Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study

Appendix N
Public Comments from Draft FR/EA

Final Integrated Feasibility Report
& Environmental Assessment

April 2020

Prepared by the New York District
U.S. Army Corps of Engineers

THE PORT AUTHORITY OF NY & NJ

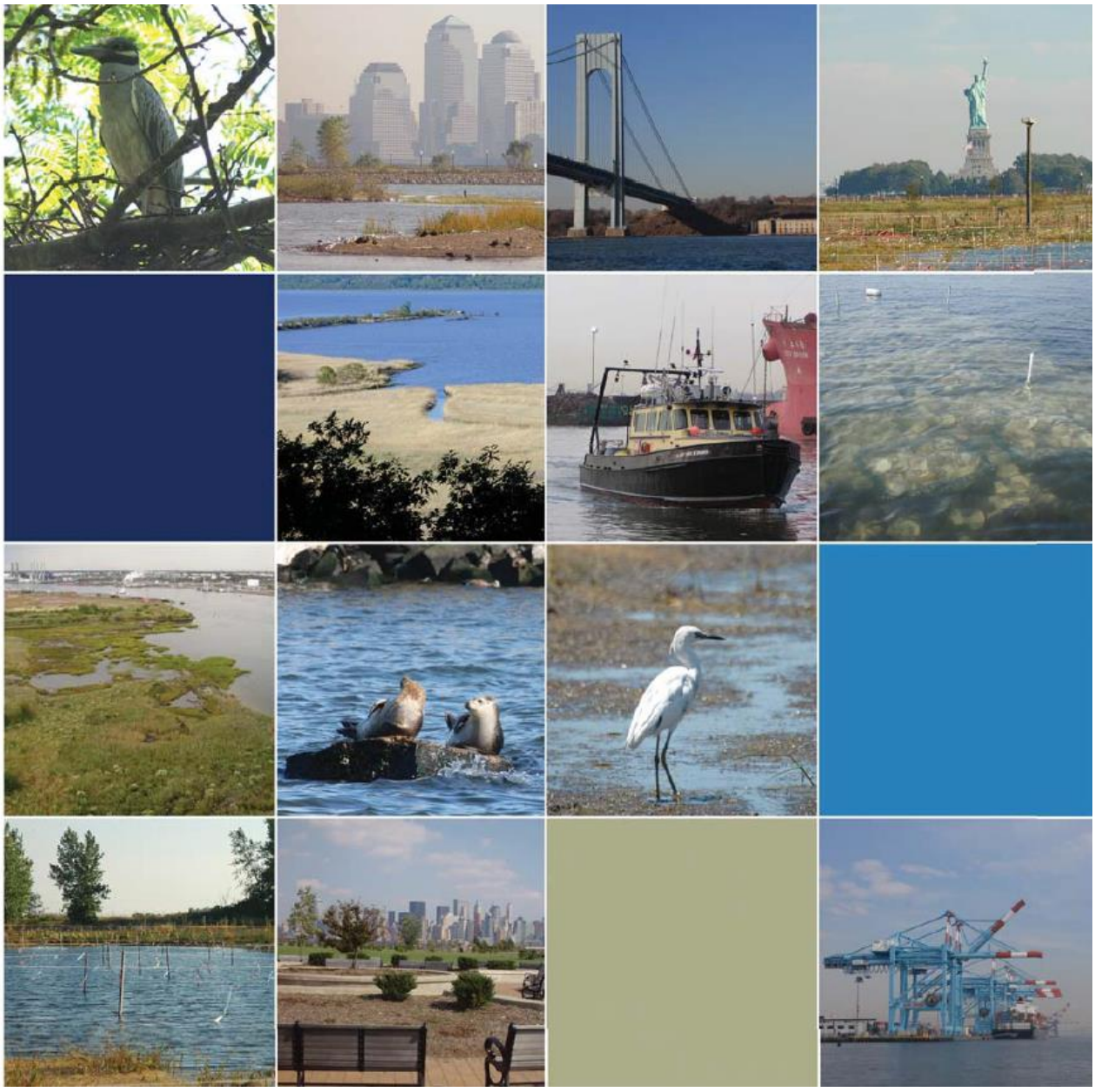

Table N-1. Summary of Public Comments and USACE Response

Organization	Contact	Letter Date	Comment Summary	USACE Response
Representatives of Flushing, New York	Congresswoman Grace Meng (NY-6) Toby Ann Stavisky (NY State Senator) Ron Kim (NY State Assemblyman) Peter Koo (NY City Counselman)	1-May-17	Support for work at Flushing Creek	Thank you for your support.
Fifth Congressional District of NY	Congressman Gregory W. Meeks (NY-5)	4-May-18	Supports Ecowatcher's request to use sand from next maintenance dredging of Rockaway Inlet for marsh island restoration.	Thank you for your support. Dredged material will be used as the source of clean sand fill used to restore the Jamaica Bay Marsh Islands.
United States Environmental Protection Agency	Grace Musumeci (Chief, Environmental Review Section)	27-Apr-17	Support of HRE Draft FR/EA, provided EPA Greening recommendations, suggested coordination with other projects.	Thank you for your support of the HRE FR/EA. The District will look to incorporate the EPA Region 2 Green Recommendations during the PED phase.
United States Coast Guard	Jacob A. Hobson (Lieutenant Commander, US Coast Guard, Chief of Waterways Management Division)	6-Apr-17	Requested information for the First Coast Guard District and contacts regarding navigation buoys and navigational work.	Thank you for your comments. The District will reach out to the appropriate parties and provide needed information to comply with USCG requests. The District will ensure compliance with regulations regarding vessel anchorage and entry to the stated security zones during PED.

Organization	Contact	Letter Date	Comment Summary	USACE Response
New York - New Jersey Harbor & Estuary Program	Isabelle Stinnette (Restoration Program Manager)	19-Apr-17	Support of HRE Draft FR/EA	Thank you for your support.
City of Passaic Department of Parks, Recreation, Cultural & Senior Affairs	Jessica Lezcano (RA, Superintendent of Recreation)	25-Apr-17	Support for work at Dundee Island Park	Thank you for your support. Unfortunately, the Dundee Island Park site was removed from the Recommended Plan during our regional Cost Effectiveness and Incremental Cost Analysis. The District is happy to see that this project was implemented through NJDEP, Trust for Public Land and the county.
New York City Parks	Jennifer Greenfeld (Assistant Commissioner of Forestry, Horticulture & Natural Resources)	28-Apr-17	Support for HRE Draft FR/EA.	Thank you for your support.
Jamaica Bay Ecowatchers	Daniel Mundy (President)	20-Mar-17	Support for Marsh Island and other restoration at Jamaica Bay. Provided benefits of work previously done to the marsh islands. Request to use dredged sand from Rockaway Inlet for marsh islands	Thank you for your support. The District appreciates your observations of the benefits to Jamaica Bay since the previous marsh island restoration was completed. Dredged material will be used as the source of clean sand fill used to restore the Jamaica Bay Marsh Islands.
Broad Channel Civic Association	Daniel T. Mundy (President)	18-Mar-17	Support for work in Jamaica Bay. Pervious Marsh Island restoration	Thank you for your support.

Organization	Contact	Letter Date	Comment Summary	USACE Response
			has benefitted the inhabitants of Broad Channel.	
NY/NJ Baykeeper	Deborah A. Mans (Executive Director & Baykeeper)	1-May-17	Support for the HRE Draft FR/EA	Thank you for your support.
Bronx River Alliance	Maggie Scott Greenfield (Executive Director)	1-May-17	Support of the HRE Draft FR/EA, specifically the 9 sites along the Bronx River.	Thank you for your support.
Environmental Defense Fund	James T.B. Tripp (Senior Counsel)	1-May-17	Support for the HRE Draft FR/EA	Thank you for your support.
Guardians of Flushing Bay	Korin Tangtrakul	1-May-17	Support for the work in Flushing Creek. Concerns about the CSO remediation by NYCDEP, specifically the use of Chlorine to disinfect CSO's and the impact of Chlorine on the ecosystem and HRE efforts	Thank you for your support. Concerns regarding the CSO remediation have been forwarded to NYCDEP for their consideration.
Rutgers University	Beth Ravit, PhD (Assistant Research Professor, Department of Environmental Sciences & Co-Director of the Center for Urban Environmental Sustainability)	28-Apr-17	1. Concerns about the lack of oyster reef restoration in Raritan Bay. 2. Recommends increasing focus of oyster reefs at Naval Weapons Station Earle. 3. Recommends that data be attained to support that the oysters are healthy prior to funding and permit approval. 4. Recommends that wetlands in Raritan Bay and NWSE be included.	1. The State of New Jersey removed the proposed oyster projects from Raritan Bay at the direction NJDEP. 2. Naval Weapons Station Earle Reef is included in the Recommended Plan. 3. The District relies on the principal investigators who continue to monitor and adaptively manage the original restoration projects implemented through the Oyster Research Restoration Partnership.

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				4. New restoration opportunities can be added for evaluation by the NYNJ Harbor Estuary Program's, Restoration Work Group.
Rutgers University	Judith S. Weiss, PhD (Professor, Department of Biological Sciences)	-	Concerns regarding Sea Level Rise, *Phragmites*, Oyster Restoration, and other minor corrections.	All estuarine projects have been evaluated for SLR. The majority of sites are located within parks or within areas not near residential sites, and therefore residential protection by *Phragmites australis* is not a planning concern. The Study Team acknowledges that *Phragmites* reduces the availability of certain contaminants to fish and wildlife and provides a better role in protecting against storm surge (higher coefficient of friction). During the coordination associated with the HRE Comprehensive Restoration Plan and its subsequent adoption by the NY.NJ Harbor & Estuary Program, it was determined that degraded marshes that were overtaken by non-native species (including

Organization	Contact	Letter Date	Comment Summary	USACE Response
				Phragmites) were candidates for aquatic habitat restoration using habitat structural targets (vegetation cover, biotic community composition, etc.) which is under the purview of USACE's aquatic ecosystem restoration mission. While some sites were considered and highlighted as potential sites to be used as natural and nature-based features (NNBFs), sites were not selected or designed specifically to address coastal storm risk. Any language corrections will be reviewed and revised as appropriate. Thank you for bringing this information to our attention.
Science & Resiliency Institute at Jamaica Bay	Adam Parris (Executive Director)	1-May-17	Support for HRE Draft FR/EA. Raised question about continuing monitoring and adaptive management after 10-years, implications of sea level rise and cost concerns. Specific section comments and corrections.	Thank you for your support. The Corps can only require a maximum of 10 years of monitoring and adaptive management per our regulations. A Relative Sea Level Change analysis has been performed and can be found in the Engineering

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				Appendix (Appendix C). The non-federal sponsor is responsible for long-term operation, maintenance, repair, replacement and rehabilitation (OMRR&R) Sea level rise has been accounted for and cost benefit analysis has been performed. Editorial comments were reviewed and revised.
Friends and Residents of Greater Gowanus	Linda Mariano Marlene Donnelly Mark Karwowski (Officers)	3-Apr-17	Support for all 33 sites in the HRE FR/EA.	Thank you for your support.
Friends of the Earth Action, Inc. Clean Air Campaign, Inc. Open Rivers Project	Bunny Gabel (NY Representative) Marcy Benstock (Executive Director)	28-Apr-17	Oppose the FONSI, oppose any placement of dredge or fill material in waters. Protecting what is existing should come first. Suggest that human lives will be less safe during major storms due to restoration, dislikes the use of "Orwellian language", aquatic habitats are not fungible, and that mother nature does it best	Thank you for your concerns. One of the primary missions of the USACE is to improve and restore degraded ecosystem structure, function and dynamic processes to a more natural condition. Restoration of the HRE is a high priority for the USACE and all federal, state, and local partners.
Evergreen Environmental	Mark Renna (President)	24-Apr-17	As a Mitigation Banking entity, look forward to helping in achieving HRE goals through mitigation banks. Raised concerns about	Thank you for your comments and concerns. As specified in the HRE Comprehensive Restoration

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			costs, and use of contaminated sediment and usage of the EPW method for functional uplift. Concerns about consistency with Regulatory about mitigation banks	Plan, Mitigation banks are important implementation strategies to achieve restoration goals in the region. Feasibility report was required to follow regulations and guidance utilizing cost estimating methods, certified models (i.e. EPW). We acknowledge that there are overlapping policy issues between ecosystem restoration and the regulatory program that will be better coordinated in the future.
Public	Carolyn Gibson	6-Apr-17	Concern about how oysters can be implemented in NJ after NJDEP prohibited restoration of shellfish in the state. How can this activity proceed?	The HRE Study includes oyster reef restoration at Naval Weapons Station Earle, which is federally owned and secure.
Public	Harvey Morginstin (Passaic River Boat Club)	19-Apr-17	Consider plant restoration to construct several boat ramps which will bring more boaters to the area and increase support.	Thank you for your comment and your support for restoration in the Lower Passaic River. Unfortunately, this site was not included the first set of recommendations for restoration of the HRE. This restoration opportunity is acknowledged as a CRP and can be studied in the

Organization	Contact	Letter Date	Comment Summary	USACE Response
				future pending a request from a willing local sponsor.
Public	Brian Sandilands	-	The Newark Bay, Hackensack River and Passaic River Planning Region should be expanded to include the upper Passaic, Pompton and Ramapo Rivers and sites should be considered there. Consideration should be made that in the planning region is in high demand for land for various uses. Recommended additional concepts for various sites to increase cohesiveness of the urban area.	Thank you for your concerns. Unfortunately the Hudson-Raritan Estuary study area was authorized as the 25 mile radius around the Statue of Liberty. Restoration in the Upper Passaic Basin would require new study authorization from Congress or a project could be implemented through the Continuing Authorities Program.

