

Draft Final Integrated Interim Response  
Feasibility Report and Environmental  
Assessment for Actionable Elements

**NEW YORK-NEW JERSEY  
HARBOR AND TRIBUTARIES  
COASTAL STORM RISK MANAGEMENT  
FEASIBILITY STUDY**

**SUBAPPENDIX A-2A  
HARLEM RIVER  
ACTIONABLE ELEMENT SITE  
ENDANGERED SPECIES ACT - USFWS**

March 2026

## Table of Contents

1	Introduction .....	4
1.1	Project Purpose and Need .....	4
1.2	Coordination and Consultation History .....	5
2	Study Area .....	8
2.1	Comprehensive Plan .....	8
2.2	Actionable Element Site - Harlem River .....	9
3	Harlem River Actionable Element Site .....	10
3.1	project description .....	10
3.2	Actionable Element Project Objectives .....	13
3.3	Existing Conditions Summary .....	13
3.4	Effects and Consequences Summary .....	14
3.5	Potential Stressors Likelihood of Effect Assessment .....	17
4	List of Preparers and Contributors .....	19

***Note: this Actionable Element Site has been deferred to a future legislative cycle, subject to the availability of funding; therefore, this appendix has not been updated since the release of the Draft Report. Any comments received on this Actionable Element Site will be incorporated in the future if authorized for further study***

## 1 INTRODUCTION

The U.S. Army Corps of Engineers (USACE), New York District, has prepared this assessment to evaluate Federally listed threatened and endangered species for the New York New Jersey Harbor and Tributaries (NYNJHAT) Coastal Storm Risk Management (CSRМ) Feasibility Study, Integrated Interim Response Feasibility Report and Environmental Assessment on Actionable Elements.

The NYNJHAT Study was authorized as a result of the findings in the January 2015, USACE North Atlantic Coast Comprehensive Study (NACCS) which identified high-risk areas on the Atlantic Coast for warranting further investigation of flood and coastal storm risk management solutions including the NYNJHAT study. In February 2019, a NYNJHAT Feasibility Study Interim Report (Interim Report) was completed to document existing information and assumptions about the future, and to identify knowledge gaps that warranted further investigation because of their potential to affect plan selection. The Interim Report states the impacts from Hurricane Sandy highlighted the National need for a comprehensive and collaborative evaluation to manage risk for vulnerable populations within the North Atlantic region. In September 2022, a Draft Integrated Feasibility Report and Tier 1 (Programmatic) Environmental Impact Statement for the Comprehensive Plan was released detailing the additional analyses conducted following the Interim Report (2019) and what additional information was needed in the future for the remainder of Tier 1 and Tier 2 of the programmatic process.

The Endangered Species Act (ESA) of 1973 was passed to protect and recover imperiled species and the ecosystems upon which they depend. The ESA is administered by the USFWS and the National Marine Fisheries Service (NMFS). Under the ESA, species may be listed as either endangered or threatened, whereby species are either in danger of extinction through all, or a significant portion, of its range (endangered) or are species that are likely to become endangered within the foreseeable future (threatened). The ESA prohibits the “take” of protected species, including harassment, hunting, capturing, collecting, or killing.

Consultation with USFWS and NMFS is required for any Federal action that may adversely affect ESA species. An adverse effect includes direct or indirect physical, chemical, or biological alterations to waters or substrate, species and their habitat, other ecosystem components, supportive of listed species.

This document focuses on the Harlem River Actionable Element Site, inclusive of both the Landward and Seaward Alignments, as a complimentary feature to the NYNJHAT Study Comprehensive Plan.

### 1.1 PROJECT PURPOSE AND NEED

Storms have historically severely impacted the New York New Jersey Harbor region, including Hurricane Sandy most recently, causing loss of life and extensive economic damages.

In 2012, Hurricane Sandy caused considerable loss of life, extensive damage to property, and massive disruption to the North Atlantic Coast. The effects of this storm were particularly severe because of its tremendous size and the timing of its landfall during high tide. Twenty-six states were impacted by Hurricane Sandy, and disaster declarations were issued in 13 states. NY and NJ were the most severely impacted states, with the greatest damage and most fatalities in the NY Metropolitan Area. For example, a storm surge of 12.65 feet above normal high tide was reported at Kings Point on the western end of Long Island Sound and 9.4 feet at the Battery on the southern tip

of Manhattan. Flood depths due to the storm tide were as much as nine feet in Manhattan, Staten Island, and other low-lying areas within the NY Metropolitan Area. The storm exposed vulnerabilities associated with inadequate coastal storm risk management (CSRM) measures and lack of defense to critical transportation and energy infrastructure.

