



**US Army Corps
of Engineers®**
New York District

NEW YORK AND NEW JERSEY HARBOR AND TRIBUTARIES STUDY

COASTAL STORM RISK MANAGEMENT STUDY

DRAFT INTEGRATED FEASIBILITY REPORT & TIER 1 ENVIRONMENTAL IMPACT STATEMENT

APPENDIX A7: Tier 1 Coastal Barrier Resource Act

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1.0 Introduction

The United States Army Corps of Engineers (USACE) New York District (herein “District”) has prepared an integrated Feasibility Report (FR) and Tier 1 Environmental Impact Statement (EIS) for the New York New Jersey Harbor and Tributaries (NYNJHAT) Study. The non-federal sponsors are the New Jersey Department of Environmental Protection (NJDEP) and New York State Department of Environmental Conservation (NYSDEC), in partnership with the New York City Office of Recovery and Resiliency (NYCORR). 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. New York and New Jersey were the most severely impacted states, with the greatest damage and most fatalities in the New York Metropolitan Area. For example, a storm surge of 12.65 feet and 9.4 feet above normal high tide was reported at Kings Point on the western end of Long Island Sound and the Battery at the southern tip of Manhattan, respectively. Flood depths due to the storm tide were as much as nine feet in Manhattan, Staten Island, and other low-lying areas within the New York Metropolitan Area. The storm exposed vulnerabilities associated with inadequate CSRM measures and lack of defense to critical transportation and energy infrastructure. Devastation in the wake of Hurricane Sandy revealed a need to address the vulnerability of populations, infrastructure, and resources at risk throughout the entire North Atlantic coastal region. At the time of the publication of the Interim Report, Hurricane Sandy is the second costliest hurricane in the nation’s history and the largest storm of its kind to hit the United States East Coast. This Coastal Barrier Resource System Appendix was prepared to review the Study Area to determine if any of the NYNJHAT Study Alternatives are co-located within or adjacent to Coastal Barrier System Units or Otherwise Protected Areas and assess any potential environmental consequences or benefits associated with the Tentatively Selected Plan and Study Alternatives.

1.1. Study Area

The NYNJHAT Study Area is located within the NY Metropolitan Area and encompasses 2,157 square miles, including the most populous and densely populated city in the United States (New York City), and the six largest cities in New Jersey (**Figure 1**).

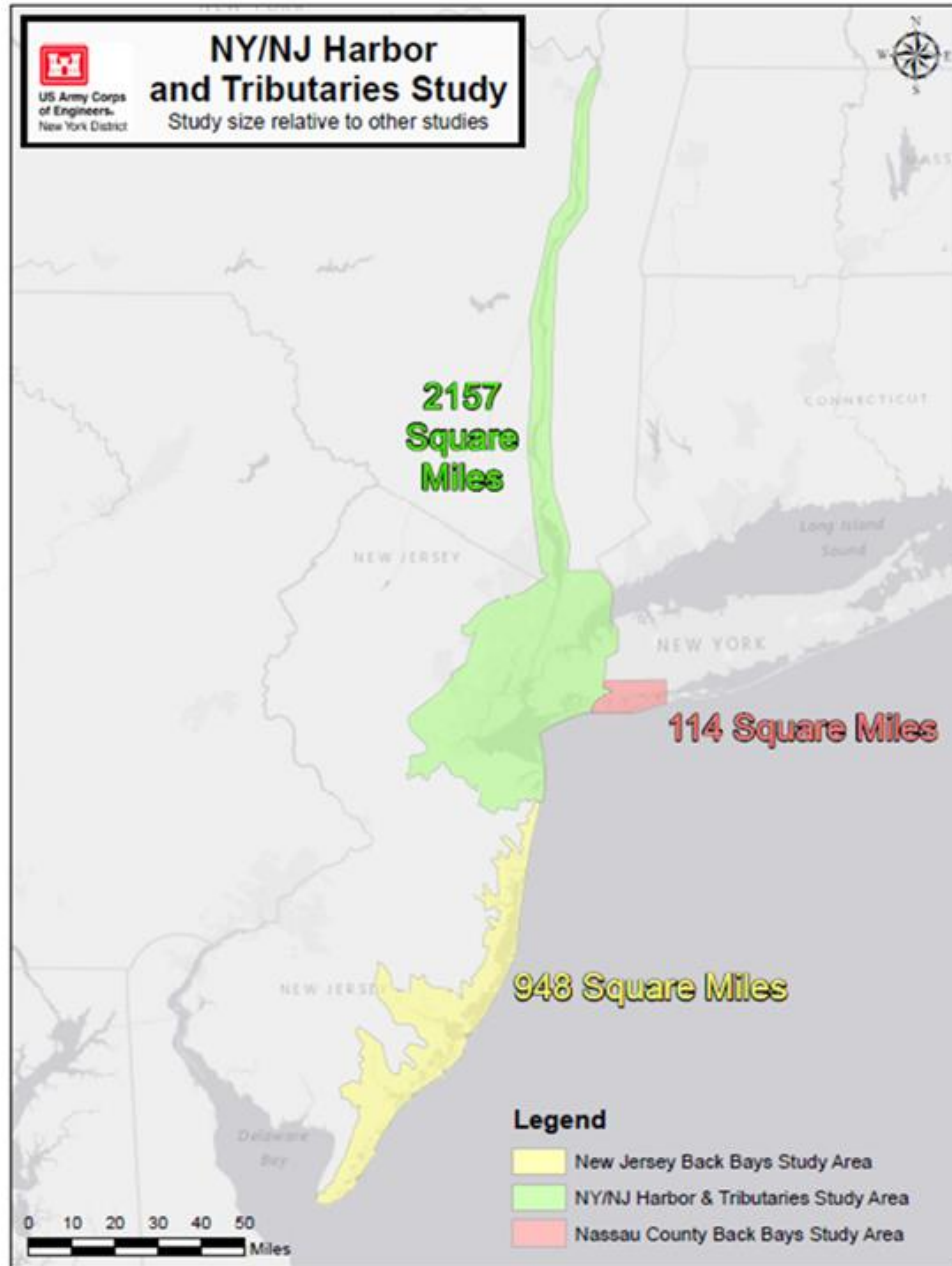


Figure 1. New York-New Jersey Harbor and Tributaries Study Area

The Study Area is comprised of nine Planning Regions: the Capital District Region, Mid-Hudson Region, Lower Hudson/East River Region, Upper Bay/Arthur Kill Region, Hackensack/Passaic Region, Lower Bay Region, Jamaica Bay Region, Long Island Sound Region, and Raritan Region, discussed in more detail in the NYNJHAT Coastal Storm Risk Management Feasibility Study Interim Report, dated February 2019 and the main text of the FR/Tier 1 EIS which this is an appendix to (Figure 2).

