

Draft Integrated Feasibility Report
and Environmental Impact
Statement

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

**APPENDIX F
REAL ESTATE PLAN**

September 2022

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1 PREAMBLE

1.1 PROJECT AUTHORIZATION:

On January 29, 2013, President Obama signed into law the Disaster Relief Appropriations Act of 2013 (Public Law [P.L.] 113-2), to assist in the recovery in the aftermath of Hurricane Sandy. The North Atlantic Division was authorized by P.L. 113-2 to commence the NACCS to investigate CSRM strategies for areas impacted by the storm. Under the direction of Public Law 113-2, Chapter 4, USACE New York District completed a Focus Area Analysis (FAA) for the New York-New Jersey Harbor and Tributaries (NYNJHAT) as part of the NACCS in response to the portion of P.L. 113-2 that states, "... as a part of the study, the Secretary shall identify those activities warranting additional analysis by [USACE]." The January 2015 NACCS final report identifies nine high-risk focus areas of the North Atlantic Coast that warrant additional analyses by USACE to address coastal flood risk. One of these areas is the New York-New Jersey Harbor and Tributaries area. The NYNJHAT FAA, completed in 2014, identified CSRM opportunities warranting additional analysis. However, authority to complete the additional analysis required to achieve a Chief of Engineers' Report for the focus areas is not provided for under P.L. 113-2. Authorization for this effort is provided by P.L. 84-71, approved June 15, 1955, which calls for: "...an examination and survey to be made of the eastern and southern seaboard of the United States with respect to hurricanes, with particular reference to areas where severe damages have occurred. "Sec. 2. Such survey, to be made under the direction of the Chief of Engineers, shall include the securing of data on the behavior and frequency of hurricanes, and the determination of methods of forecasting their paths and improving warning services, and of possible means of preventing loss of human lives and damages to property, with due consideration of the economics of proposed breakwaters, seawalls, dikes, dams, and other structures, warning services, or other measures which might be required."

1.2 OFFICIAL PROJECT DESIGNATION

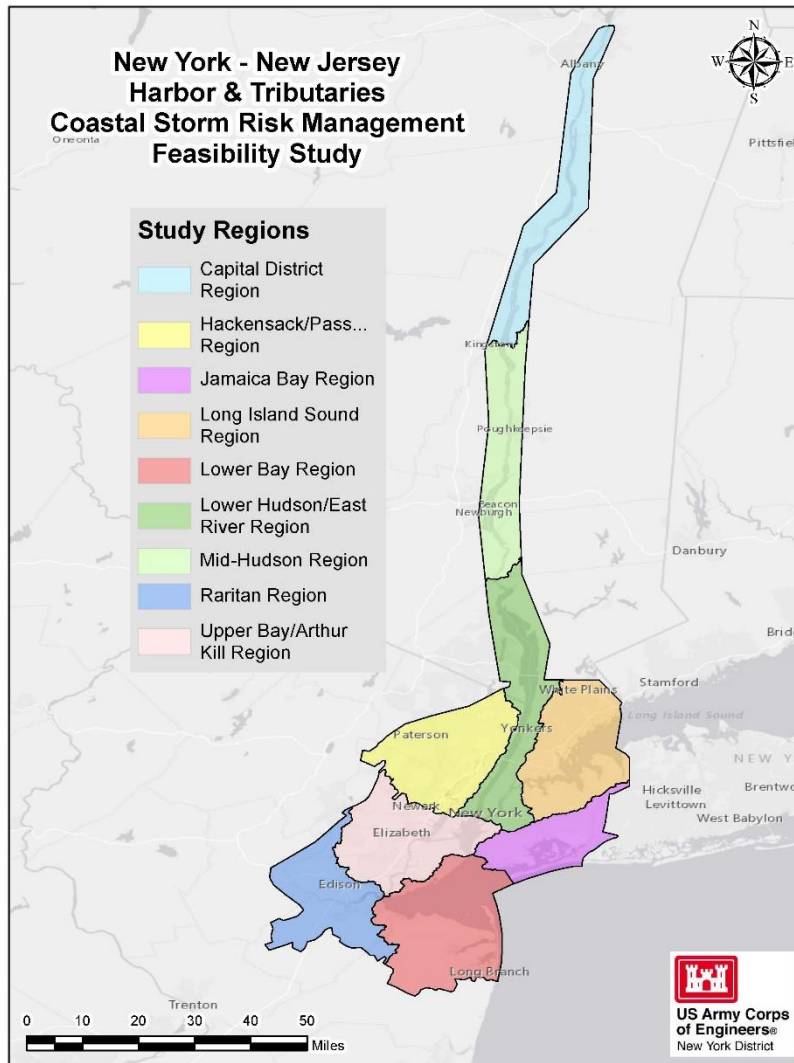
New York-New Jersey Harbor and Tributaries Coastal Storm Risk Management Feasibility Study, hereinafter referred to as the "Study" or the "Project".

1.3 PROJECT LOCATION

The U.S. Army Corps of Engineers, New York District is conducting this Coastal Risk Storm Management study in the New York and New Jersey tidally influenced study area. The Study area encompasses the New York Metropolitan area, including the most populous and densely populated city in the United States, and some of the largest cities in New Jersey. 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, Essex, Hudson, Union, Middlesex, and Monmouth Counties in New Jersey; and Rensselaer, Albany, Columbia, Greene, Dutchess, Ulster, Putnam, Orange, Westchester, Rockland, Bronx, New York, Queens, Kings, and Richmond Counties in New York. To include all tidally affected waters, the study area extends upstream of the Hudson River to the location of the Federal Lock and Dam in Troy, NY, the Passaic River to the Dundee Dam, and the Hackensack River to Oradell Reservoir.

The NYNJHATs study area is comprised of the following nine regions within the State of New York and New Jersey: (1) Capital District Region, (2) Hackensack/Passaic Region, (3) Jamaica Bay Region, (4) Long Island Region, (5) Lower Bay Region, (6) Lower Hudson Region/East River Region, (7) Mid-Hudson Region, (8) Raritan Region, (9) Upper Bay/Arthur Kill Region. The Study regions are shown in Figure-1 below:

Figure-1: NYNJHATS Study Regions



1.4 NON-FEDERAL SPONSOR

The USACE New York District is the lead Federal agency for this study, with the New Jersey Department of Environmental Protection (NJDEP) and New York State Department of Environmental Conservation (NYSDEC) acting as the Non-Federal Sponsor (NFS); and New York State Department of State (NYS DOS) and New York City Mayor’s Office of Climate and Environmental Justice (NYCMOCEJ) are Study partners.

2 STATEMENT OF PURPOSE

This Real Estate Plan (REP) is prepared in accordance with ER 405-1-12, Chapter 12 and is intended to present the overall plan describing the minimum real estate requirements (lands, easements, rights-of-way, relocations, and disposals (LERRD)) needed for the construction, operation, maintenance, repair, and rehabilitation herein referred to as the Tentatively Selected Plan (TSP). This REP is Appendix “F” to the New York – New Jersey Harbor and Tributaries Coastal Storm Risk Management Draft Integrated Feasibility Report and Environmental Impact Statement (FR/EIS).

3 PROJECT PURPOSE

Historical storms have severely impacted the New York - New Jersey Harbor region, including Hurricane Sandy most recently, causing loss of life and extensive economic damages. The impacts from Hurricane Sandy highlighted the national need for a comprehensive and collaborative evaluation to reduce risk to vulnerable populations within the North Atlantic region. In January 2015, USACE completed the North Atlantic Coast Comprehensive Study (NACCS), which identified high-risk areas on the Atlantic Coast for warranting further investigation of flood risk management solutions. The NYNJHATS focus area was one of the three focus areas, along with the Nassau County Back Bays and the New Jersey Back Bays studies, identified to investigate coastal flood risk within the New York-New Jersey Harbor region.

In response, the U.S. Army Corps of Engineers (USACE) has investigated measures to manage future coastal flood 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 New York-New Jersey Harbor and Tributaries Study (NYNJHATS) area. The objectives of this study are to (1) to reduce the risk of coastal storm damage to communities, public infrastructure, important societal resources, and the environment (2) Improve the community’s ability to recover from damages caused by storm surges by reducing the duration of interruption in services provided by man-made and natural systems, (3) Enhance human health and safety by improving the performance of critical infrastructure and natural features during and after storm surge events, (4) Restore natural coastal features that have ability to reduce coastal storm risk for communities and ecosystems.