The January 2015, USACE North Atlantic Coast Comprehensive Study (NACCS) identified high-risk areas on the Atlantic Coast for warranting further investigation of flood risk management solutions. In February 2019, a NYNJHAT Feasibility Study Interim Report was completed to document existing information and assumptions about the future conditions, and to identify knowledge gaps that warranted further investigation because of their potential to affect plan selection. The Interim Report states the impacts from Hurricane Sandy highlighted the national need for a comprehensive and collaborative evaluation to manage risk for vulnerable populations within the North Atlantic region. To address the impacts and concerns associated with devastating storms, the New York District has proposed measures to manage coastal storm risk in the NYNJ Harbor and its tributaries.

In response, the New York District is investigating measures to manage future flood and coastal storm risk in ways that support the long-term resilience and sustainability of the coastal ecosystem and surrounding communities, and reduce the economic costs and risks associated with flood and storm events for the NYNJHAT Study Area (USACE 2019). The alternative concepts proposed would help the region manage flood risk that is expected to be exacerbated by relative sea level rise.

The scope of the Interim Response Actionable Element builds upon the September 2022 Draft Integrated Feasibility Report (FR) and Tier 1 (Programmatic) Environmental Impact Statement (EIS), as an interim action while the overall Comprehensive Plan continues to be studied, subject to future funding and appropriations. The Comprehensive Plan is a programmatic assessment described as containing two tiers, with September 2022 Draft Report initiating the Tier 1, or broad-level assessment, with plans for a future Tier 2 containing the detailed site-specific analyses including any design refinements and reasonable alternatives. This Report is not a Tier 2, but rather an Interim Response to the Comprehensive Plan responsive to the larger Coastal Storm Risk Management (CSRM) authorization to assess a 2,500+ square mile radius in the New York-New Jersey Metropolitan Area. This interim response, like Tier 2, assesses the measures at a site-specific level, completing enough design maturity and analyses to disclose the potential effects of the Alternatives, and complete full environmental compliance. Interim responses often arise during the progress of a programmatic study, of which purpose and need is to respond to an immediate need for CSRM where able in the interim and corresponding with future legislative cycles (e.g. Water Resources Development Act (WRDA), while the more complex measures of the larger NYNJHAT Study require additional analysis, modeling, public engagement, and design maturity to complete. Interim responses often arise during the progress of a programmatic study, of which purpose is to respond to an immediate CSRM need in the interim and corresponding with future legislative cycles (e.g. Water Resources Development Act (WRDA), while the more complex measures of the larger NYNJHAT Study require additional analysis, modeling, public engagement, and design maturity to complete. The purpose and need of this action is to manage risk to critical infrastructure in local areas of high susceptibility to storm surge and at-risk communities. This Interim Response action addresses a critical need for CSRM measures in Harlem River, New York, East Riser, New Jersey, and Oakwood Beach, New York.

## **1.2 COORDINATION AND CONSULTATION HISTORY**

Coordination with stakeholders has been a critical component of the NYNJHAT study. Since early 2017 the New York District held many workshops and meetings with Cooperating and Participating Agencies and other stakeholders to share information on the study scope and purpose and formulation of alternatives, and to exchange ideas and information on natural and marine resources within the Study Area. Cooperating Agencies include the U.S. Environmental Protection Agency, U.S. Fish and Wildlife Service, U.S. Coast Guard, National Oceanic and Atmospheric Administration National Marine Fisheries Service, and the National Park Service. The Federal Emergency Management Agency is a Participating Agency.

The New York District announced the preparation of an Integrated Feasibility Report/Tiered EIS for the NYNJHAT study feasibility in the February 13, 2018 Federal Register pursuant to the requirements of Section 102(2)(C) of NEPA. The NEPA scoping period initially spanned 45 days from July 6 – August 20, 2018, but was extended to 120 days due to numerous requests from the public. The New York District held a total of nine public scoping meetings during the public scoping period. In 2019, four NYBEM workshops were held on January 3, March 11, June 6, and November 14 to help inform the NYBEM model set up to be used as a tool for assessing some direct and indirect effects of agency actions on regional ecosystems including the NYNJHAT Study, among others.

In February 2020, the NYNJHAT Study paused until October 2021 due to a lack of Federal funding. Following study resumption, the New York District held several Cooperating Agency meetings to facilitate open communication, share study progress, status updates, and data as it became available, including an Engineering presentation on the study alternatives, a presentation on the TSP, and a presentation on the NYBEM development progress. In September 2022, a Draft Integrated FR/Tier 1 (Programmatic) EIS was released for stakeholder, agency, and public review and comment. Following a substantial public review period of 175+ days, and approximately 2,700 comments received, many comments required a need for, among other requests, more consideration for Nature-Based Solutions to be incorporated into the Study. Ultimately, these comments informed the future of the NYNJHAT Study, and introduced the need for further coordination with public and resource agencies as the Study progresses.

