public trust lands include Constitution Park, Veterans Park and public boat slips and moorings, and Calf Pasture Beach, which is located approximately 1.5 miles south of Walk Bridge. Riverfront walkways at condominiums and office developments located upriver and downriver from Walk Bridge are also considered to be public trust lands. Public trust lands adjacent to the bridge site include the Norwalk River Valley Trail (NRVT) on the west side of the river adjacent to the Norwalk Parking Authority (NPA)'s North Water Street parking lot; and the NRVT Harbor Loop Trail, located on the water's edge of the City's Waste Water Treatment Plant (WWTP) property on the east side of the river.

Project construction activities, including compensatory wetland mitigation, will impact portions of the NRVT on both sides of the river. Due to a construction easement on the NPA's parking lot, the portion of the NRVT adjacent to the lot may be closed to the public during construction. Access requirements to the wetland mitigation areas on the east side of the river (Areas 4 and 6) may affect public access to portions of the Harbor Loop Trail, including temporary closure of the trail. Additionally, access to Wetland Mitigation Areas 1 and 2 are proposed through Oyster Shell Park or parking areas for the park, impacting public access to portions of the park. These impacts to public trust lands will be short-term. Signage and

flagging will be used during construction to minimize impacts to pedestrian and bicyclist safety. CTDOT is coordinating anticipated impacts to public trust lands and parks with the City of Norwalk.

The navigation improvements provided by this project will be a benefit for water-dependent uses, particularly for upriver commercial marine users and vessels with restricted maneuverability. This positive impact helps to mitigate the short-term effects of constrained marine passage during construction. Additionally, the City zoning and waterfront use and development policies have strong coastal use protections to provide for access to the coast and some water-dependent uses in riverfront parcels in the Inner Harbor.

The Walk Bridge Replacement Project will improve public access to and use of public trust lands near the bridge. This project will facilitate expansion of the coastal access network along the east side of the Norwalk River, providing waterfront access mitigation. CTDOT will construct an eastern path connection of the Norwalk Harbor Loop Trail via the existing and partially lowered eastern abutment of the existing bridge; the pedestrian/bicycle connection will extend south along the edge of the river, turn east, and follow the southern edge of the railroad to Goldstein Place (where the trail will join the roadway at South Washington Street). This pedestrian and bicycle connection will help facilitate the goals and vision of the Norwalk Master Plan of Conservation and Development, the Norwalk Pedestrian and Bikeway Transportation Plan (2012), the Norwalk Trail Study - Maritime Link (2014), and the Mid-Harbor Planning Study (2005). In addition to the pedestrian/bicycle connection, and as part of the project Memorandum of Agreement, CTDOT is constructing a series of interpretive panels to be located near Walk Bridge, including along the bicycle paths and in public trust areas. The interpretive panels will enhance the public use and enjoyment of public trust areas near Walk Bridge.

Walk Bridge Replacement Project Bridge Number 04288R
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State Project Number 0301-0176

Part III: Project Information
(continued)
Question 9

9. Discuss the alternatives to the project which were considered and indicate why they were rejected.

Question 9 presents alternatives analyses that were prepared for the project. Section 9.1 contains the overall project alternatives analysis, prepared in compliance with the National Environmental Policy Act/Connecticut Environmental Policy Act (NEPA/CEPA), dated August 2016. (Note that construction costs and durations in the overall project alternatives analysis represent preliminary design data.) Sections 9.2 through 9.5 contain analyses conducted as design advanced. Section 9.2 contains an analysis of the under-channel cable crossing for Construction Activity (CA) 2. Section 9.3 contains a summary of the temporary vessel relocation assessment conducted for the Maritime Aquarium research vessel and Sheffield Island Ferry currently berthed waterward of 4 North Water Street, CA3. Section 9.4 contains a summary of the analysis for the pier construction method, CA9 and CA10. Section 9.5 contains a summary of CTDOT's decision to construct the replacement bridge lift spans at Manresa Island, CA19.

9.1 Walk Bridge Replacement Project Alternatives Analysis

CTDOT conducted a thorough alternatives analysis for the Walk Bridge Replacement Project, which was presented in the Environmental Assessment and Section 4(f) Evaluation/Environmental Impact Evaluation (EA/EIE), August 2016; and the Finding of No Significant Impact/Record of Decision (FONSI/ROD), issued in July 2017.

9.1.1 Initial Range of Alternatives

CTDOT identified a range of alternatives for project and grouped them into four general categories:

1. No Build (No Action) Alternative: continuing the existing operations and maintenance of the historic swing (movable) bridge;
2. Rehabilitation Alternative: rehabilitating the existing bridge to extend its useful life by 100 years, a timeframe comparable to the useful life of a new bridge;
3. Replacement Alternative – Movable Bridge: constructing a new movable bridge, of either the bascule type or vertical lift type, on the same general alignment, and demolishing the existing bridge;
4. Replacement Alternative – Fixed Bridge: constructing a new fixed (non-movable) bridge on the same or a different general alignment and demolishing the existing bridge.

More than 70 different design variations within the four groups of alternatives were initially investigated to identify representative options that consider these parameters and meet the project purpose and need. CTDOT identified and developed concepts to replace the existing Walk Bridge with dual, double-track

movable spans in accordance with the design objectives for resiliency and redundancy. For a bascule movable bridge, design options included deck girder, through girder and through truss bascule bridges of both the trunnion and rolling lift genre. For a vertical lift movable bridge, design options included deck girder, through girder, or through truss vertical lift bridges with span-drive or tower-drive lift span operating systems.

CTDOT held multiple meetings with public agencies and project stakeholders, including the USACE, USCG, the City of Norwalk, Metro-North Railroad, property owners, and waterway users to ascertain concerns and requirements for the replacement bridge design and to obtain public and agency input. CTDOT also held a public scoping meeting on February 24, 2015, an agency scoping meeting on March 5, 2015, and a public information meeting on May 11, 2016. With input from these meetings, CTDOT concluded that the evaluation of alternatives would focus on a replacement of the bridge and would include consideration of a bascule movable bridge type, a through truss vertical lift movable bridge type, as well as a fixed bridge (non-movable) type with three design options of varied vertical clearances over the Norwalk River: a low-level, a mid-level, and a high-level bridge.

9.1.2 Alternatives Not Advanced for Further Evaluation

The following presents a description of the three alternatives not advanced for further evaluation.

Rehabilitation Alternative

The Rehabilitation Alternative would require rehabilitation or replacement of the existing Walk Bridge elements that would extend the bridge's design life by an additional 100 years, which is comparable to a new bridge's design life.

The Rehabilitation Alternative would include measures to increase the structural and seismic capacity of the existing bridge, portions of the existing retaining walls, and high tower structures. To remedy corrosion, section loss and insufficient load ratings of the bridge superstructure, all elements exhibiting minor section loss would be strengthened, and all elements exhibiting major section loss would be replaced. Existing rivets would be replaced with high-strength bolts. All structural steel would be cleaned and coated. To address fatigue concerns, stringers and floor beams would be replaced. All tension diagonals and truss chords would be replaced, as would gusset plates and connections. Other structural elements would be strengthened or replaced as required for increased live load capacity and seismic resistance. A combination of micropile and drilled shafts would be required to improve the stability and load carrying capacity of the existing foundations.

Although some swing span machinery has been replaced, the amount of current and predicted deterioration and wear is an issue that can only be eliminated by replacement of all operation machinery. Additionally, a complete replacement of the obsolete electrical service would be necessary to improve its electrical rating.

Repairs or partial replacements have been accomplished over the past 10 years on fender systems as well as on some track, signal and communication systems. However, to extend their functionality in the long term, full replacement of the fenders and track, signal, and communication systems is warranted.

Construction of a temporary, two-track bridge placed on an alignment immediately north of the existing bridge would be needed to allow for access to strengthen the existing masonry piers and to perform repairs on the existing structural, mechanical and electrical systems. Once this temporary bridge, or "runaround," becomes functional, train operations would shift from the existing bridge to the runaround bridge. This

enables many rehabilitation measures to be completed while still accommodating rail service on the runaround. However, since the temporary runaround structure would not include a movable span and would also have a fixed bottom of structure elevation above Mean High Water, marine traffic would be limited to only those vessels that would fit under the runaround track structure. Replacement of the drive system and associated components also would require a complete channel outage.

The initial program cost of the Rehabilitation Alternative was estimated to range between $425 and $475 million in year 2020 dollars. Holistic life cycle costs, which include the operator cost, annual inspection, maintenance, and supply costs, structural repair/replacement costs, electrical repair/replacement costs, and mechanical repair/replacement costs, were determined to be approximately $9.2 million per year (annualized over the 100-year life of the bridge). Major structural repair work was estimated to be needed every 25 years, major replacement work was estimated to be needed every 30 years, and minor structural work was estimated to be needed every 15 years. Cost and schedule estimates were based on NEPA and CEPA conceptual-level designs, prevailing material costs, and estimated construction activity durations. Estimates also included preliminary assessments of operational and construction-related risks commensurate with the level of design development.

CTDOT dismissed the Rehabilitation Alternative from further evaluation because it would not meet the project needs, or existing bridge deficiencies as defined in the project Purpose and Need. Table 1 provides a summary of the Rehabilitation Alternative with respect to the project needs.

Table 1 - Project Needs Evaluation of the Rehabilitation Alternative

Project Needs	Rehabilitation Alternative
Structure age and deterioration	Many structural elements require replacement. Extended construction schedule would be required for rehabilitation. Full track closures would be required for some improvements. Unknown potential problems in installation and fit-up with rehabilitating an old structure could extend schedule and costs beyond what is forecast. This need would not be fully met.
Decreasing reliability	Initial improvement in reliability due to replacement of key components, but systems would revert to current conditions resulting in unreliability. This need would not be met.
Lack of resiliency	Key mechanical and electrical systems would remain vulnerable to coastal storm events and temperature extremes. Provision of an emergency generator could improve reliability in some circumstances. This need would not be fully met.
Safety standards	The bridge does not meet current design standards which reflect improved safety aspects. This need would not be met.
Lack of redundancy	Overall system redundancy would not be enhanced. This need would not be met.
Limited operational flexibility	The operational limitations of the existing bridge would not be improved. This need would not be met.
Difficulty of maintenance	Certain maintenance would require a full bridge closure, presenting logistical problems for train and marine traffic. This need would not be met.
Reduced rail capacity and efficiency	Long term reliability would not be improved thereby resulting in potentially reduced capacity on the NHL. This need would not be met.

Project Needs	Rehabilitation Alternative
Reduced dependability and capacity for marine traffic	Long term reliability would not be improved thereby resulting in continued dependability and capacity issues for marine traffic. This need would not be met.
Lack of sustainability	Although bridge rehabilitation would improve conditions in the near-term, rehabilitation would not result in a sustainable bridge in the long term. This need would not be met.

Fixed-Bridge Replacement Alternative

CTDOT developed three fixed span bridge replacement options: a low-level option, a mid-level option, and a high-level option. All three of these options lock in the vertical clearance at sixteen feet above MHW. This would limit passage for upriver businesses and recreational user's permanently. An additional scenario within the low-level fixed bridge option also was considered: a low-level fixed bridge rehabilitation option.

Low-Level Fixed Bridge Option. The low-level option would be a fixed bridge generally located on the existing horizontal and vertical alignments. Two scenarios within the low-level fixed bridge replacement option were assessed: a low-level fixed bridge replacement option and a low-level fixed bridge rehabilitation option.

The low-level fixed bridge replacement option would involve constructing a new replacement bridge on the existing horizontal and vertical alignments. New foundations (substructure) would be required, and the new bridge would extend approximately 30 feet beyond the existing east abutment and approximately 100 feet beyond the existing west abutment. To keep the depth of the new bridge substructure as shallow as possible, new bridge span lengths of approximately 100 feet or less were included as part of the conceptual design of the low-level replacement option. In this option, the railroad tracks of the replacement bridge would be elevated by four feet over existing conditions, providing a vertical clearance of 20 feet over mean high water (MHW). This option would not require the replacement of Fort Point Street Bridge, but it would require the construction of retaining walls totaling approximately 300 feet west of the bridge and approximately 500 feet southeast of the bridge.

The low-level fixed bridge rehabilitation option would involve converting the existing swing span to a fixed structure and rehabilitating the existing bridge to promote the extended service life and reliability of the structure as a non-movable bridge. A rehabilitated low-level fixed bridge would provide the same vertical clearance as the existing bridge - 16 feet over MHW. This option would use the existing bridge foundations, and except for the mechanical and electrical requirements of the swing span, it would have the same requirements as the Rehabilitation Alternative.

CTDOT estimated the construction and program cost of the low-level fixed bridge replacement option to range between $290 and $340 million in 2020 dollars. Life cycle costs, equalized to present worth of 100-year life, were estimated to range between $5.6 and $6.1 million per year. CTDOT estimated the construction and program cost of the low-level fixed bridge rehabilitation option to range between $410 and $460 million in 2020 dollars. Life cycle costs, equalized to present worth of 100-year life, were estimated to range between $6.0 and $6.5 million per year. Cost and schedule estimates were based on NEPA and CEPA conceptual-level designs, prevailing material costs, and estimated construction activity durations. Estimates also include preliminary assessments of operational and construction-related risks commensurate with the level of design development.