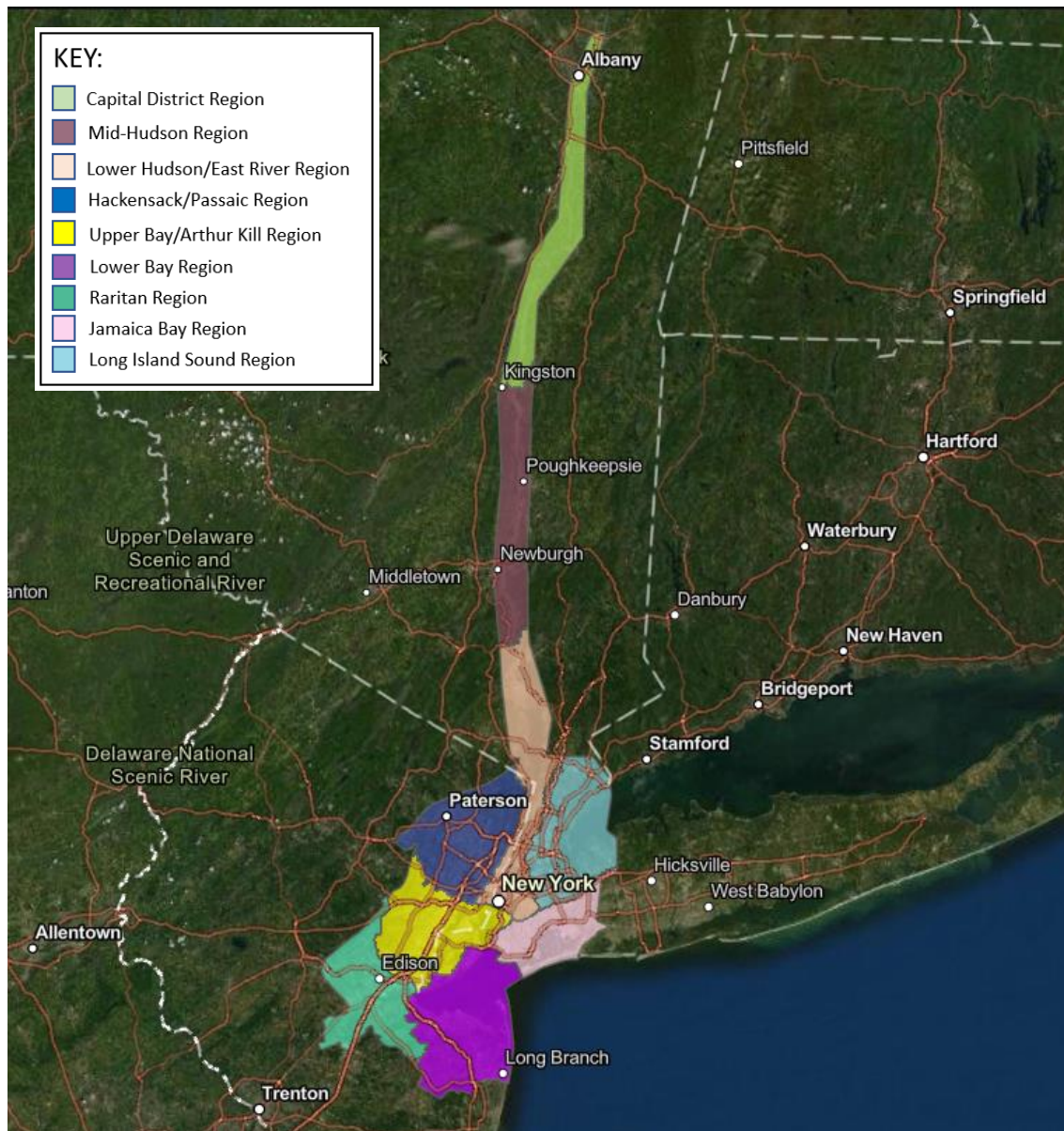


Figure 2. The NYNJHAT Study Area Planning Regions

1.2. Regulatory Framework

The Coastal Barrier Resources Act (CBRA) was enacted in 1982 to prohibit most Federal expenditures and financial assistance within CBRA designated areas, and to encourage the conservation of storm-prone and dynamic coastal barriers that have historically been subsidized for development on coastal barriers, resulting in the loss of natural resources, threats to human life, health, and property, and the expenditure of millions of tax dollars each year (USFWS 2022a). Approximately 1.4 million acres of land encompass the 588 System Units and 2.1 million acres of land encompass 282 Otherwise Protected Areas designated under CBRA throughout the United States and associated territories along the Atlantic, Gulf of Mexico, Great Lakes, U.S. Virgin Islands, and Puerto Rico coasts, including associated aquatic habitats (USFWS 2022a). The CBRA established the John H. Chafee Coastal Barrier Resources System (CBRS) which defines

CBRA System Units and Otherwise Protected Areas.

A CBRA System Unit is primarily comprised of privately owned areas, or area held for conservation and/or recreation. Most Federal expenditures and financial assistance, including Federal flood insurance, are prohibited within System Units unless the action is covered under and exemption (USFWS 2019). Exceptions to the CBRA System Unit restrictions include General Exception 16 U.S.C. §3505(a)(2) (maintenance or construction of improvements of existing federal navigation channels), and specific exceptions 16 U.S.C. §3505(a)(6)(A) (projects for the study, management, protection, and enhancement of fish and wildlife resources and habitats) and 16 U.S.C. §3505(a)(6)(G) (nonstructural projects for shoreline stabilization). Consultation with the USFWS is required if the Tentatively Selected Plan or Preferred Plan is located within a System Unit.

A CBRA Otherwise Protected Area is a category of coastal barriers that is primarily protected for conservation and/or recreation. Otherwise Protected Areas contain a “P” at the end of the unit number. The only Federal spending prohibited in Otherwise Protected Areas is related to Federal flood insurance (USFWS 2019). Consultation with the USFWS is not required if the Tentatively Selected Plan or Preferred Plan is located within an Otherwise Protected Area; however, notification of its occurrence is appropriate. Note, that although CBRA consultation is not required with the USFWS for Otherwise Protected Areas, other consultations may be required depending on the location and resources present within the corresponding Otherwise Protected Area (e.g., National Park Service Land, wetlands, threatened and endangered species, etc.).

The USFWS maintains an online mapping tool for official (and proposed revised¹) maps of CBRA System Units and Otherwise Protected Areas: <https://www.fws.gov/program/coastal-barrier-resources-act/maps-and-data>.

This report was prepared by performing the following:

- Review the NYNJHAT Study Area existing conditions by Planning Region.
- Identify CBRA System Units and Otherwise Protected Areas collocated within and near the Study Alternatives.
- Determine environmental consequences and benefits associated with any CBRA designated areas collocated within or adjacent to the Study Alternatives.

¹ "Draft Revised Units" show the CBRS draft boundaries that are prepared by the U.S. Fish and Wildlife Service (Service) through the comprehensive map modernization process. Revised boundaries that have been prepared for public review are referred to as "proposed." Following the public review process, the Service considers all submitted comments and prepares "final recommended boundaries," which are then transmitted to Congress for consideration. Revised CBRS boundaries that are produced through this process only become effective if adopted by Congress through legislation (USFWS 2022a and 2022b).

2.0 Existing Conditions

Capital District Region, Mid-Hudson Region, Lower Hudson/East River Region, Hackensack/Passaic Region, Upper Bay/Arthur Kill Region, and Raritan Region

There are no CBRA designated areas located within these Planning Regions.

Lower Bay Region

The Lower Bay Region contains four CBRA designated System Units and six Otherwise Protected Areas. Two of the four System Units are located along the southern Raritan Bay shore, one near Laurence Harbor (NJ-02) and the other near Union Beach (NJ-04). The remaining two System Units are located along the New Jersey Atlantic Coast, one near Rumson (NJ-04A) and the other between Sea Bright and Monmouth Beach (also listed as NJ-04A).

One of the six Otherwise Protected Areas is located in New York at the furthest extent of Breezy Point, a portion of the Otherwise Protected Area located within the Gateway National Recreation Area. The largest Otherwise Protected Area in the Lower Bay Region is identified at Gateway's Sandy Hook Unit (NJ-01P), also present within the Gateway National Recreation Area on the New Jersey side of Raritan Bay. The remaining four Otherwise Protected Areas within this Planning Region include one near the Raritan Bay Waterfront Park (NJ-15P), east of Laurence Harbor (NJ-02P) nearly bisecting the center of a System Unit (NJ-02), one north of Cliffwood Beach (NJ-03P), and one near Keyport (NJ-16P) (**Figure 3**).