Previously, In August 2022, the New York District and the USFWS initiated a scope of work for the preparation of a Fish and Wildlife Coordination Act Report (FWCAR) pursuant to the Fish and Wildlife Coordination Act 48 Stat. 401, as amended; 16 U.S.C 661 et seq., to provide information of fish and wildlife resources, including listed species under the ESA, and trust resources within the NYNJHAT Study Area. The USFWS provided a PAL letter until further information would become available to allow for the preparation of a FWCAR for the comprehensive study, or for the Tier 2 documents.

Given the schedule timeline following Study resumption, the New York District requested the USFWS advance the preparation of a Fish and Wildlife Coordination Act Report (FWCAR) instead of a PAL for the Actionable Element Sites. The FWCAR will be coordinated with the National Oceanic and Atmospheric Administration National Marine Fisheries Service, US Environmental Protection Agency (EPA), NYSDEC, NJDEP, and other agencies/organizations as appropriate, regarding the Interim Response Actionable Element area resources, potential project related impacts, and conservation recommendations to avoid, minimize, or compensate for impacts to fish and wildlife resources resulting from the Alternatives, including the Action Alternative. The New York District anticipates a Draft FWCAR will be received between the Draft and Final Integrated Interim Response FR/EA, prior to January 2026, and a Final FWCAR thereafter following a review and comment period. This

Subappendix, as well as the Integrated Interim Response FR/EA will be updated with the FWCAR findings and recommendations for issuance of the Final Integrated Interim Response FR/EA. Refer to the ESA NOAA NMFS Subappendix for aquatic species considerations.

## **2 STUDY AREA**

### **2.1 COMPREHENSIVE PLAN**

The Study Area of the NYNJHAT Study includes the NY Metropolitan Area, including New York City (NYC) which is the most densely populated city in the United States, and five of the six largest cities in New Jersey by population. The shorelines of some of the NYNJHAT Study Area is characterized by low elevation areas, developed with residential and commercial infrastructure, and is subject to tidal flooding during storms. The Study Area covers more than 2,150 square miles and comprises parts of 25 counties in New Jersey and New York, including Bergen, Passaic, Morris, Essex, Hudson, Union, Somerset, Middlesex, and Monmouth Counties in New Jersey; and Rensselaer, Albany, Columbia, Greene, Dutchess, Ulster, Putnam, Orange, Westchester, Rockland, Bronx, New York, Queens, Kings, Richmond, and Nassau Counties in New York.