Mid-Level Fixed Bridge Option. The mid-level option would be a fixed bridge with a top of track profile approximately 7 feet higher than the existing bridge. For this option, the Norwalk River would be crossed by two deck plate girder spans to the west and two deck plate girder spans to the east of a 170-foot through plate girder navigation span. This bridge option would provide 34 feet of vertical clearance over Mean High Water, an increase of 18 feet over existing conditions. This span arrangement would place three piers in the river with a horizontal navigation clearance of approximately140 feet. The through plate girder, while minimizing structure depth, would change the horizontal railroad track alignment, because it would require more space between Tracks 1 and 2 than currently exists (approximately 25 feet as compared to the existing 12.5 feet). Similar to the low-level bridge option, the total bridge length of the mid-level option would be 865 feet. It would extend approximately 270 feet to the west of the existing bridge's west abutment, and approximately 30 feet to the east of the existing bridges east abutment. Rail work would be required to accommodate the grade raise and change in horizontal alignment. Similar to the low-level option, this option would require retaining walls. Retaining wall lengths of 120 feet to the west and 1,000 feet to the east would be required. The rail work required to accommodate the grade raise would impact approximately 1,400 linear feet along the tracks (not including cross over track, high tower and OCS work).

CTDOT estimated the construction and program cost of the mid-level option to range between $320 and $370 million in year 2020 dollars. Life cycle costs, equalized to present worth of 100-year life, were estimated to range between $4.3 and $4.8 million per year. Cost and schedule estimates were based on NEPA and CEPA conceptual-level designs, prevailing material costs, and estimated construction activity durations. Estimates also include preliminary assessments of operational and construction-related risks commensurate with the level of design development.

High-Level Fixed Bridge Option. The high-level option would be a fixed bridge with a top of track profile approximately 35 feet higher than the existing bridge. The horizontal alignment would be similar to that of the mid-level bridge option. For this option, the navigational channel of the Norwalk River would be crossed by a 170-foot through plate girder span resulting in a 140-foot horizontal navigational clearance. This bridge option would provide 60 feet of vertical clearance, matching the vertical clearance of the upstream I-95 bridge. The through plate girder, while minimizing structure depth, would require more space between Tracks 1 and 2 than currently exists. The total bridge length is estimated to be 4,300 feet bridge and an additional 1,600 feet of rail work would be required to accommodate the substantial increase in grade. This additional rail work would extend approximately from the South Norwalk Station on the west to 600 feet beyond Osborne Avenue on the east. Approximately 1,000 feet of the Danbury Branch would require reconstruction to accommodate the re-connection to the main line tracks.

CTDOT estimated the construction and program cost of the high-level option to be more than $1 billion in year 2020 dollars. Life cycle costs, equalized to present worth of 100-year life, were estimated to range between $3.8 and $4.3 million per year. Cost and schedule estimates were based on NEPA and CEPA conceptual-level designs, prevailing material costs, and estimated construction activity durations. Estimates also include preliminary assessments of operational and construction-related risks commensurate with the level of design development.

Summary Evaluation. CTDOT dismissed the three options for the Fixed Bridge Replacement Alternative. Table 2 presents an evaluation of the three options of the Fixed Bridge Replacement Alternative relative to the project needs, or deficiencies of the existing bridge as stated in the project Purpose and Need. The low-level fixed bridge option would reduce the capacity for marine traffic passing beneath the bridge and therefore would not meet this part of the project Purpose and Need. The high-level fixed bridge option

would meet all aspects of the project Purpose and Need, but it would result in a high level of environmental impact because the bridge and approaches would be on a much higher vertical alignment and it would be more than three times as expensive as the other fixed bridge options. Similar to the low-level fixed bridge option, the mid-level bridge option would reduce the capacity for marine traffic crossing under the bridge, albeit to a lesser extent than the low-level fixed bridge. Therefore, the mid-level bridge option would not meet this part of the project Purpose and Need.

Table 2 - Project Needs Evaluation of the Fixed Bridge Alternative Options

Project Needs	**Fixed Bridge Low-Level Option**	**Fixed Bridge Mid-Level Option**	**Fixed Bridge High-Level Option**
Structure age and deterioration	As a replacement bridge, this need would be met.	As a replacement bridge, this need would be met.	As a replacement bridge, this need would be met.
Decreasing reliability	As a fixed bridge, the reliability of a movable bridge would not be an issue and therefore this need would be met.	As a fixed bridge, the reliability of a movable bridge would not be an issue and therefore this need would be met.	As a fixed bridge, the reliability of a movable bridge would not be an issue and therefore this need would be met.
Lack of resiliency	As a fixed bridge, the susceptibility of movable bridge mechanical and electrical systems would not be an issue. Clearance above the 500-year flood elevation would be provided. This need would be met.	As a fixed bridge, the susceptibility of movable bridge mechanical and electrical systems would not be an issue. Clearance above the 500-year flood elevation would be provided. This need would be met.	As a fixed bridge, the susceptibility of movable bridge mechanical and electrical systems would not be an issue. Clearance above the 500-year flood elevation would be provided. This need would be met.
Safety standards	As a replacement bridge designed and built to current standards, this need would be met.	As a replacement bridge designed and built to current standards, this need would be met.	As a replacement bridge designed and built to current standards, this need would be met.
Lack of redundancy	As a fixed bridge, structural redundancy can be designed into the structure and mechanical and electrical systems redundancy is not an issue. This need would be met.	As a fixed bridge, structural redundancy can be designed into the structure and mechanical and electrical systems redundancy is not an issue. This need would be met.	As a fixed bridge, structural redundancy can be designed into the structure and mechanical and electrical systems redundancy is not an issue. This need would be met.
Limited operational flexibility	As a replacement bridge designed and built to	As a replacement bridge designed and built to	As a replacement bridge designed and built to

Project Needs	Fixed Bridge Low-Level Option	Fixed Bridge Mid-Level Option	Fixed Bridge High-Level Option
	current standards, this need would be met.	current standards, this need would be met.	current standards, this need would be met.
Difficulty of maintenance	As a replacement bridge, designed and built to current standards, this need would be met.	As a replacement bridge, designed and built to current standards, this need would be met.	As a replacement bridge, designed and built to current standards, this need would be met.
Reduced rail capacity and efficiency	As a replacement bridge designed and built to current standards, reliability and other factors affecting rail capacity and efficiency are not issues. Therefore, this need would be met.	As a replacement bridge designed and built to current standards, reliability and other factors affecting rail capacity and efficiency are not issues. Therefore, this need would be met.	As a replacement bridge designed and built to current standards, reliability and other factors affecting rail capacity and efficiency are not issues. Therefore, this need would be met.
Reduced dependability and capacity for marine traffic	As a fixed bridge, the vertical clearance cannot be increased by opening the bridge. The vertical clearance is increased by 4 feet over the existing vertical clearance when closed but some boats will no longer be able to pass upstream of the Walk Bridge. This need would not be met.	As a fixed bridge, the vertical clearance cannot be increased by opening the bridge. The vertical clearance is increased by 18 feet over the existing vertical clearance when closed but some boats will no longer be able to pass upstream of the Walk Bridge. This need would not be met.	The vertical clearance would be the same as that provided under the upstream I-95 bridge. This need would be met.
Lack of sustainability	As a replacement bridge designed and built to current standards, this need would be met.	As a replacement bridge designed and built to current standards, this need would be met.	As a replacement bridge designed and built to current standards, this need would be met.

9.1.3 Alternatives Advanced for Further Evaluation

No Build Alternative

The No Build (No-Action) Alternative would retain the existing bridge and provide for normal maintenance activities during the life of the bridge. There would not be any major rehabilitation or replacement of structural elements, foundation elements, mechanical components, or electrical systems. The existing high towers would be retained and undergo normal maintenance by the owner.

In compliance with the National Environmental Act/Connecticut Environmental Policy Act (NEPA/CEPA), CTDOT evaluated the No Build Alternative in the EA/EIE to describe the transportation conditions that would occur if no actions other than normal maintenance were conducted, and for comparison to the Build Alternative. However, the No Build Alternative would not meet the project needs, or existing bridge deficiencies, as summarized in Table 3. CTDOT determined that the No Build Alternative was not a viable alternative.

Table 3 - Project Needs Evaluation of the No Build Alternative

Project Needs	No Build Alternative
Structure age and deterioration	Normal maintenance would not prolong the structure's useful life. This need would not be met.
Decreasing reliability	Bridge failures would likely increase and worsen. This need would not be met.
Lack of resiliency	Key mechanical and electrical systems would continue to be vulnerable to storm surges and other weather events. This need would not be met.
Safety standards	Current design standards for safety, which are currently not met, would remain unmet. This need would not be met.
Lack of redundancy	Single structure causes closure of all tracks if bridge fails and for some maintenance activities. This need would not be met.
Limited operational flexibility	This need would not be met.
Difficulty of maintenance	Full closure of all tracks would be required for some maintenance activities. This need would not be met.
Reduced rail capacity and efficiency	The unreliable nature of the bridge would reduce capacity on the NHL. This need would not be met.
Reduced dependability and capacity for marine traffic	Bridge failures would obstruct marine traffic. This need would not be met.
Lack of sustainability	Increased maintenance would be required and the bridge could eventually fail to operate, causing stoppages of rail and marine traffic. This need would not be met.

Movable Bridge Replacement Alternative

CTDOT retained and advanced the Movable Bridge Replacement Alternative for further evaluation as the Build Alternative in the EA/EIE. Two types of bridges were considered and advanced: a rolling lift bascule bridge (Option 4S) and a through truss vertical lift bridge (Option 8A). A variation of the vertical lift bridge type with a longer span also was advanced (Option 11C). CTDOT determined that the three movable bridge options represented bascule and vertical lift bridge types as a balance of user needs, engineering,

environmental, cost, and constructability needs and constraints. CTDOT further determined that as design progressed on a bridge type, design refinements such as modifying final span lengths and other dimensional attributes would be possible.

Bascule Bridge Movable Bridge Option (Option 4S). The bascule bridge movable bridge option (Option 4S) would provide two side by side single-leaf rolling lift bascule spans across the Norwalk River, each with separate mechanical and electrical equipment and controls so that each span can work independently of the other, or in unison with the other. It would provide a vertical clearance of approximately 27 feet above mean high water (MHW) when the movable span is in the closed position, and a vertical clearance of at least 60 feet when the movable span is in the opened position. When closed, the vertical clearance of the Bascule Bridge is increased by approximately 11 feet over the existing vertical clearance of 16 feet due to the design of the structure. However, the top of rail elevations on the new bridge would be approximately the same as the top of rail elevations on the existing bridge. A horizontal clearance of at least 120 feet would be provided for navigation, and the alignment of the navigation channel under the new bridge with the alignment of the navigation channel under the Stroffolino Bridge would be improved.

The rolling bascule spans would be comprised of 170-foot movable truss spans with overhead counterweights. As the span moves, the structure would be supported by curved segmental girders that are connected to the bascule span and the counterweight. As the span rotates during movements, it would also translate, or roll, horizontally, with the movements guided by the curved segmental girder. The overhead counterweights would be configured to permit the counterweights to pass to the outside of the adjacent fixed approach spans. The drive machinery, electrical components, and controls for operating the span would be located above track level, improving the resiliency of the systems by offering protection from high water events. The new movable spans would each carry two tracks: Tracks 1 and 3 on the northern span and Tracks 2 and 4 on the southern span. The tracks would be on a non-parallel alignment with adequate spacing between the two center tracks (Tracks 1 and 2) to accommodate structural and mechanical clearances. With this non-parallel alignment, the total width of the two bridge structures would vary from approximately 50 feet at the western abutment to 95 feet at the eastern abutment. The movable spans would be flanked by four spans on the western side and two spans on the eastern side. These approach spans would be fixed spans and would not move. Including the approach spans, the total length of Walk Bridge would be approximately 650 feet from bridge abutment to bridge abutment.

The bascule bridge would be supported by new abutments at each end and by six intermediate bridge piers, including the bascule pier and the bascule rest pier. The foundations for the bascule piers, rest pier, and intermediate pier supporting the new control house (to be located on the southern end of the intermediate pier) would be in the Norwalk River and would be comprised of drilled shafts installed into bedrock with a cap beam connecting the drilled shafts. The bascule pier would consist of two adjacent, open piers that support the rolling bascule span structural elements. A new fender system would be constructed approximately 10 feet from the new bascule and rest piers to protect them, providing at least 120 feet of horizontal clearance in the navigation channel. The fenders would be supported by concrete or steel piles. Navigational lighting in accordance with USCG standards would be installed.