The USACE New York District has identified five action Alternatives plus a No Action Alternative for this Study. Each action Alternative includes a different combination of coastal storm risk management (CSRМ) measures that could potentially manage risks associated with flood and storm events in the New York- New Jersey Harbor study region. All alternative plans include nonstructural measures for areas with unaddressed coastal storm risk and Natural and Nature-Based Features (NNFBs) where applicable and feasible.

4 PROJECT PLAN OF IMPROVEMENT

The five alternatives mentioned above were evaluated and as a result, Alternative 3B was identified as the Tentatively Selected Plan as it offered the highest net benefits. Approximately 62.75% of the Study area will be directly benefited from flood risks as shown on Exhibit “A”, the Tentatively Selected Plan Overview Map, attached to this REP. The TSP consists of a combination of structural and non-structural measures as well as Natural and Nature-Based Features (NNFBs) as defined below:

Structural Measures:

Structural measures reduce flood risk by modifying the characteristics of the flood. They are physical modifications designed to reduce the frequency of damaging levels of flood inundation. Structural measures are often employed to reduce peak flows (flood storage); direct floodwaters away from flood prone property (flood barriers); or facilitate the flow of water through or around an area (channel modifications or diversions).

Nonstructural Measures:

Nonstructural measures are techniques for reducing flood damage to existing structures within a floodplain. Wet-proofing consists of constructing or installing features designed to allow water to flow in and out of a structure, but prevents the contact of water to essential utilities or mechanicals of the structure (e.g., filling a basement or elevating or protecting the HVAC system). Elevations involves raising the lowest finished floor of a building to a height that is above the flood level (i.e., raising a home). The main objective for the nonstructural treatment is to help reduce flood damages of the existing structures.

Natural and Nature-Based Features (NNBFs):

NNBFs are habitats or features that may reduce flood risk while providing ecosystem benefits.

4.1 PLAN OF IMPROVEMENT:

Structural Measures within the TSP:

Storm Surge Barriers (SSBs) and Shoreline Based Measures (SBMs): Storm Surge Barriers were proposed along the Arthur Kill, Kill Van Kull, Jamaica Bay, Newtown Creek, Gowanus Canal, and Flushing Creek regions along with the necessary SBMs to reduce flood risk in the New Jersey Upper Bay and Hudson River shoreline (from Liberty State Park to Hoboken), the New York City West Side shoreline (from the Brooklyn Bridge to Pier 78), the East Harlem shoreline (from Carl Schurz Park to Washington Heights), and the Red Hook shoreline and Long Island City-Astoria shoreline (from Astoria Park to Ed Koch Queensboro Bridge).

Induced Flooding-Mitigation Features (IFFs) and Risk Reduction Features (RRFs): Induced flooding features were proposed to manage induced water level increases on the flood side of SSBs in the following New York metropolitan areas: (1) Breezy Point, (2) the Bronx (3) Inwood and (4) Kips Bay. Risk Reduction Features (RRFs): were proposed to manage flood risk behind SSBs for coastal storm events. The TSP incorporates RRFs into the Upper Bay Region, the Arthur Kill region, the Jamaica Bay region, and the Hackensack and Passaic River region.

Ringwall Construction: There are approximately 56 ringwalls incorporated into the Tentatively Selected Plan. Further engineering analysis and refinement of these features is necessary and will continue during the optimization phase of this study to determine the necessary real estate requirements.

Table-1 below describes the project features within the Tentatively Selected Plan:

Table-1: Structural Measures within the TSP

| | |
|----------------------|---------------------------|
| Storm Surge Barriers | SBMs, RRFs and IFFs |
| Jamaica Bay SSB | Deployable Flood Barriers |
| Arthur Kill SSB | Navigable Barriers |
| Kill Van Kull SSB | Elevated Promenades |
| Gowanus SSB | Floodwalls |
| Newtown Creek SSB | Reinforced Dunes |
| Flushing Creek SSB | Berms |
| | Bulkheads |
| | Navigable Gates |
| | Revetments |
| | Levees |
| | Tide Gates |
| | Ringwalls |

In addition to the measures above, the TSP includes road raisings/road ramps on 9 roads located within the Broad Channel, New York and one 1 road ramp located on Fish House Road in Newark, New Jersey. The 9 roads identified for road raisings/ramps within the Broad Channel are as follows: (1) Channel Road, (2) Lanark Road, (3) E 8th Road, (4) W 10th Road, (5) Shad Creek Road (6) W 9th Road, (7) Cross Bay Blvd (8) E. 20th Road, (9) West Road. Table-2 below shows the total length (estimated) for each road raising/road ramp proposed within the TSP:

Table-2: Road Raisings within the TSP

| Road Raisings within the Broad Channel, NY | Total Length [ft] |
|--|-------------------|
| 1. Channel Road | |
| • South Portion of Channel Road | 1,015 ft |
| • North Portion of Channel Road | 165 ft |
| 2. Lanark Road | 570 ft |
| 3. E 8 th Road | 174 ft |
| 4. W 10 th Road | 65 ft |
| 5. Shad Creek Road | |
| • South Portion of Shad Creek Road | 618 ft |
| • North Portion of Shad Creek Road | 690 ft |
| 6. W 9 th Road | 60 ft |
| 7. Cross Bay Blvd | 800 ft |
| Road Ramps within the Broad Channel, NY | |
| • Across Cross Bay Blvd | 30 ft |
| 8. E. 20 th Road | 211 ft |
| 9. West Road | 45 ft |
| Road Ramp in Newark, New Jersey | |
| 10. Fish House Road | 285 ft |

Each road raising crest will be approximately 10 feet elevation. Additional engineering and surveying analysis will need to be conducted to identify the difference between the proposed crest elevations and current road elevations. The height of each road raising is critical in the Broad Channel as most of the raisings are located within residential communities. Any access

issues to the structures within this area will need to be further studied and addressed in this Real Estate Plan.

Exhibit “A”, attached to this Real Estate Plan, displays an overview of the structural measures described above as well as the areas that will experience reduced flood risk as a result of the TSP. Exhibit “D”, attached to this Real Estate Plan, displays the road raisings/ramps that will be implemented in the TSP.

Nonstructural Measures and Natural and Nature-Based Features (NNFBs):

In addition to the structural measures above, Alternative 3b will consist of nonstructural measures and NNFBs. At this time, nonstructural measures and NNFBs are still being evaluated and locations are being determined. The Final FR/Tier 1 EIS will include a review and analysis of nonstructural measures and NNFBs along with a refined development of conceptual placement locations and measures. At this point in the Study, there is an estimated total of 103 nonstructural flood risk management measures proposed within the TSP. These measures consist of 102 elevations/raisings and 1 wetproofing technique.

5 PROJECT PHASES

Project phases have not yet been determined at this time and will be coordinated as the study progresses into the optimization phase. This Real Estate Plan will be updated once as further information becomes available.

6 LANDS, EASEMENTS AND RIGHTS OF WAY (LER REQUIRED)

In accordance with the future Project Partnership Agreement (PPA), the non-Federal Sponsor will be responsible for acquiring, or ensuring the performance of acquiring, all the LER required for the construction, operation and maintenance of the Tentatively Selected Plan, excluding Federal properties. The State of New York will acquire the appropriate LER through a local partner. The local partner will perform the acquisition of the land in its own name and be responsible for the operation and maintenance of facilities and other project components. The State of New Jersey will also acquire the appropriate LER through a local partner but will be in the name of the State of New Jersey Department of Environmental Protection.

Table-3 below offers a summary of the LER requirements. The LER required for the TSP will encompass an estimated land total of 531.35 acres and will impact approximately 1,590 parcels. Within the LER required, approximately 430 parcels were identified as publicly owned properties and approximately 1,095 parcels were identified as privately-owned properties that will be impacted. There were 65 properties that will need additional review to determine ownership information. Further coordination will be conducted to ensure that the LER required is accounted for as the study progresses into the Preconstruction, Engineering and Design (PED) phase.