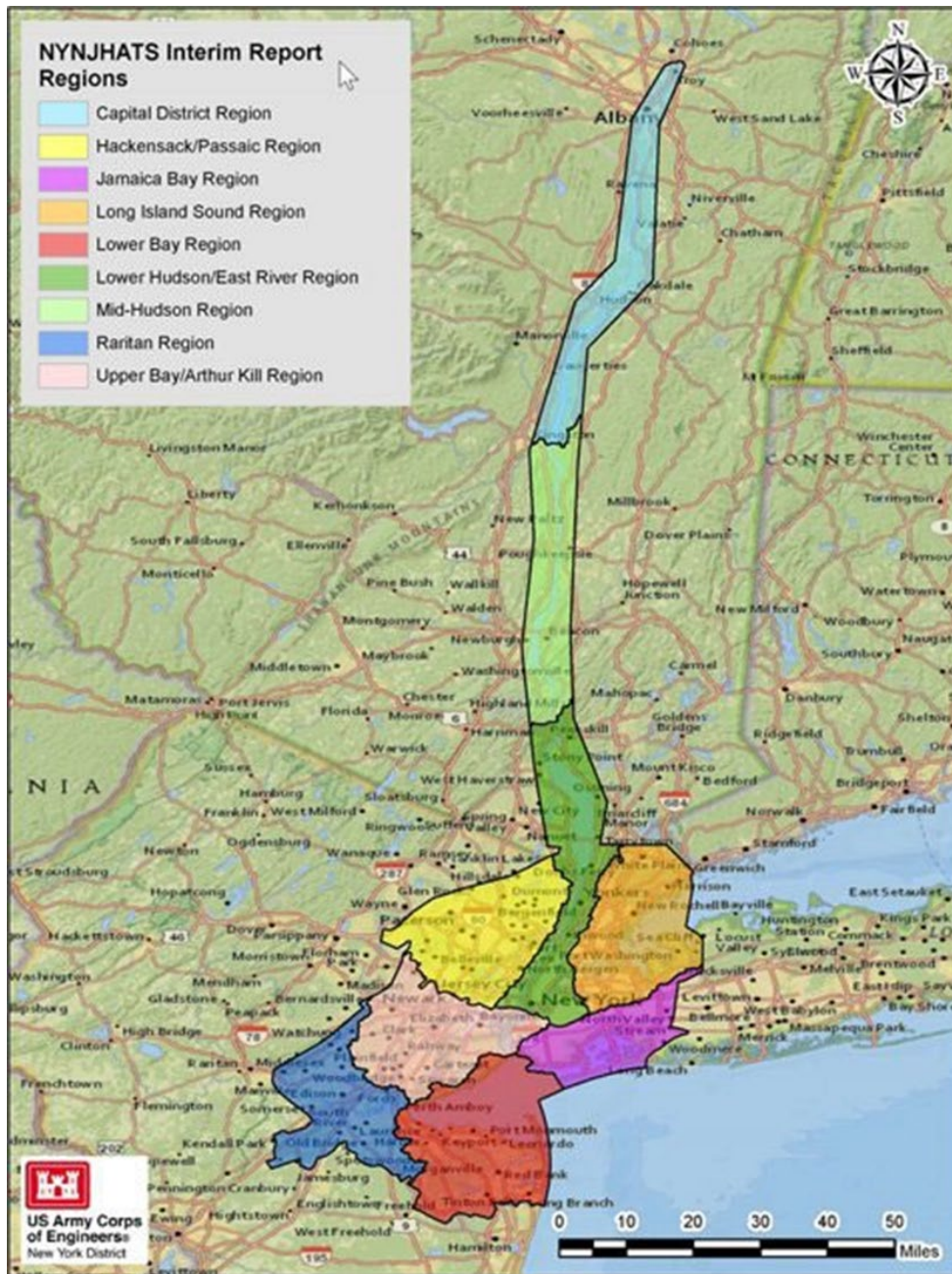


Figure 1. NYNJHAT Study Area

## 2.2 ACTIONABLE ELEMENT SITE - HARLEM RIVER

The Harlem River Actionable Element is located in and near the Harlem, New York County, Manhattan, New York, with the Lower Hudson/East River Planning Region of the NYNJHAT Study Area. The location is characterized by mixed residential/commercial uses and open space and includes Holcombe Rucker Park, Frederick Johnson Tennis Courts, Macomb's Bridge Library, Harlem Lane Playground NYCHA's Ralph J. Rangel Houses and Polo Grounds Towers, the Macombs Dam Bridge, and Harlem River Drive.

## 3 HARLEM RIVER ACTIONABLE ELEMENT SITE

### 3.1 PROJECT DESCRIPTION

All NYNJHAT Study Alternatives contained primary structural features, such as floodwalls, seawalls, and storm surge barriers as well as secondary, complementary Nature-Based Solutions (NBS) and Non-Structural Measures. At the time of the release of the September 2022 Draft Integrated Feasibility Report and Tier 1 (Programmatic) EIS, only the structural measures had been included as those would provide the primary CSRSM function, and complimentary NBS and non-structural measures would be identified for inclusion into all Alternatives at a future date. Following substantial public review period of 175+ days, and approximately 2,700 comments received, many comments requested a need for, among other requests, more consideration for NBS to be incorporated into the Study. Following, Harlem River Actionable Element was identified to include NBS for consideration in the NYNJHAT Study.

The Harlem River Actionable Element is a Coastal Storm Risk Management (CSRSM) structural measure with complimentary nature-based solution (NBS) features to the NYNJHAT Study Overall Comprehensive Plan, providing high-frequency flood risk management, and serves as a multi-line of defense to the NYNJHAT Study, Harlem River section of Manhattan. This Site includes two separate alignments for public consideration: (1) a Seaward Alignment consisting of an in-water measure (combination seawall and tunnel span structure), shore-based tie-in measures (e.g. floodwall), deployable vehicular gates, and complimentary NBS; and, (2) a Landward Alignment consisting of entirely on-land measures (e.g. floodwalls), several deployable vehicular gates, and invasive vegetation species management for replacement with native species and other potential complementary NBS to be identified.

#### **No Action:**

Under the No Action Alternative, the U.S. Army Corps of Engineers will not construct the CSRSM project, therefore, the proposed Actionable Element Site would remain as is and would continue to be exposed to flood risks.