Congressional Representatives

May 1, 2017

Colonel David A. Caldwell
Commander
New York District, U.S. Army Corps of Engineers
26 Federal Plaza
New York, NY 10278-0090

Re: Hudson-Raritan Estuary (HRE) Ecosystem Restoration Feasibility Study

Dear Colonel Caldwell:

As elected officials representing Flushing, New York, we write in support of the recommendations for the Flushing Creek and Bay Restoration within the Harlem River, East River, Long Island Sound Planning Region portion of the Hudson-Raritan Estuary (HRE) Ecosystem Restoration Feasibility Study.

The Flushing Bay and Creek watershed is a highly urbanized area with a mixture of residential, transportation, commercial, and industrial development. Beginning with preparation for the 1939 World's Fair, and continuing to the present, development activities in and around the watershed have severely degraded its tidal wetlands and have disturbed the watershed's natural habitat and ecosystem. Problems include invasive species throughout shorelines and upland habitat, creek banks that are severely eroding at low tide, limited fisheries resources, and poor water circulation and tidal flushing between Flushing Bay, Flushing Creek and Meadow Lake. Due to these significant problems, the watershed was originally the subject of its own restoration feasibility study, which commenced in 1999, but has since been incorporated into the HRE Feasibility Study.

We support the recommendations for restoration in Flushing Bay and Creek provided in the HRE Draft Integrated Feasibility Report and Environmental Assessment and believe they will go a long way to mitigate the longstanding issues affecting the watershed habitat and water quality. Specifically, we welcome the proposals to create a low salt marsh habitat and to preserve the ephemeral pond, which are included in all three proposed alternative plans in the Feasibility Report.

We believe the final restoration plan would be strengthened if it included two restoration measures from the "Alternative C" plan: eliminating mudflats and adding stormwater infiltration features to collect runoff from adjacent areas and roads to improve stormwater quality. These proposals are especially important to the communities we represent because they would improve water quality and alleviate noxious odors from the watershed. Though we understand that the New York City Department of Environmental Protection will be addressing some of these issues

through its complementary Flushing Creek Combined Sewer Overflow (CSO) Long Term Control Plan, we believe that supplementary actions from the U.S. Army Corps of Engineers are needed. As you further develop the HRE Tentatively Selected Plan for the Ecosystem Restoration Feasibility Study, we hope to see this strengthened plan for Flushing Creek included in the final version of the report. We look forward to working with you to improve the ecosystem of the Flushing Bay and Creek watershed.

Sincerely,

Grace Meng
Member of Congress

Toby Ann Stavisky
New York State Senator

Ron Kim
New York State Assemblyman

Peter Koo
New York City Councilman

PLEASE RESPOND TO:

WASHINGTON OFFICE:
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WASHINGTON, DC 20515-3205
(202) 225-3461
FAX: (202) 226-4169
www.house.gov/meeks

DISTRICT OFFICES:
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JAMAICA, NY 11432
(718) 725-6000
FAX: (718) 725-9868

67-12 ROCKAWAY BEACH BOULEVARD
ARVERNE, NY 11692
(347) 230-4032
FAX: (347) 230-4045

Congress of the United States
House of Representatives

GREGORY W. MEEKS
5TH DISTRICT, NEW YORK

COMMITTEES:
FOREIGN AFFAIRS
SUBCOMMITTEES:
RANKING MEMBER,
EUROPE, EURASIA, AND EMERGING THREATS
WESTERN HEMISPHERE

FINANCIAL SERVICES
SUBCOMMITTEE:
FINANCIAL INSTITUTIONS AND
CONSUMER CREDIT
CAPITAL MARKETS AND
GOVERNMENT SPONSORED ENTERPRISES

May 14, 2018

Colonel Thomas D. Asbery, Commander and District Engineer
Department of the Army – United States Army Corps of Engineers, New York District
26 Federal Plaza, Room 2109 -Jacob K. Javits Federal Building
New York, New York 10279-0090

RE: Request for the beneficially re-using of sand from the Jamaica Bay Federal Navigation Project (Rockaway Inlet) for the potential next phase of the Marsh Island Restoration Projects

Dear Colonel Asbery:

I have had an association with the Jamaica Bay Eco-watcher's and its leadership since the beginning of my tenure as a member of the United States House of Representatives – for most of the 20 plus years I have been in office. I have and continue to enjoy an enriching and productive partnership as the Eco-watcher's steadily play a more and more critical role in providing quality education and awareness of environmental issues for my constituents in Broad Channel, the Rockaway Peninsula and surrounding communities.

The Jamaica Bay Eco-watcher's is one of a few environmental organizations located in South Queens and has been the leading Non-Government Organization working to preserve and protect Jamaica Bay since 1995. The first to identify the Wetland's loss issue and the leading organization to spearhead the efforts to prioritize and fund the efforts to restore this critical resource. Known for its innovative outreach, they have a highly competent leadership that is committed to identifying quality resources needed in the restoration and maintaining the eco-system of Jamaica Bay. But the reality is that it cannot adequately respond to the increasing challenges that the post-Hurricane Sandy situation impose without increasing its capacity. I am pleased to support the Jamaica Bay Eco-watcher's request to the United States Army Corps of Engineers for sand from the next maintenance dredging cycle at the Rockaway Inlet be directed for use on the current proposal for the next Wetland Island in Jamaica Bay, as identified as part of the Tentatively Selected Plan within the Draft Integrated Feasibility Report & Environmental Assessment for the Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study.

It is my understanding; a sand source is the only missing component for this project at the present time. The existing navigation project at Jamaica Bay would fit this need with the exact amount of sand needed to construct one marsh island. I am familiar with the changes to the Water Resources Reform and Development Act of 2014 (WRRDA 2014) – which now authorize the Secretary to select, with the consent of the non-Federal interest, a disposal method that is not the least cost option if the Secretary determines that the incremental costs of the disposal method are reasonable in relation to the flood and storm damage and flood reduction benefits, including shoreline protection, protection against loss of life, and damage to improved property and the environmental benefits, including the benefits to the aquatic environment to be derived from the creation of wetlands and control of shoreline erosion.

I am aware there may be other requests for this sand, however it is my belief that the Jamaica Bay Eco-watcher's request was not only the initial one, (in 2013) but that this project is the most critical one in terms of priority from both an ecological perspective (the proposed area is one in which has some of the largest habitat loss and water quality issues) and will help this issue tremendously from the perspective of critical storm resiliency.

To that end, as a Member of United States House of Representatives I am urging the United States Army Corps of Engineers, New York District to approve the Jamaica Bay Eco-watcher's request, so that collectively our efforts will result in this critical ecological project that will double as a natural storm resiliency element for this estuary of national significance, as described by the Academy of Science and for the Fifth Congressional District communities I represent, that surround Jamaica Bay, that were so critically impacted by Hurricane Sandy.

Sincerely,

Gregory W. Meeks
Member of Congress
Fifth Congressional District of New York

Federal Agencies

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
290 BROADWAY
NEW YORK, NY 10007-1866

APR 27 2017

Ms. Lisa Baron
Project Manager
New York District Corps of Engineers
Attn: CENAN-PP-C
26 Federal Plaza
New York, NY 10278

Dear Ms. Baron:

The U.S. Environmental Protection Agency (EPA), Region 2, has reviewed the Draft Integrated Feasibility Report and Environmental Assessment (Draft FR/EA) for the Hudson-Raritan Estuary (HRE) Ecosystem Restoration Feasibility Study. The Draft FR/EA addresses the impacts associated with implementation of ecosystem restoration actions within the HRE Study Area defined as a 25-mile radius of the Statue of Liberty National Monument. The HRE study area includes eight (8) planning regions: 1) Jamaica Bay; 2) Harlem River, East River, and Western Long Island Sound; 3) Newark Bay, Hackensack River and Passaic River; 4) Upper Bay; 5) Lower Bay; 6) Lower Raritan River; 7) Arthur Kill/Kill Van Kull, and 8) Lower Hudson River. The Tentatively Selected Plan (TSP) includes the restoration of up to 33 sites throughout the estuary that will provide for an increase in the quality and extent of estuarine, freshwater riverine, marsh island and oyster habitat. It will provide for the restoration of up to 360 acres of estuarine wetland habitat, 12 acres of freshwater riverine wetland habitat, 81 acres of coastal and maritime forest habitat, 5.5 acres of riparian forest habitat, and 57 acres of oyster habitat. Two (2) fish ladders would be installed and three (3) weirs would be modified to re-introduce or expand fish passage along the Bronx River.

EPA Region 2 strongly supports the efforts and recommendations in your study. We are encouraged by your efforts and hope to see final approval for the TSP outlined in your report.

The U.S. Army Corps of Engineers (USACE) and multiple non-federal sponsors, commenced six concurrent ecosystem restoration feasibility studies in the 1990s and early 2000s that focused on the restoration of different areas of the HRE. As you are aware, there is much ongoing USACE work associated with the New York and New Jersey Harbor and Tributary (NYNJHAT) project. Much information from the USACE North Atlantic Coast Comprehensive Study (NACCS) is being used as part of this project. Additionally, the Rebuild by Design Hudson River: Resist, Delay, Store, Discharge is an ongoing project within this project area. Although you have

discussed the six concurrent ecosystem restoration feasibility studies, it is unclear if you have coordinated the findings of those studies with the NYNJHAT, NACCS and Rebuild by Design efforts. We believe a discussion of any of the relationships, project overlaps, synergy and design assumptions (such as sea level rise) between these projects should be closely coordinated and also included in Chapter 8 "Summary of coordination, public views, and comments.

As discussed at your public meeting on April 6, I have included a copy of our Greening recommendations for projects. We recommend that you review this list and decide if any are applicable to this or future projects and include it in a separate sustainability section if possible.

Thank you for the opportunity to comment on the Draft FR/EA for the Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study. Our comments contained in this letter are intended to help provide useful information that will ultimately inform local, state and federal decision-making and review related to land and water resource use and impacts. Should you have any questions regarding the comments and concerns detailed in this letter, please feel free to contact Michael Poetzsch of my staff at 212-637-4147.

Sincerely,

Grace Musumeci, Chief
Environmental Review Section

Enclosure

bcc: Rabi Kieber, Disaster Recovery Coordinator (electronically)

Saved as: G://deppdiv/SPM/ERS/Staff/Poetzsch/HRE Ecosystem Restoration DEA.docx

Save to: G://deppdive/SPM/ERS/ERSFINAL/309/Multistate-Programmatic/Multistate/HRE Ecosystem Restoration DEA.pdf

EPA Region 2 Green Recommendations

To the maximum extent possible, project managers are encouraged to utilize local and recycled materials; to recycle materials generated onsite; and to utilize technologies and fuels that minimize greenhouse gas emissions.

Further, to the extent feasible, renewable energy (including, but not limited to solar, wind, geothermal, biogas, and biomass) and energy-efficient technologies should be incorporated into the design, construction, and operation of all types of projects.