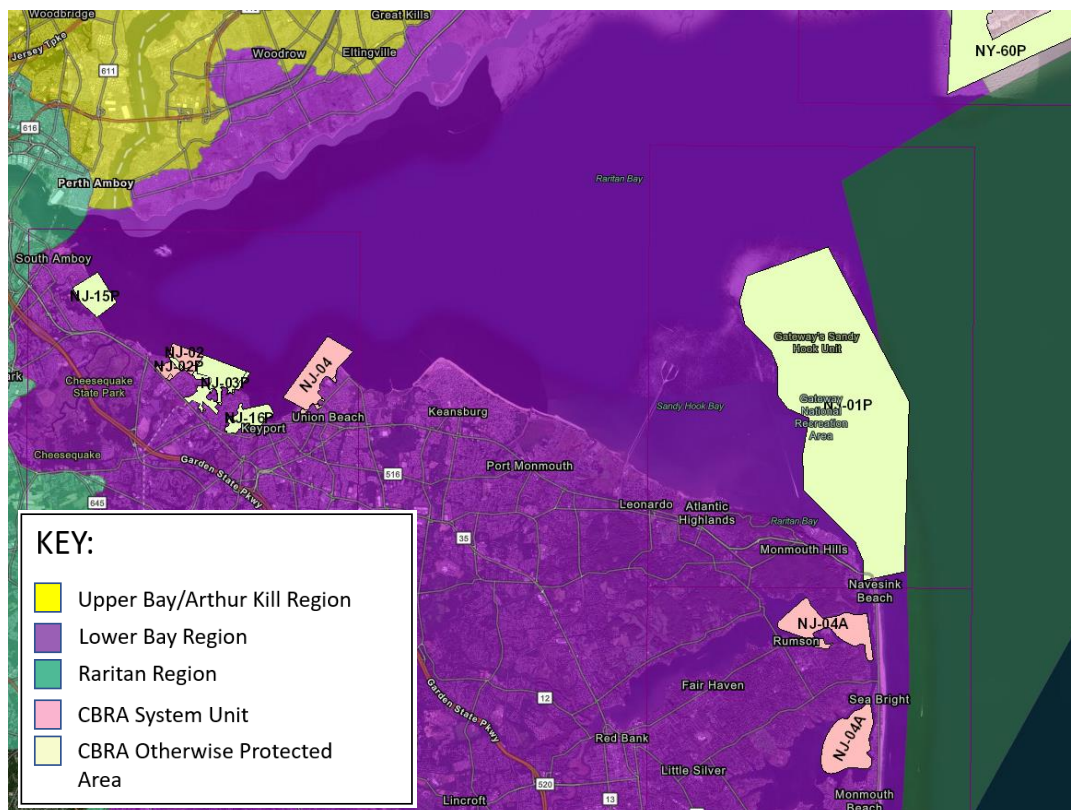


Figure 3. CBRA Designated Areas located within the Lower Bay Region
(Source: USFWS 2022a and USGS 2022)

The USFWS has proposed draft revisions to the Otherwise Protected Area at Gateway's Sandy Hook Unit and the two System Units located to the south of Sandy Hook (NJ-04A near Rumson, and NJ-04A between Sea Bright and Monmouth Beach).

Jamaica Bay Region

The Jamaica Bay Region contains one CBRA designated area, identified as an Otherwise Protected Area (NY-60P) located within the Gateway National Recreation Area and encompasses much of Jamaica Bay, the Jamaica Bay Wildlife Refuge, Shirley Chisholm State Park, and Floyd Bennett Field. This Otherwise Protected Area boundary extends from Breezy Point along the shoreline through Jacob Riis Park, north along the bay side through Cross Bay Bridge and is bound by John F Kennedy International Airport (northeast), Hamilton Beach (north), and the Belt Parkway (northwest-west) (**Figure 4**).

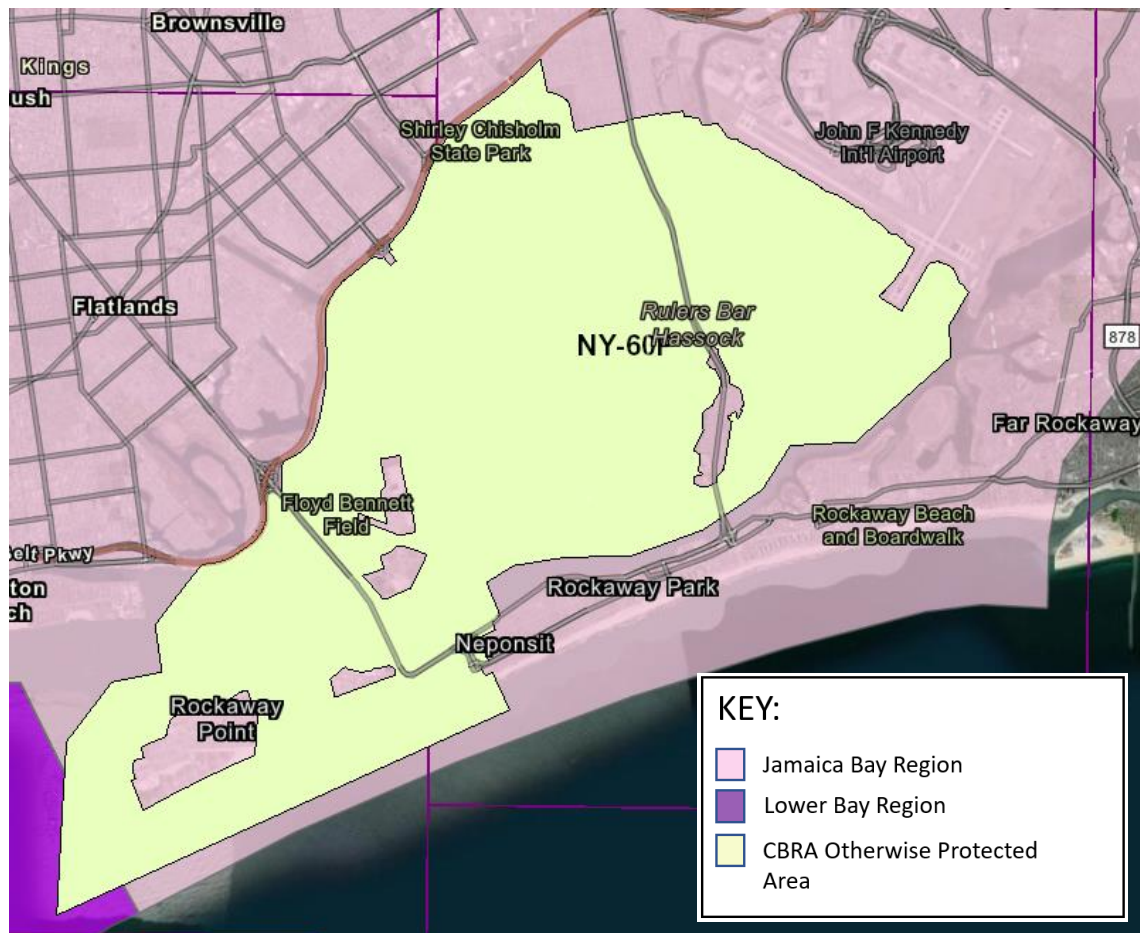


Figure 4. CBRA Designated Area located within the Jamaica Bay Region
(Source: USFWS 2022a and USGS 2022)

The USFWS has proposed draft revisions to the Otherwise Protected Area at the Gateway National Recreation Area (NY-60P) that would extend the boundary slightly to the north of Breezy Point, along the southern extend of Jamaica Bay (north of Rockaway Park) and to the east of John F

Kennedy International Airport.

Long Island Sound Region

One CBRA designated System Unit and one Otherwise Protected Area is located within the Long Island Sound Region. The System Unit is located west of Sands Point (NY-03) and the Otherwise Protected Area is located to the north of Sands Point (NY-04P) (**Figure 5**).