#### **Action (two alternative alignments):**

##### **Seaward Alignment:**

This alternative proposes approximately 320 linear feet (LF) of floodwall, two 40 LF each deployable flood barriers – vehicle gates, 3,636 LF anchored combi wall, and 155 LF tunnel span. The top of the CSRSM line of protection is approximately 17 ft NAVD88 which corresponds to approximately 6 ft higher than the existing barrier along the north bound section of the Harlem River Dr. The CSRSM protection is approximately 25 feet in water (seaward) from the existing Harlem Rive Drive barrier and 5 feet wide. Backfill will fill in the space between the roadway barrier and the seawall, and will include NBSs such as oyster reefs, tidal wetlands, tide pools, and seawall panels, armor blocks, and or pile encapsulations that support aquatic marine organism growth for wave attenuation. This alignment also includes some invasive vegetation species management and replacement for the tie-ins.

##### **Landward Alignment:**

This alternative proposes approximately 2,700 LF of floodwall and five 40 LF each deployable flood barriers. approximately 17 ft NAVD88 which corresponds to 0 - 12 ft above ground. The floodwalls

and barriers will be approximately 5 ft wide. Also included is approximately 1+ acre (AC) of invasive vegetation species management and replacement with native species.

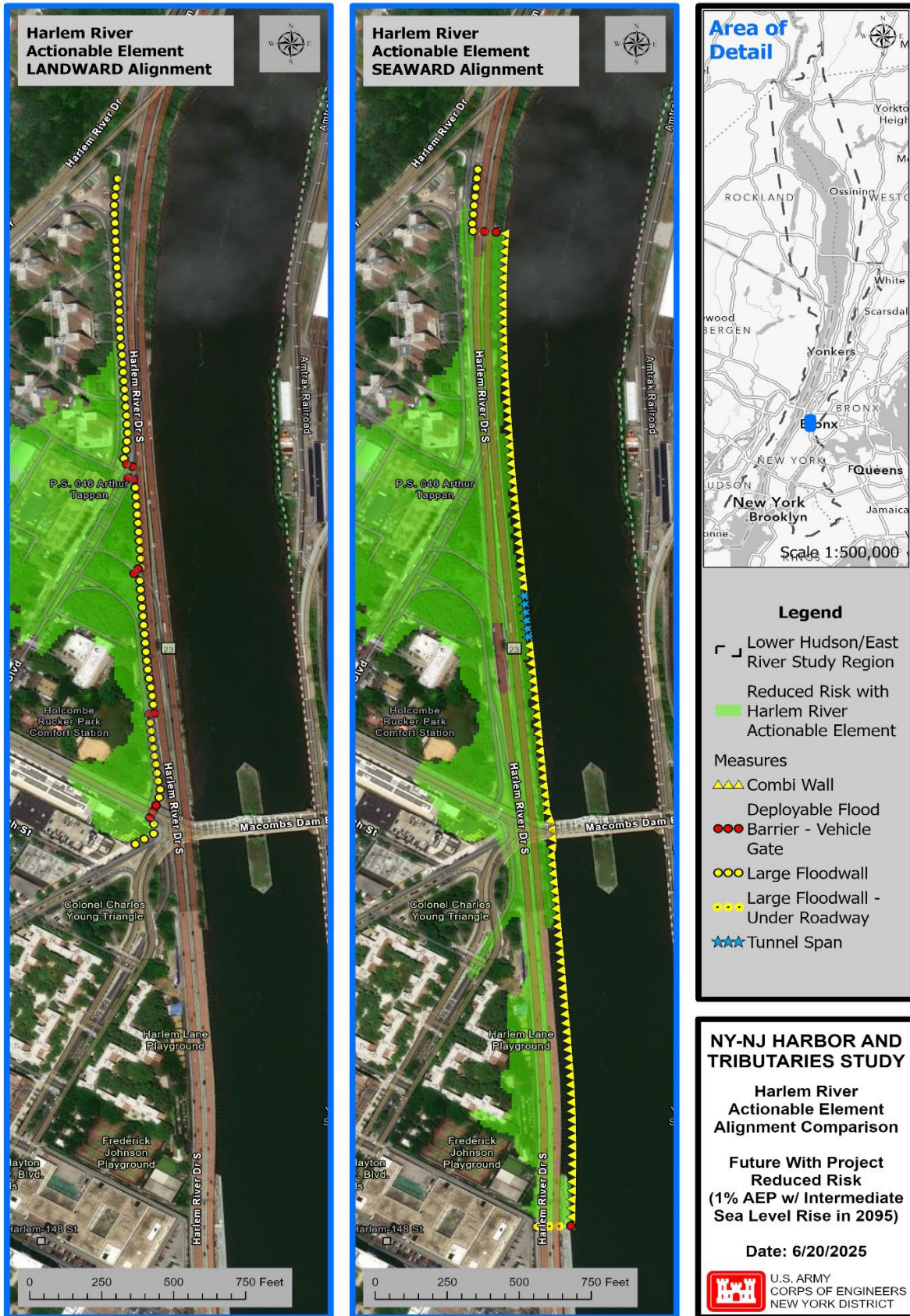


Figure 2. Harlem River CSRM Alignment Alternatives

### 3.2 ACTIONABLE ELEMENT PROJECT OBJECTIVES

Actionable Elements were evaluated on whether they make significant contributions to the planning objectives and sufficiently avoid planning constraints. The study objectives, below, were used to evaluate the Actionable Elements:

- Manage the risk of coastal storm flood damage to communities, public infrastructure, important societal resources, and the environment.
- Improve the community’s ability to recover from damages caused by storm surges by reducing the duration of interruption in services provided by manufactured and natural systems.
- Enhance human health and safety by improving the performance of critical infrastructure and natural features during and after storm surge events.
- Recruit natural ecosystems into the coastal storm risk management framework where able to provide multiple lines of defense.