Table-3: Tentatively Selected Plan LER Summary

| | Required Acres for SBM's RRFs and IFFs | | | Total No. of Impacted Parcels |
|--------|--|------------------------|------------------|----------------------------------|
| | Permanent Easements | Temporary Easements | Total Acreage | |
| Totals | ±479.24 AC | ±48.43 AC | ±531.35 AC | ±1,590 Parcels |

The following details the minimum interest in real property required for the Tentatively Selected Plan's construction, operation, and maintenance requirements:

[Perpetual] Flood Protection Levee Easement (USACE Standard Estate No. 9):

Approximately 378 acres are required in perpetuity for the construction of SBMs, IFFs and RRFs. There are approximately 1,562 parcels impacted by this permanent easement.

Perpetual Beach Storm Damage Reduction Easement (USACE Standard Estate No. 26):

Approximately 101.21 acres are required for the construction of reinforced dunes within the Jamaica Bay Region. There will be an estimated amount of 28 parcels impacted by this permanent easement.

Temporary Work Area Easement (USACE Standard Estate No. 15):

Approximately 48.43 acres of land are required for are required for the work area purposes to construct all SBM's, RRF's and IFF's. This temporary work area easement will impact approximately 998 parcels. In addition, temporary work area easements will be necessary for the road raising within the project plan. As the study progresses, temporary work area easements will be determined for the 8 road raisings and 2 road ramps referenced in Section 4 of this Real Estate Plan.

Road Easement (USACE Standard Estate No. 11):

As the study progresses, temporary work area easements may be implemented into this Real Estate Plan for road raisings, however, this is dependent on further design analysis.

All SBM's and IFF's were estimated to have temporary work area easements for approximately four years. All RRFs were estimated to have temporary work area easements for approximately two years. The durations established for these easements are preliminary in nature and are subject to change.

Rights-of-Entry (USACE Standard Estate No. 20):

For owners who elect to receive nonstructural flood-proofing measures on their property, a Rights-of-Entry (ROE) will be obtained for access for evaluation of whether the proposed treatment can be applied and the actual implementation. Since ROEs do not constitute an interest in land and since the proposed nonstructural plan will be implemented only if the owner willingly participates and makes their property available, obtaining ROEs is not considered a real estate requirement for implementation of the Tentatively Selected Plan. Therefore, the need to obtain ROEs for nonstructural measures is not factored into the estimated land payments. However, for planning and budgeting purposes, this report assumes 100% participation from owners. ROEs are required only from those owners who voluntarily elect to receive the proposed nonstructural flood-proofing measures on their property.

Nonstructural Floodproofing Agreement(s): Homeowners that agree to have their homes elevated will need to enter into a Nonstructural Floodproofing Agreement (The "Agreement") with the non-Federal Sponsor based upon the operations and maintenance requirements of the project. The Agreement will outline the work to be performed and provide the means for such work to occur. It will also identify any restrictions that may limit improvements or modifications to the property that could jeopardize the effectiveness of the flood-proofing measure's intended purpose as well as curative methods for deviation from the terms of the agreement.

Since this report was prepared during a feasibility level study, the size of the required real estate interests presented in this REP are preliminary estimates based only on existing, readily available Geographic Information System (GIS) data. The LER requirements are subject to change with plan optimization during PED when final plans, specifications and detailed drawings are prepared. After the PPA is fully executed and once the final design of the Tentatively Selected Plan has been completed, a general written description of the final LER (with supporting real estate maps) and any facility or utility relocation required will be provided to the Sponsor in their formal written Notice to Proceed with Real Estate Acquisition letter (hereinafter, the "NTP").

Once the Sponsor receives the NTP from USACE, the Sponsor will commence real estate acquisition activities. To delineate the precise boundary of the required real estate interests and to mitigate against potential boundary disputes, boundary land surveys, with corresponding legal descriptions for each required estate, will be completed by the non-Federal Sponsor. Further, the non-Federal Sponsor is advised to obtain a chain of title and title insurance on all acquired property to identify potential encumbrances and to protect against "defects" in title. USACE will remain in close coordination with the non-Federal Sponsor throughout the real estate acquisition process for support and guidance and enforcement of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, as amended.

After the non-Federal Sponsor completes its acquisition efforts and prior to USACE's issuance of the solicitation for construction contract(s), the Sponsor must provide USACE with copies of all real estate conveyance agreements recorded with the applicable County and a signed Authorization for Entry for Construction (with an attorney's Certificate of Authority) for all LER USACE identified in the NTP the Sponsor had to provide for that construction contract. USACE will examine and evaluate all records received to ensure sufficient real property interests are available to support construction. USACE will then certify in writing to the appropriate USACE District elements that the real estate for the project has been obtained and solicitation for the construction contract(s) may commence.

Property tax assessor information from the New York State GIS Program Office and the New Jersey Office of Information Technology, Office of GIS, was utilized to assist with GIS mapping and property ownership data described within this REP. In November 2020, Daniels Law was enacted in the State of New Jersey to expand protections from public exposure and personal information. As a result, further coordination will be conducted between USACE and the State of New Jersey to obtain additional ownership information for the LER required within the study.

7 APPRAISAL INFORMATION:

In accordance with USACE Real Estate Policy Guidance Letter No. 31, CEMP-CR, 11 Jan 19, subject: Real Estate Policy Guidance Letter No. 31-Real Estate Support to Civil Works Planning (hereinafter referred to as “PGL 31”), since the land acquisition value of the required real estate for the Tentatively Selected Plan were not expected to exceed ten percent of the overall project costs, an appraisal cost estimate, or a “rough order of magnitude” estimate, was completed. A cost estimate is not a full appraisal. To establish a more accurate land valuation, a full land appraisal based on surveyed boundaries of the Tentatively Selected Plan’s final design plans is necessary during acquisition by the non-Federal Sponsor.

The appraisal cost estimate represents the estimated market value of the Tentatively Selected Plan’s required real estate. It neither includes the incidental costs (e.g., appraisals, surveys, title, attorney fees, etc.) that will be incurred to facilitate the real estate acquisitions, nor does it represent the Tentatively Selected Plan’s total real estate cost (See paragraph 11 for the Tentatively Selected Plan’s total real estate cost). The appraisal cost estimate serves as the estimated compensation amount paid to property owners for the purchase of their land to implement the Tentatively Selected Plan.

An appraisal cost estimate for the Tentatively Selected Plan was completed in August 2022 by a licensed USACE staff Appraiser who concluded the approximate market value (i.e., the estimated compensation amount expected to be paid to property owners) for all the required real estate is approximately \$5,805,739,194.43. The market value for the required real estate is shown in line-item number 01B1, “Total Land Payments with 30% Contingency” in Exhibit “G” the Base Line Cost Estimate for Real Estate (BCERE).

Since ROEs do not represent an interest in land and have no market value, they were not considered in the appraisal cost estimate. The appraisal cost estimate was completed with the following Assignment Conditions:

Assignment Condition #1: The appraiser did not receive a title report for the parcels impacted by the Tentatively Selected Plan. The cost estimate was predicated on the extraordinary assumptions that, as of the effective date of the cost estimate, the parcels impacted by the Tentatively Selected Plan: (1) did not begin condemnation proceedings; and (2) had marketable title without restrictions or encumbrances impacting cost.

Assignment Condition #2: The appraiser was provided with the Tentatively Selected Plan’s preliminary real estate maps and parcel data spreadsheet. The cost estimate was predicated on the extraordinary assumption that, as of the effective date of the cost estimate, the preliminary real estate maps and parcel data spreadsheet accurately portrayed the location of the defined estates in land based upon the land use planning and engineering designs. The maps and parcel data parameters are frequently amended due to project planning reasons. Cost estimates change as project planning analysis changes the planning parameters.

Assignment Condition #3: The appraiser was provided with the Tentatively Selected Plan's preliminary real estate maps and parcel data spreadsheet indicating areas for the fee, and permanent and temporary easements. The data was applied in the cost estimate. The cost estimate is predicated on the extraordinary assumption that, as of the effective date of the cost estimate, the Tentatively Selected Plan's parcel areas were consistent with the parameters of the Tentatively Selected Plan.

Assignment Condition #4: The Temporary Work Area Easements were assumed to encumber the real property areas for a period of 2-4 years, depending on the measure. The cost estimate was predicated on the extraordinary assumption that, as of the effective date of the cost estimate, the duration of the encumbrances was consistent with the parameters of the Tentatively Selected Plan.