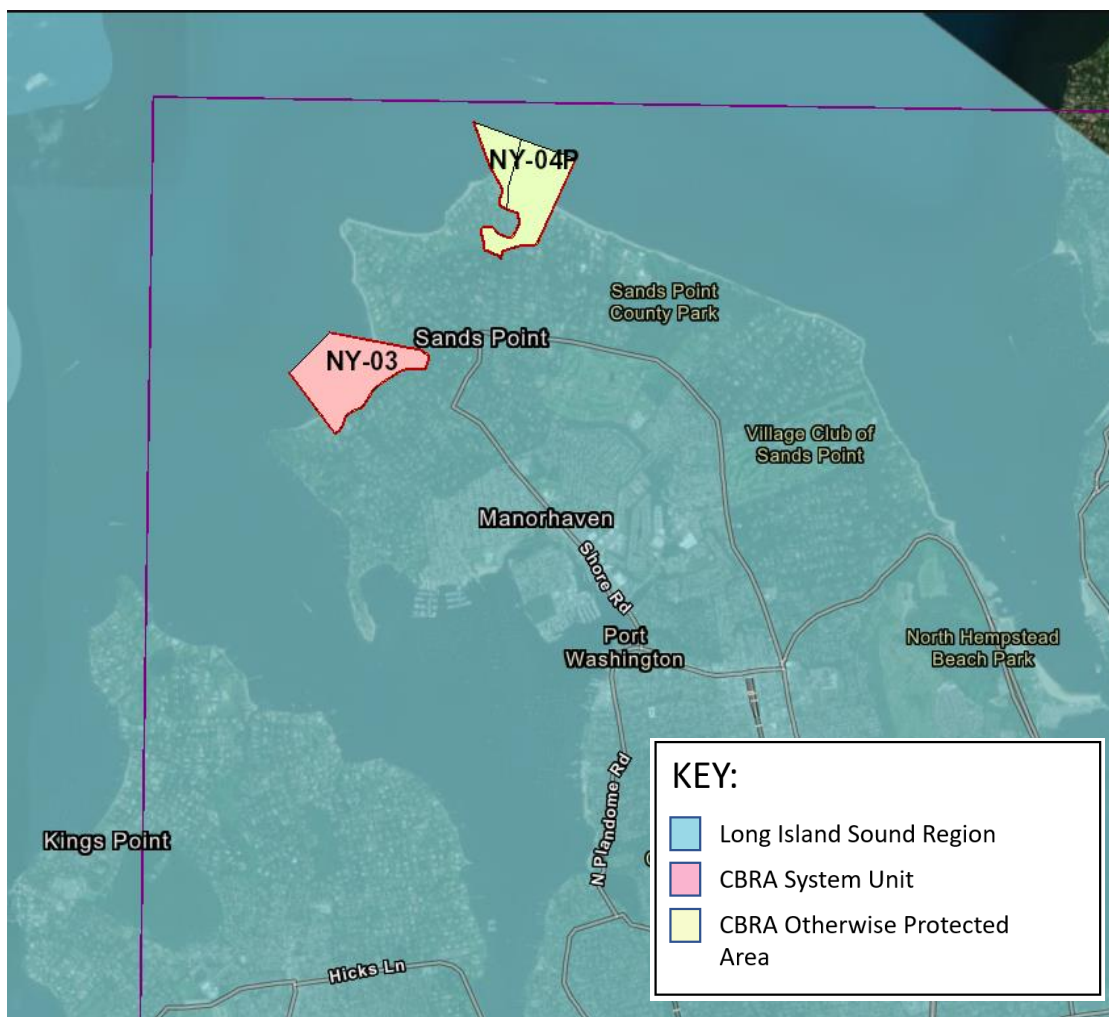


Figure 5. CBRA Designated Areas located within Long Island Sound Region
(Source: USFWS 2022a and USGS 2022)

The USFWS has proposed draft revisions to the Otherwise Protected Area located north of Sands Point (NY-04P) that would extend the boundary slightly to the west and slightly to the southeast.

3.0 Study Conceptual Alternatives

The NYNJHAT Study conceptual Alternatives range from predominantly in-water measures and incrementally shifting to predominantly on-land measures (**Figure 6**).

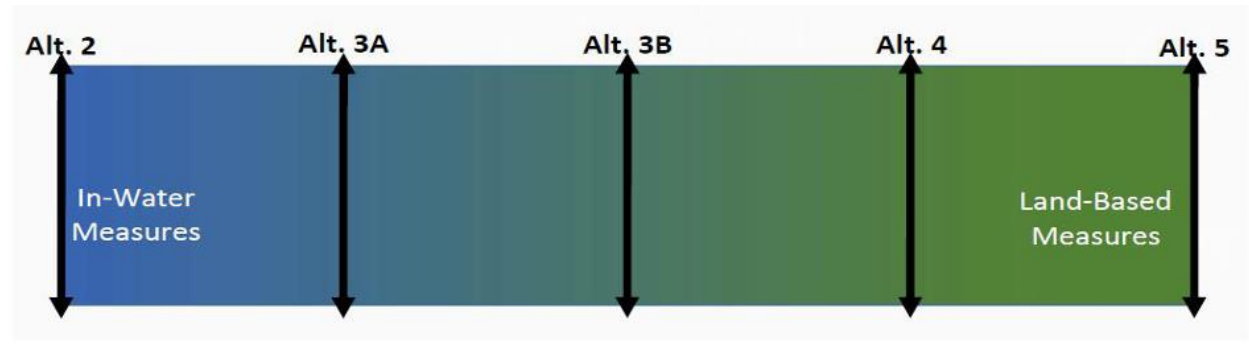


Figure 6. Gradient of in-water measures and land-based measures of Alternatives 2 through 5.

Refer to the FR/Tier 1 EIS, of which this is an Appendix to, for a full description of the Study conceptual Alternatives.

4.0 Environmental Consequences and Benefits

Tentatively Selected Plan – Alternative 3b

Alternative 3b measures are present either within or adjacent to the Gateway National Recreation Area, CBRA designated Otherwise Protected Area (NY-60P) around the Breezy Point peninsula, along the northern shore of Rockaway Point and Roxbury, and bisecting through Jamaica Bay from Jacob Riis Park extending along Flatbush Avenue to the west of John F Kenney International Airport and continuing along the Belt Parkway. Several additional measures are proposed throughout Jamaica Bay along the southern part of Rulers Bar Hassock, between Far Rockaway and John F. Kennedy International Airport, Hamilton Beach, and E 108th Street. No other measures proposed under Alternative 3b are on or adjacent to a CBRA designated System Unit or Otherwise Protected Area.