### 3.3 EXISTING CONDITIONS SUMMARY

Threatened and endangered species, as well as vulnerable species of concern, with the potential to be present within the NYNJHAT Study Area, Lower Hudson/East River Planning Region and the Actionable Element Site were sourced from the Draft Integrated FR/Tier 1 (Programmatic) EIS, the USFWS IPaC database, the NMFS Section 7 Mapper, and the New York Natural Heritage Program website. A Fish and Wildlife Coordination Act Report (FWCAR) was requested from USFWS and a request for information was also submitted to the New York Natural Heritage Program, a response is pending at this time. Additional information received from the USFWS and NYNHP will be incorporated into the Final Integrated Interim Response FR/EA.

Refer to the September 2022 Draft Integrated FR/Tier 1 (Programmatic) EIS for a list of all ESA species throughout the NYNJHATS Study Area.

Federal-listed terrestrial threatened and endangered species potentially present within the Comprehensive Plan Study Area, East River/Lower Hudson Planning Region are listed below, and those species identified as potentially present in the vicinity of the Actionable Element site, sourced from the IPaC database (accessed May 6, 2025, attached), are highlighted yellow:

Common Name	Scientific Name	Federal Status	New York State Status	Listing/Recovery Plan Citation	Region/Site Where Species May Occur
<b>Mammals</b>					
Indiana bat	<i>Myotis sodalis</i>	E	E	32 FR 4001; Draft Recovery Plan: USFWS 2007	LH/ER
Northern long-eared bat	<i>Myotis septentrionalis</i>	E	T	80 FR 17973 18033	LH/ER
Tricolored bat	<i>Perimyotis subflavus</i>	P	NL	FR 2022-18852	LH/ER
<b>Birds</b>					
Piping plover	<i>Charadius melodus</i>	T	E	49 FR 44712; Recovery plan USFWS 2016	LH/ER
Red knot	<i>Calidris canutus rufa</i>	T	T	79 FR 73705; Draft Recovery	LH/ER

				plan: USFWS 2021	
Roseate tern	<i>Sterna dougalli dougalli</i>	E	E	52 FR 42064; Recovery plan USFWS 1998	LH/ER
Bald eagle	<i>Haliaeetus leucocephalus</i>	NL	T	N/A	LH/ER
<b>Reptiles</b>					
Bog turtle	<i>Glyptemys muhlenbergii</i>	T	E	62 FR 59605 59623; Recovery plan: USFWS 2001	LH/ER
<b>Insects</b>					
Monarch butterfly	<i>Danaus plexippus</i>	P	NL	85 FR 81813	LH/ER, AE
Rusty-patched bumble bee	<i>Bombas affinis</i>	E	NL	80 FR 56423 56432; Recovery plan: 85 FR 4334 4336	LH/ER
Yellow-banded bumble bee	<i>Bombas terracola</i>	C	NL	Not Found	LH/ER
<b>Flowering Plants</b>					
Seabeach amaranth	<i>Amaranthus pumilus</i>	T	T	58 FR 18035; Recovery plan: USFWS 1996	LH/ER
Small whorled pogonia	<i>Isotria medeoloides</i>	T	E	59 FR 50852 50857; Recovery plan: USFWS 1992	LH/ER

Notes: 1 Status Abbreviations – Threatened (T), Endangered (E), Candidate (C), Proposed (P), Not Listed (NL); 2 Region/Site Abbreviations - Lower Hudson/East River (LH/ER) Planning Region, Actionable Element (AE) site vicinity. Yellow = sourced from the USFWS IPaC database as potentially occurring at the Actionable Element Site.