The existing Walk Bridge and fender system would be dismantled and removed. This would include removal of the foundations and fender supports in the river to a depth to be determined in consultation with USACE and USCG. The existing western bridge abutment would be removed in its entirety, while the eastern abutment would be retained and partially lowered so that the remaining portions of the abutment

can be used as a retaining wall to support an extension of the bike/pedestrian trail north of the bridge to areas south of the bridge.

The construction cost of the bascule bridge movable bridge option was estimated to range between $330 and $365 million in year 2020 dollars. Life cycle costs, equalized to present worth of 100-year life, were estimated to range between $3.4 and $3.9 million per year.

Short Span Vertical Lift Movable Bridge Option (Option 8A). The short span vertical lift bridge option (Option 8A) would provide two side-by-side vertical lift spans across the Norwalk River, each with separate mechanical and electrical equipment and controls so that each span can work independently of the other, or in unison with the other. A span-drive vertical lift bridge with a 170-foot open-deck through-truss lift span would provide a minimum of 120 feet of horizontal navigational clearance and 60 feet of vertical clearance when the span is fully raised. There would be two separate lift spans, one through-truss span for Tracks 1 and 3 and one through-truss span for Tracks 2 and 4, providing system redundancy. The tracks would be on a parallel alignment across the Norwalk River, resulting in the two movable spans being parallel with one another. Track spacing between Tracks 1 and 2 would be 25 feet to allow for structural and mechanical system clearance between the adjacent lift spans. The alignment of Tracks 1 and 3 would remain close to the current alignment, while the alignment of Tracks 2 and 4 would be shifted to the south to accommodate the increase in center track spacing. The total width of the bridge would be approximately 70 feet. The lift span would provide approximately 27 feet of vertical clearance above Mean High Water in the closed position, which would be approximately 11 feet more than the vertical clearance of the existing swing span. To achieve 60 feet of vertical clearance at mean high water, the lift span would be raised 35 feet above the profile of the existing bridge. The bridge tower heights would be determined during final design and would range between approximately 100 and 150 feet above the top of the support piers. The movable spans would be flanked by four spans on the western side and two spans on the eastern side. These approach spans would be fixed spans and would not move. Including the approach spans, the total length of Walk Bridge would be approximately 690 feet from bridge abutment to bridge abutment.

The bridge would be supported by new abutments at each end and by six intermediate bridge piers, including the vertical lift bridge piers. The foundations for the vertical lift span piers and one intermediate pier would be in the Norwalk River and would be comprised of drilled shafts installed into bedrock, with a cap beam connecting the drilled shafts. The western bridge abutment would be located approximately 100 feet further west than the existing abutment to avoid construction conflicts with the existing abutment, high tower foundations, and retaining walls. A new control house would be located on the southern end of the east vertical lift span pier. A new fender system would be constructed approximately 10 feet from the new vertical lift span piers to protect them, providing at least 120 feet of horizontal clearance in the navigation channel. The fenders would be supported by concrete, steel or composite material piles. Navigational lighting in accordance with USCG standards would be installed.

The existing Walk Bridge and fender system would be dismantled and removed. This would include removal of the foundations and fender supports in the river to a depth to be determined in consultation with USACE and USCG. The existing western bridge abutment would be removed in its entirety, while the eastern abutment would be retained and partially lowered so that the remaining portions of the abutment can be used as a retaining wall to support an extension of the bike/pedestrian trail north of the bridge to areas south of the bridge.

The construction cost of the short span vertical lift movable bridge option was estimated to range between $380 and $415 million in year 2020 dollars. Life cycle costs, equalized to present worth of 100-year life, were estimated to range between $3.4 and $3.9 million per year.

Long Span Vertical Lift Movable Bridge Option (Option 11C). Like the short span vertical lift bridge option, a long-span vertical lift movable bridge option (Option 11C) would provide two side-by-side vertical lift spans across the Norwalk River, each with separate mechanical and electrical equipment and controls so that each span can work independently of the other, or in unison with the other. A vertical lift bridge with a 240-foot open-deck through-truss lift span would provide a minimum of 200 feet of horizontal navigational clearance and 60 feet of vertical clearance when the span is fully raised. There would be two separate lift spans, one through-truss for Tracks 1 and 3 and one through-truss for Tracks 2 and 4, providing system redundancy. The tracks would be on a parallel alignment across the Norwalk River, resulting in the two movable spans being parallel with one another. Track spacing between Tracks 1 and 2 would be 25 feet to allow for structural and mechanical clearance between the lift spans. The alignment of Tracks 1 and 3 would remain close to the current alignment, while the alignment of Tracks 2 and 4 would be shifted to the south to accommodate the increase in center track spacing. The total width of the bridge would be approximately 70 feet. The lift span would provide approximately 27 feet of vertical clearance in the closed position, which would be approximately 11 feet more than the vertical clearance of the existing swing span. To achieve 60 feet of vertical clearance at mean high water, the lift span would be raised 35 feet above the profile of the existing bridge. Like the short-span vertical lift bridge option, the bridge tower heights of the long-span vertical lift bridge option would be determined during final design and would range between approximately 100 and 150 feet above the top of the support piers. The movable spans would be flanked by four spans on the western side and one span on the eastern side. These approach spans would be fixed spans and would not move. Including the approach spans, the total length of the Walk Bridge would be approximately 690 feet from bridge abutment to bridge abutment.

The bridge would be supported by new abutments at each end and by five intermediate bridge piers, including the vertical lift bridge piers. The eastern lift pier would be located further east than the eastern lift pier for the short-span vertical lift bridge (Option 8A), thus increasing the span length and the horizontal clearance between the vertical lift bridge piers. Both piers supporting the vertical lift span towers would be placed outside of the limits of the existing swing span, with no new foundation construction occurring in either the west or east navigation channels, as currently defined by the existing swing span. The foundations for the vertical lift span piers would be in the Norwalk River and would be comprised of drilled shafts installed into bedrock, with a cap beam connecting the drilled shafts. The western bridge abutment would be located approximately 100 feet further west than the existing abutment to avoid construction conflicts with the existing abutment, high tower foundations, and retaining walls. Although not the intent of the abutment relocation, this action would result in a more open environment on the west side of North Water Street under the bridge. A new control house would be located on the southern end of the east vertical lift span pier.

A new fender system would be constructed approximately 10 feet from the new vertical lift span piers to protect them, providing at least 200 feet of horizontal clearance in the navigation channel. The fenders would be supported by concrete, steel, or composite piles. Navigational lighting in accordance with USCG standards would be installed.

The differences between the short-span and long-span vertical lift bridge options lie in the pier placement and span length between the east and west bridge abutments of the Walk Bridge. Beyond these abutments,

the improvements to the corridor approaching the Walk Bridge would be the same for the short span or long span options of the vertical lift bridge. The railroad corridor approaching the bridge from the west would be on retained fill. The existing retaining walls would be replaced with new retaining walls along both sides of the corridor for approximately 350 feet. These two new retaining walls would be constructed within the railroad right-of-way in the same general location as the existing retaining walls. The work would not extend to the Danbury Branch interlocking but would end approximately 100 feet east of this interlocking, which is approximately 250 feet east of the existing Washington Street Bridge.

The existing Walk Bridge and fender system would be dismantled and removed. This would include removal of the foundations and fender supports in the river to a depth to be determined in consultation with USACE and USCG. The existing western bridge abutment would be removed in its entirety, while the eastern abutment would be retained and partially lowered so that the remaining portions of the abutment can be used as a retaining wall to support an extension of the bike/pedestrian trail north of the bridge to areas south of the bridge.

The construction cost of the long-span vertical lift movable bridge option was estimated to range between $425 and $460 million in year 2020 dollars. Life cycle costs, equalized to present worth of 100-year life, were estimated to range between $3.7 and $4.2 million per year.

Non-Bridge Project Elements. In addition to replacement of Walk Bridge, the Walk Bridge Replacement Project would include other improvement elements that would apply in all three options. The railroad corridor approaching the bridge from the west would be on retained fill. The existing retaining walls would be replaced with new retaining walls along both sides of the corridor for approximately 350 feet. These two new retaining walls would be constructed within the railroad right-of-way in the same general location as the existing retaining walls. The work would not extend to the Danbury Branch interlocking but would end approximately 100 feet east of this interlocking, which is approximately 250 feet east of the existing Washington Street Bridge.

East of Walk Bridge, the project would continue on the existing railroad corridor location with construction of a new retaining wall within the existing right-of-way on the southern side of the corridor. A retaining wall would not be necessary on the north side of the corridor in the area from the Walk Bridge to Fort Point Street. The project would extend east to a point approximately 300 feet east of the Fort Point Street Bridge. The railroad bridge over Fort Point Street would be replaced.

Track, catenary, and signal work would be performed in addition to the work to replace Walk Bridge. Track work would include replacing about one-half-mile of tracks and ballast within the existing railroad right-of-way from approximately the Washington Street Bridge to approximately 300 feet east of the Fort Point Street Bridge. Overhead catenary and supports would be replaced within the limits of the project, generally from the Washington Street Bridge to a point approximately 300 feet east of the Fort Point Street Bridge. All approach track, catenary and signal work for the project would be within the existing state right-of-way.

The project would require the removal of the two existing high towers which carry Eversource Energy high voltage power and Metro-North Railroad communications over the Norwalk River. These towers do not meet current structural design standards and would conflict with the replacement bridge and associated track alignments. CTDOT would be responsible for removing the existing high towers as part of the Walk Bridge Replacement Project. Several options for replacement of the utility functions that exist on the high towers are under consideration from engineering, cost, environmental, and historical perspectives. Metro-North communication functions will potentially be carried on the new bridge on either side of the movable

span, transitioning to a placement beneath the Norwalk River at the navigation channel. Eversource Energy would be responsible for relocating its lines and securing the associated environmental reviews and permits.

The project would require dredging those portions of the river under the bridge that are not currently maintained as part of the federal navigation channel. The depth of dredging would match the federal channel depth of ten feet and tie into the existing 125-foot navigation channel that exists upstream of the bridge and the 100-foot navigation channel that exists downstream of the bridge.

Summary Evaluation. Table 4 presents an evaluation of the Movable Bridge Replacement (Build) Alternative relative to the project needs, or deficiencies of the existing bridge as stated in the project Purpose and Need. CTDOT determined that the Build Alternative is the only alternative that satisfies the project Purpose and Need.

Table 4 - Project Needs Evaluation of the Movable Bridge Replacement (Build) Alternative

Project Needs	**Movable Bridge Alternative**
Structure age and deterioration	The project will fully replace the existing bridge with a new structure with an estimated 100-year life span. This need will be met.
Decreasing reliability	The project will replace all mechanical and electrical components, providing for a reliable bridge structure. This need will be met.
Lack of resiliency	The project will substantially improve the bridge's resistance to severe weather events. The replacement bridge will be located above the required elevation for critical actions (mechanical systems). Key structural elements of the replacement bridge will withstand inundation levels of a Category 3 and Category 4 hurricane, in comparison to the existing bridge's ability to withstand inundation levels of a Category 1 and Category 2 hurricane. The replacement bridge will allow storms to flow through the bridge without inundating or impacting the bridge's main span, including beams, deck, ballast, and rails. In all category storm events, storms will not impact critical mechanical and electrical elements in the control house or machine room. This need will be met.
Safety standards	The project will be designed to current design standards. The existing bridge does not meet current design standards which reflect improved safety aspects compared to when the bridge was originally designed and built. Minimum requirements (loading, safety margins, etc.) for the design of railroad bridges have evolved throughout the twentieth century to reflect increases in demands on the infrastructure and advances in materials, methods, and technology. The project will incorporate safety and security measures, including a CCTV system, exterior lighting located along the bridge structure, and navigation lighting to meet USCG requirements. The CCTV system will provide for increased security relative to operations (bridge, navigation channel, and boat

Project Needs	Movable Bridge Alternative
	traffic) and surveillance (pedestrian and vehicular activity, control house and exit and entrance points, and anchorage and pier points). This need will be met.
Lack of redundancy	The project will provide operational redundancy through the construction of two independent bridge spans, each with separate mechanical and electrical equipment and controls, which will minimize the potential for rail operation disruptions. This need will be met.
Limited operational flexibility	The project will maximize operational flexibility through construction of two independent bridge spans. Dual mechanical and electrical systems will be provided for each movable span, so that if the selected main drive system is inoperable, the alternative system can be used. This need will be met.
Difficulty of maintenance	The project will facilitate ease of regular maintenance, including in-water maintenance, by allowing for a closure of one span while the second span remains available for rail traffic operations. This need will be met.
Reduced rail capacity and efficiency	The project will correct existing deficiencies which directly impact Metro-North and Amtrak daily train service, particularly on-time performance (OTP). Combined with the CTDOT's planned improvements to the New Haven Line, the project will increase rail efficiencies, contribute to Metro-North's and Amtrak's passenger ridership and OTP goals, and accommodate Providence and Worcester Railroad Company's freight service needs, including weight standards. This need will be met.
Reduced dependability and capacity for marine traffic	The project's increased vertical clearance will reduce the frequency of bridge openings, which will benefit commercial and recreational marine users. The additional horizontal clearance will facilitate easier barge and tow operations. The required dredging will enhance the federal navigation channel by straightening the alignment between Walk Bridge and the Stroffolino Bridge and improving the navigability of the river between and through the two bridges. This need will be met.
Lack of sustainability	The project will incorporate sustainable materials to provide protection from accelerated corrosion due to condensation, cold weather conditions, and the marine environment. Project elements will be located to facilitate access and ease of maintenance. This need will be met.