To that end, the following information and internet hyperlinks are provided for your consideration and use:

- **Multi-media green building and land design practices**
  Utilize green building practices which have multi-media benefits, including energy efficiency, water conservation (see WaterSense below), and healthy indoor air quality. Apply building rating systems and no-cost online tools and guides, such as ENERGY STAR, Portfolio Manager, Target Finder, Indoor Air Quality Package, and WaterSense for building construction. The ENERGY STAR website (see below) includes, among other things, information on new single-family homes, multi-family homes, commercial and other buildings, and schools. The website also provides an ENERGY STAR "Training Center" free of charge.

  U.S. Green Building Council (USGBC) LEED Programs and Guides: http://www.usgbc.org/

  ENERGY STAR home page: http://www.energystar.gov

  ENERGY STAR Target Finder (no-cost online tool to set energy performance targets): http://www.energystar.gov/targetfinder

  Indoor Air Quality: http://www.epa.gov/iaq

- **Water conservation and efficiency in building construction and rehabilitation**
  Utilize sustainable water infrastructure. As aging drinking water, wastewater and stormwater systems require significant upgrade and repair, it has become one of the biggest challenges facing the water sector. The investments made now in water sector infrastructure can have profound impacts on long term community sustainability. Please see the following link on sustainable water infrastructure: https://www.epa.gov/sustainable-water-infrastructure

  Promote water conservation and efficiency through the use of water efficient products in building construction/rehabilitation (e.g., toilets, faucets, showerheads) and practices. For new building construction and restoration projects, we recommend considering the use of products with the WaterSense label where appropriate. Devices receiving the EPA WaterSense label must be at least 20% more water efficient than (and must meet or exceed the performance standards of) non-labeled devices of the same type. Additionally, when possible, consider the use of WaterSense Certified Professional Irrigation Partners and WaterSense Builder Partners. These professionals use WaterSense labeled devices where appropriate, are trained in the latest water conservation practices, and use the latest water efficiency tools and technologies, including irrigation equipment and xeriscaping for landscaping and best management practices for construction in the WaterSense New Home Specifications. Visit the WaterSense website for tips on water efficiency, a WaterSense labeled product search tool, a list of WaterSense Partners, access to the Water Budget Tool at: http://www.epa.gov/watersense/

In addition to using WaterSense labeled products and certified professionals, there are many water conservation strategies and best management practices that can be used in new construction and/or restoration. Here are some useful links on water conservation and efficiency:

- Whole Building Design Guide:
  http://www.wbdg.org/resources/water_conservation.php

- Alliance for Water Efficiency:
  http://www.allianceforwaterefficiency.org/

- Water Use It Wisely – 100 Ways to Conserve:
  http://www.wateruseitwisely.com/100-ways-to-conserve/index.php

- **Green Building in Federal Agency Projects**
  The *Federal Green Construction Guide for Specifiers* includes helpful information for procuring green building products and construction/renovation services within the Federal government:
  http://www.wbdg.org/design/greenspec.php

- **Safer Choice**
  The ingredients of products containing the Safer Choice label have been evaluated by EPA scientists. Products designed for homes and businesses, schools and overall community that carry the Safer Choice label must meet requirements for the following: safer ingredients; performance; packaging; ingredient disclosure; pH; and Volatile Organic Compounds. General information on the Safer Choice label can be found at https://www.epa.gov/saferchoice. To search for products that meet the Safer Choice standard please see: https://www.epa.gov/saferchoice/products

  Municipalities use chemical products for many activities (such as road, vehicle and building maintenance) that can pose a threat to water quality. Practices and procedures should include the use of Safer Choice products in order to, for instance, reduce the volume and toxicity of chemicals that can be discharged into local waterways.

- **Use Environmentally Preferable Purchasing**
  Promote markets for environmentally preferable products by referencing EPA's multi-attribute Environmentally Preferable Purchasing guidance. Products and services include: Building and Construction, Carpets, Cleaning, Electronics, Fleets, Food Services, Landscaping, Meetings and Conferences, Office Supplies, and Paper.
  http://www.epa.gov/epp

- **Purchase 'green' electronics, and measure their benefits**
  Require the purchase of desktop computers, monitors, and laptops that are registered as Silver or Gold products with EPEAT, the Electronics Product Environmental Assessment Tool at www.epeat.net. Products registered with EPEAT use less energy, are easier to recycle, and can be more easily upgraded than non-registered products. Energy savings, CO_2 emission reductions, and other environmental benefits achieved by the purchase, use and recycling of EPEAT-registered products can be quantified using the Electronics Environmental Benefits Calculator:
  http://isse.utk.edu/ccp/projects/benefitscalculator/elecbenecalc.html

  http://www.energystar.gov/products

- **Consider Low Impact Development and Green Infrastructure to help manage stormwater**
  Low Impact Development (LID) is an approach to land development (or re-development) that works with nature to manage stormwater as close to its source as possible. LID employs principles such

as preserving and recreating natural landscape features, minimizing effective imperviousness to create functional and appealing site drainage that treat stormwater as a resource rather than a waste product.

Implement site planning, design, construction, and maintenance strategies to maintain or restore, to the maximum extent technically feasible, the predevelopment hydrology of the building site with regard to the temperature, rate, volume, and duration of flow.

Additional information:
Green infrastructure: http:// www.epa.gov/green-infrastructure
Soak Up the Rain Resource Index: https://www.epa.gov/soakuptherain/soak-rain-resource-index
National Stormwater Calculator: http://www.epa.gov/nrmrl/wswrd/wq/models/swc/

- **Evaluate sustainable stormwater management at brownfield sites**
  Consider designs for stormwater management on compacted, contaminated soils in dense urban areas:

  Additional information:
  https://www.epa.gov/sites/production/files/2015-09/documents/swdp0408_0.pdf
  https://www.epa.gov/soakuptherain/soak-rain-resource-index#Brownfields

- **Alternative and Renewable Energy**
  The Department of Energy's "Green Power Network" (GPN) provides information and markets that can be used to supply alternative generated electricity. The following link identifies several suppliers of renewable energy:

  Additional information:
  http://apps3.eere.energy.gov/greenpower/buying/buying_power.shtml?

- **Clean Diesel**
  For new equipment utilize contract specifications requiring advanced pollution controls and clean fuels: http://www.northeastdiesel.org/pdf/NEDC-Construction-Contract-Spec.pdf and http://www.epa.gov/cleandiesel

  Implement diesel controls, cleaner fuel, and cleaner construction practices for on-road and off-road equipment used for transportation, soil movement, or other construction activities, including:
  - Strategies and technologies that reduce unnecessary idling, including auxiliary power units, the use of electric equipment, and strict enforcement of idling limits; and
  - Use of clean diesel through add-on control technologies like diesel particulate filters and diesel oxidation catalysts, repowers, or newer, cleaner equipment.

  For more information on diesel emission controls in construction projects, please see:
  http://www.northeastdiesel.org/pdf/NEDC-Construction-Contract-Spec.pdf

- **Utilizing recycled materials in construction projects**
  Many industrial and construction byproducts are available for use in road, building or infrastructure construction. Use of these materials can save money and reduce environmental impacts. The Recycled Materials Resource Center has developed user guidelines for many recycled materials and compiled existing national specifications.

  Additional information: http://rmrc.wisc.edu
  http://www.fhwa.dot.gov/pavement/recycling/rectools.cfm

- **Greening demolition projects**
  http://detroitworksproject.com/2013/11/11/dfc-and-partners-launch-pilot-deconstruction-project/

- **Encourage cost-efficient, environmentally friendly landscaping**
  There are many benefits to making greener landscaping choices. For additional information, please see the following website:
  http://www2.epa.gov/greenerproducts/identifying-greener-landscaping-choices

- **Incorporate on-site energy generation and energy efficient equipment upgrades into projects at drinking water and wastewater treatment facilities**
  Consider using captured biogases in combined heat and power systems, and renewable energy (wind, solar, etc.) to generate energy for use on-site. Evaluate the potential energy savings associated with upgrading to more energy efficient equipment (pumps, motors, lighting, etc.).

  Additional information: http://water.epa.gov/infrastructure/sustain/goinggreen.cfm
  http://www.epa.gov/region9/waterinfrastructure/howto.html

- **Incorporate green practices into remediation of contaminated sites**
  Encourage or incentivize the use of green remediation practices, including designing treatment systems with optimum energy efficiency; use of passive energy technologies such as bio-remediation and phyto-remediation; use of renewable energy to meet power demands of energy-intensive treatment systems or auxiliary equipment; use of cleaner fuels, machinery, and vehicles; use of native plant species; and minimizing waste and water use.

  Additional information: http://cluin.org/greenremediation/index.cfm

- **Encourage development in brownfield sites**
  Cleaning up and reinvesting in these properties takes development pressures off of undeveloped, open land, and both improves and protects the environment. These sites are often "infrastructure-ready," eliminating the need to build new roads and utility lines which are necessary in undeveloped land.

  Additional information: http://www.epa.gov/brownfields/

- **Encourage use of Smart Growth and transit-oriented development principles**
  Smart Growth and transit oriented development (TOD) principles help preserve natural lands and critical environmental areas, and protect water and air quality by encouraging developments that are mixed-use, walkable and located near public transit. Encourage use of bicycling with bike commuter parking, storage, and changing facilities. Facilitate increased carpooling or alternative vehicles with preferable parking spaces and/or electric vehicle plug in spots.

  Additional information: http://www.epa.gov/smartgrowth

- **Integrated Design Process**
  The Integrated Design Process calls for the active and continuing engagement of all stakeholders throughout the building design, development, construction, and post-construction phases including the owners, architects, engineers, building department officials, and others. This process creates a higher-performing building at lower cost, allows various building systems to work together to eliminate redundant and unnecessary capacity, and minimizes change order costs.

  Additional information: http://www.wbdg.org/design/engage_process.php

U.S. Department of Homeland Security

United States Coast Guard

Commander
United States Coast Guard
Sector New York

212 Coast Guard Drive
Staten Island, NY 10305
Staff Symbol: (spw)
Phone: (718) 354-2353
Fax: (718) 354-4190

16670

6 APR 2017

U. S. Army Corps of Engineers
New York District
26 Federal Plaza
New York, NY 10278
Attn: CENAN-PP-C

Ladies and Gentlemen:

We have reviewed Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study regarding near-term construction and potential future studies in the eight identified planning regions and offer the following comments.

Our comments are guided by the Coast Guard's 11 missions codified in the Homeland Security Act of 2002. These comments do not apply to the Essex County Branch Brook Park (west of the Passaic River) and the Bronx River restoration site at West Farm Rapids Park and all restoration sites north as they are upstream of the USCG Bronx River navigability determination made by the USCG in 1976.

The Oak Island Yards location is adjacent to a charted turning basin for vessels and the Lehigh Valley Railroad Bridge. There is a 25-yard USCG security zone surrounding bridge piers and abutments within our jurisdiction. Additionally, there is a 750 yard radius security zone surrounding Naval Weapons Station Earle NJ. Procedures to request entry to these security zones are codified at 33 CFR 165.33, 33 CFR 165.130, and 33 CFR 165.169.

The other proposed restoration sites are close to Federal and recreational channels making them, and construction vessels, susceptible to wake and/or surge damage. If a permit is issued for this project, the Coast Guard does not intend to place any operational limitations on vessels using the adjacent waterways. We also recommend that the applicant conduct additional outreach to the recreational boating and fishing vessel industries to ensure maximum visibility.

Any vessels used in conjunction with this project must comply with the Port of New York anchorage ground regulations codified at 33 CFR 110.155, including paragraph (l)(11) regarding vessels that impede or obstruct vessel movements.

We request that any permit you issue require the permittee to:

1. Submit the following information, at a minimum, to the First Coast Guard District for publication in the Local Notice to Mariners before starting operations:

   Date of submission:
   Name, phone number, and email address of project point of contact:
   Company Name:
   Type of Work:

Waterway and location where work will be done:
Latitude & Longitude of work area (Degrees, Minutes, Thousandths of seconds):
Work Start & Stop dates and Hours of Operation:
Equipment on scene:
Passing Arrangements / Time to move vessels to not impede navigation:
VHF Radio Channel monitored:
Disposal Site (if used):
NOAA Chart Number for the area:

This information must be e-mailed to LNM@uscg.mil or faxed to (617) 223-8291 a minimum of fourteen days before starting operations.

2. Contact our Aids to Navigation Officer at (718) 354-4117 to request the movement of any Federal Channel marker buoys a minimum of 30 days in advance if necessary for the completion of this project.

3. Contact our Private Aids to Navigation (PATON) staff at (718) 354-4354 for guidance with the installation of any proposed PATON at any restoration site.

