Attachment A – Executive Summary

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

Table of Contents

Attachment M: Other Information

NOAA/NMFS/GARFO Reviews and Approvals

M1 Essential Fish Habitat (EFH)

M2 Section 7 of the Endangered Species Act (SEC 7 ESA)

M3 CTDEEP Marine Fisheries Coordination

M4 USFWS SEC 7 ESA Determination

M5 CTDEEP NDDB Determination

M6 Selected CTDOT Specifications:

Item # 0948013A –Tidal Wetland Creation

Item # 0210306A – Turbidity Control Curtains

Section 1.10 Environmental Compliance

Attachment N: U.S. Army Corps of Engineers Consultation Form

Appendix A: Activity Specific Information (13 pages)

Dredging and Disposal of Dredged Material

Shoreline Erosion or Stabilization Structures, Breakwaters or Wave Attenuators

Attachment A – Executive Summary

1. Project Description

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 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.

2. 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 U.S. Army Corps of Engineers (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. Summary of Environmental and Engineering Analysis

CTDOT prepared an Environmental Assessment/Section 4(f) Evaluation and Environmental Impact Evaluation (EA/EIE) in compliance with the National Environmental Policy Act and Connecticut Environmental Policy Act (NEPA/CEPA). The EA/EIE included an Alternatives Analysis, wherein CTDOT identified a range of alternatives; narrowed the alternatives based upon the ability to meet the purpose and need, costs, and/or environmental impacts; conducted a thorough evaluation of three options; and selected a preferred alternative. The Alternatives Analysis is included in this application in response to **Part III, Question 9**. The Connecticut Office of Policy and Management issued a determination that the EIE satisfied the requirements of CEPA and issued a Record of Decision (ROD) on July 6, 2017. The Federal Transit Administration (FTA) determined that CTDOT complied with the requirements of NEPA and issued a Finding of No Significant Impact (FONSI) for the project on July 17, 2017.

The design of the Walk Bridge Replacement Project has advanced since the 15 percent conceptual level that was analyzed in the EA/EIE. The design advancement beyond 60 percent since the conceptual design resulted in limited design modifications, while also refining the construction methodology of the Construction Manager/General Contractor (CM/GC). Additionally, since the issuance of the FONSI/ROD, CTDOT has conducted multiple meetings with federal regulatory, state, and local regulatory agencies to refine project mitigation and advance permitting. In response to these refinements in engineering design and construction methods, CTDOT submitted an *Environmental Re-evaluation Consultation* to FTA in July 2019. FTA's approval is pending.

The project will result in 8,400 square feet (sf) (0.19 acre) of permanent impacts to tidal wetlands. Wetland mitigation will involve treatment and removal of invasive common reed (*Phragmites australis*) in and adjacent to existing tidal wetland areas, restoration of degraded tidal wetlands to salt marshes, and restoration of low-function riprap flats to higher function tidal salt marshes. Selection and development of the wetland mitigation sites was done by CTDOT Office of Environmental Planning (OEP) in close conjunction with the Connecticut Department of Energy and Environmental Protection (CTDEEP), as well as local stakeholder representatives from the City and the Maritime Aquarium, who were also given opportunities to review the mitigation plans. Project mitigation is described in **Section 7. Summary of Environmental Protection Measures and Compensatory Mitigation and in response to Part III, Question 4.**

CTDOT OEP has conducted extensive reviews with federal and state agencies regarding protection of federally and state protected species. CTDOT OEP consulted with the National Marine Fisheries Service (NMFS) Protected Resources Division (PRD) and NMFS Habitat Conservation Division (HCD) in December 2014, and subsequently in June-August 2018 and June–August 2019. On July 17, 2018 and August 1, 2019, NMFS issued concurrences that the project is not likely to adversely affect any NMFS Endangered Species Act (ESA)-listed species or designated critical habitat. Additional Section 7 ESA coordination was completed for species under the United States Fish & Wildlife Service's (USFWS) jurisdiction via on-line screening using the USFWS Information for Planning and Conservation (IPaC) tool (initially in September 2015 and subsequently in October 2018 and August 2019) and by consulting with CTDEEP Wildlife and CTDEEP Natural Diversity Database for discussed and interpretation of the best available scientific data available for listed species. For state regulated species, the CTDEEP NDDB and

CTDEEP Wildlife were consulted initially in November 2014, and subsequently in February 2016 and May 2019 (approval).**Attachment M** contains documentation of federal and state coordination and approvals.