9.1.4 Determination of Preferred Alternative

CTDOT considered the project purpose and need, engineering, constructability, potential impacts to rail and navigation traffic, estimated costs, and potential environmental impacts of the alternatives and options.

With public input, CTDOT determined that the Build Alternative, specifically the Replacement Alternative – Movable Bridge, Long Span Vertical Lift Bridge (Option 11C), is the Preferred Alternative. Each of the three design options for the Build Alternative would have similar environmental impacts. However, construction requirements and the associated impact to rail and navigation traffic, as well as the costs of the three design options, would be different.

The existing bridge, in whole or in part, is expected to remain in service throughout a major portion of the construction duration. Maintaining the integrity of the existing bridge, in particular the foundations, is imperative to minimizing disruptions to rail and navigation traffic. Therefore, bridge replacement options requiring activities that limit proximity exposure of the existing bridge during construction are viewed favorably. For example, designs with foundations located near the existing supports, specifically the pivot pier, exhibit more risk than other designs. The long span vertical lift option (Option 11C) is the only alternative for which all foundations are located beyond the limits of the existing swing span.

Superstructure erection for all options will require a two-track outage. However, the amount of substructure work that can be completed without service disruptions (from a four-track operation to a two-track operation) would vary among the options. The design concept that allows for conducting the largest portion of substructure work in advance of an outage, along with the shortest period of superstructure construction, is expected to require the shortest overall construction duration. The shortest construction duration generally corresponds with the least disruptions to rail, maritime, and other users. Option 11C offers the greatest opportunity for maximum substructure construction prior to imposing a two-track outage, thereby minimizing the remaining duration of construction once the outage takes effect.

Designs that present fewer challenges during scheduled outages will have less risk of extending those outages and prolonging the disruptions to commuters and waterway users. The east movable span foundations for the bascule bridge option (Option 4S) and the short span vertical lift bridge (Option 8A) would be in the existing east navigation channel. Equipment access for float-in installation of the new lift spans is, therefore, obstructed by the existing pivot pier and limited to the west channel unless the pier is removed in advance of the span installation, indicating that additional temporary support is required for the tracks remaining in service. Option 4S also exhibits a highly asymmetric and unbalanced lift span configuration, further complicating a float-in installation. Symmetry and balance are favorable characteristics of Option 8A and Option 11C. Additionally, access to both channels would mitigate the pivot pier obstruction, presenting a potential advantage for Option 11C over Option 8A.

Work in the river is inherently riskier than work that is not in the water. For Option 11C, the elimination of the eastern intermediate approach span pier and the location of the east lift span tower foundation closer to shore, outside the navigation channel, and in shallower water (compared to Option 4S and Option 8A), introduce clear advantages regarding risks associated with in-water construction.

Option 11C exhibits navigation advantages over Option 4S and Option 8A by not blocking the east channel and thereby delaying immobilization of the swing span. Construction equipment can be operated on one side of the existing pivot pier while maintaining safe vessel transit through the bridge on the opposite side. Since the swing span would be operational until it is removed, over-height vessels could pass through the bridge, albeit on a restricted schedule that balances construction efficiency with the reasonable needs of safe, efficient navigation. Based on the configuration of the new movable spans and the associated track alignment, Option 11C does not require the use of a temporary runaround bridge during construction.

Option 8A introduces a vertical navigation restriction prior to completion of the lift span towers due to locking down the swing span for partial demolition or replacement with a non-movable temporary span. Option 4S requires removal of the existing bridge in the east channel to install the bascule pier foundations, thereby imposing a vertical restriction with temporary spans for drilled shaft installation, which is earlier in the construction sequence than Option 8A.

The environmental impacts of the three design options are comparable. All options would require that the historic Walk Bridge and high towers be demolished. Fort Point Street Bridge also would be replaced in all options. In general, all other environmental impacts would be similar. The bascule bridge option (Option 4S) would require a wider bridge and project footprint on the east side of the Norwalk River than the two vertical lift bridge options. The footprint impacts of the options to natural resources would be comparable; however, the impacts of the bascule bridge to tidal wetlands and subtidal habitat would be slightly higher than the vertical lift bridge options. When the impacts associated with a temporary runaround bridge are considered, some impacts would be further increased. In all cases, the long span vertical lift bridge option (Option 11C) would have the same or slightly less impact to natural resources than the short span vertical lift option (Option 8A).

The existing high towers present prominent vertical elements at the site and they contribute to the overall historic character of the project area. As previously noted, these latticed high towers must be removed. A potential advantage of the vertical lift bridge options (Option 8A and 11C) is that these options will reintroduce a prominent vertical element to the site and will offer flexibility, as the design advances, to retain this vertical element and continue to contribute to the character of the project area.

At approximately 40 months, Option 11C will require the shortest overall time from commencement of Walk Bridge construction to restoration of four-track service and full operation capability for marine traffic. This compares to 44 months for the short-span vertical lift bridge (Option 8A) and to 47 months for the bascule bridge (Option 4S).

More construction activities can be undertaken while the existing swing span is operational with Option 11C, thereby reducing the vertical navigation restrictions during construction by up to 14 months compared to the other two options. Two-track rail operation with Option 11C is four months shorter than Option 8A and seven months shorter than Option 4S, thus minimizing the duration of rail restrictions during construction. Construction of Option 11C will result in less disruption to rail service and navigational traffic during construction.

Temporary track outages, temporary channel restrictions or closures, and temporary street detours could potentially affect business operations around construction. Selection of Option 11C minimizes this temporary disruption by minimizing the duration of construction activities, restrictions, or closures. As a result, this Option 11C corresponds with the least social and economic risks and impacts to the City of Norwalk and the larger region.

The estimated costs of Option 11C are higher than the other two design options. At an estimated construction cost between $365 million and $415 million, Option 11C would cost about 12 percent more than Option 8A ($325 million -$375 million) and about 10 percent more than Option 4S ($330 million - $380 million). Life cycle costs also would be highest for Option 11C at between $3.7 million and $4.2 million per year. This compares to annual life cycle costs ranging from $3.4 million to $3.9 million for Option 4S and $3.4 million to $3.9 million for Option 8A. CTDOT has determined that Option 11C's shorter construction duration and the reduced disruption to rail traffic along the Northeast Corridor and

navigation traffic on the Norwalk River, along with lower environmental impacts, outweighs the additional costs of Option 11C.

9.2 Under-Channel Cable Crossing Alternatives Evaluation

Construction Activity (CA) 2 presents plans for the routing of Metro-North Railroad (MNR) traction power and signal power, communication and signal, and bridge power and control cabling, across the channel of the Norwalk River. The MNR cables will be contained into two separate pipes which will meet MNR's separation requirements for the north and south circuits. Each pipe will be filled with an inner bundle of smaller pipes. The pipes making up the inner bundle will carry the various cables.

CTDOT conducted an evaluation of three options for crossing the Norwalk River: 1) cut and cover (CAC); 2) horizontal directional drilling (HDD); and 3) micro-tunneling. The three methods assume the cables will be enclosed in two large pipes that will cross the Norwalk River channel to the south of the existing (and replacement) bridge. Additionally, laydown and work areas along with various depth and sizes of temporary excavations will be required on both sides of the channel. This work will impact Parcel 2/19/2 (the IMAX Theater parcel) and Parcel 3/1/25 (the construction yard at the former marina site). The three construction methods for the under-channel cable crossing were evaluated based on constructability, schedule, environmental impacts, local impacts, costs, and the risks associated with each category.

The CAC installation method is a traditional construction method of placing the pipe at the desired elevation by excavating and removing material to create a trench, placing the pipes within an open trench, and then backfilling the trench. The CAC route would be constrained by obstacles in the channel that cannot be removed, construction activities, and available space for the tie-in and pipe laydown area. The CAC method also would require treatment of all material removed from the trench. The timing of the CAC work would be limited by the in-channel work time of year restrictions.

The HDD installation is a construction method that uses guided drill rigs to install pipe underground. This method reduces excavation and backfill and can potentially avoid obstacles by drilling beneath the obstacle. The HDD method would require an extensive laydown area on the east side of the Norwalk River. The work area on the Water Street side of the channel would require closure of the street and would affect the buildings adjacent to Water Street. The HDD route would be constrained by available staging and pipe laydown area, adjacent construction activities, soil density and stratification, soil cover above the pipe path, reasonable entry angles, distance to existing obstructions (including utilities), minimum drill and pipe bend radius, and existing soil fissures such as boring holes or removed piles. If the soil is too soft or there is not enough confining overburden pressure, then it is harder to steer the drill and the risk for leaking drilling fluid also increases. This is referred to as frac-out. Soil layers with cobbles and boulders are more difficult to drill through.

The Micro-tunneling installation is a construction technique that uses a slurry-type Micro-Tunnel Boring Machine (MTBM) to install the cables through the medium to dense sand/gravel layer below the river bottom. The micro-tunnel would be approximately 5-feet in diameter, approximately 490 feet long, and approximately 55-feet below the existing mud line. There would be a pit on each side of the channel excavated down to the level of the crossing pipe. The pit will be dewatered and would contain the tunnel boring equipment during the boring operation.

The HDD method was abandoned due to geometric limitations of the drilling equipment and the depth of the soft soil layers on the west bank. The potential for leakage of drilling fluid, especially on the west side of the channel, presented a serious environmental concern. The HDD option would be limited in the horizontal and vertical layout due to soil layers, geometric constraints of the drill rig, existing building and infrastructure, obstructions in the channel, and available staging areas. The work area required for the HDD option would adversely impact the businesses and residents on North Water Street and would require a closure of Fort Point Street. Further, while the HDD option would not disturb the river bottom or water quality of the Norwalk River habitat, the HDD method would incur the risk of frac-out, which cannot be detected in advance. A large steel pipe would have to be installed at an angle on the west side through the soft soil layers, then would have to be removed at the end of the process. This was the only option for minimizing the risk of frac-out on the west bank, which added significant risk to the operation.

CTDOT determined that the of the remaining two options, the CAC and Micro-tunneling methods, the Micro-tunnel option has more advantages, including a lower construction cost and lower risk. The CAC option would require excavation in the channel, potentially impacting existing marine and fish passage. To provide protections, excavation would be required within a sheet pile enclosure and turbidity curtain or subject to time of year restrictions. Additionally, all excavated material would be treated as hazardous, requiring special management and disposal. While the temporary environmental impacts of the CAC process primarily would occur in proposed channel maintenance dredging areas, the environmental protection requirements and the hazardous material handling would add project cost and schedule impacts. The Micro-tunnel option would not require these environmental protections, nor would it impact existing soils. For these reasons, CTDOT opted to pursue the Micro-tunnel option for the routing of MNR traction power and signal power, communication and signal, and bridge power and control cabling across the channel of the Norwalk River.

9.3 Vessel Relocation and Docking Facilities Alternatives Assessment

CA3 addresses temporary and permanent requirements of the Sheffield Island Lighthouse Ferry and the Maritime Aquarium's research vessel, Spirit of the Sound, located waterward of 4 North Water Street (Parcel 2/19/1). Existing facilities consist of two 65-foot docks, each with a non-accessible gangway.[1] The vessel operations are located immediately south of Walk Bridge (and north of the Stroffolino Bridge) and will likely be affected by proposed construction activities. CTDOT evaluated alternatives for the vessel operations and current berthing, with a goal of minimizing the effects of project construction on current facilities, while maintaining the safety of the vessel passengers and operators during construction and maximizing their operational flexibility.

CTDOT commissioned a Navigation Safety Risk Assessment of the vessel operations with proposed construction activities.[2] Two construction options were evaluated in the Navigation Safety Risk Assessment: A) reconfiguring the vessel berthing in the current location; and B) relocating the berthing operations to a location south of the Stroffolino Bridge on the west side of the harbor. In Option A, vessel

[1] Accessible refers to compliance with The Americans with Disabilities Act (ADA). Non-accessible indicates noncompliance with ADA.
[2] RACE Coastal Engineering, Navigation Safety Risk Assessment, Walk Bridge Replacement Project, Norwalk, CT (Draft, 10/23/20).

operations would remain in their current location, waterward of 4 North Water Street. To minimize disruption to their operations, vessel berthing would be shifted further south of Walk Bridge and the distance between the vessels would be maximized. The revised location would require a new docking configuration consisting of a single 213-foot long floating dock. Option B, temporarily relocating vessel berthing operations approximately 700 feet south at the Marine Staging Yard (waterward of 68-90 Water Street), was developed to address concerns with construction-related vessel traffic congestion north of the Stroffolino Bridge. Option B would consist of a new temporary 165-foot long floating dock with two gangways (one of which would be accessible) to accommodate both vessels. The navigation safety risk assessment determined that Option A, while it is the preferred option of the vessel operators, would incur a higher risk in several hazard categories when compared to Option B. Option B would provide more maneuvering room and eliminate transit through the Stroffolino Bridge for inbound and outbound operations, however there would be some increased risks associated with Option B due to proximity to adjacent marinas and exposure to waves. CTDOT developed a third option, Option C, which would be a combination of Option A and Option B. In Option C, both locations would be available to vessel operators: the primary location for passenger loading and unloading would be the current location (Option A), and 68-90 Water Street (Option B) would be used for passenger loading and unloading during certain project construction operations and for vessel storage outside of operating hours.