### 3.4 EFFECTS AND CONSEQUENCES SUMMARY

The species identified as potentially present within the Lower Hudson and East River Planning Region and this Actionable Element Site were reviewed for potential to effect, based on the existing conditions and the proposed action, to determine if the species was likely to be present at the Site relative to suitable habitat, and if so further assess if there is an anticipated adverse or beneficial effect. Species that are anticipated to not have suitable habitat available at the Site are to have no effect.

Common Name	Scientific Name	Species Habitat Description	Potential Habitat Presence (Y/N)	Potential to adversely effect	Potential to beneficially effect
<b>Mammals</b>					
Indiana bat	<i>Myotis sodalis</i>	Maternal roosts under the bark of dead trees during the summer. Prefers riparian zones,	Y	Potential habitat loss of live/dead trees, during excavation and	Replacement of trees, and conversion of low quality non-native

		floodplain habitat, and wooded wetlands.		vegetative clearing.	invasive species dominated habitat to quality habitat.
Northern long-eared bat	<i>Myotis septentrionalis</i>	Roosts under tree bark, bridges, and crevices of live and dead trees during the summer. Roosts sometimes in buildings, barns, sheds, under eaves, bridges and other manmade structures (USFWS 2022b)	Y	Potential habitat loss of live/dead trees, during excavation and vegetative clearing.	Replacement of trees, and conversion of low quality non-native invasive species dominated habitat to quality habitat.
Tricolored bat	<i>Perimyotis subflavus</i>	Caves, abandoned mines; where caves are sparse may be found roosting in road-associated culverts, forested habitats of live and dead deciduous hardwood trees, human structures.	Y	Potential habitat loss of live/dead trees, during excavation and vegetative clearing.	Replacement of trees, and conversion of low quality non-native invasive species dominated habitat to quality habitat.
<b>Birds</b>					
Piping plover	<i>Charadrius melodus</i>	Ocean beaches; sand dunes, tidal inlets, and tidal flats.	N	Habitat does not occur at the site.	Habitat does not occur at the site.
Red knot	<i>Calidris canutus rufa</i>	Uses ocean beaches, tidal flats, and inlets for foraging and resting during migration.	N	Habitat does not occur at the site.	Habitat does not occur at the site.
Roseate tern	<i>Sterna dougalli dougalli</i>	Ocean beaches and barrier islands with vegetation. Nests from Nova Scotia to Long Island.	N	Habitat does not occur at the site.	Habitat does not occur at the site.
<b>Reptiles</b>					
Bog turtle	<i>Glyptemys muhlenbergii</i>	Sunny open freshwater wetlands, especially fens, bogs, and marshes bordering wooded areas.	N	Habitat does not occur at the site.	Habitat does not occur at the site.
<b>Insects</b>					
Monarch butterfly	<i>Danaus plexippus</i>	Open wildflower meadows and grasslands, including vegetated roadsides. Requires milkweed for egg laying, larval development, and protection of larvae.	Y	Potential disturbance to habitat if it occurs at site.	Removal of invasive species and conversion to high quality native species.

Northeast beach tiger beetle	<i>Habroscelimorpha dorsalis dorsalis</i>	Inter-tidal zone on undisturbed sandy beaches. Considered extirpated from New York.	Y	Habitat does not occur at the site.	Habitat does not occur at the site.
Rusty-patched bumble bee	<i>Bombas affinis</i>	Prairies, woodlands, marshes, agricultural landscapes and residential parks and gardens	Y	Potential disturbance to habitat if it occurs at site.	Removal of invasive species and conversion to high quality native species.
Yellow-banded bumble bee	<i>Bombas terracola</i>	Mixed woodlands, farmlands, wildflower grasslands, seeps, and urban areas. Prefers wetland vegetation for pollinator activity.	Y	Potential disturbance to habitat if it occurs at site.	Removal of invasive species and conversion to high quality native species.
<b>Flowering Plants</b>					
Seabeach amaranth	<i>Amaranthus pumilus</i>	Barrier islands, inlets, and overwash areas.	N	Habitat does not occur at the site.	Habitat does not occur at the site.
Small whorled pogonia	<i>Isotria medeoloides</i>	Upland locations in mixed-deciduous or mixed-deciduous/coniferous forests. Grows in highly acidic and nutrient poor soils.	N	Habitat is not known to occur in the Study Area. Disturbance to any potential habitat will be avoided.	N/A

### Adverse Effects

The ESA prohibits the “take” of protected species, including harassment, hunting, capturing, collecting, or killing. Direct impacts from construction are not anticipated to result in a “take” of a regulated wildlife species due to the limited presence of these species at the project site. Prior to construction, threatened and endangered species surveys may be conducted as necessary to identify potential special status plants or wildlife species present, or with the potential to be present. Should species be identified as present, or potentially present, avoidance is the primary mitigation action to prevent adverse effects to these species.