4. Summary of Project Construction

4.1 Overview of Construction Activities, Sites, and Regulated Areas

To facilitate CTDEEP's review of the application for a Structures, Dredge and Fill, and Tidal Wetlands permit and 401 Water Quality Certification, CTDOT has organized project construction into 18 construction activities at nine sites at and near the existing Walk Bridge (as shown in Figure ES-1and ES-2). Construction activities for this project are extensive and will span the course of more than four years. A detailed listing of construction activities along with means and methods is located in **Part III, Question 2a.**

Sites 1 through 3 are located at the bridge site and include existing bridge demolition activities and replacement bridge construction activities. Site 1 consists of construction activities west of the navigation channel; it encompasses the 100-year floodplain and extends waterward to include the Mean Low Water (MLW), but landward of (outside) the navigation channel. Site 2 consists of construction activities within the navigation channel; Site 2 resources include the 100-year floodplain and subtidal area. Site 3 consists of construction activities east of the navigation channel; it encompasses the 100-year floodplain and extends waterward to include the MLW, but landward of (outside) the navigation channel.

Site 4 is located approximately 100 yards south of the bridge site waterward of 4 North Water Street and consists of activities related to temporarily relocating existing ferry docks required prior to bridge construction. Due to a conflict with the location of the southwest work platform required to access the bridge during construction, the existing Maritime Aquarium and Sheffield Island Ferry vessel docks will be temporarily relocated. Site 4 includes activities waterward of the Coastal Jurisdiction Line (CJL) but landward of (outside) the navigation channel.

Site 5 is located south of the Route 136/Stroffolino Bridge, less than 0.2 mile from the bridge site and directly waterward of 68 and 90 Water Street. CTDOT will develop a Marine Staging Yard at 68, 70, and 90 Water Street to store materials and equipment and to construct large bridge components, including the two lift spans. Work at Site 5 includes activities waterward of the CJL, but landward of (outside) the navigation channel.

Site 6 consists of six individual wetland mitigation areas in various locations along both river banks near the bridge. All tidal wetland mitigation areas are within the intertidal zone of the Norwalk River.

Sites 7 through 9 consist of the construction barge mooring locations. Site 7 is located south of Veterans Memorial Park, approximately 1,000 feet from the bridge site. Work at Site 7 includes activities waterward of the CJL but landward of (outside) the navigation channel. Site 8 is located within the south anchorage basin east of the Norwalk Harbor navigational channel, approximately 0.6 mile from the bridge site. Site 9 is located in Long Island South, just west of Sheffield Island, approximately 3.8 miles from the bridge site. Sites 8 and 9 are waterward of MLW and located outside the navigation channel.

Part III, Question 2a also provides tables of anticipated impacts to resource areas. Detailed project plates are provided in **Attachment I**. Attachment I includes general plans showing existing conditions (EP), proposed conditions (PP), and details of project construction activities.