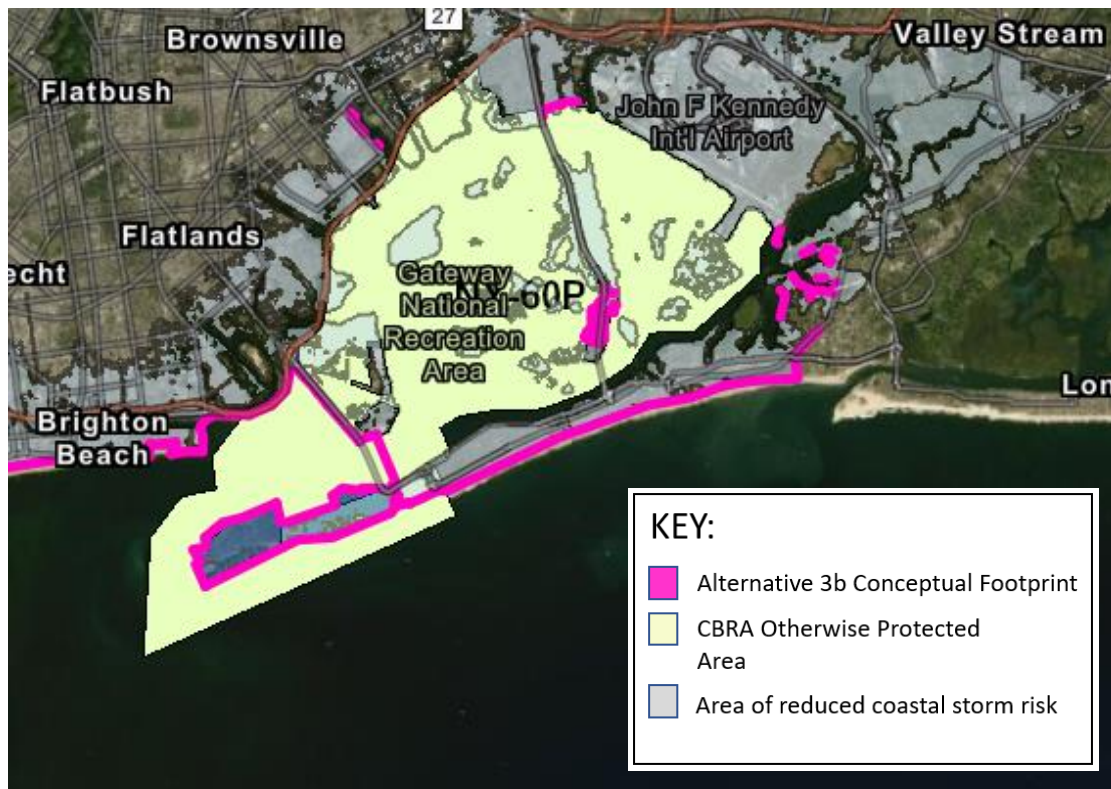


Figure 7. Alternative 3b conceptual measures proximity to CBRA designated Areas

While Alternative 3b footprint measures are located within a CBRA designated Otherwise Protected Area, the CBRA does not restrict Federally funded projects within Otherwise Protected Areas, except for Federal flood insurance projects; therefore, there is no requirement to demonstrate that the project meets an exemption with the project is within an Otherwise Protected Area. No adverse impacts associated with construction, operations, and maintenance are anticipated to the CBRA Otherwise Protected Area by the project. However, note that although no impacts are anticipated to the CBRA designated Otherwise Protected Area, this does not indicate there are no impacts to other resources that may be present within the Otherwise Protected Area, which are assessed in more detail in the main text of the FR/Tier 1 EIS and associated appendices (e.g., National Park Service Land, wetlands, threatened and endangered species, etc.).

Beneficial effects of Alternative 3b are anticipated to align with the intent of the CBRA, which encourages the conservation of storm-prone areas and reduce loss of natural resources, threats to human life, health, and property, and the expenditure of millions of tax dollars each year. Anticipated benefits include reduced damages caused by coastal storms and reduced storm damage risks to the Otherwise Protected Areas of Gateway National Recreation Area (NY-60P).

Alternative 2

Alternative 2 includes a large outer harbor storm surge barrier that extends across Raritan Bay from Sandy Hook to Breezy Point, with associated tie-ins that bisect through two Otherwise Protected Areas: Gateway National Recreation Area (NY-60P) and Gateway's Sandy Hook Unit

(NJ-01P). Alternative 2 measures that are located along the northern boundary of Rockaway Point and Roxbury are either adjacent or slightly overlapping with the Gateway National Recreation Area Otherwise Protected Area (NY-60P). Additionally, Alternative 2 measures located along the western edge of Sandy Hook are either adjacent or slightly overlapping Gateway's Sandy Hook Unit (NJ-01P). As the outer harbor storm surge barrier tie-ins extend further south, those measures are located along the coast, to the east and outside of the CBRA designated System Units (NJ-04A near Rumson and, also named NJ-04A, between Sea Bright and Monmouth Beach). Several additional measures are proposed throughout Jamaica Bay along the southern part of Rulers Bar Hassock, between Far Rockaway and John F. Kennedy International Airport, Hamilton Beach, and E 108th Street. No other measures proposed under Alternative 2 are on or adjacent to a CBRA designated System Unit or Otherwise Protected Area.

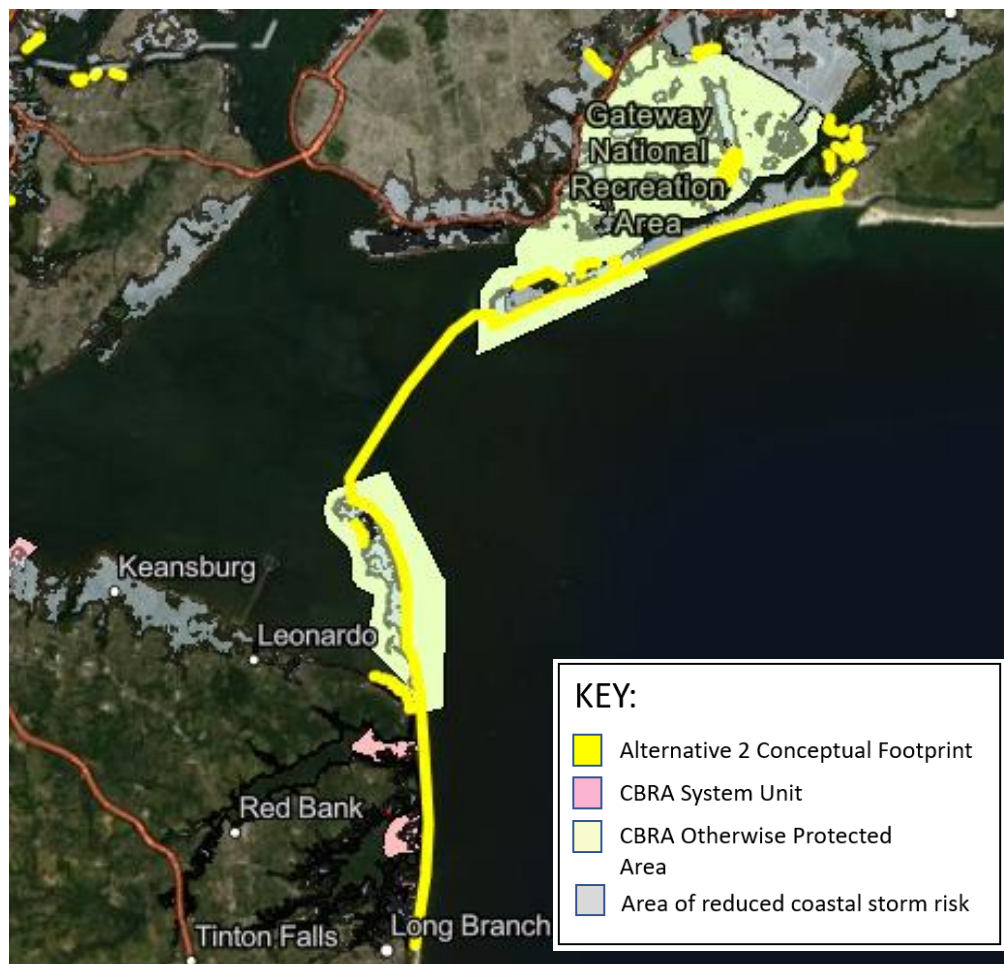


Figure 8. Alternative 2 conceptual measures proximity to CBRA designated Areas

While Alternative 2 footprint measures are located within a CBRA designated Otherwise Protected Area, the CBRA does not restrict Federally funded projects within Otherwise Protected Areas, except for Federal flood insurance projects; therefore, there is no requirement to demonstrate that the project meets an exemption with the project is within an Otherwise Protected Area. No adverse direct, indirect, or cumulative impacts associated with construction, operations, and maintenance

are anticipated to the CBRA Otherwise Protected Area by the project.