4. Notify the National Oceanic and Atmospheric Administration of each restoration site completion and specifications so they may initiate the appropriate chart and Coast Pilot corrections. This request, along with a copy of the USACE permit, must be submitted online at http://ocsdata.ncd.noaa.gov/idrs/discrepancy.aspx.

5. Ensure any current, or future, outdoor lighting is located or shielded so that it is not confused with any aids to navigation and does not interfere with navigation on the adjacent waterways. If installed, the lights must be white and non-flashing.

6. All vessels working at these restoration sites must comply with the Inland Navigation Rules.

Additional comments and/or requirements may be provided as the construction details are made available. If you have any questions or comments regarding this matter, please contact Mr. Jeff Yunker at (718) 354-4195.

Sincerely,

Jacob A. Hobson, LCDR

J. A. HOBSON
Lieutenant Commander, U.S. Coast Guard
Chief, Waterways Management Division
By direction

Copy: CCGDONE(dpw)

New York - New Jersey
Harbor & Estuary Program
www.harborestuary.org

4/19/2017

Colonel David A. Caldwell, Commander
U.S. Army Corps of Engineers, New York District
26 Federal Plaza, 20th Floor
New York, NY 10278

RE: Letter of Support for the Draft Integrated Feasibility Report and Environmental Assessment for the Hudson-Raritan Estuary (HRE) Ecosystem Restoration Feasibility Study

Dear Commander Caldwell,

I am writing in support of the Draft Integrated Feasibility Report and Environmental Assessment for the Hudson Raritan Estuary (HRE) Ecosystem Restoration Feasibility study.

The New York-New Jersey Harbor & Estuary Program (HEP) was established in 1987 by the US EPA and the states of New York and New Jersey to advance restoration in one of the Nation's 28 Estuaries of National Significance. As you know, HEP focuses on protecting and restoring healthy waterways and productive habitats, managing sediments, fostering community stewardship, educating the public, and improving safe access to our waterways.

The Draft Feasibility Report provides a critical service to our restoration community, enabling the easy identification and prioritization of restoration opportunities to advance restoration planning, and facilitate the integration of wetlands, oysters and coastal restoration into other planning efforts. This effort is a huge step towards accomplishing the habitat goals outlined in HEP's recent Action Agenda. This report also highlights the collaborative nature of the NY-NJ Harbor Estuary restoration community. There is every reason to believe that restoration of the projects listed in this report will facilitate the progress of other companion restorations, cumulating in a greater positive environmental impact and increasing the sustainability of our vulnerable urban ecosystem. Additionally, the restoration of any of these projects would be a great opportunity to leverage HEP's civic network for education and public outreach both locally and estuary-wide.

We highly value our working relationship with our USACE NY/NJ District partners and are looking forward to supporting them on this new venture.

Sincerely,

Isabelle Stinnette
Restoration Program Manager

Local Agencies

DEPARTMENT OF PARKS, RECREATION, CULTURAL & SENIOR AFFAIRS
330 Passaic Street • Passaic, NJ 07055
973-365-5525 • Fax 973-365-3273
Jessica Lezcano, Superintendent of Recreation
jlezcano@cityofpassaicnj.gov

4/25/17

STAFF

Chris Buttler
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mrivera@cityofpassaicnj.gov

Colonel David A. Caldwell, Commander
U.S. Army Corps of Engineers, New York District
26 Federal Plaza, 20th Floor
New York, NY 10278

RE: Letter of Support for the Draft Integrated Feasibility Report and Environmental Assessment for the Hudson-Raritan Estuary (HRE) Ecosystem Restoration Feasibility Study

Dear Commander Caldwell,

As Superintendent of Recreation for the City of Passaic, I enthusiastically support the U.S. Army Corps of Engineers' proposed construction work on the shoreline of Dundee Island Park. As described in the Hudson Raritan Estuary Ecosystem Restoration Feasibility Study, the City of Passaic strives to make Dundee Island Park a centerpiece for active and passive outdoor recreation. Indeed, the City currently maintains the Park's soccer field, benches, playground, and boat launch to the Passaic River—enhancements that are part of an ongoing effort to transform Dundee Island Park into a cherished community resource.

However, there are still numerous issues that plague Dundee Island Park. For instance, flood-driven woody debris and floatable trash are frequently deposited along the shore of the Park, tarnishing the Passaic River's appearance and causing great harm to the River's sensitive ecosystem. Additionally, the shoreline and bank of Dundee Island Park are dominated by invasive Japanese knotweed, which also affects the Passaic River's fragile ecosystem and diminishes the City's efforts to provide a beautiful location for all residents. Moreover, the River's banks have significantly eroding, raising the River's likelihood to flood the Park.

The City therefore fully endorses the U.S. Army Corps of Engineers' plans to stabilize and improve the Dundee Island shoreline. These efforts will have myriad benefits, as shoreline stabilization will reduce erosion and turbidity in waters as well as flood control. Further, the intended enhancement actions would decrease nutrient inputs to the waters and increase the opportunity for nutrient transformation. Other benefits include, but are not limited to, habitat improvements (providing secondary benefits of flood control to the flood prone area) and increased public access to and enjoyment of the Passaic River.

These improvements would thus make Dundee Island Park a more stable and aesthetically pleasing locus for recreational activity. Consequently, the City will have increased space to host its low-cost soccer programming and other recreational activities. With a densely populated, low-income community, the City must maximize every opportunity to enhance open space and bolster programming.

Sincerely,

Jessica Lezcano, RA
Superintendent of Recreation

NYC Parks

Jennifer Greenfeld
Assistant Commissioner
Forestry, Horticulture, and Natural Resources

City of New York
Parks & Recreation

Arsenal North
1234 Fifth Avenue
New York, NY 10029
www.nyc.gov/parks

Friday, April 28, 2017

Colonel David A. Caldwell, Commander
U.S. Army Corps of Engineers, New York District
26 Federal Plaza, 20th Floor
New York, NY 10278

RE: Letter of Support for the Draft Integrated Feasibility Report and Environmental Assessment for the Hudson-Raritan Estuary (HRE) Ecosystem Restoration Feasibility Study

Dear Commander Caldwell:

On behalf of the NYC Department of Parks and Recreation (Parks), we strongly support the Feasibility Study to identify water resource issues, discuss existing environmental conditions, and highlight factors contributing to environmental degradation in the HRE. These areas, as well as the Feasibility Study's focus on building upon existing restoration, ties in with many of Park's efforts to manage, maintain and restore wetlands and riparian ecosystems throughout NYC.

Parks in the process of implementing natural and nature-based features, such as wetland and coastal forest restoration, of varying sizes at sites surrounding Jamaica Bay, including Spring Creek North, Sunset Cove, Idlewild Marsh, Bayswater Park, and more. We are also advising and supporting restoration projects identified in the New York-New Jersey Harbor Estuary Comprehensive Restoration Plan, led by the U.S, Army Corps of Engineers. We have also worked on a number of projects in the Bronx River, stream bank stabilization, fish ladder installation to support restoring river herring and American eel populations, and water quality improvements through stormwater management. As a partner of the Corps and Bronx River Alliance, we strongly support their efforts to advance restoration along NYC's only freshwater river.

As a representative of Parks, I would like to express our full support for this important project, and we look forward to seeing its achievement and reviewing its results. We hope that you will agree and recommend this proposal for funding to improve our knowledge and management of Hudson-Raritan Estuary ecosystems.

Sincerely,

Jennifer Greenfeld,
Assistant Commissioner
Forestry, Horticulture & Natural Resources
NYC Parks

CC: Lisa Baron, Project Manager, U.S. Army Corps of Engineers

Non-Governmental Organizations

Jamaica Bay Ecowatchers

Working to preserve, protect and enhance the natural resources of Jamaica bay

56 West 14th road, Broad Channel, New York, NY 11693

Jamaicabayecowatchers.org

March 20, 2017

Ms. Lisa Baron
Project Manager
U.S. Army Corps of Engineers
26 Federal Plaza - Room 2119
New York, NY 10278-0090

RE: Jamaica Bay Ecowatchers Comments on Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study

The Jamaica Bay Ecowatcher's have been the leading advocacy group working to protect Jamaica Bay since 1995. We were: first to identify the wetlands loss issue in Jamaica Bay (Note: we are the stakeholders who brought this to the attention of the NYDEC), the lead proponents in the successful battle to oppose the 2010 plan to expand JFK runways into the bay, and with the tremendous support of the National Resources Defense Council, brought forth a lawsuit under the Clean Water Act against Mayor Bloomberg that resulted in the historic 2010 Nitrogen Agreement. This Agreement mandated that NYC spend $100,000,000 to upgrade the waste water treatment systems to drastically reduce the nitrogen loading of these waters and required that an additional $15,000,000 be set aside for marsh island restoration. Towards that end, we have partnered with the American Littoral Society, the U.S. Army Corps of Engineers, (USACE), and the New York State Department of Environmental Conservation in the restoration of Rulers Bar and Black Wall Marsh Islands. We have worked to restore oyster populations in Jamaica Bay thru our partnerships with Stony Brook University, and other local academic institutions. We are the lead NGO on the next major restoration project about to break ground in Jamaica Bay - the Sunset Cove Restoration Project, which will remove contaminated fill from the site, replenish sand, and restore wetland and maritime forest and shubland and is anticipated to break ground this coming June. We were also the lead NGO involved with the planning and concept behind furthering construction of the existing Rockaway Artificial Reef Project using funds (at our urging) by the Transco Williams Company as part of their offset mitigation

requirement. We have been working for over 20 years to preserve and protect the waters and habitat of Jamaica Bay. Our comments are based on the hundreds of years of combined observational time that our members have accrued in their time out on the bay and we hope they will assist the ACOE in assessing restoration priorities in Jamaica Bay

We have reviewed the Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study-Draft Integrated Feasibility Report and Environmental Assessment--February 2017 and we offer the following comments pertaining to the area referred to as "Source Study Area - Jamaica Bay, Marine Park, and Plumb Beach Ecosystem Restoration Feasibility Study":

1. **The broad list of potential restoration projects in Jamaica Bay that have been identified** would all have a positive environmental impact on the bay but it is our strong opinion that the restoring the marsh islands will have (and have had) the greatest impact for the following reasons.
    a) They are located in the center of the waters of the bay and as they are inundated **twice a day have a great ability to filter the waters of the bay as they surge in and** out on the daily tidal cycle.
    b) The restored islands have seen thousands of **horseshoe crabs** using the shorelines for mating and laying of eggs.
    c) The restored islands serve as a **refuge area and nursery for small bait fish** such **as Killifish, Spearing and Menhaden.**
    d) The increasing **Osprey population** of the bay (last year saw the most nesting pairs of Osprey to date) feed in and around the restored islands due to the present large fish populations
    e) Many **birds of various species** can be seen using the island for feeding including Egrets, Oystercatchers, and Brandt's Cormorant.
    f) **Turtle populations** seem to be notably increased in and around the restored islands
    g) As has been historically the case in Jamaica Bay, the local observations (citizen science) are often ahead of the scientific research in noting significant environmental conditions in Jamaica Bay. The area where the five marsh islands would be created surround an area that has been noted for a water quality condition that exists during high heat periods in July and August. **Hydrogen Sulfide occurrences** in that area (from an overabundance of sea weed which heats up and decomposes) have had a negative impact on the water and air quality. Due to its shallow draft, it is not a designated water quality testing area **and thus is often not noted by agencies. We feel strongly that the creation of these** islands would help reduce or eliminate these occurrences.
    h) Finally post-Sandy and post-construction of Yellow Bar, Rulers Bar and Black Wall Marsh Islands, it has been observed by our organization the tremendous impact these islands have on attenuating **wave energy within in the bay related to more frequent lower level storms. During a storm, one can clearly see the** reduced wave height on the leeward side of these islands. The combined effect is noticeable and positive.

2. As the USACE looks to seek **local sponsors with matching funding** for these projects it is worth noting that due to the Nitrogen Agreement (noted above) there is several million dollars available for restoration work in the bay and at our urging it was legally defined to be used only for " wetland islands in the center of the bay" and can be applied to any of the wetland island projects identified in this proposal.

3. While the USACE, has their very detailed analysis and planning program for **scoring** the values of the various projects, we would like to take this opportunity for you to consider our own anecdotal scoring of which islands would provide the most benefit.
    a) Duck Point with Atoll #1, Pumpkin Patch East #2, Pumpkin Patch west #3, Stony Creek #4 and Elders center #5. All of these wetland island projects would have **enormous value but given funding constraints this would be the priority that we** believe would have the best benefit if they had to be prioritized.