Assignment Condition #5: The cost estimate was predicated on the extraordinary assumption that, as of the effective date of the cost estimate: (1) there were no zoning bulk area requirement violations on any of the properties required for the Tentatively Selected Plan; (2) all properties were conforming uses; and (3) all properties were permitted uses under the zoning code. It was assumed that the existing land uses comply with current zoning requirements and did not impact the cost estimate conclusion.

Assignment Condition #6: The cost estimate was based upon a superficial level of detail. The data provided for the analyst was based upon a preliminary design and did not provide specifics on each parcel. Superficial, in the context of the analysis, is defined as "the property data is concerned only with what is obvious or apparent, not thorough or complete at this point in the land planning process" as directed by PGL 31. If the design parameters change, the cost estimate may change.

8 LERRD OWNED BY THE NON-FEDERAL SPONSOR

The State of New Jersey Department of Environmental Protection owns approximately 26.88 acres of land required for the Tentatively Selected Plan, including approximately .012 acres of lands below the Mean High-Water Line (MHWL). The State of New York, Department of Environmental Conservation does not own any LER required for the project.

Other departments within the State of New York and New Jersey own an estimated total of 44.94 acres of land required for the project. Memorandums of Agreement, or an equivalent legally binding document, between the non-Federal Sponsor and their sister state departments should be implemented to authorize and coordinate construction on varying state department land. The agreement should remain in full force and effect while the Project is authorized and shall constitute permission for the non-Federal Sponsor to maintain the Project after completion.

9 NON-STANDARD ESTATES

At this point in the Study, there is an expectation of requiring a non-standard estate for the Nonstructural Floodproofing Agreements referenced in Section 6 of this REP regarding nonstructural measures. USACE will coordinate the exact text of that language with the non-Federal Sponsor during the Preconstruction Engineering and Design.

10 EXISTING FEDERAL PROJECTS

There are several existing federal projects within the study area. As the study progresses through the optimization phase, there will be an analysis on whether the project will have an impact on any other existing federal projects within the study area. Exhibit “F” attached to the REP shows the list of existing federal, state and local projects within the study area. This list of projects will be updated at key milestone points, up to submission of the final report to USACE Headquarters.

11 FEDERALLY-OWNED LAND

There are approximately ±130 acres of Federally-owned lands that are included within the lands required for the Tentatively Selected Plan. All federally-owned lands that are required for the project are located in either (1) Queens County, New York or (2) Kings County, New York.

The National Park Service (NPS) manages several resources in the study area, the largest of which is the Gateway National Recreation Area and its Jamaica Bay, Staten Island, and Sandy Hook Units. Approximately 127.31 acres of Federally-owned land, under the National Parks Service is included within the lands required for the Project. Access to these lands is required for the construction of IFFs and SBMs. NPS is not legally allowed to grant an easement, which requires Congress to pass a bill specifically allowing it for this project on specific property. This will need to be coordinated with the NPS in order to determine acquisition requirements.

Approximately 0.009 acres of Federally-owned land, under the USCG, is included within the lands required for the Project. Access to these lands is required for a four-year temporary construction easement to construct a floodwall on the adjacent property. Coordination with the USCG, Department of Homeland Security, is ongoing to discuss a Memorandum of Agreement and/or permit application process for temporary construction work. Since this easement is for a relatively small portion of land and is in close proximity to the US Coast Guard Far Rockaway Station historical site, it is likely that further project design will eliminate the requirement to obtain this easement.

Approximately .24 acres of Federally-owned land, under the U.S. Postal Service (USPS), is included within the lands required for the Project. The appropriate legal document will be determined after close coordination between USACE and the USPS.

Approximately 1.24 acres of Federally-owned land, under the U.S. Army, is included within the lands required for the Project. Access to these lands is required for the construction of a levee, located at the U.S. Army Garrison Fort Hamilton, near the eastern base of the Verrazano Narrows Bridge in the southern west corner of Brooklyn New York in Kings County.

Table-4 below depicts an overview of the Federally-owned lands that will be required by the project:

Table-4: Federally-Owned lands within the TSP

| Federally-Owned Land Required | Total Acreage Required | Total Number of Parcels Impacted |
|-------------------------------|------------------------|----------------------------------|
| National Park Service | ±127.31 AC | 16 |
| United States Army | ±1.24 AC | 1 |
| U.S. Coast Guard | ±0.009 AC | 1 |
| U.S. Postal Service | ± 0.24 AC | 1 |

Federal Program Funds: Any properties that have been previously acquired using federal funds will be incorporated into this Real Estate Plan and excluded in the BCERE, Exhibit “G”. In accordance with ER 405-1-12, the NFS shall not receive credit for the value of LER, including incidental costs, to the extent that they were provided using Federal funds unless the Federal granting agency verifies in writing that such credit is expressly authorized by statute.

12 NAVIGATIONAL SERVITUDE

Federal Navigational Servitude is the dominant right of the Federal Government under the Commerce Clause of the Constitution to use, control, and regulate the navigable waters of the United States and the submerged lands thereunder for various commerce-related purposes including navigation and flood control. In tidal areas, the servitude extends to all lands below the Mean High-Water Line (MHWL). There are submerged lands outside of the existing authorized Federal navigation channel. The Federal Navigational Servitude appears to be available for use on this project for the construction, operation and maintenance of project features located in the Harbor. An analysis to determine if the Study has the required navigation nexus to justify navigational servitude will be documented in a memo by the USACE New York District, Office of Counsel.

A total of 3.98 acres of land may be available for the project through the use of navigational servitude. The project appears to meet the criteria, and no additional costs will be incurred. There are eight structures that will be constructed across navigable waterways. It is likely that navigational servitude will be invoked for the construction of the 6 SSBs and 2 RRFs located within the navigable waterways shown in Table-5 below. Additional design analysis must be conducted in order to determine the footprint of these structures.

Table-5: Navigational Servitude for SSBs and RRFs

| Structural Measure | Navigable Waterway | Total Length [ft] |
|---------------------|--------------------|-------------------|
| Storm Surge Barrier | Jamaica Bay | 3,800 |
| Storm Surge Barrier | Arthur Kill | 2,300 |
| Storm Surge Barrier | Kill Van Kull | 3,300 |
| Storm Surge Barrier | Gowanus Creek | 200 |
| Storm Surge Barrier | Newtown Creek | 400 |
| Storm Surge Barrier | Flushing Creek | 500 |
| Navigable Barrier | Sheepshead Bay | 800 |

| | | |
|-------------------|-----------------|-----|
| Navigable Barrier | Gerritsen Creek | 400 |
|-------------------|-----------------|-----|

12 REAL ESTATE MAPS

Exhibit “A” identified as the Tentatively Selected Plan Overview Map shows an arial view of the proposed structural measures within Alternative 3b and its corresponding flood extents. Exhibit “B” identified as the Structural Measures within the Tentatively Selected Plan Map provides an overview of the SSBS/SBMs, RRFs and IFFs proposed within the TSP. Exhibit “C” identified as the Reduced Risk Area Maps, illustrates the areas within the study that will experience reduced flood risks as a result of the proposed SSB’s/SBM’s, RRF’s and IFF’s. Exhibit “D” identified Road Raising Measures Map, displays the locations of each road raising within the TSP. Exhibit “E”, the Real Estate Map Series, depicts the approximate easement locations that will be required for the of the TSP. These maps do not show nonstructural or NNFB measures. Exhibit “H” identifies the Hazardous, Toxic and Radioactive Waste Sites (HTRW) located within the TSP.

The GIS data depicted on the maps and parcel information used for this Real Estate Plan were obtained through the New York State GIS program office and from the New Jersey Office of Information Technology, Office of GIS.

13 INDUCED FLOODING

Induced Flooding is not expected to occur within the TSP as a result of the IFFs placed west of the Jamaica Bay SSB and east of the Harlem River. If induced flooding is determined in the optimization phase, a legal opinion from the USACE New York District, Office of Counsel would be conducted to address whether the projected flooding would rise to the level of a taking of an interest in real property. Additionally, if induced damages are determined as a result of the study, mitigation would be investigated and recommended, if appropriate. It is likely that the PDT will expand the storm sample size for statistical analysis during the optimization phase of the project. This may impact the statistical results and possibly expand or decrease the areas that would be susceptible to flooding.