To further demonstrate the viability of these options, CTDOT commissioned an in-water vessel test in consultation and coordination with the vessel operators, the Norwalk Harbor Management Commission, and the Norwalk Harbormaster. Three alternative temporary berthing arrangements were simulated and a series of vessel maneuvers were conducted on June 17, 2020, including simulation of project material and equipment barges and the contractor's work platform in the Norwalk River. The test maneuvers were accomplished safely without incident, confirming the operators' ability to dock safely for each alternative simulated under the river traffic, weather, tide, and current conditions at the time of the test, while maintaining minimum desired clearances to fixed objects. While the In-Water Vessel Test effectively demonstrates the viability of each alternative berthing configuration simulated, it should be understood that the test was conducted absent bridge construction activity.[3]

Based on the results of both the Navigation Safety Risk Assessment and the in-water vessel test, CTDOT determined Option C to be the preferred option. At the current location (4 North Water Street), the two existing docks will be removed and replaced with a new single 213-foot long dock. The existing non-accessible gangways will be relocated to provide access to the new dock and supplemented with an 80-foot accessible gangway constructed at the southern end of the reconfigured dock. Dredging will be required at the southern end of the reconfigured dock to facilitate vessel access to the new dock and at the northern end of the reconfigured dock to facilitate vessel access during the lowest tidal conditions. The reconfigured single long dock and new gangway will be permanent improvements available to both vessel operators, providing operational flexibility both during construction and in the permanent condition. Additionally, the new accessible gangway will improve passenger loading and unloading operations.

Following the completion of the project, all operations of the Maritime Aquarium vessel and the Sheffield Island Ferry will resume at the permanently reconfigured single dock (Option A) and the temporary docking facility (Option B) will be removed.

[3] HNTB Corporation and MILONE & MACBROOM, INC., In-Water Vessel Test Report, Draft, December 31, 2020.

9.4 Pier Construction Alternatives

CA9 and CA10 address the construction of Pier 2 and Pier 3. New pier foundation alternatives include: 1) use of drilled shafts installed within individual permanent steel casings, 2) use of pile-supported piers constructed with cofferdams, and 3) use of spread footings supported on rock. CTDOT selected the drilled shaft construction method based on the ability to meet the structural design, span length, and constructability considerations associated with the proposed bridge. This method will decrease the impacts of construction upon environmental resources.

The use of drilled shafts in pier design will reduce the overall extent of permanent river bottom impacts, while also minimizing both the extent and duration of construction disturbances to the river bottom. The drilled shafts will be constructed within permanent 12-foot diameter steel casings (rather than pile-supported piers built within steel sheeting cofferdams). Significant disturbances to the river bottom would result with the implementation of Option 2, a pile-supported foundation. This construction technique would include the placement of a continuous concrete slab (footing) within an excavated area of the river bottom, connecting all of the foundation piles. To construct the slab for the pile-supported foundation, a cofferdam would need to be constructed around the entire foundation perimeter, with this cofferdam being dewatered to complete the pier construction. Cofferdams for a pile-supported foundation would be large enough to enclose the foundation footprint, which would result in extensive impacts to the river bottom. Option 3 was dismissed due to the depth (elevation) of the rock surface. This pier construction option would require full excavation to a depth of more than 40 feet over the entire footprint of the footing. With drilled shafts (Option 1), the amount of excavation would be greatly reduced relative to the alternative foundation types. CTDOT determined Option 1 to be the preferred option.

The drilled shaft steel casings will be installed within marine enclosures. This construction technique will minimize the extent of in-water work, will reduce the amount of sediment dredging/excavation, and will reduce schedule risks by eliminating the time-consuming and risky process of constructing and dewatering sheet-pile cofferdams necessary for the pile-supported foundation.

9.5 Replacement Bridge Lift-Span Assembly Location

As previously cited, a primary goal of the Walk Bridge Replacement Project design and construction approach is to minimize disruptions to rail and river traffic. A corresponding goal of the project is to minimize community impacts during construction. These goals were two of the reasons that CTDOT determined to use the southern parcel at Manresa Island (Parcel 5/86/1) as a Staging and Storage Yard for the construction of the replacement bridge lift spans (CA 19), as opposed to locations closer to Walk Bridge.

A Value Engineering (VE) Study for the project was prepared for CTDOT and FTA to identify opportunities to improve project value (HNTB Corporation and Strategic Value Solutions, Inc., September 2019). The VE Study included a recommendation for the fabrication of the replacement bridge lift spans off-site in lieu of constructing the lift spans at a marine staging yard (68-90 Water Street) closer to the bridge site, as proposed in the earlier design stages. CTDOT is proposing to construct the lift spans at the site of the de-commissioned NRG Energy power plant at Manresa Island, which consists of a previously disturbed site with existing storage and staging areas and waterfront access. CTDOT determined that improved project value will result from using a smaller, pre-existing staging and storage area for assembling the lift spans,

as opposed to constructing a new permanent marine staging yard at the Water Street parcels at the bridge site.

Using Manresa Island as a water-based construction Staging and Storage Yard will minimize encroachment into the Norwalk River navigation channel. At Manresa Island, berthing of the largest barges for assembling the lift span at the Manresa Island dock will be generally 300 feet outside of the 200-foot navigation channel. In comparison, berthing of these barges at 68-90 Water Street would be approximately 28 feet within the navigation channel, which is 250-feet wide at this location.

Use of Parcel 5/86/1 will not adversely affect any existing uses, located on site or abutting the site. The proposed Staging and Storage Yard at Manresa Island is relatively isolated from neighborhoods and community uses; the closest neighborhood/residence is approximately 0.4 mile from the work area to the north. Impacts on the community northwest of the site will be limited to traffic to and from the Staging and Storage Yard. Relative to existing truck traffic on Woodward Avenue, the additional traffic on surrounding roads due to the Staging and Storage Yard will have minimal impact on existing conditions. In comparison, the Water Street parcels are located in a densely developed downtown area, with abutting residential, retail, and other commercial uses. By using an isolated waterfront site for the replacement bridge lift span assembly, there will be less construction traffic, noise, and air quality impacts upon neighboring uses. Further, the Storage and Staging Yard at Manresa Island will not adversely impact navigation during berthing of construction barges. For these reasons, as well as a reduced overall construction cost, CTDOT opted to use the Manresa Site for the assembly of the replacement bridge lift spans.

Walk Bridge Replacement Project Bridge Number 04288R
Norwalk CT
State Project Number 0301-0176

Part IV: Project Information
(continued)
Questions 10 and 12

10. Indicate the number and date of issuance of any previous state coastal permits or certificates issued by DEEP authorizing work at the site and the names to whom they were issued.

Permit/Permit Number	Date Issued	Name of Permittee/Certificate Holder
Flood Management General Certification (FMGC) Authorization: Advanced Utility Construction/FM-201200688C	5/5/2020	Connecticut Department of Transportation
FMGC Authorization: Trestle Test Pits/ FM-201200688C	10/21/2019	Connecticut Department of Transportation
FMGC Authorization: Penna Site Drainage/ FM-201200688C	8/9/2018	Connecticut Department of Transportation
Certificate of Permission/201807462	6/14/2018	Connecticut Department of Transportation
Structures, Dredging and Fill/Section 401 Water Quality Certification/CAM Review/201708100	5/7/2018	Connecticut Department of Transportation
FMGC Authorization: Test Pile Program/ FM-201200688C	4/4/2018	Connecticut Department of Transportation
Flood Management Certification/201801456-FM	3/16/2018	Connecticut Department of Transportation
General Permit for Water Resource Construction Activities	6/26/2017 (submittal date)	Connecticut Department of Transportation
General Permit for Discharge of Stormwater and Dewatering Wastewaters from Construction Activities/GSN003179	6/13/2017	Connecticut Department of Transportation
Coastal Management Consistency Review/NA	8/2/2016 & 3/8/2017	Connecticut Department of Transportation

Permit/Permit Number	Date Issued	Name of Permittee/Certificate Holder
Section 401 Water Quality Certification/TBD	11/21/2016	Connecticut Department of Transportation
FMGC Authorization: Norwalk Submarine Cable/ M-201200688C	9/13/2016 (submittal date)	Connecticut Department of Transportation
Certificate of Permission/2016033772-MG	4/4/2016	Connecticut Department of Transportation
FMGC Authorization: Walk Bridge Fender Repairs/ FM-201200688C	3/3/2016 (submittal date)	Connecticut Department of Transportation
Certificate of Permission/COP-201207773-SJ	3/11/2013	Connecticut Department of Transportation
FMGC Authorization /FM-201200688C	3/21/2012	Connecticut Department of Transportation
Certificate of Permission/COP-2004-059-KZ	5/10/2004	Connecticut Department of Transportation

12.a. Identify and describe the existing municipal zoning classification of the site.

The Walk Bridge Replacement Project, extending from approximately the Washington Street Bridge (western project limit) to approximately 300 feet east of the Fort Point Street Bridge (eastern project limit), is located within the Connecticut Coastal Area Boundary. The state-designation is intended to ensure that any development within the coastal area is conducted in a context sensitive manner without significantly disrupting either the natural environment or sound economic growth. The following City of Norwalk zoning districts are in the immediate vicinity of Walk Bridge at the four quadrants of the bridge, and along the railroad corridor within the Coastal Area Boundary (effective October 30, 2020):

- The northeast quadrant is zoned Industrial 1(I1) directly adjacent to the bridge. On the northside of the railroad corridor, Zone I1 extends east from the riverbank past the eastern project limit. On the southside of the railroad corridor, Zone I1 begins east of the railroad crossing of Fort Point Street/Route 136 and extends past the eastern project limit. According to the Norwalk regulations, the Industrial No. 1 District "is intended to provide low-scale industrial facilities interspersed with other uses and with the utilities and infrastructure necessary to support such industrial operations. The provisions of this zone are designed to recognize the need for manufacturing space while ensuring that these areas are compatible with adjacent residential neighborhoods and with the capacity of available infrastructure."

- The southeast quadrant is zoned Neighborhood Business (NB) directly adjacent to the bridge. On the southside of the railroad, the NB Zone extends east from the riverbank to the railroad crossing of Fort Point Street/Route 136. East of Fort Point Street, the parcels are zoned I1 past the eastern project limit. South of Parcel 3/1/25 and extending south to include Veterans Memorial Park, the area is zoned AAA Conservation Land. The intention of the AAA Conservation Land is to preserve land for park and recreation purposes. The Neighborhood Business Zone is intended to encourage mixed-use development in neighborhood commercial areas and water-dependent uses are encouraged on those lots which are adjacent to the waterfront.

- The northwest quadrant is zoned Reed Putnam Design District – Subarea D (RPDD) directly adjacent to the bridge. On the northside of the railroad corridor, the RPDD Zone extends west from the riverbank to the NHL Danbury Branch, where the zone transitions to the Reed Putnam Design District – Subarea E (RPDE) to the western project limit. The districts were created to encourage development in accordance with the Reed Putnam Urban Renewal Plan, including creating opportunities for mixed-use development and enhancing public access to the Norwalk waterfront. There are five different subareas within the Reed Putnam districts, reflecting differences in use, height, and bulk of buildings.

- The southwest quadrant is zoned Washington Street Design District (WSDD) directly adjacent to the bridge. On the southside of the railroad corridor, the WSDD zone extends east from the riverbank past the western project limit. According to Article 50 of the Building Zone Regulations: "The purpose of this regulation is to preserve and enhance the unique character of the Washington Street Historic District and environs by encouraging the preservation of existing buildings, by encouraging the mixed-use of properties and by ensuring that all uses and structures will be compatible with one another and with the established character of the area."

  There are two areas of designated properties (also known as overlay districts) located west of the bridge. The first overlay district, "Designated Properties for Fees in lieu of Parking in South Norwalk," includes most of SoNo and allows for flexibility in parking requirements for uses located within its boundary. The second overlay district, "Designated Properties for Transit-Oriented Development (TOD) at South Norwalk Railroad Station," specifies TOD provisions for properties within its boundary. A third overlay district has been proposed to the east of the project area; the "Designated Properties for Transit Oriented Development at the East Norwalk Railroad Station," also specifies TOD provisions for properties within its boundary.