4. In addition, we urge the USACE to include a separate concept, from that of a large marsh island restoration. We recommend implementing the Thin Layer Placement of **adjacent sediment that was used at the Big Egg Restoration Project and more recently in New** Jersey. This would not be a substitute for the large island restoration that is proposed and so critical but rather it could be used as a maintenance program to place sediment on identified wetland locations where center portions had died off and "collapsed" (due to loss of Rhizomes) . This condition is present in many of the remaining wetland sites and **would allow us to create a sediment bank that would "hold" the marsh together and create** an area for natural seeding to take place. The process could be done for a fraction of the costs associated with the larger projects and in all likelihood could be done in conjunction with local partnerships much the way the planting on Rulers Bar and Black wall were done. Areas at Big Egg and Little Egg would be ideal for this as they still have good perimeter marsh but have lost interior marsh which has now become pooling areas and would be ideal for sediment placement.

5. The marsh islands of Jamaica Bay have been the signature nature-based element that has existed for hundreds of years. They should be protected and maintained as much for their ecological value as for their visitor experience that they afford to those who come to this National Park. Their value, in our view, should be even more significant given the Urban **Setting** they exist in. Gateway National Recreation Area, under the auspices of the National Park Service, hosts the only wildlife refuge in the country that one can get to via Subway. When one looks at the socio-economic makeup of the surrounding communities, it is clear that this park is accessible to millions of people of various backgrounds as well **as limited means and for many this park is their "Yellowstone or Yosemite" and should** see the necessary resources put forth to maintain it for their current as well as future enjoyment.

6. **Our organization has submitted numerous requests regarding beneficially using the sand** dredged from the next round of the **Federal Navigation Maintenance Project of Jamaica Bay - Rockaway Inlet** for marsh island restoration. Also, we request that USACE consider recommending the marsh islands as a pilot project as referenced in

Section 1122 – Beneficial Use of Dredged Material of the Water Infrastructure Improvements for the Nation (WIIN) Act of 2016.

Thank you for the opportunity to comment and look forward to continued restoration efforts within the Hudson-Raritan Estuary

Sincerely,

Daniel Mundy,
President,
Jamaica Bay Ecowatchers

Broad Channel

Civic Association

March 18 2017

Ms. Lisa Baron
Project Manager
U.S. Army Corps of Engineers
26 Federal Plaza - Room 2119
New York, NY 10278-0090

RE-- Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study-Draft Integrated Feasibility Report and Environmental Assessment--February 2017

Broad Channel is the only inhabited island in Jamaica Bay and is perhaps the most at risk community in the New York region in terms of Hurricane and Nor'easter storm damage. Hurricane sandy saw tremendous damage with every home on the island experiencing 4-5 foot of tidal flooding though out the first floor. Even more devastating than the tidal surge was the wave impact that was generated during that storm event.

The Broad Channel Civic Association represents the residents of this community and has reviewed the Draft Integrated Feasibility Report and Environmental Assessment--February 2017 and offers the following comments for your consideration.

This town is very conscious of the waters and environment that surrounds our island and has been supportive of the various efforts to restore the water quality and habitat. In addition we have been working with NYCDEP, NYC Office of Resiliency, NYSDEC, NYC DPR and NYC DDC to identify both green and gray infrastructure projects to better protect the residents of this island community in the event of a future Hurricane or Nor'easter. To that end we have just completed phase 1 of a street raising project that has elevated coastal streets and built new bulkheads and are now working on phase two of that project which will also raise 6 more streets. We worked with agencies and our elected officials in seeking the 4.85 million DOI grant to build a resiliency project at the southern portion of this island-Sunset Cove. We are working with the Mayor's office and the office of Housing Recovery to elevate one fourth of the homes on this island thru the CDBG funded Build it Back Program. In reviewing the impacts of the recently restored marsh islands - Yellow Bar, Rulers Bar and Black Wall Islands, it has been noted that aside from their tremendous ecological value they have reduced damaging wave heights that are regularly seen on the western shores of Broad Channel.

Wave height is a product of wind speed and wind time over water and these islands reduce the time over water of the wind. With top wind speeds often recorded on the island of over 50 miles

per hour it is not only major named storms that produce these damaging waves. We strongly support the proposal to create additional marsh islands and believe that they will have a combined ability to reduce damaging wave energy throughout the bay and most significantly along the shores of this at-risk community as well as protect the major evacuation route , Cross Bay Boulevard, for the entire Rockaway Peninsula. The following was an assessment recently made by the USACE and it supports our observations--"*The recently restored marsh islands will reduce horizontal fetch to the North Channel bridge by 54% to 64%. If this CROSS BAY/highway artery was to be damaged in a future storm the 20,000 daily users would have to travel an additional 6.2 miles & additional 9/18 minutes of travel time causing additional economic hardship & valuable time.*"

We strongly support the five marsh island projects that have been identified in this study and ask that you consider their effect on the wave energy of the bay as well as their obvious environmental impact as you move forward with implementation choice decisions.

Sincerely,

Daniel T Mundy,
President
Broad Channel Civic Association

May 1, 2017

Ms. Lisa Baron
Project Manager
U.S. Army Corps of Engineers, New York District
Attn: CENAN-PP-C
26 Federal Plaza
New York, NY 10278-0090

Re: Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study
Draft Integrated Feasibility Report and Environmental Assessment
(Draft FR/EA)

Dear Ms. Baron:

Please accept these comments on behalf of NY/NJ Baykeeper. Since 1989, NY/NJ Baykeeper has been working to protect, preserve and restore the Hudson-Raritan Estuary. Our staff has been working with the Army Corps of Engineers (Corps) on the development of the Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study, Draft Integrate Feasibility Report and Environmental Assessment (Draft FR/EA), as well as the HRE Comprehensive Restoration Plan (CRP). We thank you especially for your efforts.

The degradation of the Hudson-Raritan Estuary occurred over many decades, including through the development of the region into a major port, complete with significant dredging of berths and shipping channels and filling of acres of wetlands and open waters. Many of these activities were either performed or permitted by the Corps.

It is now time for the Corps to turn its attention to restoring this Estuary. We support the Corps efforts to do this and the restoration opportunities recommended in the Draft FR/EA.

This work needs to be funded now, before more time slips by and the region loses opportunities to restore critical ecosystem habitat, improve resiliency and water quality and bring increased recreational use of our shared waters. As we wait for Corps funding on already approved plans, conditions on the ground change that make the restoration infeasible or require the partners to move ahead without the Corps due to the significant delays, including, in some cases up to ten years. In sum, the Corps needs to invest in the communities and natural areas impacted by its past activities in a timely and robust manner.

Sincerely,

Deborah Mans

Deborah A. Mans
Executive Director & Baykeeper

Headquarters: 52 West Front Street, Keyport, NJ 07735
Phone: 732.888.9870 Fax: 732.888.9873 www.nynjbaykeeper.org

1 May 2017

Colonel David A. Caldwell, Commander
U.S. Army Corps of Engineers, New York District
26 Federal Plaza, 20th Floor
New York, NY 10278

Dear Commander Caldwell,

As local advocates for ecosystem restoration, increased public access, and stewardship in the Bronx River watershed, the Bronx River Alliance would like to express support for the Draft Integrated Feasibility Report and Environmental Assessment for the Hudson Raritan Estuary (HRE) Ecosystem Restoration Feasibility study, particularly the nine restoration sites proposed for the Bronx River.

The Bronx River Alliance serves as a coordinated voice for the river and works in harmonious partnership to protect, improve, and restore the Bronx River corridor so that it can be a healthy ecological, recreational, educational, and economic resource for the communities through which the river flows. As the only freshwater river in NYC, our program areas focus on Ecology & Restoration, Education, Greenway, Outreach, and Recreation, engaging over 7000 people each year as watershed stewards, reaching 5000 with our monthly newsletters and social media posts, and benefitting approximately 225,500 local community members, many of whom live in the South Bronx, the poorest congressional district in the country. Along with NYC Parks we have created 19 acres of new City parkland and improved over 44 acres through invasive species management, native plant restoration, and erosion control.

Our activities focus on promoting river access and green space for urban communities as well as restoring the river for wildlife populations. In addition to the well-known invasive species, like Japanese knotweed, we have a newly-emergent invasive species called Incised fumewort (*Corydalis incisa*) that is localized in the Bronx River watershed that should be included in all removal activities. Since stormwater is a major source of sediment and pollutants, we construct and manage a number of stormwater mitigation structures, and are conducting source detection of pollutants, like floatable garbage, to improve overall water and habitat quality. In 2017 we have had ~40 herring through the fish ladder at the 182nd Street dam and have stocked an additional 400 herring upstream. All the restoration projects that incorporate and promote fish passage align with our priorities and efforts, thus increasing the total impact of each of these projects and eventually leading to a sustainable population.

After careful review of all proposed alternatives and considering how they align with our existing restoration and water quality enhancement goals, we would like to submit our support of the following alternatives:

River Park/West Farms Rapids Park – alternative B
Bed restoration is preferable to the insertion of in-stream structures, particularly because our recreation program often begins trips with students at River Park and in summer months have difficulty passing through this area. Additionally, we have ~$2.4 million in local and federal funds to construct a mixed-use path connecting the Bronx River Greenway and create a park.

Bronx Zoo and Dam – alternative A
We fully support passage over this structure, and have $500,000 in funds from the Bronx Borough President designated for the construction of the fish passage that could be used as non-federal match.

Stone Mill Dam – alternative A or B
This project aligns with our goals of increasing passage for the diadromous species in the river.
Shoelace Park – alternative A
The Alliance and NYC Parks have a grant totaling $513,224 from state and local sources and funding totaling $3.65 million to support restoration, including installing stormwater detention structures and restoring native plants in the riparian zone on the east side of the channel. We have established one of the new green infrastructure installations at 229th Street and would ask that any constructed meanders avoid this structure. There is a major issue with salt runoff from the Bronx River Parkway and would request that salt monitoring be included as part of the efforts; we are willing to assist with this study.
Muskrat Cove – alternative B (second option, A)
We prefer the riffle-pool complex creation because of the bends in this area and the current state of the unconsolidated channel bottom. We have a proposed project to DEC for an Environmental Justice grant (approx. $60,000) to construct crib walls down to the trash boom at 233rd Street, remove invasive species, plant native riparian species, and manage trash accumulating in the boom with volunteer Citizen Scientists. In addition, we are seeking to construct a mixed-use path connecting the Bronx River Greenway through this area.
Bronxville Lake – alternative A
This project presents a significant opportunity for freshwater wetland creation and sediment reduction for downstream reaches.
Crestwood Lake – alternative A
We prefer prioritization of sediment removal. Because of upstream sedimentation and subsequent transport, much of the downstream habitat and associated benthic communities are degraded. Filling in of the channel also has adverse effects on our recreation program.
Harney Road/Garth Woods – alternatives A or B and A-2
This project creates freshwater wetlands and reduces sediment for downstream reaches, and aligns with our goal of increasing passage for the diadromous species in the river.
Westchester County Center – alternative A
Stormwater has a discernible effect on water quality at this site, so we support the construction of wetlands in upstream reaches to prevent input of sediment and pollutants from upland sources.

These projects would provide critical environmental benefits through sediment reduction, species migration over in-channel impediments, and construction of better habitat for the aquatic wildlife in the river. The Bronx River Alliance is in close communication with Lisa Baron, HRE CRP Project Manager, regarding the design and implementation of these proposed restoration projects to maximize habitat benefits should these projects be implemented in the Bronx River. Any upstream restoration would improve environmental quality for residents along the river corridor. This is especially important for the residents of the South Bronx, an EJ community, many of whom are low-income and who lack affordable transit options to natural areas. We support this opportunity from the U.S. Army Corps of Engineers New York District to restore habitat in the Bronx River watershed.

Sincerely,

Maggie Scott Greenfield
Executive Director

CC: Lisa Baron, Project Manager, U.S. Army Corps of Engineers

EDF
ENVIRONMENTAL DEFENSE FUND
Finding the ways that work

May 1, 2017

Ms. Lisa Baron, Project Manager
US Army Corps of Engineers, NY District
Programs and Project Mgt Division
Civil Works Programs Branch
26 Federal Plaza
New York NY 10279-0090
Lisa.a.baron@usace.army.mil
HRE_FREA_Comments@usace.army.mil

Re: Draft Feasibility Report/EA HRE ERFS

Dear Ms. Baron:

The Environmental Defense Fund, a national and international environmental organization headquartered in NYC, has review the Draft Integrated Feasibility Report & Environmental Assessment for the Hudson-Raritan Estuary Ecosystem Restoration dated February 2017. It is obvious that the New York District and cooperating NYC, state and federal agencies have performed a huge amount of work to put together this comprehensive restoration program and the Tentatively Selected Plan.