14 BASELINE COST ESTIMATE FOR REAL ESTATE (BCERE)

The BCERE (provided in Exhibit G”) establishes the estimated federal and non-federal financial costs attributed to the Tentatively Selected Plan’s real estate requirements. It is recorded in the 01-Lands & Damages project cost account, itemized under “Incidental” and “Acquisition” categories, the BCERE provides a list of wok activities/items with its associated estimated cost. The Tentatively Selected Plan’s total estimated real estate cost is \$5,260,468,783.00 for the LER required in the State of New York and \$5,260,468,783.00 for the LER required in the State of New Jersey. Table-6 and Table-7 below provides a summary of the BCERE for the LER required in the State of New York and the State of New Jersey:

Table-6: BCERE Summary for LER Required in New York

| BCERE Category | Estimated Costs |
|---|---------------------------|
| (01A) Incidental | \$208,208,932.00 |
| (01B) Real Estate Acquisition | \$3,857,217,290.00 |
| PL 91-646 Cost | \$81,951,019.00 |
| Contingency: 30% of 01A and 01B Account (Excluding PL-646 Cost) | \$1,195,042,561.00 |
| (01) Lands & Damages Total: | \$5,260,468,783.00 |

Table-7: BCERE Summary for LER Required in New Jersey

| BCERE for the State of New Jersey | Estimated Costs |
|---|-------------------------|
| (01A) Incidental | \$41,198,892.00 |
| (01B) Real Estate Acquisition | \$382,229,651.00 |
| PL 91-646 Cost | \$17,288,981.00 |
| Contingency: 30% of 01A and 01B Account (Excluding PL-646 Cost) | \$121,841,869.00 |
| (01) Lands & Damages Total: | \$545,270,412.00 |

For civil works projects that are cost-shared between the Federal Government and a non-federal interest, the Water Resources Development Act of 1986 (“WRDA 86”) assigns the non-Federal partner the responsibility of acquiring the LER and of performing the facility/utility Relocations and borrow/excavated material Disposal (i.e. “LERRD”) requirements for the project. All LERRD must be acquired in accordance with the project’s PPA, WRDA 86, and the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (“Public Law 91-646”), as amended.

LERRD costs represent a non-Federal partner’s estimated upfront direct and indirect financial costs in fulfilling its real estate responsibilities. The non-Federal partner will receive credit for their actual associated costs if found to be reasonable, allowable and allocable. Supporting documents (i.e., receipts, invoices, official certified timesheets, etc.) of all LERRD costs incurred by the non-Federal partner will be submitted to USACE for review and evaluation as part of their claim for credit. LERRD cost are determined by adding the non-Federal costs in the Plan’s 01-Lands & Damages cost account with the cost in the Plan’s 02-Relocations cost account (See Section 20 for 02-Relocation costs). LERRD cost do not include Federal costs.

The non-Federal Sponsors estimated LERRD cost in New York for the Tentatively Selected Plan is estimated at \$6,343,568,338.00. Table-8 below provides an itemized summary:

Table-8: Sponsors Estimated LERRD Costs in New York:

| LERRD Category | Estimated Cost |
|---------------------|---------------------------|
| LER | \$5,234,746,333 |
| Relocations | \$1,108,822,005 |
| Disposals | - |
| Total LERRD: | \$6,343,568,338.00 |

The non-Federal Sponsors estimated LERRD cost in New Jersey for the Tentatively Selected Plan is estimated at \$767,635,291.00. Table-9 below provides an itemized summary:

Table-9: Sponsor’s Estimated LERRD Costs in New Jersey:

| LERRD Category | Estimated Cost |
|---------------------|-------------------------|
| LER | \$533,710,162 |
| Relocations | \$233,925,130 |
| Disposals | - |
| Total LERRD: | \$767,635,291.00 |

15 PUBLIC LAW 91-646, UNIFORM RELOCATION ASSISTANCE

Public Law 91-646, as amended, provides uniform equitable treatment of persons and businesses displaced by a Federal or Federally assisted project. Along with the PPA, it requires the non-Federal partner to provide assistance and certain benefits be paid to all persons and businesses that are displaced and must be relocated from their residence or place of business due to a Federally funded project. The cost incurred by the non-Federal partner to provide relocation assistance is part of its LERRD responsibilities.

There are persons and businesses that are expected to be eligible for Public Law 91-646 relocation assistance benefits for the Tentatively Selected Plan. While the Tentatively Selected Plan proposes the raising of certain properties that may require the owner to temporarily relocate, the raisings will be performed solely on a voluntary basis and only with the consent of the owner. Public Law 91-646 relocation assistance benefits are not paid under voluntary circumstances. If a homeowner elects not to participate, eminent domain will not be invoked. Consequently, a displaced person situation would not occur. Any property owner who elects to have their property raised and vacates the property during the construction period will do so at their sole expense and without reimbursement. A tenant(s) who may not be inclined to temporarily move, but forced to move by their landlord, may claim displacement and file a Public Law 91-646 claim. Additionally, due to the improvements made on the property, a tenant could experience higher rent upon their return and may claim rental assistance under Public Law 91-646 by claiming displacement.

Current design and alignments for the TSP structural measures are preliminary and will be refined and further evaluated during the optimization phase. The current alignment shows that approximately 1,200 structures will be impacted by the study. Further progression of the Study is necessary to clearly identify the structures that will be impacted. The costs for business and residential relocations are estimates and are subject to change with additional project development.

Business Relocations:

Along with the cost to acquire the property of a displaced business, there are three basic types of financial relocation assistance payments provided to business occupants: 1) a moving expense payment; 2) a business re-establishment payment 3) personal property loss payment for machinery & equipment and goods held for sale. Other benefits which dislocatees may be entitled to are increased mortgage payments if the business has an existing mortgage and

searching cost payment if the dislocatee spends time and expense to locate a replacement business place. These costs are intended to compensate a displaced business for the additional costs it will incur in relocating from its current location.

Moving Cost Reimbursements: Displaced business occupants are eligible to receive a payment for the actual, reasonable expenses necessary to move their personal property from the acquired business to the replacement business location. The options and limitations are presented to each relocatee by the assigned relocation specialist.

Business Re-Establishment Payments: The maximum payment for this benefit is \$25,000. To qualify, a business needs to actually incur the expense and document it for the re-establishment of the business at a new site. The cost must be reasonable and necessary. Typical eligible items would be repairs or improvements to the replacement real property as required by law, modifications to the replacement real property to accommodate the business operation, construction and installation costs for exterior signing to advertise the business, increased costs of operation during the first two years at the replacement site for such items as lease charges, personal or real property taxes, insurance premiums and utility charges.

Personal Property Loss: There are two forms of personal property loss: machinery & equipment and goods held for sale. Values for the former are generally provided by an M&E appraiser while the latter is based upon actual receipts the business produces for the cost it paid to acquire those items. All are valued in place. A business cannot be paid for personal property loss and a move cost for the same item. The relocation specialist will work with the business in determining how to treat each item.

The total estimated business relocation assistance benefits paid in support of the Project is approximately \$52,200,000.00, as shown in Table-10. The estimated cost to acquire the properties has been factored in as part of the LER acquisition cost for the Project. *This amount is an estimate based off of preliminary design alignment data and is subject to change with further design development and analysis within the Study. This amount was calculated*

Table-10: Business Relocation Assistance Benefits

| Number of Impacted Buildings | Business Re-Establishment Costs | Move Costs | PPL (M&E and Goods Held for Sale) |
|------------------------------|---------------------------------|--------------------------------|-----------------------------------|
| 360 Impacts | \$25,000.00 (Per business) | \$100,000.00 (Per business) | \$20,000.00 (Per business) |
| Total for Business Costs | \$9,000,000.00 | \$36,000,000.00 | \$7,200,000.00 |
| Grand Total: | | | \$52,200,000.00 |

Residential Relocations:

Along with the cost to acquire the property of a displaced person, there are four basic types of financial relocation assistance payments provided to residential occupants: 1) a moving expense payment; 2) a residential housing/rental supplement 3) increased mortgage payment

4) closing costs. These costs are intended to compensate a displaced person for the additional costs he/she will incur in relocating from his or her home.

Moving Cost Reimbursement: Displaced residential occupants are eligible to receive a payment for the actual, reasonable expenses necessary to move themselves and their personal property from the acquired dwelling to the replacement dwelling. The options and limitations are presented to each relocatee by the assigned relocation specialist.