The parcels designated for construction material storage and employee parking at 68 (portion), 70, and 90 Water Street [Parcels 2/84/19 (portion), 2/84/63, and 2/84/33] are located less than 0.20 miles southwest of the bridge site. The parcels are zoned as Marine Commercial (MC). Water-dependent uses are allowed in the Marine Commercial Zone including marinas, water-based recreational uses, parks and public recreational facilities and marine research labs and related facilities.

Parcel 5/86/1, a portion of which will be used as the Manresa Island Staging and Storage Yard, is located approximately 2.1 nautical miles south of the existing bridge. The 33-acre southern parcel (Parcel 5/86/1), and the 92-acre northern parcel (Parcel 5/86/2) on Manresa Island are zoned for B Residence. The principal

uses and structures allowed in B Residence Zones are single-family detached dwellings, parks and playgrounds, limited farms/nurseries, and neighborhood club houses. The decommissioned NRG Energy Manresa Island Power Plant and supporting facilities were allowed as a special permit use.

12.b. Identify and describe the existing land uses(s) on and adjacent to the site.

Walk Bridge and the railroad corridor in South Norwalk and East Norwalk are designated as a transportation land use.

The SoNo neighborhood, located west of the bridge, is a dense mixed-use area with restaurants, bars, retail, office, light industrial, and residential units served by municipal bus service. Recently, this area has seen substantial publicly and privately funded revitalization. There are several mixed-use Transit Oriented Development (TOD) projects under construction or planned in the SoNo neighborhood. The neighborhood is also home to two parks and the Norwalk Police Headquarters. In addition to the South Norwalk Train Station that services the New Haven Line, the neighborhood is served by five city bus routes. In the Norwalk Plan of Conservation and Development, the neighborhood is highlighted as a regional center with numerous development areas, some of which have already taken place.

The Maritime Aquarium at Norwalk is located directly adjacent to Walk Bridge between the Norwalk River and North Water Street. The Aquarium complex occupies the western bank of the Norwalk River on both the north side and south sides (including the IMAX Theater) of the bridge (Parcels 2/19/3 and 2/12/2, respectively); the two areas are connected by a pedestrian walkway running underneath the bridge. Across North Water Street from the aquarium on the north side of the rail corridor is the Norwalk Lock Building, a historic industrial building converted to commercial office space that abuts the retaining wall along the rail corridor, separated by a 10-foot access driveway. The City of Norwalk currently is constructing a replacement IMAX facility and seal tanks, as well as constructing related interior renovations to the existing Aquarium facility, on Parcel 2/19/3.

Further north at 100 North Water Street, the SoNo Collection, a mixed used retail shopping center with over 1 million square feet of development, opened in October 2019. . To the west along the north side of the rail corridor to the bridge over Washington Street, the land use is comprised of three and four-story mixed-use buildings with commercial uses on the lower floors and residential uses on the upper floors. The land use along the south side of the rail corridor west of the river is a similar make up, consisting of historic warehouse buildings rebuilt for new mixed use including the Ironworks SoNo building, converted to incorporate over 100 residences, located across North Water Street from the aquarium's IMAX Theater. South of the theater along the riverbank, additional uses include the Maritime Aquarium and Sheffield Island ferry docks and an NPA public parking lot. Portions of the Norwalk River Valley Trail exist along the waterfront north of the SoNo neighborhood and at the NPA parking lot.

Further south along Water Street, at 68-90 Water Street, are three parcels designated for use as construction material storage and employee parking. Current land uses include office, warehouse, and parking. Ongoing

construction projects in the Marine Commercial area on Water Street include a multi-activity entertainment complex and a mixed-use retail and residential development.

The east bank of the river directly adjacent to Walk Bridge is less densely developed than the west bank. The East Norwalk neighborhood is centered around the East Norwalk Train Station, which is located approximately one-half-mile east of the bridge. The Norwalk Water Pollution Control Authority (WPCA) Wastewater Treatment Plant (WWTP) is located approximately 750 feet to the northeast of Walk Bridge. The bridge and the WWTP are separated by a vacant CTDOT-owned lot primarily used for materials storage and access to the railroad and bridge for operations and maintenance. The WWTP Waterfront Walkway section of the Norwalk Harbor Loop Trail runs north along the river from Walk Bridge. The Liberty Square area, located southeast of Walk Bridge and extending east to Fort Point Street, consists of mixed land uses, including commercial uses (an auto body repair shop, contractor storage yard, plastic fabrication company), multi-family residential uses, and a restaurant.

Manresa Island, the location of the project's Staging and Storage Yard, consists of two parcels. The southern parcel, Parcel 5/86/1, is the site of the decommissioned NRG Energy Manresa Island Power Plant and supporting facilities, including industrial/utility support structures, an active Eversource Energy electrical substation, an office building and employee parking (71 spaces), dock, and harbor. In 2013, the power plant was decommissioned. Access to and from Parcel 5/86/1 is by two paved roads, Manresa Island Road and an unnamed construction access road, through the northern parcel (Parcel 5/86/2) to Longshore Avenue. Parcel 5/86/2 contains historic fill (contaminated material), dense forest cover, tidal and freshwater wetlands, and critical habitat. Due to the level of contamination, the parcel is not considered suitable for development.

Attachment AA – Published Notice of Application and Completed Certification of Notice Form

Connecticut Department of Energy & Environmental Protection

Certification of Notice Form - Notice of Application

DEEP USE ONLY
Division
Application No.

I , **Kimberly C. Lesay** , certify that
(Name of Applicant)

the attached notice represents a true copy of the notice that appeared in **The Hour**
(Name of Newspaper)

on **August 28, 2019**
(Date)

I also certify that I have provided a copy of said notice to the chief elected municipal official listed below as required by section 22a-6g CGS.

Harry Rilling	**Mayor**	
Name of Official	*Title of Official*	
125 East Avenue, P.O. Box 5125		
Address		
Norwalk	**CT**	**06856-5125**
City/Town	*State*	*Zip Code*
Kimberly Lesay	8/29/19	
Signature of Applicant	*Date*	
Kimberly C. Lesay	**Transportation Assistant Planning Director, Office of Policy & Planning**	
Name of Applicant (print or type)	*Title (if applicable)*	

SPORTS

COLLEGE FOOTBALL

No. 9 Notre Dame has stacked deck of youthful linebackers

ASSOCIATED PRESS

SOUTH BEND, Ind. — For a guy who generally holds his cards close to the vest, Clark Lea may have a couple aces up his sleeve.

The defensive coordinator and linebackers coach for No. 9 Notre Dame said he sees leaders everywhere on his side of the ball with the season opener at Louisville coming up on Monday.

In the secondary, free safety Alohi Gilman and strong safety Jalen Elliott are both team captains and the Fighting Irish are counting on senior Troy Pride Jr. to replace All-American Julian Love at boundary corner. On the defensive line, senior ends Julian Okwara and Khalid Kareem also were named captains by their teammates. Junior Myron Tagovailoa-Amosa has replaced the graduated Jerry Tillery and junior Kurt Hinish has stepped up at nose tackle.

Tasked with replacing linebackers Te'von Coney and Drue Tranquill — a combined 209 stops — from last season's 12-1 playoff team, Lea has spent the last eight months searching for the right combinations. Of 13 players rotating at Lea's three linebacker positions, 10 are freshman or sophomores.

"The thing I'm excited about is we have a talented group," Lea said. "Everyone has the ability to have a role in the game. We're not having two guys take the brunt of snaps this season. We have rotations, we have specific skills that are executed in situations."

Asmar Bilal, a 6-2, 227-pound grad student who saw the majority of snaps at rover last fall and finished with 50 tackles, has spent time at both Coney's middle and Tranquill's weakside linebacker positions. Drew White, a 6-foot, 230-pound physical junior who saw limited action in four games, has returned from shoulder surgery and is part of the rotation in the middle. Jeremiah Owusu-Koramoah, a 6-1, 216-pound junior, has been impressive in Bilal's old rover spot.

"(White's) got a really, really nice knack of finding the ball," added Lea, who likely will remove the once overlooked former three-time state champion at St. Thomas Aquinas (Florida) in passing situations. "He's a winner who has fought through adversity and hasn't wavered or backed down."

Coach Brian Kelly said he realizes that how well this young group grows will determine how far the Irish will go in 2019.

"We've got a better feel on who (the players) are and what their strengths and weaknesses are," Kelly said. "We'll use different packages and you'll see different faces. For this team, it's going to be about the basic tenets of football — we're going to have to run the ball well and stop the run. We're going to have to play with a physicality."

Carlos Osorio / Associated Press

Stanford wide receiver Trenton Irwin is stopped by Notre Dame safety Jalen Elliott (21) and linebacker Asmar Bilal during the first half in South Bend, Ind., in 2018. Notre Dame's second-year defensive coordinator Clark Lea has spent all spring, summer and preseason looking for replacements for graduated 2018 tackle leaders Te'von Coney and Drue Tranquill. In grad student Bilal and junior Drew White he may have found two of many.

The Norwalk Hour

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PUBLIC NOTICES

Notice of Permit Application

Town: City of Norwalk

Notice is hereby given that the Department of Transportation (the "applicant") of 2800 Berlin Turnpike Newington, CT 06131 has submitted to the Department of Energy and Environmental Protection an application under Connecticut General Statutes Section 22a-32 for a permit to conduct regulated activities in tidal wetlands, and Section 22a-361 to conduct work in tidal coastal or navigable waters of the State; and 33 U.S.C. Section 1341 (401 Water Quality Certification) to conduct an activity which may result in a discharge to certain waters of the State.

Specifically, the applicant proposes to replace the New Haven Line Railroad Bridge (Walk Bridge, Bridge No. 04288R) crossing the Norwalk River in Norwalk, Connecticut. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, and deactivated electrical and railroad submarine cables; and construction of the replacement bridge. The four-span replacement bridge includes two side-by-side, 240-foot vertical lift spans across the Norwalk River, each with independently operated mechanical and electrical equipment. The pair of 240-foot vertical lift spans provides 170 feet horizontal navigational clearance between fenders, 60.73 feet vertical clearance above mean high water (MHW) when the span is fully raised, and 25.73 feet vertical clearance above MHW when the span is closed. There are two western approach spans and one eastern approach span. The approach spans are side-by-side, two-track structures; the north structure carries Tracks 1 and 3 and the south structure carries Tracks 2 and 4. Each structure is comprised of a precast concrete composite ballasted deck supported on four simply-supported built-up welded plate girders. The lift spans are 40-foot deep through trusses, each with a double-intersection Warren truss configuration without verticals. Each lift span is an open-deck two-track structure made up of trusses with floor beams supporting track stringers. Tower structures at the end of the lift spans support the lifting mechanisms and counterweights for both lift spans. Short deck--girder spans through the towers at each end provide continuity from the approach spans to the movable spans.

The proposed activity will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain. The project will result in 8,600 square feet (sf) (0.20 acre) of permanent impacts to tidal wetlands. Compensation for permanent impacts to the vegetated tidal wetlands and intertidal mudflats will be largely in the form of mitigating tidal wetland areas within the intertidal zone, with some enhancement areas located landward of the high tide line. The loss of vegetated tidal wetlands and intertidal mudflats will be mitigated through treatment and removal of invasive common reed (Phragmites australis) in existing tidal wetlands, restoration of degraded vegetated tidal wetlands dominated by Phragmites, and restoration of a low-functioning intertidal flat previously impacted by riprap placement. The proposed mitigation areas cover a total of 61,990 square feet (1.42 acres), which is sufficient to compensate for the 34,400 square feet (0.79 acre) of required mitigation. These areas include 43,200 square feet (0.99 acre) that will be restored within existing tidal wetland boundaries which contain salt marsh vegetation, stands of Phragmites, and riprap with scattered patches of smooth cordgrass (Spartina alterniflora), in addition, 18,790 square feet (0.43 acre) will be newly created or restored tidal wetlands outside of existing tidal wetland boundaries. The mitigation plan also will include listed species enhancements and improvements to the overall water quality of the Norwalk River. The proposed mitigation areas exist along the Norwalk River, proximal to, but outside of the project's immediate vicinity. Selection and development of the wetland mitigation sites were conducted in close conjunction with the Connecticut Department of Energy and Environmental Protection (CTDEEP); additionally, local stakeholder representatives from the City and the Maritime Aquarium were also given opportunities to review the mitigation plans. The project also includes new developments to improve coastal navigation and water-dependent uses, consisting of a new bulkhead at the Marina Staging Yard (68-90 North Water Street), which will support navigational operations for future water-dependent uses; new docking facilities for existing Maritime Aquarium and Sheffield Island Ferry vessels; and a new permanent public fishing pier with small boat short-term docking waterfront of 4 North Water Street.

Interested persons may obtain copies of the application in electronic (CD) format from Ms. Kimberly Lesay, Transportation Assistant Planning Director, Connecticut Department of Transportation, 2800 Berlin Turnpike, Newington, Connecticut 06131 Telephone (860) 594-2931.