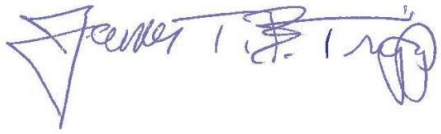
We very much support the TSP as shown in Figure ES-2 and described in terms of restoration features in Table ES-2 and elaborated in the Report in detail. The costs are presented in Tables ES-3 and ES-4 with a total estimated cost for all of the projects of $644 million appear to be reasonable and cost-effective. Six source studies identified at p. ii of the Executive Summary provide invaluable information and assessments that the Corps has used in this draft Report.

This Feasibility Report as well as the six source studies have been a long time in development. The challenge is implementation. The Corps has carried out very useful work in terms of restoring some of the Jamaica Bay marsh islands with funding from the deep draft navigation channel mitigation dollars and CPA funds. The information in this draft Report should play an eminently helpful role in terms of formulating and expediting implementation of a Jamaica Bay flood protection program that would include some of the Bay restoration projects with risk reduction attributes and that could move forward expeditiously with Sandy funding. If some of these projects are included in a Sandy-funded Bay-side program, that will demonstrate real commitment by the Corps to effectuation of the HRE restoration reflected in the TSP. If a

number of these projects located in Jamaica Bay are not included in that Sandy funded program, our assessment of the seriousness with which the Corps views this restoration program may change.

We look forward to working with the Corps in advancing the implementation of this TSP, including components of it that we expect will be included in the Sandy-funded program for the Bay.

Sincerely,



James T. B. Tripp, Senior Counsel
jtripp@edf.org
212-616-1247

May 1, 2017

Colonel David A. Caldwell, Commander
U.S. Army Corps of Engineers, New York District
26 Federal Plaza, 20th Floor
New York, NY 10278

RE: Letter of Support for the Draft Integrated Feasibility Report and Environmental Assessment for the Hudson-Raritan Estuary (HRE) Ecosystem Restoration Feasibility Study

Dear Commander Caldwell,

As a local leader in public access and stewardship in the Flushing Bay Watershed in Queens, Guardians of Flushing Bay would like to express support for the habitat restoration for Flushing Creek as part of the Draft Integrated Feasibility Report and Environmental Assessment for the Hudson Raritan Estuary (HRE) Ecosystem Restoration Feasibility study.

Guardians of Flushing Bay is a coalition of human-powered boaters, environmental enthusiasts and residents of the watershed that advocate to promote a clean and healthy Flushing Bay, to increase the accessibility and public use and enjoyment of the Bay and its surroundings. Our members participate in water quality sampling, steward oyster cages, and advocate for reduction of Combined Sewer Overflow (CSO) and environmental remediation of Flushing Bay and Flushing Creek. We meet often with the NYC Department of Environmental Protection (DEP) regarding water quality improvements and the NYC Department of Parks and Recreation regarding the waterfront space owned by Parks, and partner with citywide environmental organizations such as Riverkeeper, SWIM Coalition and Billion Oyster Project.

As active users of the waterway, clean water is a priority for our organization. Over the next few years, the DEP is completing ecosystem restoration along the Flushing Bay promenade, as part of their CSO abatement plans. We feel this improvement along with HRE's ecosystem restoration in Flushing Creek will greatly enhance water quality and ecosystem habitat in the connected waterbodies. In addition to ecological services, these improved habitats will provide educational opportunities for the surrounding communities.

However, we are concerned about the potential impact that DEP's plans for Flushing Creek may have on the ecology. DEP's Long Term Control Plan proposes using chlorine to disinfect CSO discharge at the outfall using untested technology. We are concerned that residual chlorine will kill the recovering ecosystem and put HRE's efforts of habitat restoration at risk. Furthermore, the plan calls for *no reduction* in CSO volume. There will continue to be over a billion gallons of chlorinated and raw CSO discharge entering this restored habitat, including heavy metals and litter from stormwater runoff. The Flushing Creek Long Term Control Plan has already been approved by the New York State Department of Environmental Conservation. We are taking every opportunity to raise our concerns over dumping chlorine in Flushing Creek, and we hope HRE can encourage DEP and the State DEC to find an alternative solution.

We look forward to supporting this opportunity from the U.S. Army Corps of Engineers New York District, and contributing to the success of ecological restoration in the New York-New Jersey Harbor.

Sincerely,

Korin Tangtrakul

Korin Tangtrakul
Coordinator
Guardians of Flushing Bay

Academic Organizations

RUTGERS
CUES — Center for Urban Environmental Sustainability

April 28, 2017

Ms. Lisa Baron
U.S. Army Corps of Engineers, New York District
26 Federal Plaza
New York, NY 10278-0090

Dear Ms. Baron,

Thank you for the time spent presenting the update on the Harbor Estuary Restoration Feasibility studies and your continued commitment to restoration in the Hudson-Raritan Estuary. Below please find my comments related to the 1***) Oyster Restoration Target Ecosystem Characteristic*** (TEC) Goal of 20 acres by 2020 and 2,000 acres by 2050; 2) the ***Oyster TEC Tracking Definition***; and 3) **Wetland restoration opportunity**.

1. Although Raritan Bay was the site of the harbor's most extensive historic oyster reefs[i] the current restoration initiatives are not currently focused on Raritan Bay. (Appendix D[ii]).
    a. **Recommendation:** Increase the focus on potential restoration locations in Raritan Bay (both NY and NJ) through continuing dialogue with regulatory agencies in NY and NJ. Rutgers Center for Urban Environmental Sustainability (CUES) and NY/NJ Baykeeper have surveyed[iii] approximately 30 miles of Raritan Bay coastline and compared potential sites with NOAA Bathymetry data. Raritan Bay locations are desperately needed to contribute a substantial proportion of the 2050 acreage goal. The ReBuild-by-Design proposed Staten Island oyster project on the southern coastline of Staten Island has not yet been included in the HEP list of potential oyster restoration sites, although it is included in the is the final Hudson-Raritan Estuary Comprehensive Restoration Plan[iv].

2. The Naval Weapons Station Earle (NWSE) site is identified as 0.25 acres completed since 2006. However, the potential exists to obtain permits for approximately 10 acres between the Earle Piers. Reference to current installations at Earle only mention "Ware Creek" test plots. Based on the research conducted at the NWSE site, the oysters in this location appear to be healthy and capable of spawning. The acreage potential in naval protected waters is significant, given the short-term TEC goals.
    a. **Recommendation:** Increase focus and funding on the NWSE site options/property in general. Support NY/NJ Baykeeper's strong collaboration with the U.S. Navy.

3. Tracking success in achieving the Oyster Restoration TEC: The current Tracking Definition is the amount of oyster acreage installed. Our research[v] found that

oyster growth is not a surrogate for oyster health or ability of populations to reproduce (manuscript attached). To justify the funds needed to meet the oyster restoration TEC, no site should be considered for restoration until test oysters placed at that location demonstrate long-term soft tissue health and fitness (ability to successfully reproduce). The actual reproductive health of these animals can only be determined by looking at soft body tissues.

   a. **Recommendation:** Funding and permit approvals should not be given for any location(s) until data is provided to the USACE that demonstrates oysters placed in the location are healthy – particularly the reproductive tissues – and that sex ratios are conducive to successful fertilization.

4. **Raritan Bay wetlands and Naval Weapons Station Earle (NWSE)** – Naval property includes the dune/marsh system connected with Ware Creek, a surface waterbody on naval property that discharges directly into Raritan Bay. Based on historic aerial maps, this dune/*Spartina* marsh ecosystem has experienced significant erosion since construction of the pier. This beachfront and combination low/high marsh ecosystem is a prime target for wetland and coastal shoreline restoration, which could be support by application of the sand that is periodically dredged by the navy to maintain access to their pier. Rather than sending navy clean sand out to HARS, onsite NWSE wetlands should be prioritized for beneficial reuse of dredge materials, which can mitigate the current coastline erosion and support the marsh in keeping up with a rising sea level.

Thank you very much for considering these comments.

Regards,
Beth Ravit

Beth Ravit, PhD, Assistant Research Professor
Department of Environmental Sciences
Co-Director, Center for Urban Environmental Sustainability
School of Environmental & Biological Sciences
Rutgers University
14 College Farm Road
New Brunswick, NJ 08901

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i Hudson-Raritan Estuary Comprehensive Restoration Plan - Version 1.0 June 2016 13. Fig. 2-2, pg. 13.
ii Ibid.
iii http://cues.rutgers.edu/oyster-restoration/pdfs/Ravit_et_al_Mapping%20Report_2014.pdf
iv Hudson-Raritan Estuary Comprehensive Restoration Plan - Version 1.0 June 2016 13. pg. 61.
v Ravit et. al. 2014. Improving Management Support Tools for Reintroducing Bivalve Species (Easter Oyster [*Crassostrea virginica Gmelin*]) in Urban Estuaries. Integrated Environmental Assessment & Management 10(4):555-565.

cc: P. Weppler, USACE, New York District

Comments on the Final HRE Restoration Plan Judith S. Weis Rutgers University
jweis@newark.rutgers.edu

Congratulations on producing such an excellent, comprehensive document. You should all feel very proud of it. My comments, primarily on the marsh restoration plans, are meant primarily to alert you to some research that you may not be aware of, and which I hope will modify the plans somewhat

Marsh Restoration Projects:

I am very pleased that plans for the Jamaica Bay marsh islands now include some high marsh at some of the islands. This is a major improvement over the earlier projects.

Concerns about Sea Level Rise

1. A recent study evaluated many US coastal marshes (components of the National Estuarine Research Reserve Program) for their resilience in the face of climate change (Raposa et al. 2016). Marshes in southern new England are the most vulnerable, probably because of inadequate amounts of sediment coming in to enable them to keep up with SLR. Marshes in the NYC area were not included in the study (except for those NERRS up the Hudson River). Symptoms of marsh vulnerability included increased ponding within marsh interiors, replacement of *S. patens* (typical of mid to-high marsh) with *S. alterniflora* typical of low marsh), slumping along marsh edges/loss of creek banks (losing important habitat for ribbed mussels and fiddler crabs), erosion of marsh edge, loss of high marsh, and widening of tidal inlets, which have also been seen in Jamaica Bay marshes (Hartig et al 2002) and others in the area.

Factors that need to be considered according to Raposa et al. (2016) in evaluating marshes include

1. Marsh elevation**:** Are plants located at the high end of their tolerance to flooding so they are initially protected from rising seas?
2. Change in elevation**:** Is the marsh rising fast enough to keep pace with SLR? Is there sufficient sediment to build up the marsh?
3. Rate of sea level rise: Is the marsh resilient because it has not yet been exposed to rapid local sea level rise or high water levels?
4. Tidal range**:** Does tidal range allow plants to occupy a broad range of elevations so they are buffered against the effects of sea level rise?

This study evaluated ability to elevate and did not consider the potential ability of a marsh to move inland. This is another way that marshes may persist, but in urban areas there is less likely to be undeveloped open space behind marshes.

How will the proposed restoration projects deal with this problem that is already upon us? Before embarking on any of the proposed projects, it will be important to study each marsh to see if these symptoms are occurring and to what degree. It may be that the marshes along rivers, such as Harlem and East River, Passaic and Hackensack, will have adequate sediment supply and not be as vulnerable as marshes (e.g. Jamaica Bay) without major sources of new sediments. Plans will need to be formulated to restore marshes to a condition that they will not be “drowned” by SLR soon.

In some areas, "thin layer" sediments have been sprayed to elevate the marsh surface (Ray, 2007) VIMS (2014). This appears to be a relatively successful technique in Louisiana and other places, but there is no discussion of this possibility. It may need to be done repeatedly every several years (like beach re-nourishment) in the face of continuing and accelerating SLR.