Residential Housing Supplement: All residential owner-occupants whose property is being acquired who are eligible (1. occupying dwelling 90 consecutive days prior to Notice of Intent to Acquire, initiation of negotiations, or actual acquisition, whichever occurs first, 2. purchase of a decent, safe, and sanitary replacement dwelling within one year of the latter of moving from the acquired dwelling or receiving full acquisition cost payment for acquired dwelling, 3. Written application for residential housing supplement within 18 months of the latter of moving from the acquired dwelling or receiving full acquisition cost payment for acquired dwelling) may apply for a residential housing supplement, which has a cap of \$31,000. Anything more than that is considered Housing of Last Resort and must be justified prior to approval. Closing and Increased Mortgage Costs are included in that limit.

Increased Mortgage Costs: If the residential owner-occupant has a mortgage on the property at least 180 days old, the relocatee may be eligible for an increased mortgage payment. In order to receive payment, the relocatee must actually purchase a new mortgage on the replacement property. The payment is broken into two parts: Interest Costs and Mortgage Related Costs.

Closing Costs: In addition to the replacement housing supplement payment, relocatees are eligible for reimbursement of actual and reasonable costs incidental for the purchase of the replacement dwelling. There are some restrictions generally related to pre-paid items, which the assigned relocation specialist would outline.

The total estimated residential relocation assistance benefits paid in support of the Project is approximately \$47,040,000.00, as shown in Table-11. The estimated cost to acquire the properties has been factored in as part of the LER acquisition cost for the Project. *This amount is an estimate based off of preliminary design alignment data and is subject to change with further design development and analysis within the Study.*

Table-11: Residential Relocation Assistance Benefits

| Number of Impacted Buildings | Moving Expenses | Residential Housing Supplement | Increased Mortgage Costs | Closing Costs |
|------------------------------|-----------------|--------------------------------|--------------------------|------------------------|
| 840 Impacts | \$10,000.00 | \$31,000.00 | \$7,500.00 | \$7,500.00 |
| Total for Residential Costs | \$8,400,000.00 | \$26,040,000.00 | \$6,300,000.00 | \$6,300,000.00 |
| Grand Total | | | | \$47,040,000.00 |

16 MINERALS AND TIMBER ACTIVITY

There are no known present or anticipated mineral extraction or timber harvesting activities within the LER required for the Plan.

17 LAND ACQUISITION EXPERIENCE AND CAPABILITY OF THE NON-FEDERAL SPONSOR(S)

The New York State, Department of Environmental Conservation, as the Non-Federal Sponsor for a Federal Civil Works project, has the legal authority to acquire and hold title to real property for project purposes however the State intends to have a local sponsor to obtain the property amicably, and through condemnation as necessary. The State of New Jersey, Department of Environmental Conservation, as the Non-Federal Sponsor for a Federal Civil Works project, has the legal authority to acquire and hold title to real property for project purposes under N.J.S.A. § 58:16A-5.

Both non-Federal Sponsors maintain the professional capability for land acquisitions and can reasonably obtain contract services if needed. The NJDEP has successfully completed real estate acquisition for similar USACE civil works projects located at Elberon to Loch Arbor, Newark, Greenbrook, and Port Monmouth, among others. Similarly, the NYDEC has successfully completed real estate acquisition for similar USACE civil works projects. The NYSDEC has acquired or overseen the real estate acquisition for the Atlantic Coast of New York City Rockaway Inlet to Norton Point (Sea Gate) Shore Protection Project; the Atlantic Coast of New York, Jones Inlet to East Rockaway Inlet, Long Beach Island, New York, Storm Damage Reduction Project; and the Fire Island Inlet to Moriches Inlet Project.

The non-Federal Sponsors are aware of Public Law 91-646 requirements as well as the requirement to document all LERRD expenses for its claim of credit. The Sponsors are highly capable of performing or ensuring the performance of its LERRD responsibilities. The Non-Federal Partner's Capability Assessment(s) are shown on Exhibit "J" and Exhibit "K", attached to this REP.

18 ZONING

No application or enactment of local zoning ordinances is anticipated in lieu of, or to facilitate, the acquisition of the Tentatively Selected Plan's required real estate.

19 SCHEDULE OF ACQUISITION

The NFS, Project Manager and Real Estate Technical Lead will formulate the milestone schedule upon project approval to meet dates for advertisement and award of the construction contract. Table-12 below demonstrates an estimated acquisition milestone schedule for the TSP. This schedule is preliminary in nature and is subject to change through further project formulation.

Table-12: Schedule of Acquisition Milestones

| Milestone | Date |
|--|--------------------------------------|
| PPA executed with Sponsor | January 1, 2029 |
| USACE provides the NTP letter to Sponsor | 2 weeks after execution of PPA |
| Sponsor's provides Authorization for Entry for Construction to USACE | 2 years after NTP |
| USACE certifies the real estate has been acquired by the Sponsor | 2 weeks after authorization to enter |
| USACE commences with advertising for construction contracts | 1 week after RE certification |

20 FACILITY AND/OR UTILITY RELOCATIONS

For flood control projects, the non-Federal Sponsor is required to relocate affected facilities and utilities necessary for the construction, operation, and maintenance of a project. A relocation may take the form of an alteration, lowering, raising, or replacement (and attendant removal) of the affected facility/utility or part thereof. The cost to relocate a facility or utility is captured in the project's 02-Relocations cost account and is included as part of the Sponsor's LERRD responsibilities. The total amount determined for relocation costs under the Tentatively Selected Plan is approximately \$1,342,747,135.00 as shown in Table-13 below:

Table-13: Facility and Utility Relocation Costs

| Category | Relocation Costs |
|--------------------------------------|---------------------------|
| Shoreline-Base Measures | \$887,612,741.00 |
| Risk Reduction Features | \$151,211,394.00 |
| Induced Flooding-Mitigation Features | \$303,923,000.00 |
| Total | \$1,342,747,135.00 |

A detailed analysis of utility and/or facility relocations will be conducted during the optimization phase of this study. At this time, utility relocation costs were determined by analyzing facility/utility relocation data from the previous studies listed below:

- East Harlem Resiliency Study – Costing Memo, October 23, 2018 South Shore of Staten Island, NY Coastal Storm Risk Management;
- Interim Feasibility Study for Fort Wadsworth To Oakwood Beach – USACE Cost Engineering Appendix, September 2016
- Rahway River Basin, New Jersey Coastal Storm Risk Management Feasibility Study - USACE Cost Engineering Appendix

- Draft Final Integrated Hurricane Sandy General Reevaluation Report and Environmental Impact Statement Atlantic Coast of New York East Rockaway Inlet to Rockaway Inlet and Jamaica Bay - Appendix C - Cost Engineering Appendix , August 2018.

The substitute facilities doctrine provides an alternate means of just compensation to property owners affected by an acquisition or taking of property in order to place them in as good a position as if the property had not been acquired or taken. The measurement of just compensation, as it relates to the substitute facilities doctrine, has been required only when fair market value has been too difficult to establish or when its application would result in manifest injustice to the owner or the public. In such cases, the cost of constructing a substitute facility may be used as the measure of just compensation paid to the facility or utility owner where a substitute facility or utility is necessary. The substitute facilities doctrine is the foundation for the concept of “relocation” as applied to the implementation of water resources projects by USACE. Engineer Regulation 405-1-12, Chapter 12, Real Estate Roles and Responsibilities for Civil Works: Cost Shared and Full Federal Projects, Change 31, 1 May 98, defines the term “relocation” as generally meaning:

To provide a functionally equivalent facility to the owner of an existing utility, cemetery, highway, or other eligible public facility and railroad when such action is authorized in accordance with applicable legal principles of just compensation. Providing a functionally equivalent facility may take the form of alteration, lowering, raising, or replacement (and attendant removal) of the affected facility or part thereof.

Any conclusion or categorization contained in this report that an item is a utility or facility relocation to be performed by the Non-Federal Sponsor as part of its LERRD responsibilities is preliminary only. The Government will make a final determination of the relocations necessary for the construction, operation, or maintenance of the project after further analysis, completion and approval of Final Attorney’s Opinions of Compensability for each of the impacted utilities and facilities.