Beneficial effects of Alternative 2 would be anticipated to align with the intent of the CBRA, which encourages the conservation of storm-prone areas and reduce loss of natural resources, threats to human life, health, and property, and the expenditure of millions of tax dollars each year. Anticipated benefits include reduced damages caused by coastal storms and reduced storm damage risks to the Otherwise Protected Areas of Gateway National Recreation Area (NY-60P), Gateway's Sandy Hook Unit (NJ-01P), at least portions of the two CBRA designated System Units located along the New Jersey Shore near Rumson (NJ-04) and Sea Bright (also NJ-04), and portions of the Otherwise Protected Areas (NJ-15P, NJ-02P, NJ-03P, NJ-16P) and System Units (NJ-02 and NJ-04) located along the southern shore of Raritan Bay.

Alternative 3a

Alternative 3a measures are present either within or adjacent to the Gateway National Recreation Area CBRA designated Otherwise Protected Area (NY-60P) around the Breezy Point peninsula, along the northern shore of Rockaway Point and Roxbury, and bisecting through Jamaica Bay from Jacob Riis Park extending along Flatbush Avenue to the west of John F Kenney International Airport and continuing along the Belt Parkway. Several additional measures are proposed throughout Jamaica Bay along the southern part of Rulers Bar Hassock, between Far Rockaway and John F. Kennedy International Airport, Hamilton Beach, and E 108th Street.

Measures are also present in the southern portion of Gateway's Sandy Hook Unit (NJ-01P), extending from the coast through the intersection of Hartshorne Drive and connecting into Snug Harbor Avenue across Raritan Bay.

Along the southern shore of Raritan Bay in New Jersey, measures are present either adjacent or slightly overlapping with the CBRA designated Otherwise Protected Areas (NJ-15P, NJ-02P, NJ-03P, and NJ-16P). One proposed measure is observed extending approximately 360 feet into the CBRA designated System Unit located to the north of Union Beach (NJ-04). This measure is currently conceptually proposed as a levee intended as an Induced Flooding Feature. No measures are proposed within or adjacent to the CBRA designated System Unit near Laurence Harbor.

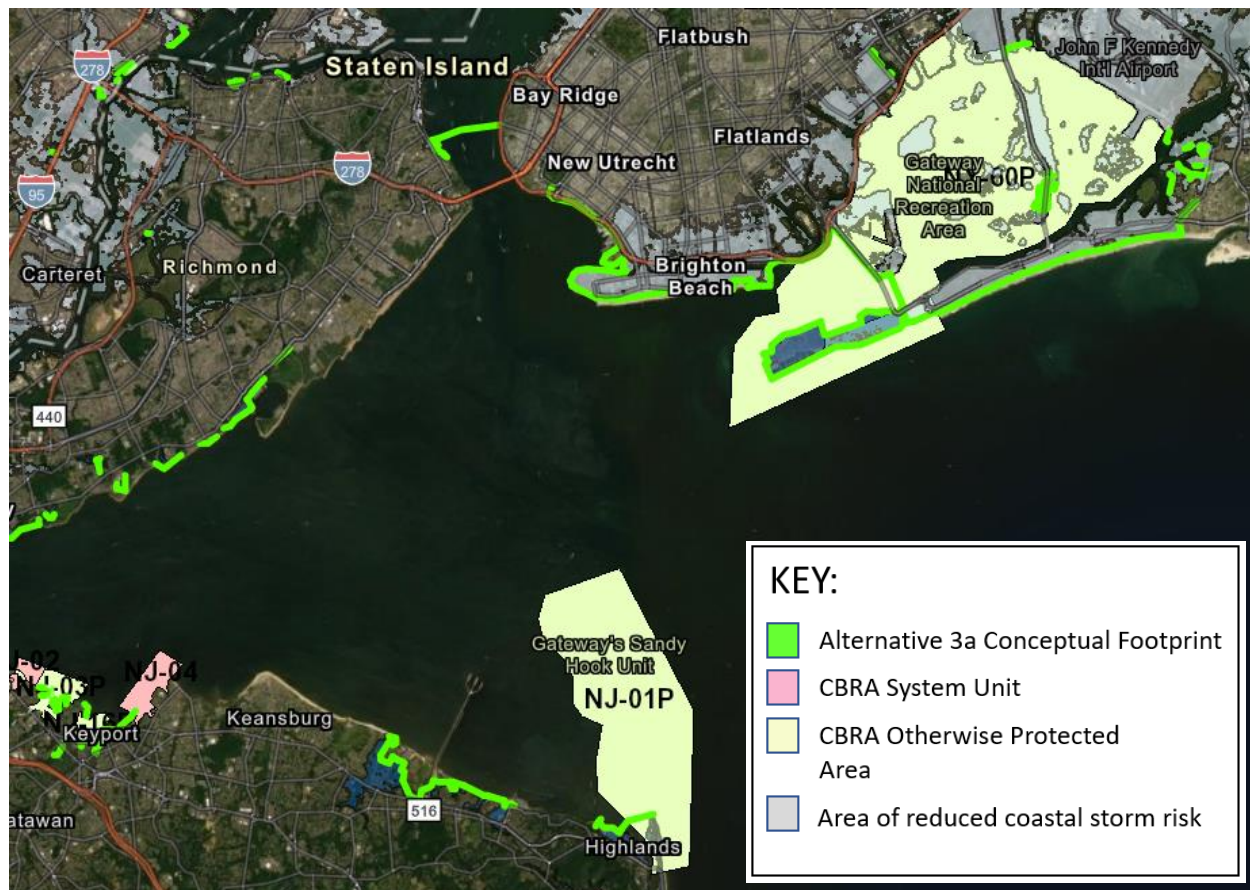


Figure 9. Alternative 3a conceptual measures proximity to CBRA designated Areas

While the majority of Alternative 3a footprint measures are located within a CBRA designated Otherwise Protected Area, the CBRA does not restrict Federally funded projects within Otherwise Protected Areas, except for Federal flood insurance projects; therefore, there is no requirement to demonstrate that the project meets an exemption with the project is within an Otherwise Protected Area. No adverse direct, indirect, or cumulative impacts associated with construction, operations, and maintenance are anticipated to the CBRA Otherwise Protected Area by the project.

The proposed measure observed extending approximately 360 feet into the CBRA designated System Unit located to the north of Union Beach (NJ-04), would require further assessment and consultation with the USFWS to determine impacts and any qualifying exemptions to the CBRA, if this Alternative was to be carried forward for further consideration.

Beneficial effects of Alternative 3a would be anticipated to align with the intent of the CBRA, which encourages the conservation of storm-prone areas and reduce loss of natural resources, threats to human life, health, and property, and the expenditure of millions of tax dollars each year. Anticipated benefits include reduced damages caused by coastal storms, reduced storm damage risks to the Otherwise Protected Areas of Gateway National Recreation Area and portions of Gateway's Sandy Hook Unit.

The measure extending into the CBRA designated System Unit to the north of Union Beach (NJ-

04) would require coordination and consultation with the USFWS should it be carried forward under the Tentatively Selected Plan or Preferred Plan. If so, it is anticipated this measure may meet, at a minimum, specific exception 16 U.S.C. §3505(a)(6)(A) (projects for the study, management, protection, and enhancement of fish and wildlife resources and habitats) of the CBRA, subject to consultation with the USFWS. Additionally, the Study purpose is to investigate and prevent coastal flood risk within the Study Area and is not intended to promote further development along the coastal barriers and that development is limited by the inability of property owners to receive federally backed insurance or construct in areas protected by the Clean Water Act.

Alternative 4

Alternative 4 measures are present either within or adjacent to the Gateway National Recreation Area, CBRA designated Otherwise Protected Area (NY-60P) around the Breezy Point peninsula, along the northern shore of Rockaway Point and Roxbury, and bisecting through Jamaica Bay from Jacob Riis Park extending along Flatbush Avenue to the west of John F. Kennedy International Airport and continuing along the Belt Parkway. Several additional measures are proposed throughout Jamaica Bay along the southern part of Rulers Bar Hassock, between Far Rockaway and John F. Kennedy International Airport, Hamilton Beach, and E 108th Street. No other measures are located within or adjacent to a CBRA designated area.