Interested persons may view the application on the Walk Bridge Program website at www.walkbridgect.com. Additionally, interested persons may view the application and/or obtain copies of the application in paper or CD format at the Walk Bridge Program Welcome Center, 24 Marshall Street, South Norwalk, Connecticut (corner of North Water Street and Marshall Street in the first floor of the Lock Building). The Walk Bridge Welcome Center hours of operation are: Tuesday 8:00 a.m.- 4:00 p.m.; Wednesday 8:00 a.m. - 4:00 p.m.; and Thursday 12:30 - 4:30 p.m. Please call in advance to schedule a review of the application, telephone 1-833-GO2-WALK (462-9255).

The application is available for inspection at the Department of Energy and Environmental Protection, Land and Water Resources Division, 79 Elm Street, Hartford, Connecticut 06106-5127, telephone (860) 424-3034 from 8:30 a.m. to 4:30 p.m. Monday through Friday. Please call in advance to schedule review of the application.

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PROBATE NOTICES

NOTICE TO CREDITORS
ESTATE OF Jill Ann Mola
(19-04845DR)

The Hon. Douglas Stern, Judge of the Court of Probate, District of Norwalk-Wilton Probate Court, by decree dated August 5, 2019, ordered that all claims must be presented to the fiduciary at the address below. Failure to promptly present any such claim may result in the loss of rights to recover on such claim.

Diane Ely, Chief Clerk

The fiduciary is:

Corey Mola
26 Lakeview Drive,
Norwalk, CT 06850
David Mola aka David J. Mola,
2 West Avenue Unit 16,
Norwalk, CT 06854

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PUBLIC NOTICES

PUBLIC NOTICES

Notice of Permit Application

Town: City of Norwalk

Notice is hereby given that the Department of Transportation (the "applicant") of 2800 Berlin Turnpike Newington, CT 06131 has submitted to the Department of Energy and Environmental Protection an application under Connecticut General Statutes Section 22a-32 for a permit to conduct regulated activities in tidal wetlands and Section 22a-361 to conduct work in tidal coastal or navigable waters of the State; and 33 U.S.C. Section 1341 (401 Water Quality Certification) to conduct an activity which may result in a discharge to certain waters of the State.

Specifically, the applicant proposes to replace the New Haven Line Railroad Bridge (Walk Bridge, Bridge No. 04288F) crossing the Norwalk River in Norwalk, Connecticut. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, and deactivated electrical and railroad submarine cables; and construction of the replacement bridge. The four-span replacement bridge includes two side-by-side, 240-foot vertical lift spans across the Norwalk River, each with independently operated mechanical and electrical equipment. The pair of 240-foot vertical lift spans provides 170 feet horizontal navigational clearance between fenders, 60.73 feet vertical clearance above mean high water (MHW) when the span is fully raised, and 25.73 feet vertical clearance above MHW when the span is closed. There are two western approach spans and one eastern approach span. The approach spans are side-by-side, two-track structures; the north structure carries Tracks 1 and 3 and the south structure carries Tracks 2 and 4. Each structure is comprised of a precast concrete composite ballasted deck supported on four simply-supported built-up welded plate girders. The lift spans are 40-foot deep through trusses, each with a double-intersection Warren truss configuration without verticals. Each lift span is an open-deck two-track structure made up of trusses with floor beams supporting track stringers. Tower structures at the end of the lift spans support the lifting mechanisms and counterweights for both lift spans. Short deck-girder spans through the towers at each end provide continuity from the approach spans to the movable spans.

The proposed activity will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain. The project will result in 8,600 square feet (sf) (0.20 acre) of permanent impacts to tidal wetlands. Compensation for permanent impacts to the vegetated tidal wetlands and intertidal mudflats will be largely in the form of mitigating tidal wetland areas within the intertidal zone, with some enhancement areas located landward of the high tide line. The loss of vegetated tidal wetlands and intertidal mudflats will be mitigated through treatment and removal of invasive common reed (Phragmites australis) in existing tidal wetlands, restoration of degraded vegetated tidal wetlands dominated by Phragmites, and restoration of a low-functioning intertidal flat previously impacted by riprap placement. The proposed mitigation areas cover a total of 61,990 square feet (1.42 acres), which is sufficient to compensate for the 34,400 square feet (0.79 acre) of required mitigation. These areas include 43,200 square feet (0.99 acre) that will be restored within existing tidal wetland boundaries which contain salt marsh vegetation, stands of Phragmites, and riprap with scattered patches of smooth cordgrass (Spartina alterniflora). In addition, 18,790 square feet (0.43 acre) will be newly created or restored tidal wetlands outside of existing tidal wetland boundaries. The mitigation plan also will include listed species enhancements and improvements to the overall water quality of the Norwalk River. The proposed mitigation areas exist along the Norwalk River, proximal to, but outside of the project's immediate vicinity. Selection and development of the wetland mitigation sites were conducted in close conjunction with the Connecticut Department of Energy and Environmental Protection (CTDEEP); additionally, local stakeholder representatives from the City and the Maritime Aquarium were also given opportunities to review the mitigation plans. The project also includes new developments to improve coastal navigation and water-dependent uses, consisting of a new bulkhead at the Marine Staging Yard (68-90 North Water Street), which will support navigational operations for future water-dependent uses; new docking facilities for existing Maritime Aquarium and Sheffield Island Ferry vessels; and a new permanent public fishing pier with small boat short-term docking waterfront of 4 North Water Street.

Interested persons may obtain copies of the application in electronic (CD) format from Ms. Kimberly Lesay, Transportation Assistant Planning Director, Connecticut Department of Transportation, 2800 Berlin Turnpike, Newington, Connecticut 06131 Telephone (860) 594-2931.

Interested persons may view the application on the Walk Bridge Program website at www.walkbridgect.com. Additionally, interested persons may view the application and/or obtain copies of the application in paper or CD format at the Walk Bridge Program Welcome Center, 24 Marshall Street, South Norwalk, Connecticut (corner of North Water Street and Marshall Street in the first floor of the Lock Building). The Walk Bridge Welcome Center hours of operation are: Tuesday 8:00 a.m. - 4:00 p.m.; Wednesday 8:00 a.m. - 4:00 p.m.; and Thursday 12:30 - 4:30 p.m. Please call in advance to schedule a review of the application, telephone 1-833-GO2-WALK (462-9255).

The application is available for inspection at the Department of Energy and Environmental Protection, Land and Water Resources Division, 79 Elm Street, Hartford, Connecticut 06106-5127, telephone (860) 424-3034 from 8:30 a.m. to 4:30 p.m. Monday through Friday. Please call in advance to schedule review of the application.

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

August 29, 2019

Connecticut Department of Energy and Environmental Protection
Land and Water Resources Division
79 Elm Street
Hartford, CT 06106

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Certification of Abutter Notices

To Whom It May Concern:

The State of Connecticut Department of Transportation (the Department) is applying for a Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341 from the Connecticut Department of Energy and Environmental Protection.

In accordance with Section 22a-6g of the Connecticut General Statutes, as revised, this letter serves as certification that all abutting property owners within 500 feet of the project limits have been provided a copy of the legal notice which appeared in *The Norwalk Hour* on August 28, 2019. A copy of the letter sent to the Abutters is enclosed. A list of the abutting property owners is located in Attachment K of the Structures, Dredging and Fill, and Tidal Wetlands Permit application for the proposed project.

In accordance with Section 22a-6g of the Connecticut General States, as revised, copies of the legal notice were provided to the Chairman of the Norwalk Shellfish Commission and Chairman of the Norwalk Harbor Management Commission. Certification that a published notice was provided to the City of Norwalk Mayor is provided in Attachment AA of the application.

If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Very truly yours,

Kimberly C. Lesay
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning

Enclosure

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

June 26, 2020

Connecticut Department of Energy and Environmental Protection
Land and Water Resources Division
79 Elm Street
Hartford, CT 06106

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Certification of Abutter Notices

To Whom It May Concern:

The State of Connecticut Department of Transportation (the Department) is applying for a Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341 from the Connecticut Department of Energy and Environmental Protection.

In accordance with Section 22a-6g of the Connecticut General Statutes, as revised, this letter serves as certification that all abutting property owners within 500 feet of the project limits have been provided a copy of the legal notice which appeared in *The Norwalk Hour* on August 28, 2019. Copies of the letter sent to the Abutters (dated August 28, 2019 and June 22, 2020) are enclosed. A list of the abutting property owners is located in Attachment K of the Structures, Dredging and Fill, and Tidal Wetlands Permit application for the proposed project.

In accordance with Section 22a-6g of the Connecticut General States, as revised, copies of the legal notice were provided to the Chairman of the Norwalk Shellfish Commission and Chairman of the Norwalk Harbor Management Commission. Certification that a published notice was provided to the City of Norwalk Mayor is provided in Attachment AA of the application.

If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Very truly yours,

Kimberly Lesay

Digitally signed by Kimberly Lesay
DN: cn=Kimberly Lesay, o=Department of Transportation , ou=Environmental Planning, email=kimberly.lesay@ct.gov, c=US
Date: 2020.06.26 14:56:11 -04'00'

Kimberly C. Lesay
Transportation Assistant Planning Director
Bureau of Policy and Planning

Enclosure

STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

August 28, 2019

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Notice of Permit Application

To Whom It May Concern:

The State of Connecticut Department of Transportation (the Department) is applying for a Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341 from the Connecticut Department of Energy and Environmental Protection.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, deactivated electrical and railroad submarine cables and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

In accordance with Section 22a-6g of the Connecticut General Statutes, as revised, the Department hereby gives notice of the filing with the Connecticut Department of Energy and Environmental Protection for regulated activities to be conducted in conjunction with the subject project. A copy of said Notice is attached. If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Very truly yours,

Kimberly C. Lesay
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning

Enclosure

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

June 26, 2020

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Notice of Permit Application

To Whom It May Concern:

The State of Connecticut Department of Transportation (the Department) is applying for a Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341 from the Connecticut Department of Energy and Environmental Protection.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, and deactivated electrical and railroad submarine cables; and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

In accordance with Section 22a-6g of the Connecticut General Statutes, as revised, the Department hereby gives notice of the filing with the Connecticut Department of Energy and Environmental Protection for regulated activities to be conducted in conjunction with the subject project. A copy of said Notice is attached. If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Very truly yours,

Kimberly Lesay

Digitally signed by Kimberly Lesay
DN: cn=Kimberly Lesay, o=Department of Transportation , ou=Environmental Planning, email=kimberly.lesay@ct.gov, c=US
Date: 2020.06.26 14:54:39 -04'00'

Kimberly C. Lesay
Transportation Assistant Planning Director
Bureau of Policy and Planning

Enclosure

STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

August 28, 2019

John Romano, Chairman
City of Norwalk Harbor Management Commission
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Notice of Permit Application

Dear Chairman Romano:

The State of Connecticut Department of Transportation (the Department) is applying for a Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341 from the Connecticut Department of Energy and Environmental Protection.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, deactivated electrical and railroad submarine cables and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

In accordance with Section 22a-6g of the Connecticut General Statutes, as revised, the Department hereby gives notice of the filing with the Connecticut Department of Energy and Environmental Protection for regulated activities to be conducted in conjunction with the subject project. A copy of said Notice is attached. If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Very truly yours,

Kimberly Lesay

Kimberly C. Lesay
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning

Enclosure

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION
2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546

June 22, 2020

John Romano, Chairman
City of Norwalk Harbor Management Commission
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Notice of Permit Application

Dear Chairman Romano:

The State of Connecticut Department of Transportation (the Department) is submitting an updated Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341 from the Connecticut Department of Energy and Environmental Protection.

The updates to the permit application are due to a recent Value Engineering Study the Department conducted. The study brought about changes to the construction methodology for several phases of the project. The result is a reduction in impacts to resources in the project area, as well as a reduction in the duration of partial blockages in the Federal Navigational Channel.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, and deactivated electrical and railroad submarine cables; and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

In accordance with Section 22a-6g of the Connecticut General Statutes, as revised, the Department hereby gives notice of the filing with the Connecticut Department of Energy and Environmental Protection for regulated activities to be conducted in conjunction with the subject project. A copy of said Notice is attached. If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner, at 860-594-2157 or Andrew.H.Davis@ct.gov.

Very truly yours,

Kimberly Lesay

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Date: 2020.06.23 11:47:45 -04'00'

Kimberly C. Lesay
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning

Enclosure

STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

August 28, 2019

Peter Johnson, Chairman
City of Norwalk Shellfish Commission
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Notice of Permit Application

Dear Chairman Johnson:

The State of Connecticut Department of Transportation (the Department) is applying for a Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341 from the Connecticut Department of Energy and Environmental Protection.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, deactivated electrical and railroad submarine cables and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

In accordance with Section 22a-6g of the Connecticut General Statutes, as revised, the Department hereby gives notice of the filing with the Connecticut Department of Energy and Environmental Protection for regulated activities to be conducted in conjunction with the subject project. A copy of said Notice is attached. If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Very truly yours,

Kimberly Lesay

Kimberly C. Lesay
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning

Enclosure

STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546

NEWINGTON, CONNECTICUT 06131-7546

June 22, 2020

Peter Johnson, Chairman
City of Norwalk Shellfish Commission
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Notice of Permit Application

Dear Chairman Johnson:

The State of Connecticut Department of Transportation (the Department) is submitting an updated Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341 from the Connecticut Department of Energy and Environmental Protection.