2. Another approach being used in marsh areas that are eroding is that of developing "living shorelines," in which some hard structures (e.g. stones, oysters) are added at the seaward edge of the restored marsh. According to NOAA, (comparing living shorelines with sea walls), “This approach uses plants, sand, and limited use of rock to provide shoreline protection and maintain valuable habitat. Living shoreline projects utilize a variety of structural and organic materials, such as wetland plants, submerged aquatic vegetation, oyster reefs, coir fiber logs, sand fill, and stone.” The benefits of living shorelines (compared to sea walls) include: stabilization of the shoreline, protection of surrounding riparian and intertidal environment, improvement of water quality via filtration of upland run-off, and creation of habitat for aquatic and terrestrial species. Initiatives in NY and NJ for living shorelines are reviewed by Rella et al. (2017). Are there areas within the HRE that are at great risk for erosion, where this technique might be preferable to a traditional restoration which might not not last long?

Concerns about *Phragmites*

Many of the proposed marsh restoration projects include removing “non-native invasive species” –presumably *Phragmites.* In the document, the presence of *Phragmites* is practically equated with degradation.

The report states: “Restoration of these communities likely would cause a qualitative improvement of their biodiversity and ecological services” and cites Rey-Benayas et al., 2009 and Duffy, 2009, although those papers are general papers about diversity and ecological services and not specifically about salt marshes or the species in question. The report goes on to say “The resilience of the Jamaica Bay ecosystem would be enhanced due to an increase in regulating ecological services, which can attenuate the impact of shocks on ecosystems. The reduction or elimination of nonnative plant species would enhance native biodiversity and ecological community functioning, and the created or restored habitats would provide for an increased diversity of plant species” This also is a general statement, that does not refer to marshes or *Phragmites*.

These statements are questionable when it comes to *Phragmites*. There is a considerable literature on ecosystem services provided by *Phragmites* that has been developed by scientific research over the past twenty years, none of which is acknowledged in this plan. This extensive literature should be considered.

Ecosystem Services of *Phragmites*:

1.Raises the marsh level faster than *Spartina* (Rooth and Stevenson 2000) These authors concluded: “Greater rates of mineral and organic sediment trapping were associated with the *P. australis* community in both a subsiding creek bank marsh (34

$g \cdot m^{-2} \cdot day^{-1}$in *P. australis* vs.18 $g \cdot m^{-2} \cdot day^{-1}$in *Spartina* spp.) and a laterally eroding marsh (24 $g \cdot m^{-2} \cdot day^{-1}$in *P. australis* vs.15 $g \cdot m^{-2} \cdot day^{-1}$in *Spartina* spp.). Litter accumulation in *P. australis* stands is responsible for the higher depositional pattern observed. Additionally, below ground accumulation in *P. australis* communities (as much as 3 mm in 6months) appears to substantially increase substrate elevation over relatively short time periods. Thus *P. australis* may provide resource managers with a strategy of combating sea-level rise, and current control measures fail to take this into consideration." (underline mine) Now, it is 17 years later, and time that we did take it into consideration.

If we are concerned about *resilience and sustainability* (Section 4.11 in report) keeping some *Phragmites* would be a good decision. A community organization in Piermont NY near Tappan Zee Bridge think *Phragmites* protected them from Superstorm Sandy's storm surge and wind damage. They do not want it removed.

2. Sequesters pollutants (metals, Nitrogen, CO_2) more effectively. Both plants concentrate metals in the roots, but *Spartina* sends more up to the leaves, from which it excretes the metals along with salts. For example, leaves of *S. alterniflora* consistently released 2–3 times more Hg than leaves of *P. australis*. Leaves of *S. alterniflora* also contained greater concentrations of Hg. Rates of Na release were correlated with rate of Hg release (Windham et al. 2001). Similar patterns were seen with other toxic metals such as lead.

Windham and Ehrenfeld (2001) found that *P. australis* took up 60% more N than did *S. patens* and annual rates of N immobilization were nearly 300% greater in *P. australis* litter than in *S. patens* litter. Mineralization rates in *P. australis* sediments were nearly 300% greater than those in sediments with *S. patens*. Rates of nitrate reduction were 300% greater in *P. australis* sediments. In freshwater tidal marshes, Alldred et al. (2016) found that denitrification was lower in *Phragmites*-removal sites relative to untreated *Phragmites* sites, a pattern that persisted at least two years following removal when native plants were re-colonizing treated sites. They stated that the results suggest the potential for a trade-off between invasive-plant management and nitrogen-removal services and recommended that a balanced assessment of costs associated with keeping versus removing invasive plants is needed to adequately manage simultaneously for biodiversity and pollution targets."

Schäfer et al. (2014) found that fluxes of carbon decreased by 50% after the removal of *Phragmites australis*. Comparison between a restored urban wetland and an unmanaged site nearby showed that the fluxes in the *Phragmites*-dominated wetland were significantly higher than those of the marsh from which *Phragmites* had been removed. Thus, managing wetlands by removing *Phragmites* may cause reduced carbon sequestration.

3. Provides habitat for aquatic organisms in creeks. Benthic communities in the sediments under *Phragmites* and *Spartina* in the NJ Meadowlands were equivalent

(Yuhas et al 2005) Fell et al (1998) found that tidal marsh invertebrates (snails, amphipods and isopods) were common to abundant in reed-dominated regions, as well as in areas with native tidal marsh vegetation, suggesting that reed (*Phragmites*) marshes provide suitable habitat and food resources for these detritus/algae feeders. McClary (2004) found that populations of *Geukensia demissa*, ribbed mussels, were somewhat more abundant in *Phragmites* than nearby *Spartina* marshes in the NJ Meadowlands Nekton (fishes) tend to be richer in NJ *Spartina* marshes but nevertheless are abundant in *Phragmites* marshes as well (Kimball and Able 2007) In contrast, in Chesapeake Bay, Meyer et al. (2000) found no significant differences in the utilization of *P. australis* and *S. alterniflora* marshes by nekton in terms of species numbers, abundance or biomass. They postulated that under similar environmental and physical conditions these marshes are equivalent in terms of nekton. and recommended that management practices which involve elimination of *P. australis* in favor of *S. alterniflora* in order to increase nekton use should be re-thought.

4. Detritus provides equivalent food value to *Spartina* (Weis et al. 2002) Fiddler crabs (*Uca pugnax* and *U. pugilator*) and grass shrimp (*Palaemonetes pugio*) fed diets of detritus from the different plant species did not differ in growth or survival.

5. Bird use is variable, depending on species, geographic location, stand architecture and other plant species. Kane (2001) found that in NJ*, Phragmites* hosts a number of resident bird species, including species listed by the state as threatened or endangered, as well as some that are rare breeders. He listed over 40 species that breed in *Phragmites* marshes. Important populations of some species are resident in reed marshes and some use reed as nest material. Surveys in 40 salt and brackish marshes by Benoit and Askins (1999) found fewer species of birds and state-listed species in *Phragmites*-dominated wetlands than in short-grass marshes. Seaside Sparrow, Saltmarsh Sharp-tailed Sparrow, and Willet, three marsh specialists adapted to nesting in short graminoids, had low frequencies in plots dominated by *Phragmites*. Marsh Wren and Swamp Sparrow, marsh specialists that prefer tall, reedy vegetation, had greater densities at sites with more *Phragmites*.

Kiviat (2013) analyzed ecosystem services of *Phragmites* and concluded that the functions that *Phragmites* provides for many species are optimal at lower levels of *Phragmites* biomass and extent of stands. Ecosystem services include habitat functions for other organisms. However, *Phragmites* stands may need management (e.g. thinning, fragmentation, containment or removal) to create or maintain suitable habitat for desired species of animals and plants.

There is no doubt that *Phragmites* marshes decrease biodiversity of marsh plants, but is that the value of greatest importance? We should evaluate which services are the most important - to assess the goals of the project - before embarking on mass removal of this species. Kiviat (2006) outlined management techniques and their nontarget impacts, and suggested how research needs can be defined. Depending on management goals, site and stand factors, the surrounding landscape, and the local

biota, it may be appropriate to take no action, remove a *Phragmites* stand, or alter the stand to change its habitat functions and ecosystem services. An explicit and documented decision-making process should be used to justify decisions and acquire information about management outcomes that can inform subsequent management.

A presentation on this topic by Kiviat is seen at
https://www.scribd.com/document/268400561/Kiviat-Phragmites-Management-051915

I am not advocating that *Phragmites* should never be removed. I agree with Kiviat that after study, it should be removed some places, partially removed other places, and left alone in other places. This may require thinning stands periodically, which can be considered one aspect of adaptive management.

In addition, it should be noted that Martin & Blossey, (2013) examined restoration projects in which *Phragmites* was removed between 2005-2009, found that over $4.6 million/ year was spent on *P. australis* management; 94% of the projects used herbicides to treat almost 200,000 acres. They found that few projects actually accomplished their objectives, and no relationship was seen between resources invested and management success
Two years of monitoring is probably is not enough. I would recommend five years.

Oyster Restoration

Survival rates of previously stocked oysters should be an important criterion for choosing locations for future restoration. Some of the selected sites have been used for stocking oysters over the past decade. I have not seen or heard about data on the survival rate of these oysters, except for Jamaica Bay.

Minor issues/corrections –

The following statement is repeated for each part of the HRE "It is anticipated that, under the no action alternative, there would be continued or worsening degradation of water quality" This is contrary to the trajectory of improved water quality in many (all?) parts of the HRE over the past several decades due to the Clean Water Act.

Another statement that occurs repeatedly is: "Establishment of oyster reefs would provide water filtration and an attendant reduction in turbidity (Coen et al., 2007), which would provide long-term benefits to aquatic macrophytes (Newell and Koch, 2004. Improved water clarity can increase light penetration, which can increase growth of benthic vegetation (Grabowski and Peterson, 2007)." While this is theoretically true, it is an exaggeration. The amount of oyster reef needed to reduce turbidity etc. to a degree that would be noticeable is far greater than the current plan.

P 78 (finfish) *"Fundulus* species, including the striped killifish (*Menidia beryllina*) and spotfin killifish (*Fundulus luciae*), were the second most prevalent taxa." **Error**: Striped killifish are *Fundulus majalis*. The same error occurs later on the same page "Other common fish species that inhabit this area include….striped killifish (*Menidia beryllina*)",

P 184 “Water filtration by bivalves can reduce phytoplankton, but can also remove diatoms, dinoflagellates…”, **Error**: Diatoms and dinoflagellates ARE the dominant phytoplankton in marine and estuarine waters.

I am happy to discuss any or all of these issues with you and to work with you to improve the plans for the marsh restorations.

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May 1, 2017

The U.S. Army Corps of Engineers, New York District
Programs and Project Management Division (ATTN: Lisa Baron)
26 Federal Plaza, New York, New York 10279-0090

Re: Public Comments of the Science and Resilience Institute at Jamaica Bay on the USACE Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study

Dear Col. Caldwell,

The Science and Resilience Institute at Jamaica Bay (Institute) is pleased to submit the following letter of support and public comments on the February 2017 *Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study: Draft Integrated Feasibility Report & Environmental Assessment*, developed by the U.S. Army Corps of Engineers New York District.

The tentatively selected plan reflects a tremendous effort by the Corps to protect, restore and adapt Jamaica Bay's ecological systems through 33 projects, including 12 in Jamaica Bay. Restoration of Jamaica Bay is of critical importance to the nearly 1 million residents who live in its watershed. Jamaica Bay is truly a gem within the NY-NJ Harbor Estuary, providing critical ecosystem good and services. However, these services have been compromised by past and current actions, and will continue to degrade without continued action.

The Institute produces integrated knowledge that can be used to increase biodiversity, well-being, and adaptive capacity in Jamaica Bay, New York City, and other urban coastal areas around the world. The Institute, hosted by Brooklyn College, is a partnership among academic institutions, government agencies, nongovernmental organizations and community groups. Core partnerships are sustained among the National Park Service, the City of New York, and a Consortium of eight research institutions including the City University of New York (CUNY), Columbia University, Cornell University, Rutgers University's Institute of Marine and Coastal Sciences, New York Sea Grant, Stevens Institute of Technology, Stony Brook University (SUNY), and the Wildlife Conservation Society. A central feature of our work involves engaging communities, public officials, and scientists in formal and informal learning to stimulate collaborative research on issues of importance in coastal urban areas. The Army Corps of Engineers has been a valued member of the Institute's Public Agency Committee, and we hope the recommendations, opinions and questions herein will add depth and value to this review process.

This document was compiled with the help of several scientists and partners involved with the Institute and active in Jamaica Bay research. While not compiled from a wholly comprehensive list of experts, the subject matter touches on many dimensions of the Jamaica Bay ecosystem and communities, consistent with the Institute's broad focus on resilience.