21 HAZARDOUS, TOXIC AND RADIOACTIVE WASTE

The NYNJHATS study regions are predominantly urban, and most areas have many known contaminated sites collocated with the proposed measures in New Jersey and New York. HTRW sites identify the locations of potential contamination that may adversely impact human health and the environment. The NYNJHAT Study Area Planning Regions predominantly covers the NYC Metropolitan Area, where many federal and state listed known contaminated sites, and other related sites of interest, are prevalent throughout. Engineer Regulation 1165-2-132 states that HTRW collocated within the Alternative footprints must be avoided where feasible, and where they cannot be avoided, those sites must be remediated at 100% nonfederal cost prior to construction. The Tier 1 FR/EIS HTRW assessment consisted of a broad level analysis utilizing federal, state, and local records obtained for each Planning Region where Alternative measures are located and identifying which of those sites may be collocated within the Alternative footprints with a potential to impact or be impacted by nearby HTRW sites. USACE will perform a more detailed and updated HTRW Survey, in accordance with ER 1165-2-132 guidance, during future phases of the Study, including Tier 2 and PED.

If the alignment of a proposed measure is collocated on an HTRW site, that portion of the HTRW site would be proposed for expedited remediation by the non-Federal sponsor(s). Active HTRW sites will be avoided as much as feasibly possible; however, in locations where

avoidance may not be possible, additional coordination with the non-federal sponsors will be necessary to provide a clean site for measure placement, at 100% non-federal non-project cost, in accordance with ER-1165-2-132 *Hazardous, Toxic and Radioactive Waste (HTRW) Guidance for Civil Works Project*.

As shown in Table-14 below, there were approximately 212 HTRW sites identified within the study area for the Tentatively Selected Plan:

Table-14: Hazardous, Toxic and Radioactive Waste Sites within the Tentatively Selected Plan:

| Study Region | Approximate number of HTRW Sites in Tentatively Selected Plan |
|---------------------------------------|---|
| Hackensack Passaic – Line A | 42 |
| Jamaica Bay | 35 |
| Long Island Sound | 5 |
| Lower Bay | 20 |
| Upper Bay | 60 |
| Manhattan (Lower Hudson / East River) | 50 |
| Total HTRW Sites | 212 |

Capital District Region and Mid-Hudson Region:

Several major power generating facilities, manufacturing plants, petroleum terminals, cement, and aggregate plants, as well as various mining operations, are located along the banks of the Hudson River. Many of the river’s tributaries were historically dammed for industrial use. Unregulated discharge of polychlorinated biphenyls (PCBs) from two General Electric capacitor manufacturing plants in the non-tidal river above Troy Lock and Dam between 1947 and 1977 contaminated sediments and has resulted in PCB uptake by Hudson Estuary biota, especially striped bass and other commercially and recreationally significant sportfish (USACE 2020a). The USEPA concluded that contaminated sediments in the upper Hudson River are a major source of PCBs for the entire river environment at least as far as New York Harbor, and the Contaminant Assessment and Reduction Project (CARP) identified the upper freshwater non-tidal portion of the Hudson River Superfund Site, which includes 200 miles of the Hudson River between Hudson Falls and the Battery, to be the dominant external source of PCBs to the New York/New Jersey Harbor Estuary. This portion was contributing about three-quarters of the PCB load below Troy Dam to the Atlantic Ocean, and modeling showed these PCBs were transported throughout the entire estuary, including Newark Bay (USACE 2020a).

Lower Hudson/East River Region:

The borough of Manhattan and the surrounding areas are extremely urbanized with large areas of residential, commercial, and industrial properties. The majority of the major HTRW sites are located in Manhattan, western portions of Brooklyn and Queens, and across the Hudson River into New Jersey. Major HTRW sites identified include Radiac Research Corp., All County Environmental Service Corp., Grand Street Mercury, Hoboken Auto Body, Inc., City Chemical Corp., Con Edison NYC Steam Explosion, Hudson River PCBs, and Federated Metals Corporation. HTRW sites are present throughout the Region, rather than concentrated in only a few locations or industrial parks. Many leaking storage tanks were identified as potentially occurring within the vicinity of Alternative footprints, the majority of which are observed in Manhattan, Brooklyn, the Bronx, Queens, and Hudson County New Jersey.

Hackensack/Passaic Region:

This region is comprised of present day and historically significant industrial areas along the Hackensack River, Passaic River, and Newark Bay as well as within the cities of Newark, Elizabeth, Bayonne, and Jersey City. The area is predominantly comprised of several chemical, herbicide, paint, and pigment manufacturing plants, petroleum refineries, and other major industrial facilities. Historical unregulated discharges from these industrial manufacturing facilities have caused degraded sediment quality and contamination including dioxins, mercury, lead, polychlorinated dibenzofurans, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, and DDT, posing threats to human and ecological health (USACE 2020b).

Several National Priority List sites and known contaminated sites are located within the Hackensack/Passaic Region. One National Priority Site, the Diamond Alkali Superfund Site (Diamond Alkali) is comprised of four operable units that extend throughout the region for the main plant (OU1), the lower 8.3 miles of the Lower Passaic River (OU2), the Newark Bay Study Area (OU3), and the entire 17-mile Lower Passaic River Study Area (OU4). The main plant of the Diamond Alkali was added to the National Priority List in 1984 and was located at 80 Lister Avenue in Newark, New Jersey along the western shore of the Passaic River. The Diamond Alkali was historically known for the manufacturing of agricultural chemicals and herbicides used in the production of “Agent Orange”. Agent Orange manufacturing polluted the surface and subsurface of the plan grounds in addition to the Passaic River which drains south into Newark Bay. Although production of Agent Orange ceased in the 1970s, adverse effects of manufacturing processes are still present to this day. Due to the known pollution concerns, the New Jersey Department of Environmental Protection prohibits the consumption of fish or shellfish from the Lower Passaic River and Newark Bay (USEPA 2022). The Newark Bay Study Area was added as an Operable Unit of the Diamond Alkali in 2004, including Newark Bay, Arthur Kill and Kill Van Kull channels and portions of the Hackensack River. In 2007, a remedial investigation work plan for the Newark Bay Study Area was prepared and included investigation goals to determine the horizontal and vertical extent of Diamond Alkali contamination by sampling for several contaminants including, but not limited to, polychlorinated dibenzo-p-dioxins, polychlorinated dibenzofurans, polychlorinated biphenyls, polycyclic aromatic hydrocarbons, pesticides, and metals. Currently, remedial investigation of the Newark Bay Operable Unit is still in progress under the oversight of the USEPA. Additional Diamond Alkali study information and plans are located on the Newark Bay Study website: www.ournewarkbay.org.

Upper Bay/Arthur Kill Region

This Region is highly urbanized and includes significant industrial areas, containing a large number of major HTRW sites present throughout the Region rather than concentrated in only a few locations or industrial parks. Several Superfund NPL sites and Corrective Action sites were identified in the nearby vicinity of Alternative measures including Hudson River PCBs, a Diamond Alkali Superfund Site Operable Unit, Pierson’s Creek, White Chemical Co., Gowanus Canal, Jewett White Lead, and several Hudson County Chromate Sites. The NYNJHAT Study Alternatives have been placed to avoid some of the major industrial areas in Port Newark, Elizabeth, NJ, and northern Staten Island, NY which reduces some of the potential for HTRW sites to be collocated with the proposed measures.

Lower Bay Region:

The Lower Bay Region has a relatively low density of major HTRW sites in comparison to other Planning Regions (Hackensack/Passaic and the Upper Bay Regions). Perth Amboy and South Perth Amboy have several mapped HTRW sites along the waterfront and with HTRW related activities along the shoreline. The ocean/bay facing properties have a significant history of military activity with a 19th and 20th century fortress. Based on the presence of these fortifications, UXO may be present along the coastlines. Corrective action and/or Superfund NPL sites identified within this Region include the International Flavors and Fragrances, Inc., Raritan Bay Slag/National Lead site, and Atlantic Salt site. State listed remedial sites identified within this Region include the Harborside at Hudson's Ferry, Keyport Waterfront Park, Sanitary Landfill, and McWilliam Stadium.

Raritan Region:

The Raritan Region ranges from predominantly industrial development with bulk-headed shorelines and piers at the river's mouth to a mix of industrial, commercial, and residential development farther upstream. Several State listed known contaminated sites are present throughout this Planning Region including a landfill, the former Raritan Arsenal, and the Sayreville and Werner generating stations which are located along the Raritan River shoreline (USACE 2020b). A review of HTRW sites within this Planning Region were focused to the footprint and surrounding vicinity of potential Alternative measures, in the South River/Sayreville area of New Jersey. No major HTRW were identified in these areas, however a concentration of minor sites, spills, and leaking underground storage tanks were observed in South River, New Jersey.