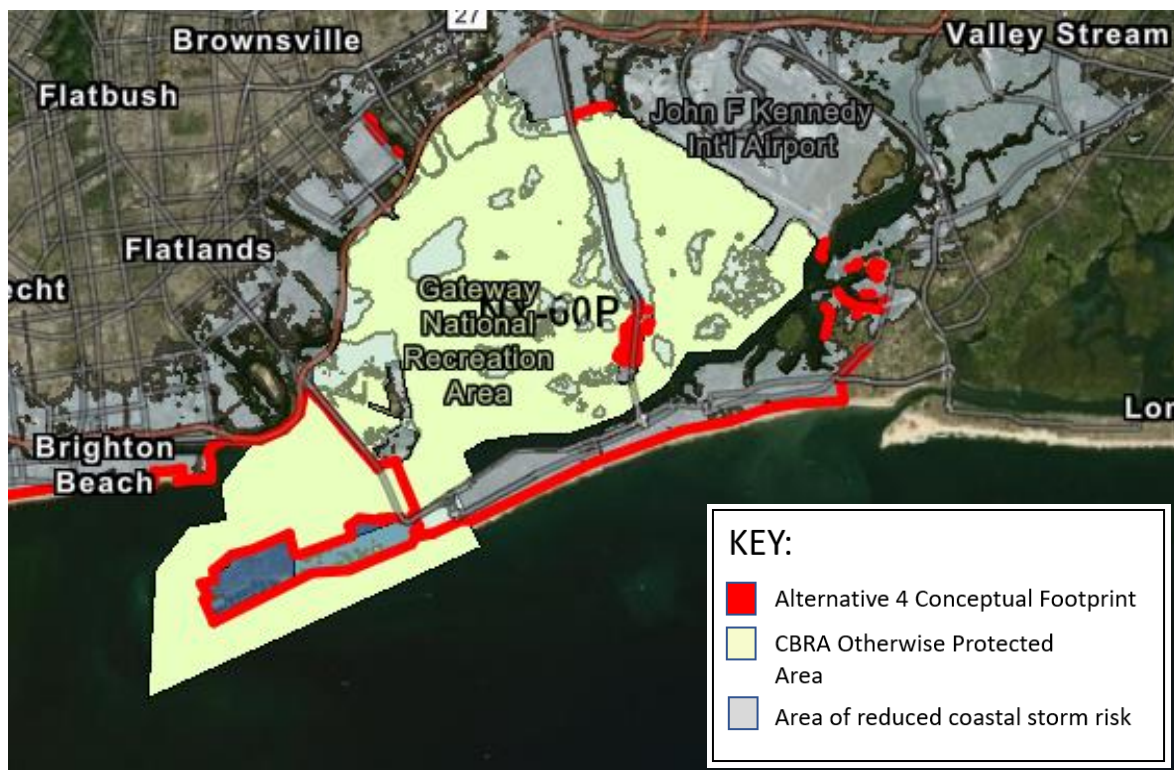


Figure 10. Alternative 4 conceptual measures proximity to CBRA designated Areas

While Alternative 4 footprint measures are located within a CBRA designated Otherwise Protected Area, the CBRA does not restrict Federally funded projects within Otherwise Protected Areas, except for Federal flood insurance projects; therefore, there is no requirement to demonstrate that the project meets an exemption with the project is within an Otherwise Protected Area. No adverse direct, indirect, or cumulative impacts associated with construction, operations, and maintenance are anticipated to the CBRA Otherwise Protected Area by the project.

Beneficial effects of Alternative 4 would be anticipated to align with the intent of the CBRA, which encourages the conservation of storm-prone areas and reduce loss of natural resources, threats to human life, health, and property, and the expenditure of millions of tax dollars each year. Anticipated benefits include reduced damages caused by coastal storms and reduced storm damage risks to the Otherwise Protected Areas of Gateway National Recreation Area (NY-60P).

Alternative 5

No measures included under Alternative 5 are within or adjacent to a CBRA designated System Unit or Otherwise Protected Area, therefore, no direct, indirect, or cumulative impacts, or benefits to CBRA designated areas, are anticipated.

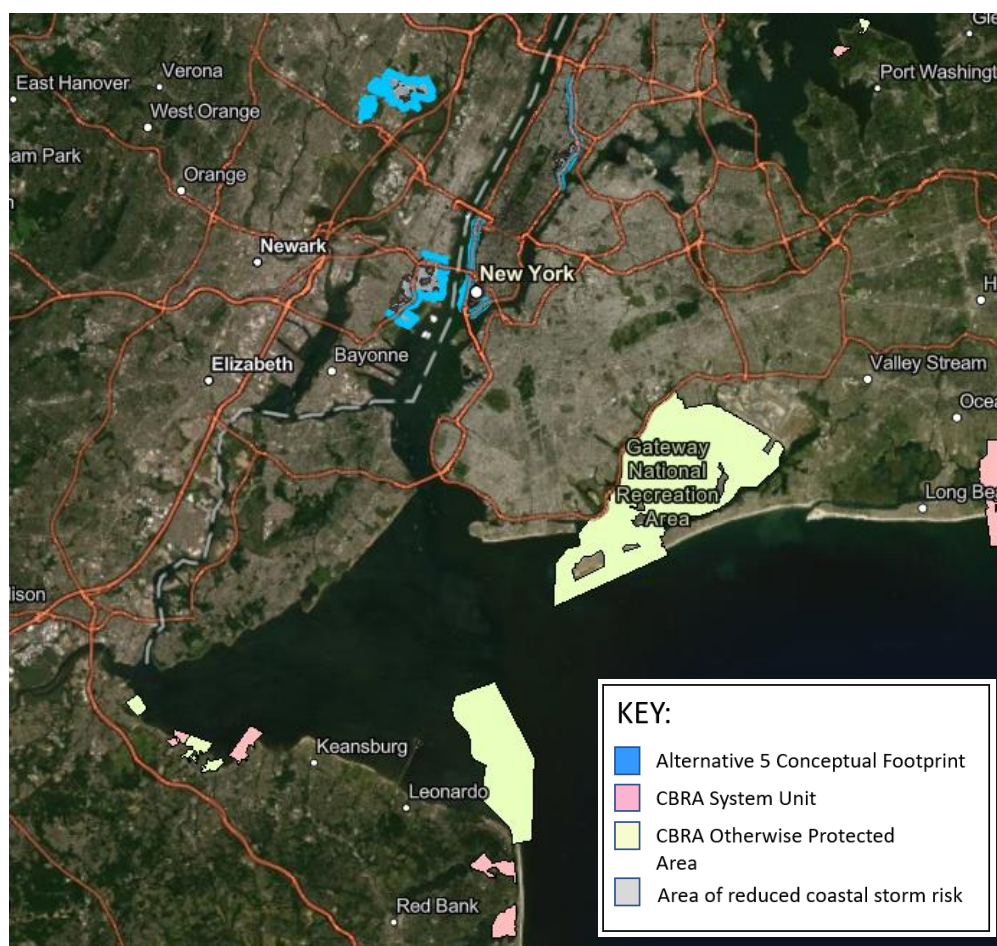


Figure 11. Alternative 5 conceptual measures proximity to CBRA designated Areas

5.0 Non-Structural Measure Locations Considerations

Non-structural measures are part of every Alternative in the NYNJHAT Study, and associated impacts (direct, indirect, and cumulative) will be assessed in the Tier 2 EIS when more information on measures is known in this Tiered process. A list of non-structural measure types and potential locations are presented in the main text of the Tier 1 FR/EIS of which this is an appendix to. In review of the current potential non-structural measure locations, as of June 2022, an area considered for these types of measures is within a portion of a CBRA designated Otherwise Protected Area, to the north of Keyport, New Jersey (NJ-16P) (**Figure 10**).