The updates to the permit application are due to a recent Value Engineering Study the Department conducted. The study brought about changes to the construction methodology for several phases of the project. The result is a reduction in impacts to resources in the project area, as well as a reduction in the duration of partial blockages in the Federal Navigational Channel.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, and deactivated electrical and railroad submarine cables; and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

In accordance with Section 22a-6g of the Connecticut General Statutes, as revised, the Department hereby gives notice of the filing with the Connecticut Department of Energy and Environmental Protection for regulated activities to be conducted in conjunction with the subject project. A copy of said Notice is attached. If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner, at 860-594-2157 or Andrew.H.Davis@ct.gov.

Very truly yours,

Kimberly Lesay

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Date: 2020.06.23 11:48:19 -04'00'

Kimberly C. Lesay
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning

Enclosure

STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

August 28, 2019

The Honorable Harry Rilling
Mayor, City of Norwalk
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Notice of Permit Application

Dear Mayor Rilling:

The State of Connecticut Department of Transportation (the Department) is applying for a Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341 from the Connecticut Department of Energy and Environmental Protection.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, deactivated electrical and railroad submarine cables and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

In accordance with Section 22a-6g of the Connecticut General Statutes, as revised, the Department hereby gives notice of the filing with the Connecticut Department of Energy and Environmental Protection for regulated activities to be conducted in conjunction with the subject project. A copy of the Notice published in *The Hour* is attached. If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Very truly yours,

Kimberly C. Lesay
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning

Enclosure

STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546

NEWINGTON, CONNECTICUT 06131-7546

June 22, 2020

The Honorable Harry Rilling
Mayor, City of Norwalk
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Notice of Permit Application

Dear Mayor Rilling:

The State of Connecticut Department of Transportation (the Department) is submitting an updated Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341 from the Connecticut Department of Energy and Environmental Protection.

The updates to the permit application are due to a recent Value Engineering Study the Department conducted. The study brought about changes to the construction methodology for several phases of the project. The result is a reduction in impacts to resources in the project area, as well as a reduction in the duration of partial blockages in the Federal Navigational Channel.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, and deactivated electrical and railroad submarine cables; and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

In accordance with Section 22a-6g of the Connecticut General Statutes, as revised, the Department hereby gives notice of the filing with the Connecticut Department of Energy and Environmental Protection for regulated activities to be conducted in conjunction with the subject project. A copy of the Notice published in *The Hour* is attached. If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner, at 860-594-2157 or Andrew.H.Davis@ct.gov.

Very truly yours,

Kimberly Lesay

Digitally signed by Kimberly Lesay
Date: 2020.06.23 11:47:12 -04'00'

Kimberly C. Lesay
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning

Enclosure

STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

September 3, 2019

John Verel, Chairman
City of Norwalk Conservation Commission
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Permit Application

Dear Chairman Verel:

The State of Connecticut Department of Transportation (the Department) is applying for a Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341 from the Connecticut Department of Energy and Environmental Protection.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, deactivated electrical and railroad submarine cables and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

Per the requirements of this permit application, please find attached a copy of the Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification application for your use. If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Very truly yours,

Kimberly C. Lesay
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning

Enclosure
cc: CTDEEP OLISP

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

June 26, 2020

Karen Destefanis, Vice Chair
City of Norwalk Conservation Commission
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Updated Permit Application – Permit No. 201909990-TWSDF

Dear Vice Chair Destefanis:

The State of Connecticut Department of Transportation (the Department) is submitting an updated Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification, pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341, to the Connecticut Department of Energy and Environmental Protection.

The updates to the permit application are due to a recent Value Engineering Study the Department conducted. The study brought about changes to the construction methodology for several phases of the project. The result is a reduction in impacts to resources in the project area, as well as a reduction in the duration of partial blockages in the Federal Navigational Channel.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, and deactivated electrical and railroad submarine cables; and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

Per the requirements of this permit application, please find attached a copy of the updated Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification application for your use. If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Very truly yours,

Kimberly Lesay

Digitally signed by Kimberly Lesay
DN: cn=Kimberly Lesay, o=Department of Transportation , ou=Environmental Planning, email=kimberly.lesay@ct.gov, c=US
Date: 2020.06.26 14:57:21 -04'00'

Kimberly C. Lesay
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning

Enclosure

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2946

March 5, 2021

John Moeling, Chairperson
City of Norwalk Conservation Commission
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Updated Permit Application – Permit No. 201909990-TWSDF

Dear Chairperson Moeling:

The State of Connecticut Department of Transportation (the Department) is submitting an updated Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification, pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341, to the Connecticut Department of Energy and Environmental Protection. The overall project has not changed. Some of the project elements and construction means and methods have been refined, warranting an update to the permit application.

The Department has continued to coordinate with the Norwalk Shellfish Commission and Norwalk Harbor Management Commission through meetings and consultations on the Walk Bridge Replacement Project in preparation for the Structures, Dredging and Fill and Tidal Wetlands Permit and Section 401 Water Quality Certification application filing. Since the June 2020 submittal, we have participated in each Commission's monthly meetings on two separate occasions to present and discuss project updates.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, and deactivated electrical and railroad submarine cables; and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2946

May 17, 2021

John Moeling, Chairperson
City of Norwalk Conservation Commission
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 0301-0176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Update to Permit Application – Permit No. 201909990-TWSDF

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STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

September 3, 2019

John Romano, Chairman
City of Norwalk Harbor Management Commission
125 East Avenue
P. O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Permit Application

Dear Chairman Romano:

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Office of Environmental Planning
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Enclosure
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STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

June 26, 2020

John Romano, Chairman
City of Norwalk Harbor Management Commission
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Updated Permit Application – Permit No. 201909990-TWSDF

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March 5, 2021

John Romano, Chairperson
City of Norwalk Harbor Management Commission
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

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May 17, 2021

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City of Norwalk Harbor Management Commission
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

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STATE OF CONNECTICUT

DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

September 3, 2019

Peter Johnson, Chairman
City of Norwalk Shellfish Commission
125 East Avenue
P. O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Permit Application

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NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

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Peter Johnson, Chairman
City of Norwalk Shellfish Commission
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

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DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

September 3, 2019

The Honorable Harry Rilling
Mayor, City of Norwalk
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
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Permit Application

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NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2931

June 26, 2020

The Honorable Harry Rilling
Mayor, City of Norwalk
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Updated Permit Application – Permit No. 201909990-TWSDF

Dear Mayor Rilling:

The State of Connecticut Department of Transportation (the Department) is submitting an updated Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification, pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341, to the Connecticut Department of Energy and Environmental Protection.

The updates to the permit application are due to a recent Value Engineering Study the Department conducted. The study brought about changes to the construction methodology for several phases of the project. The result is a reduction in impacts to resources in the project area, as well as a reduction in the duration of partial blockages in the Federal Navigational Channel.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, and deactivated electrical and railroad submarine cables; and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

Per the requirements of this permit application, please find attached a copy of the updated Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification application for your use. If you have any questions or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner of my staff, at 860-594-2157.

Very truly yours,

Kimberly Lesay
Digitally signed by Kimberly Lesay
DN: cn=Kimberly Lesay, o=Department of Transportation , ou=Environmental Planning, email=kimberly.lesay@ct.gov, c=US
Date: 2020.06.26 14:58:28 -04'00'

Kimberly C. Lesay
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning

Enclosure

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2946

March 5, 2021

The Honorable Harry Rilling
Mayor, City of Norwalk
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 301-176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Updated Permit Application – Permit No. 201909990-TWSDF

Dear Mayor Rilling:

The State of Connecticut Department of Transportation (the Department) is submitting an updated Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification, pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341, to the Connecticut Department of Energy and Environmental Protection. The overall project has not changed. Some of the project elements and construction means and methods have been refined, warranting an update to the permit application.

The Department has continued to coordinate with the Norwalk Shellfish Commission and Norwalk Harbor Management Commission through meetings and consultations on the Walk Bridge Replacement Project in preparation for the Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification application filing. Since the June 2020 submittal, we have participated in each Commission's monthly meetings on two separate occasions to present and discuss project updates.

The project proposes to replace Bridge No. 04288R which carries the New Haven Line over the Norwalk River in the City of Norwalk. The project consists of the removal of the existing bridge, including the superstructure, substructure elements (abutments and piers), timber pier protection system, and deactivated electrical and railroad submarine cables; and construction of the replacement bridge. The proposed project will affect the Norwalk River; intertidal flats and vegetated tidal wetlands along the east and west sides of the Norwalk River, both north and south of the bridge; and the 100-year floodplain.

Per the requirements of this permit application, an electronic version will be available at https://www.walkbridgect.com/project_documents/environmental_permits.aspx. If you would like a hard copy of the application, have any questions, or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner, of my staff at Andrew.H.Davis@ct.gov.

Very truly yours,

Kevin Carifa

Digitally signed by Kevin Carifa
DN: C=US, E=kevin.carifa@ct.gov, O="Department of Transportation ", OU="Office of Environmental Planning ", CN=Kevin Carifa
Date: 2021.03.05 15:25:17-05'00'

Kevin F. Carifa
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning

STATE OF CONNECTICUT
DEPARTMENT OF TRANSPORTATION

2800 BERLIN TURNPIKE, P.O. BOX 317546
NEWINGTON, CONNECTICUT 06131-7546
Phone: (860) 594-2946

May 17, 2021

The Honorable Harry Rilling
Mayor, City of Norwalk
125 East Avenue
P.O. Box 5125
Norwalk, CT 06856-5125

Subject: State Project No. 0301-0176, Walk Bridge Replacement Project
Metro-North Railroad Bridge (Bridge No. 04288R) over the Norwalk River
City of Norwalk
Update to Permit Application – Permit No. 201909990-TWSDF

Dear Mayor Rilling:

The State of Connecticut Department of Transportation (the Department) is updating portions of the application for the Structures, Dredging and Fill, and Tidal Wetlands Permit and Section 401 Water Quality Certification, pursuant to Connecticut General Statutes Sections 22a-32 and 22a-361, and 33 U.S.C. Section 1341, to the Connecticut Department of Energy and Environmental Protection (CTDEEP) Land and Water Resources Division (LWRD). The portions of the application that are being updated are Part III Questions 1, 2, and 5; Attachment A; Attachment AA; Attachment D; Attachment E; Attachment I; and Appendix A.

The overall project has not changed. In Part III Question 1 and Question 2a, the update relates to the construction methodology for the existing swing span removal – Construction Activity 13 (CA13). Two schemes are presented (Scheme 1 and Scheme 2). The preferred method (Scheme 2) of Swing Span Removal, described in Section 2.3, has not changed; the application revision clarifies the two potential construction schemes for CA13. Based upon the preferred construction scheme, the Department anticipates that the duration of navigation channel impacts of CA13 will be up to approximately 180 days. The second update to Part III Question 2a relates to CA4, Marine Staging Yard Improvements. This update is in Section 5.1, and the revision clarifies the Department's intent regarding the proposed bulkhead. Similarly, Appendix A is updated to clarify the status of the bulkhead and associated dredging. The update to Part III Question 5, Section 5.2, clarifies the Department's land needs at 68 Water Street, Parcel 2/84/19. Attachment AA is updated to include this correspondence, as well as similar correspondence with the Norwalk Harbor Management Commission (NHMC), the Norwalk Shellfish Commission (NSC) and the Norwalk Conservation Commission (NCC). Attachments D and E are updated for recent coordination/correspondence with the NSC and NHMC, respectively. Attachment E also is updated to include a chronology of meetings with marine use stakeholders and minutes of those meetings. Attachment I contains the permit plates, portions of which are updated to incorporate minor design refinements to the drainage system. Attachment A is the Executive Summary which has been revised to reflect the above updates.

The updated application is being submitted to CTDEEP, and the Department is sending you the updated application by our consultant's (HNTB) file transfer site. Per the requirements of the permit application, an electronic version will be available at the following website: https://www.walkbridgect.com/project_documents/environmental_permits.aspx. If you would like a hard copy of the application, have any questions, or require additional information, please contact Mr. Andrew H. Davis, Transportation Supervising Planner, of my staff at Andrew.H.Davis@ct.gov.

Very truly yours,

Kevin Carifa

Digitally signed by Kevin Carifa
DN: C=US, E=kevin.carifa@ct.gov, O="Department of Transportation ", OU="Office of Environmental Planning ", CN=Kevin Carifa
Date: 2021.05.18 07:24:38-04'00'

Kevin F Carifa
Transportation Assistant Planning Director
Office of Environmental Planning
Bureau of Policy and Planning