Jamaica Bay Region:

Jamaica Bay, and specifically the Brighton Beach area, contains a mix of urban and light industrial uses. Rockaway has a significant number of historic spills and leaking tanks, but most of these are anticipated to be located adjacent to roads and not directly along the beach or shoreline. Nine historical fire control stations and naval shore batteries, one of which is reported as having unexploded ordinance, are located along the barrier coastline. Coastal unexploded ordinance may either be associated with the fire control station(s) or associated with dredging operations or storm events that bring debris from the near shore to the beach. All construction along the beach, especially within 0.25 miles of the former fire control stations should be considered unexploded ordinance to be a potential hazard and utilize clearing operations to assure working areas are clear for construction.

Long Island Sound Region:

Much of the Long Island Sound Region is characterized by highly urbanized, but not highly industrialized, uses. The coastline appears to have less major HTRW sites than other regions within the NYNJHAT Study Area. Three major nearby sites include a landfill (Pelham Bay Landfill), lagoon (College Point Lagoon), and a federal facility (Fort Totten). The majority of other related sites of interest include drycleaners, auto service stations, formerly utilized defense sites (Pelham Camp and Fort Schuyler), and the Sylvania Corning Nuclear Lab. Several Corrective Action and/or national priority list sites were listed in the federal and state record databases in the Port Washington area, however only one of these sites was mapped, identified as the Edmos Corporation which stored and treated hazardous wastes pre-1980s.

Additional information regarding contamination and HTRW sites within the study area is described in Appendix "A", Environmental. Additionally, Exhibit "H" is attached within this REP

to show the Groups A-E sites identified within the Tentatively Selected Plan. USACE will perform a more detailed and updated HTRW Survey, in accordance with ER 1165-2-132 guidance, during future phases of the Study, including Tier 2 and PED. In accordance with ER 405-1-12, this Real Estate Plan will be updated to identify the exact HTRW sites located within the project alignment and any associated impacts acquisition.

22 PROJECT SUPPORT

Public outreach has been a significant priority for the Study and will remain an integral objective throughout the Project. There were nine public meetings held in varying New York and New Jersey cities in 2019. Generally, the Study itself has received general universal support. In the aftermath of Hurricane Sandy, NYC Parks, NJDEP, and NYSDEC have put an emphasis on maintaining parklands and incorporating resiliency into these spaces. Senators and representatives as well as the Non-Federal Partners and Nonprofit Organizations (NGOs) support the study and further analysis of Coastal Storm Risk Management Measures within the Study region.

Landowners within the Study Region have requested additional information regarding environmental impacts within the region and any positive and/or negative impacts that their communities will experience as a result of the Project. Additionally, strong opposition to the Study was primarily seen under Alternative 2 and Alternative 3a. Notable NGO's have expressed concerns regarding low sea level rise projections and climate change mitigation plans. USACE is currently developing public engagement plans and strategies for additional outreach efforts with the public.

23 NOTIFICATION TO THE NON-FEDERAL SPONSOR

During instances when the non-Federal Sponsor chooses to acquire real estate before the full execution of the PPA and before receiving the NTP letter from USACE New York District, they will assume full and sole responsibility for any and all costs and/or liabilities arising out of their acquisition effort. Generally, the risks include, but may not be limited to, the following:

1. Congress may not appropriate funds to construct the Tentatively Selected Plan;
2. The Tentatively Selected Plan may otherwise not be funded or approved for construction;
3. A PPA mutually agreeable to the Sponsor and the Federal Government may not be executed and implemented;
4. The Sponsor may incur liabilities and expenses by virtue of its ownership of contaminated lands, or interests therein, whether such liability should arise out of local, state, or Federal laws or regulations including liability arising out of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), as amended;
5. The Sponsor may acquire interests or estates that are later determined by the Federal Government to be inappropriate, insufficient, or otherwise not required for the Tentatively Selected Plan;

6. The Sponsor may initially acquire insufficient or excessive real property acreage which may result in additional negotiations and/or benefit payments under PL 91-646. This may also result in the payment of additional fair market value to affected landowners which could have been avoided by delaying acquisition until after PPA execution and the Federal Government's notice to commence acquisition; and
7. The Sponsor may incur costs or expenses in connection with its decision to acquire LER in advance of the executed PPA and issuance of the NTP letter which may not be creditable under the provisions of WRDA 86 or the PPA.

A letter regarding the risks associated with LERRD acquisition prior to PPA execution and Notice to Proceed for Acquisition will be sent to the non-Federal sponsor prior to PPA execution.

24 OTHER PROJECT ISSUES

1. Location of NNBFs and Nonstructural Measures are unknown at this time.
2. There may be public roads within the project area that will be permanently impacted by the project. If it is determined that any roads will be permanently impacted during the optimization phase, the City of New York Department of Transportation will need to physically terminate service and public access down particular portions of those streets. Real Estate will coordinate the public roads that may be permanently impacted by the project as the study progresses to the optimization phase.
3. Access Agreements: NYSDEC does not acquire real estate interest from municipalities. Required access to the public parcels will be acquired through an Access Agreement executed between NYSDEC and the relevant governing entity. These Access Agreements will incorporate the full body of text from the relevant easement standard estate and will be recorded. The Access Agreements will authorize the construction of project features such as floodwalls, over public lands.
4. National Historic Landmarks and National Park Service lands are located within the study. The TSP will involve additional coordination and Mutual Acceptability with the Department of Interior. The following historic districts and landmarks are located within the LER required for the TSP: The Greenpoint Historic District, the South Street Seaport Historic District, the Jacob Riis Park Historic District, the Fort Tilden Historic District and the US Coast Guard Far Rockaway Station are located within the LER required for the project. The Cobble Hill Historic District, St. George/New Brighton Historic District, Far Rockaway Beach Bungalow Historic District and the Marine Parkway - Gil Hodges Memorial Bridge, are in close proximity to the LER required for the project.
5. Permanent direct impacts to parks would be caused by construction of floodwalls, seawalls, and bulkheads, which are all anticipated to impact the public's access to waterways in parks. The footprint of these structures would typically run along or near the waterfront and would be at an increased elevation relative to the current shoreline, sometimes raising the entire height of the shoreline. This may temporarily or permanently impact user's ability to reach the waterfront, specifically for activities such as recreational boating, fishing, and other water sports.

6. Several parks and recreation land exist within the TSP Study area, as shown on Exhibit "I", attached to this REP. "Parkland alienation" occurs when a municipality wishes to sell, lease or discontinue the use of municipal parkland. Parkland alienation can be applicable to every municipal park in New York State, whether owned by a city, county, town or village. In order to convey parkland to a non-public entity, or to use parkland for another purpose, the municipality must receive prior authorization from the New York State Office of Parks, Recreation and Historic Preservation (State Parks) in the form of legislation enacted by the New York State Legislature (Legislature) and approved by the Governor. The bill by which the Legislature grants its authorization is commonly referred to as a parkland alienation bill. This takes roughly 18-24 months to get signed, which can be done contemporaneously with other City/State processes such as the Uniform Land Use Review Procedure. If a municipality accepts State funding for the acquisition or improvement of parkland or recreational facilities, certain other restrictions must be considered when requesting alienation approval. The restrictions depend upon the source of the funding that was provided to the municipality. The restrictions vary but can include a restriction that requires legislative approval at a minimum, and in other cases, a requirement to provide substitute lands. Any properties involving city alienation or divestment will be identified through close coordination with the city as the study progresses. Additional information regarding NYC municipally owned parkland alienation and conversion is detailed in the *New York Parks, Recreation and Historic Preservation Handbook, Alienation and Conversion of Municipal Parkland (Rev September 2017)*.

25 POINTS OF CONTACT

The point of contact for this Real Estate Plan is Lauren Mazzola, Realty Specialist who may be contacted by phone at (917) 246-7696 or via email at Lauren.N.Mazzola@usace.army.mil. The undersigned, Helen Luke, Chief, Real Estate Division, may be contacted by phone at (917) 623-4310 or via email at Helen.Luke@usace.army.mil.

26 RECOMMENDATIONS

This REP has been prepared in accordance with Chapter 12, ER 405-1-12, Real Estate Handbook, as amended.

Prepared By: _____

Reviewed and Approved By: _____