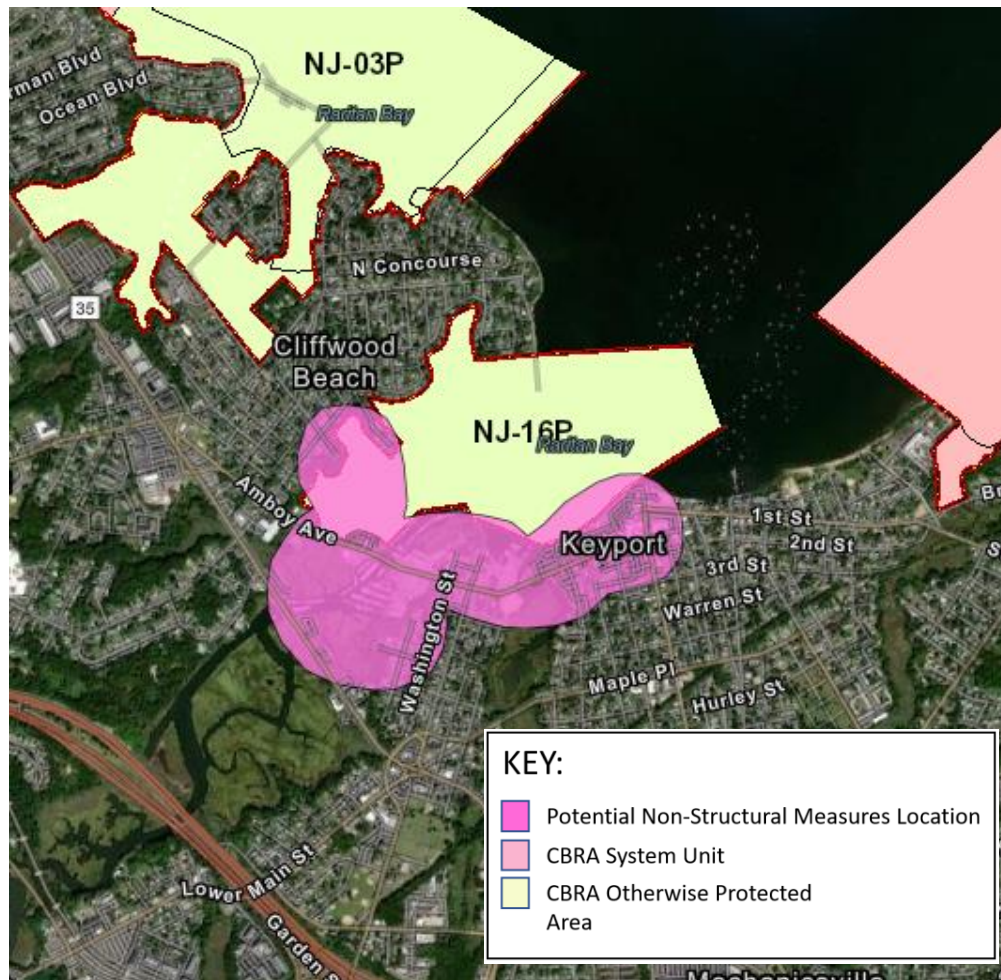


Figure 12. Potential non-structural locations proximity to CBRA designated Areas

The type of non-structural measures proposed for this potential location, and further refinement of the non-structural location boundaries, will be assessed further in the Final FR/Tier 1 EIS.

6.0 Findings and Conclusion

The Tentatively Selected Plan, Alternative 3b, footprint measures are either within or adjacent to CBRA designated Otherwise Protected Areas. No measures proposed under Alternative 3b extend

into a CBRA designated System Unit. While Alternative 3b footprint measures are located within a CBRA designated Otherwise Protected Area, the CBRA does not restrict Federally funded projects within Otherwise Protected Areas, except for Federal flood insurance projects; therefore, there is no requirement to demonstrate that the project meets an exemption with the project is within an Otherwise Protected Area. No adverse impacts associated with construction, operations, and maintenance are anticipated to the CBRA Otherwise Protected Area by the project. However, note that although no adverse impacts are anticipated to the CBRA designated Otherwise Protected Area, this does not indicate there are no impacts to other resources that may be present within the Otherwise Protected Area, which are assessed in more detail in the main text of the FR/Tier 1 EIS and associated appendices (e.g., National Park Service Land, wetlands, threatened and endangered species, etc.).

Beneficial effects of Alternative 3b are anticipated to align with the intent of the CBRA, which encourages the conservation of storm-prone areas and reduce loss of natural resources, threats to human life, health, and property, and the expenditure of millions of tax dollars each year. Anticipated benefits include reduced damages caused by coastal storms and reduced storm damage risks to the Otherwise Protected Areas of Gateway National Recreation Area (NY-60P).

Alternatives 2, 3a, and 4 have measures that are either within or adjacent to CBRA designated Otherwise Protected Areas and Alternative 3a has a measure that extends approximately 360 feet into a CBRA designated System Unit located to the north of Union Beach (NJ-04). Alternative 5 has no measures within or adjacent to a CBRA designated System Unit or Otherwise Protected Area. If Alternative 3a were to be carried forward as the Tentatively Selected Plan or the Preferred Plan, consultation with the USFWS would be required.

For measures that extend into CBRA designated Otherwise Protected Areas, conservation easements may be considered as an additional project enhancement opportunity, which would require additional coordination with the USFWS and non-federal sponsors, as acquisition easements or development restrictions would be the responsibility of the non-federal sponsors, at 100% non-federal cost. Additional reviews and consideration will be assessed further in the Tier 2 EIS.

7.0 Acronyms

CBRA	Coastal Barrier Resources Act
CBRS	Coastal Barrier Resource System
CSRM	Coastal Storm Risk Management
EIS	Environmental Impact Statement
FR	Feasibility Report
NJ	New Jersey
NJDEP	New Jersey Department of Environmental Protection

NY	New York
NYCORR	New York City Office of Recovery and Resiliency
NYNJHAT	New York-New Jersey Harbor and Tributaries
NYSDEC	New York State Department of Environmental Conservation
USACE	United States Army Corps of Engineers
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey

8.0 Resources and Sources

16 United States Code (USC) § 3501 et seq., *Coastal Barrier Resources*

USGS 2022. United State Geologic Survey, Coastal Barrier Resource System MapServer (USFWS, CBRA Program) website:

<https://cbrsgis.wim.usgs.gov/arcgis/rest/services/CoastalBarrierResourcesSystem/MapServer>.

Accessed: June 2022.

USFWS 2019. *Coastal Barrier Resources System Validation Tool User Guide V2.1*, Ecological Services, Division of Budget and Technical Support, United State Fish and Wildlife Service (USFWS) website: <https://www.fws.gov/sites/default/files/documents/coastal-barrier-resources-system-validation-tool-user-guide.pdf>. Accessed June 2022.

USFWS 2022a. USFWS Coastal Barrier Resources Act website and mapper:

[https://www.fws.gov/program/coastal-barrier-resources-act#:~:text=We%20administer%20the%20Coastal%20Barrier,Barrier%20Resources%20System%20\(CBRS\)](https://www.fws.gov/program/coastal-barrier-resources-act#:~:text=We%20administer%20the%20Coastal%20Barrier,Barrier%20Resources%20System%20(CBRS)). Accessed: June 2022.

USFWS 2022b. USFWS, *Report to Congress: John H. Chafee Coastal Barrier Resources System Hurricane Sandy Remapping Project, Appendix H: Summaries of Change, Technical Correction Assessments, and Maps for New Jersey*. April 2022.