### Seaward Alignment

Prior to construction, threatened and endangered species surveys may be conducted as necessary to identify potential special status plants or wildlife species present, or with the potential to be present. Should species be identified as present, or potentially present, avoidance is the primary mitigation action to prevent adverse effects to these species. The proposed efforts at this Actionable Element Site that are relevant to the terrestrial environment portions of the alignment (such as the floodwall tie-ins to high ground) are highly urban. It is likely species potentially present in this area are accustomed to urban environments (e.g. bats).

Potential indirect effects may include the temporary disturbance and/or removal of habitat for foraging species and prey during construction. Although the threatened and endangered species will be avoided, there may be ancillary disturbances that cannot be avoided that may deter species, such as noise and vibrations although those are anticipated to be temporary, low, and addressed through no-construction windows and/or cofferdams as necessary to avoid or reduce effects.

No direct or indirect adverse effects from operation and maintenance of the site are anticipated to threatened and/or endangered species, as the site would continue to be monitored for establishment of the native habitat, to prevent the return on non-native habitat, preserving the quality of habitat for wildlife present. Maintenance may include non-native plant management, such as herbicide application and removal which could temporarily disturb terrestrial vegetation to eliminate non-native or invasive species but would be negligible given that procedures would be established to avoid such impacts.

### **Landward Alignment**

Prior to construction, threatened and endangered species surveys may be conducted as necessary to identify potential special status plants or wildlife species present, or with the potential to be present. Should species be identified as present, or potentially present, avoidance is the primary mitigation action to prevent adverse effects to these species. The proposed efforts at this Actionable Element Site are primarily focused on a terrestrial environment that is highly urban. Potential indirect effects may include the temporary disturbance and/or removal of habitat for foraging species and prey during construction. Although the threatened and endangered species will be avoided, there may be ancillary disturbances that cannot be avoided that may deter species, such as noise and vibrations although those are anticipated to be temporary, low, and addressed through best management practices.

No direct or indirect adverse effects from operation and maintenance of the site are anticipated to threatened and/or endangered species, as the site would continue to be monitored for establishment of the native habitat, to prevent the return on non-native habitat, preserving the quality of habitat for wildlife present. Maintenance may include non-native plant management, such as herbicide application and removal which could temporarily disturb terrestrial vegetation to eliminate non-native or invasive species but would be negligible given that procedures would be established to avoid such impacts.

### **Beneficial Effects**

#### **Seaward Alignment**

Replacement of existing degraded habitat will be replaced with native habitat, may consider pollinator friendly species. Complimentary NBS will provide newly created habitat for terrestrial (birds) and aquatic species to forage and shelter.

#### **Landward Alignment**

Replacement of existing degraded habitat will be replaced with native habitat, may consider pollinator friendly species.

### **3.5 POTENTIAL STRESSORS LIKELIHOOD OF EFFECT ASSESSMENT**

Potential Stressor	Species
--------------------	---------

	<b>Mammals</b>	<b>Birds</b>	<b>Insects</b>	<b>Plants</b>
Physical Seabed/Land Disturbance	NLAA	NLAA	NLAA	NLAA
Air Emissions	NLAA	NLAA	NLAA	NLAA
Habitat Conversion	NLAA	NLAA	NLAA	NLAA
Noise	NLAA	NLAA	NLAA	NLAA
Visible Structures	NLAA	NLAA	NLAA	NLAA
Land Use and Economic Change	NLAA	NLAA	NLAA	NLAA

Notes: NLAA (not likely to adversely affect) is the appropriate conclusion when effects on listed species are expected to be discountable, insignificant, or completely beneficial. LAA (likely to adversely affect) is the appropriate conclusion when effects on listed species are expected to be measurable and significant. N/A (not applicable) means the stressor/species is not applicable to the action and will not be considered further.

Additional information received from the USFWS and NYNHP will be incorporated into the Final Integrated Interim Response FR/EA, including any conclusions to the adverse and/or beneficial effects of the Actionable Element Site.

#### **4 LIST OF PREPARERS AND CONTRIBUTORS**

Cheryl R. Alkemeyer, PMP, ENV SP, Physical Scientist, U.S. Army Corps of Engineers, New York District

Matthew Voisine, Biologist, U.S. Army Corps of Engineers, New York District