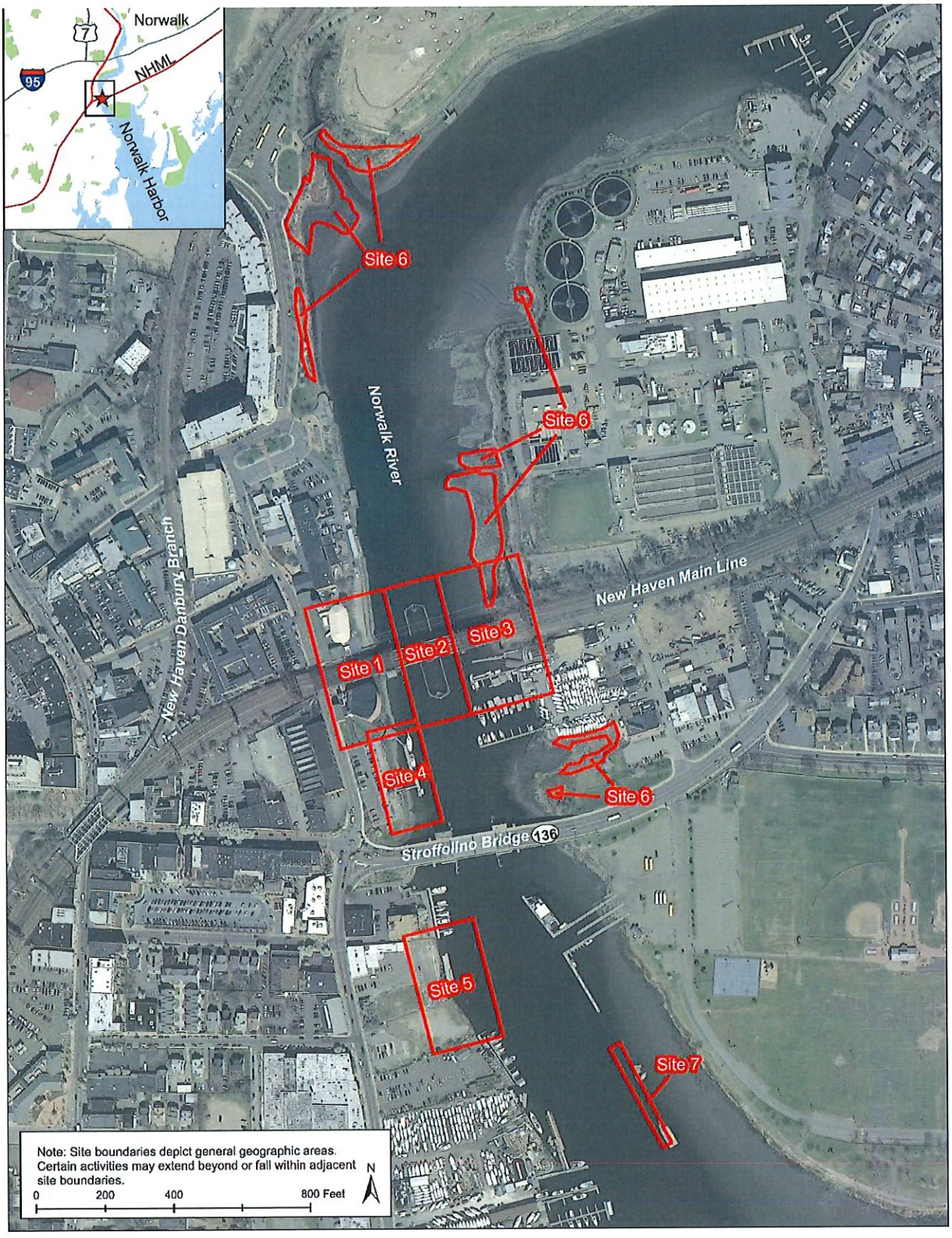

Figure ES-1 – Walk Bridge Replacement Project, Sites 1 through 7

Figure ES-2 – Walk Bridge Replacement Project, Sites 8 and 9

4.2 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. There will be certain construction activities that will require either a vertical restriction or a complete channel closure. Coordination with the United States Coast Guard Sector Long Island Sound and the Norwalk Harbormaster for channel restrictions and closures will be required for overall staging of barges and equipment during certain construction activities, including removal of the existing pivot pier, rest piers, and swing span; installation of the new lift spans; and installation and removal of the slide rail assemblies used for installing the new bridge elements.

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 project's Marine Staging Yard and transported upstream along the Norwalk River via barge to the bridge site where they will be prepared for final installation. A temporary slide rail system supported on the southwest and southeast construction work platforms will be used to install the south lift span into its final position. The north lift span will be floated into its final position on a barge.

The swing span will be operational for river traffic during the initial bridge construction activities. These activities include removal of the south half of the existing bridge approach spans, construction of the south half of the approach spans, and assembly of the south lift span. Upon assembly of the south lift span and reconstruction of the south portion of the west approach, east approach, approach spans, and overhead contact system (OCS) structures, the navigation channel will be closed. The existing swing span will be slid to the north and will be replaced by the first (south) lift span being slid in from the south via the slide rail system. The horizontal channel restriction will be lifted once the swing span and the swing span slide rails have been removed. The channel will be fully restored to navigation once the south lift span is made operational. Upon assembly of the north lift span and reconstruction of the north portion of the west approach, east approach, approach spans, and OCS structures, the navigation channel will be closed. At this time, the north lift span will be floated under the new south lift span (in the raised position) for final installation. During this phase, the channel will be vertically restricted prior to the north lift span becoming fully operational, but otherwise it will open for river traffic.

4.3 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; 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. 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 Marine Staging Yard for final placement at the Walk Bridge location. Likewise, the existing swing span will be transported by barge to a secure location upstream of Walk Bridge for disassembly, salvage and disposal.

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 OCS structures. These elements will be removed in their entirety. 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 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 in their entirety. Pier 1 will be removed to 2 feet below ground. The existing bridge foundations in the river (Piers 2 and 3 and the pivot pier) will be removed to elevation -14.98, which is 1 foot below the authorized dredge elevation of -13.98, to accommodate an allowance for over-dredging.

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, 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.

Upon completion of the existing pier demolition, the marine enclosures will be removed 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.

The eastern construction work platforms will be used for initial loading of dredged sediment, existing bridge superstructure and substructure parts, and other construction material from construction barges. The Marine Staging Yard (68-90 Water Street) and the construction yard at the bridge site (11 Goldstein Place) will be used for off-loading of materials from the construction barges. Additional potential off-site locations include two upstream locations at Devine Brothers, Inc. (38 Commerce Street) and King Industries Inc. (1 Science Road). CTDOT is continuing to coordinate with the upstream businesses for use of the sites during project construction.

Section 7 of this Executive Summary describes the time of year restrictions and environmental protection measures that will be implemented to protect resources during project constructions. Further details are provided in the application narrative.

5. Summary of Impacts to Coastal/Aquatic Resource Areas

Drawings SUM-1 and SUM-2 in Attachment I report the area (square footage) of impact to river bottom within the subtidal and intertidal zones and the volume (cubic yards) of sediments to be dredged/removed during trench excavation. Impacts with durations less than 24 months are considered temporary. Impacts due to temporary fill and/or structures that are expected to be in place more than 24 months are considered permanent. Dredging impacts include maintenance dredging and new dredging. Maintenance dredging includes all material within the navigation channel and dredging side slope limits. New dredging includes all material that is not defined as maintenance dredging. Impacts to various resources that exist in the project area are summarized as follows, with further details provided in the permit application.

5.1 Intertidal Flats

Intertidal flats exist upstream from Walk Bridge on both sides of the river and smaller exposed intertidal areas exist on both the east and west shores of the Norwalk River near the abutments of the Walk Bridge. However, these smaller areas do not qualify as mudflats by definition, as the substrate is comprised more of a coarse sand/cobble mix and the grade of these areas is not gently sloping or flat.

5.2 Vegetated Tidal Wetlands

Vegetated tidal wetlands are located along the east and west sides of the Norwalk River, both north and south of the bridge. In the vicinity of this project, vegetated tidal wetlands are representative of estuarine vegetative communities typically deemed salt tolerant, such as smooth cordgrass (*Spartina alterniflora*), salt meadow grass (*Spartina patens*), high-tide bush (*Iva frutescens*), water hemp (*Amaranthus cannabinus*), seaside goldenrod (*Solidago sempervirens*), and marsh orach (*Atriplex patula*). The prominent species in the project vicinity is smooth cordgrass. 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 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.

5.3 Estuarine Embayments/Nearshore Waters

The project site, located within the tidally-influenced Norwalk River, is partially protected and maintains an open connection to the sea. The project site is a small area within a much larger estuarine embayment. There will be a net increase in available estuarine embayment following this project.

5.4 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. The Walk Bridge is located in FEMA defined Zone AE, defined as the 100-year floodplain or as areas subject to inundation by the 1-percent-annual-chance flood event. 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.

5.5 Developed Shorefront

The surrounding river banks in the project vicinity are defined as developed shorefronts. This project will include unavoidable construction phase shorefront disturbances and limitation to water access, primarily due to the use of construction trestles and contractor access. Following the completion of this project, the Norwalk River's developed shorefront will result in overall improvements.

5.7 Shellfish Concentration Areas

The Norwalk River 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 changes with substrate conditions, which are also variable. Any impact to natural shellfish beds in the area of the project will be minimized with the following mitigation measures: 1) unconfined dredging/excavation will only occur between December 1st and January 31st when the water temperature drops below 50 degrees F and shellfish slip into dormancy; and 2) any in-water turbidity producing work will occur within the confines of turbidity curtains and/or marine enclosures that will be installed and maintained by the contractor. Collectively, these measures will minimize potential impacts to resources.

5.8 Wildlife and Aquatic Resources

Direct removal of the benthic substrate 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. Adverse impacts to benthic invertebrate communities and Essential Fish Habitat (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, similar benthic species are anticipated to return and recolonize the disturbance footprint. Recolonization of the disturbance footprints by algae and benthic organisms will begin almost immediately especially given the proximity to colonizing biota. In addition to unconfined dredging being restricted to the months of December and January, the project will include the installation and maintenance of turbidity curtains, and in some cases marine enclosures, during the period of in-water construction taking place outside of this winter window to contain turbidity plumes.

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 excavation/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 limiting unconfined work to the months of December and January) and increased sound pressure levels from underwater construction activity. Impacts from the latter (underwater construction noise) has been thoroughly researched and documented in the NOAA NMFS Section 7 informal consultation and the EFH Assessment for this project. Overall, no adverse effects on indigenous finfish/EFH species or ESA listed fish species are anticipated.

5.9 Benthic Habitat

Direct removal of the benthic substrate via dredging/excavation and new construction will be necessary. Adverse permanent short-term impacts will include the removal of benthic species inhabiting the project 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, similar benthic species are anticipated to return and recolonize the disturbance footprint. Recolonization of the disturbance footprints by algae and benthic organisms is expected to begin almost immediately following construction activities. The unconfined dredging activities will be scheduled to conclude in mid-winter, allowing recolonization to coincide with steadily increasing water temperatures and light penetration with the onset of the spring and summer seasons.

6. Summary of Impacts to Coastal Activities

6.1 Use and Development of Adjoining Uplands

The project will have minor impacts on adjoining upland communities/habitat. 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.

6.2 Use and Development of Adjoining Lands and Properties

The project will require the use of lands and properties adjoining the project site for the construction and operation of the replacement bridge. 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, access to the Norwalk River and streets for transport of equipment and materials, access to the railroad ROW, dredged/excavated sediment temporary storage and management, and access to the bridge for maintenance. CTDOT is acquiring parcels through full and partial parcel acquisitions and full or partial parcel easements. As design progresses, CTDOT may require additional, minor right-of-way (ROW) easements for construction.

Following construction completion, acquired parcels will be sold per CTDOT's Office of Rights of Way Property Management Division. Some permanent easements near the bridge will be necessary for bridge

operation and maintenance. 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. For acquired waterfront parcels, CTDOT will select the highest bid that best demonstrates an integrated, quality, water-dependent use, in coordination with CTDEEP. There are opportunities for these two 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.

In the case of the parcels immediately adjacent to the bridge, CTDOT will retain permanent easements for access to the bridge for future operation and maintenance. Except for 10 North Water Street (Parcel 2/19/2, IMAX Theater), temporary easements will cease upon project completion, and 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.

6.3 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.

Additional new developments following construction of the Walk Bridge Replacement Project will improve coastal navigation and water-dependent uses: 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.

6.4 Water Quality

CTDOT obtained Norwalk River sediment samples in 2016 to characterize the river sediments at the bridge site. Based on testing results, the Norwalk River is identified as a preliminary Area of Environmental Concern (AOEC).Chemical constituents detected in the sediment of the Norwalk River include the following: Extractable Total Petroleum Hydrocarbons (TPH), Semi-volatile Organic Compounds (SVOCs),

Polychlorinated Biphenyls (PCBs), and metals (arsenic and lead). Because of this contamination, handling and permitting clearances that comply with CTDEEP standards will be followed to protect aquatic resources. Sediment impacted by chemical constituents will be dredged, managed, and disposed of at an upland location in accordance with state and federal regulations. Water resulting from the dewatering/decanting process will meet CTDEEP discharge permit performance standards/requirements prior to being discharged back into the Norwalk River.

CTDOT will implement water quality monitoring for all in-water work during the construction project. 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, an environmental inspector will be available on the project to 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. As necessary, the best management practices implemented by the contractor will be adjusted. CTDOT will also be monitoring specific conductivity, salinity, dissolved oxygen, pH, temperature and water level to determine if marine life and other natural conditions may be contributing to turbidity levels.

6.5 Water Circulation and Drainage

To ensure that the proposed bridge will not have an adverse impact to the 100-year design floodplain, the proposed conditions hydraulic flood model (60 percent design) was compared to the existing conditions flood model. The results of the models indicate that the 100-year water surface elevations will be reduced throughout the study area, 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, combined with the removal of the existing rest piers and the placement of the proposed lift span piers, 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. During the 500-year storm event, modeling indicates that water surface elevations in the proposed conditions are 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.

6.6 Recreational Use of Public Water

For most of the project duration, it is anticipated that the river will remain open to traffic, including recreational use, by restricting construction activity to one existing channel and keeping the other channel open to marine traffic. There will be construction periods when river traffic will be restricted (via a vertical restriction) or closed, however. To facilitate recreational use of the Norwalk River during construction, CTDOT is CTDOT is preparing a Marine Use Plan in consultation with water-dependent users of the Norwalk River, including rowing clubs, marinas, and other commercial interests. Additionally, the contractor is required to prepare a Marine Safety Plan for approval by CTDOT. This plan will be developed through consultation with the USCG Long Island Sector.

6.6 Public Trust Lands

Public trust lands adjacent to the project site include the Norwalk River Valley Trail (NRVT) on the west side of the river and the NRVT Harbor Loop Trail on the east side of the river. While project construction activities, including compensatory wetland mitigation, will impact portions of the NRVT on both sides of the river, in the permanent condition, the 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. Additionally, 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.

6.7 Water Dependent Uses

The navigation improvements provided by this project will benefit existing water-dependent uses, particularly upriver commercial marine users and vessels with restricted maneuverability. With the new vertical lift bridge, the reliability of bridge operations will be substantially improved. The proposed increased bridge height of approximately 26 feet above MHW (when closed) will reduce the frequency of bridge openings, which will benefit commercial and recreational marine users. The new bridge will offer a horizontal navigational clearance of 170 feet, with the removal of the center pivot pier, which will facilitate easier barge and tow operations through the bridge. The widened channel at Walk Bridge via 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. Additional dredging will straighten the alignment between Walk Bridge and the Stroffolino Bridge to improve the navigability of the river between and through the two bridges, improving overall conditions for large and small vessel users.

Following the completion of this project, the Norwalk River's water dependent development activities and opportunities in the vicinity of Walk Bridge will experience overall improvements. Following construction completion, all acquired parcels will be sold by CTDOT's Office of Rights of Way Property Management Division. For waterfront parcels (11 Goldstein Place – Parcel 3/1/25, zoned Industrial; and 90 Water Street - Parcel 2/84/33, zoned Marine Commercial), CTDOT will select the highest bid that best demonstrates an integrated, quality, water-dependent use, in coordination with CTDEEP. There are opportunities for these two parcels to be redeveloped with water-dependent uses, in compliance with City of Norwalk planning regulations.

7. Summary of Environmental Protection Measures and Compensatory Mitigation

7.1 Environmental Protection Measures

In coordination with CTDEEP Marine Fisheries, Wildlife and NDDB, the U.S. Army Corps of Engineers, and NOAA/NMFS, CTDOT has agreed to implement the following environmental protection measures:

Time of Year Restrictions:

- Dredging outside of marine enclosures will be conducted only between December 1st and January 31st, and be within Type III Turbidity Curtain containment.

- Pile driving and extraction (including sheet piles), shaft drilling and micropile drilling activities conducted between April 1st and June 30th will only occur between one hour after sunrise to one hour before sunset (12-hour work periods followed by 12-hour work-free periods);
- A soft start will be used at the beginning of each shift that requires pile driving and extraction (including sheet piles), shaft drilling, and micropile drilling activities conducted between March 16th and October 31st.
- No work will be conducted between April 1st and July 31st within 500 feet of any active Peregrine Falcon (*Falco peregrinus*) nest.
- No unconfined turbidity producing activities will be allowed between February 1st and September 30th.

Resource Protection Measures:

- Pile driving/extraction and drilled shaft and micropile drilling activities will be coordinated to ensure activities are only taking place on one half (or occupy less than 50% when working in the middle of the river) of the navigation channel at a time.
- Barge movements will take place during slack water conditions coincident with the high tide to minimize river bottom disturbances.
- Marine enclosures will be installed prior to the start of certain construction activities. Marine enclosures are steel sheet pile structures that are not to be considered as being water-tight. 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 enclosures will be installed so that the top of the enclosure is at or above Elevation 6.2 (1 foot above the high tide line). 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.
- Turbidity curtains will be Type III and adhere to Item # 0210306A-Turbidity Control Curtains. 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),
  - Duct bank and submarine cable installation (with marine enclosure),
  - Existing submarine cable removal,
  - Slide rail installation and removal for swing span removal,
  - Fender pile installation and existing fender removal,
  - Navigational/maintenance dredging,
  - Construction platform pile driving,
  - Pile installation and removal at the vessel docks,
  - New dredging (with marine enclosure if outside the dredging work window) at Vessel Dock Relocations
  - Bulkhead installation and removal (with marine enclosure outside of the dredging work window) at Marine Staging Yard,
  - Sheet pile installation and outfall reconstruction at the IMAX,
  - IMAX Theater removal (with marine enclosure),
  - Wetland restoration.

7.2 Compensatory Mitigation

The Walk Bridge Replacment Project will result in permanent impacts to approximately 8,400 square feet (0.19 ac.) of vegetated tidal salt marsh wetland that will require a 4:1 mitigation ratio, resulting in 33,600 square feet of required mitigation. Compensation for permanent impacts to the vegetated tidal wetlands and intertidal mudflats due to construction of the 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.

The areas proposed for mitigation are located along the Norwalk River, proximal to, but outside of the project's immediate vicinity. 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 ac.) 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. In addition, 18,790 square feet (0.43 ac.) will be newly created or restored tidal wetlands outside of existing tidal wetland boundaries.

The proposed mitigation areas will be restored to emulate the existing vegetated tidal wetlands that are located along the shores of the Norwalk River in the Walk Bridge vicinity and adjacent to the proposed mitigation areas, to include salt marsh vegetation (dominated by smooth cordgrass) with an absence of invasive common reed. The proposed mitigation areas will provide a higher level of the same functions and values as those wetland areas impacted. Further, restoring the tidal wetland habitats is expected to improve the quality of these estuarine resources, thereby providing enhanced suitable habitat for several fish and wildlife species.

8. Project Construction Schedule

The project construction start is dependent upon the receipt of environmental permits. The anticipated start date is fall 2020. Activities will be conducted in conjunction with all time-of-year-restrictions in place to protect species and the environment. Project construction is anticipated to take approximately four to five years to complete.