Thank you for your time and consideration,

Adam Parris
Executive Director of the Science and Resilience Institute at Jamaica Bay

Public Comments from the Science and Resilience Institute at Jamaica Bay

The Science and Resilience Institute at Jamaica Bay (Institute) applauds the U.S. Army Corps of Engineers for their on-going leadership in advancing restoration in Jamaica Bay and throughout the Hudson-Raritan Estuary. This Feasibility Study represents the culmination of decades of planning, research and coordination amongst the many stakeholders dedicated to improving the environmental conditions of the estuary. The Study also aptly recognizes the important ecological significance of Jamaica Bay in the region, its historic changes due to extensive urbanization and the risks it faces in light of climate change. The Institute looks forward to building on our successful partnership to date with the Corps and continuing to facilitate the timely, relevant exchange of integrated knowledge that can help guide this process moving forward.

Coastal Flood Risk Reduction by Nature Based Features

Nature Based Features offer the promise of storm risk reduction as an alternative to traditional hard engineering approaches. However, their potential to mitigate coastal hazards, enhance ecological services and provide community benefits remain an area of further research and monitoring. Improving the understanding of these strategies can advance project design and streamline implementation, evaluation, long-term operations, and maintenance (ARCADIS, 2014). Furthermore, monitoring sites to measure, evaluate, and adjust their performance over time is imperative to improve the overall health of the estuary.

The coupling of storm damage reduction and hurricane protection with ecological restoration in Jamaica Bay has been a well-established objective of studies in Jamaica Bay, including the 1994 reconnaissance studies, the Comprehensive Restoration Plan, and the on-going Integrated Analysis and Modeling for Flood Risk Reduction (RAND, 2017). The HRE Feasibility Study also describes the secondary benefits to this effect that certain Target Ecosystem Characteristics, like wetland restoration, coastal and maritime forests, and oyster reefs can provide (see page 3-3). The identified coastal restoration projects have the ability to more explicitly address these secondary benefits of storm risk reduction and other community benefits, such as public access and stewardship. Coordinating these restoration efforts with other hazard mitigation objectives, such as the residual risk measures outlined in the Jamaica Bay Reformulation Study, will enhance their overall financial feasibility and practical benefits to the resilience of the Bay.

Monitoring & Adaptive Management

While we applaud the inclusion of the Monitoring & Adaptive Management Plan for 10 years (see Appendix O) to assess the ecological health and biota richness and abundance, we

recommend that the monitoring metrics are expanded to capture the performance of the restoration projects to achieve the stated secondary benefits of coastal flood risk reduction, as well as their broader social benefits and impacts. The Institute, in partnership with the NY-NJ Harbor & Estuary Program, NYS Dept of Environmental Conservation, NYC Parks, SCAPE Landscape Architects, CUNY, US Forest Service and ARCADIS, will soon be initiating a project, funded through NYSERDA and the NYS Dept of State, to develop a statewide framework for monitoring these features. Many of the 33 sites in this study offer the opportunity to test this monitoring framework. Allowing monitoring and adaptive management beyond ecological performance will help justify these types of activities in the future. As these metrics are developed through the Institute-led effort, we recommend that they be incorporated into the monitoring requirements for each of the restoration activities that aim to achieve multiple performance goals.

Monitoring programs are particularly important for novel approaches to restoration, such as the "atoll" marsh terrace. A partnership between the USAC New York District, the Engineering With Nature group at ERDC in Vicksburg and the Institute could build meaningful dialogue between research and management entities. Coupling on-site monitoring with computer modeling around topics such as sediment transport, sea level rise and other climate-related hazards, and species migration could help groundtruth and verify model results, creating a positive, powerful feedback loop between science and action to help inform future restoration planning.

Role for Research and Science

The implementation of multiple restoration projects creates the opportunity for a harbor-wide "living laboratory" for learning. Engaging the research community to develop a complementary research program to correspond with the restoration activities would be a way to align research and practice. Institute-affiliated CUNY scientists have already shown that restored marsh islands in Jamaica Bay can remove as much nitrogen as natural marshes. This is an additional benefit of marsh restoration that would not have been identified through typical monitoring practices but may be important in influencing management decisions.

While the approach to marsh restoration has largely been worked out over the last decade and seems to be effective, there continue to be opportunities to improve methods by exploring facilitative interactions. For example, the current planting approach is to place plants a specified distance apart in order to minimize competition. However, recent work suggests that interactions among plants and mussels may increase restoration success and resilience (Angelini et al, 2016, Silliman et al, 2015). Planting the plants closer together or with mussels may improve survival, growth and overall resilience. As these restoration

projects progress, matching research opportunities into restoration practices could benefit future efforts.

Furthermore, to ensure sustainable, long-term data collection over time, the Army Corps can tap into the region's robust academic network of researchers, students and citizen scientists to assist in the implementation of monitoring. The Institute would be pleased to play a coordinating role for such an effort both within Jamaica Bay and beyond.

Systems Approach to Restoration and Resilience

The Institute is committed to not only restoring the ecological health of Jamaica Bay, but also helping transform it into a resilient one. While the plan is regional in scale, drawing from well-established regional goals, each project site appears somewhat isolated from one another, and independent of its surrounding landscape, contrary to established processes in environmental systems. Therefore, we recommend that, as the sites are further developed and refined, they be thought of as a suite of reinforcing and complementary efforts with shared, dependent systems and conditions. This is significant for several reasons:

Sediment

There are varying opinions within the research community as to the nature of sediment supply into and out of Jamaica Bay. Lack of sediment in the Bay may be one factor in the loss of marshes Islands (but other factors are at play as well. What we do know is that sediment inputs to the Bay have been greatly reduced due to the loss of upland sediment due to urbanization. For wetlands to be sustainable in the long-run, there will be a need to continual source of sediment. The Atoll Marsh Terrace is a great example of how designing with nature may be able to reduce future renourishment. However, even the Atoll Marsh Terrace strategy needs to be perpetually maintained with new sediment, or it may risk becoming a sediment "magnet" that pulls sediment away from other marshes in the Bay. Creatively thinking about system-wide ways to increase sediment inputs (such as redistribution of sediment or sedimentary processes within the estuary) would have a benefit to multiple restoration projects simultaneously.

Water Quality

The limited project boundaries also restrict the broader potential for water quality benefits. To truly take a watershed scale approach, controlling water further into the watershed at the upland source could help improve conditions at the restoration sites. This could also reduce complications related to managing outfalls and contaminants on site at the restoration location. Continued support and coordination with NYC Department of Environmental

Protection's green infrastructure program and the approaches therein could help marry these goals beyond the individual site scale.

Sea level rise impacts

In the planning of each site, the designs should be forward looking about the potential impacts that sea level rise may have in the short and long term. Preemptive adaptation planning, such working with communities to consider marsh migration pathways, where appropriate, would provide a roadmap for future adaptive management actions to take place not only within the site boundaries, but beyond them. The availability of adjacent land along does not on its own lead to marsh migration, and it would require careful planning for hydrology, tidal channel networks, and connectivity to be successful.

Cost of Restoration

The costs for restoration described in the Feasibility Study are high. In order to maximize restoration in the region, and be competitive with nationwide allocation of Congressional appropriations, innovative strategies are necessary to make the funds go further. One area for research and innovation is to explore partnerships with communities (e.g. the restoration of Rulers Bar), less expensive, innovative techniques for managing site elevations, or partnering with research entities to conduct ongoing monitoring reduce the overall project cost.

Social Resilience and Project Implementation

The Institute applauds the engagement and robust participation that has gotten this Study to where it is today. As the plan moves toward design and implementation phases, we encourage an even more sustained, citizen-focused form of engagement as a way to build resilience through changes in both behavior and policy. More sustained forms of engagement can bring citizen ideas and concerns more productively into the planning process, offer opportunities to play critical data-gathering roles, and create a sense of stewardship. Furthermore, we believe that the deliberation that can occur most powerfully in systems of sustained engagement may be the best hope for addressing pervasive problems like climate change.

At a minimum, extensive outreach conducted equitably through the region and using a range of accessible engagement strategies (in person, digital, traditional media) would give a more comprehensive understanding of community concerns to be prioritized and addressed. Discussions with affected communities about the design and construction implications of the plan, the risk reduction and public access enhancement implications should be prioritized. Additionally, any outreach should consider the demographic

characteristics of the neighborhood (such as language access, accessibility for elderly and disabled, etc.) to ensure broad community participation. We strongly encourage the Army Corps to improve its own website and standard communication processes to make sure that all materials are easily searchable, accessible to a general audience, and well distributed in advance of any meetings or decision-points.

As the Institute builds up its capacity to undertake sustained engagement programming in the Bay, we look forward to partnership opportunities with the Corps to allow for community dialogue and deliberation of each project with a wide, diverse audience.

Section-specific comments:

- **Section 2.2.1.3 – Vegetation.** This section states that one type of Ulva, sea lettuce (*Ulva latuca*), dominates. In fact, there are multiple species of Ulva living in Jamaica Bay (Wallace and Gobler 2015, and Annesia Lamb's dissertation work at CUNY). The prevalence of multiple ulva species may lead to different management implications.

- **Section 2.2.1.5 – Essential Fish Habitat.** While the overall approach to restoration supports fish populations, the Essential Fish Habitat section contains numerous inaccuracies based on current research of the fish populations in the harbor and estuary. Among the 23 species listed, the only species that would really benefit from habitat protection and restoration, in that it spawns and lives in the harbor, is the winter flounder. Most of the listed species have coastwide populations that bulge into the harbor as juveniles or adults. Examples include black sea bass, scup, Atlantic mackerel, and Atlantic herring. However, the latter two, among others are pelagic, living up in the water column, and bottom habitat condition is not of major significance to them. Additionally, some of the species listed have already retreated northward because of climate change. For example, silver hake (included in species descriptions) are rarely seen in NY any more but they are still numerous in the Gulf of Maine. Windowpane flounder are also moving northward. Finally, there are a number of highly inappropriate species such as cobia and king mackerel. Both are southern, pelagic, open ocean species that almost never show up in harbor waters. The sharks do not have a larval stage. Atlantic salmon (in species descriptions) do not spawn in the Hudson or anywhere near it, except for an individual caught around New York every few decades. Exceedingly rare straying does not constitute essential fish habitat.

- **Section 3.10.1:** There is a reference to a Table 3- 11 as showing the metrics used to estimate ecosystem benefits for each TEC. However, there is no Table 3 - 11; we believe it should refer to Table 3 - 5.

- **Section 4.5.1.2 - Jamaica Bay Marsh Island Restoration.** The description of the Atoll Terrace at Duck Point inaccurately states that this will be an "offshore strategy." The footprint of the proposed terrace is within the 1974 aerial mapping of the wetlands. The following text is suggested as a replacement: "At the Duck Point marsh island site, the TSP would restore low and high marsh, and construct an offshore atoll terrace, within the footprint of the 1974 aerial mapping of the wetland marsh perimeter, based on recommendations by CUNY's City College of New York (CCNY) and the Rockefeller Foundation's Structures of Coastal Resilience (2015) research. The atoll terrace feature, a terrace with gradient slopes set at a slightly higher elevation than the high tide datum, will be stabilized with high marsh flora species. The atoll terrace serves as a sediment trap and "sand engine," harnessing natural processes of tidal current to improve sediment accretion and sustainability while promoting wave and turbidity attenuation. It will also decrease wind fetch length at the back bay, reducing coastal erosion."

- **Section 4.5.1.3 Oyster Restoration.** Oyster Restoration at Head of Bay has only recently been installed, and it remains unclear whether the approach used (shell and porcelain substrate), location and hydrology will be successful. An evaluation of the current Head of Bay should be conducted before expanding oyster restoration in this area.

References

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Silliman, B.R., E. Schrack, Q. He, R. Cope, A. Santoni, T. van der Heide, R. Jacobi, M. Jacobi, and J. van de Koppel. 2015. Facilitation shifts paradigms and can amplify coastal restoration efforts. *Proceedings of the National Academy of Sciences of the United States of America* 112: 14295–14300.

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Acknowledgements

This document was developed through the input of the following Institute-affiliated researchers and Institutes staff: Helen Cheng, Science and Resilience Institute/NY Sea Grant; Jennifer Cherrier, Brooklyn College; Jessica Fain, Science and Resilience Institute at Jamaica Bay; Peter Groffman, CUNY; Philip Orton, Stevens Institute of Technology; Adam Parris, Science and Resilience Institute at Jamaica Bay; Eric Sanderson, Wildlife Conservation Society; Catherine Seavitt Nordenson, City College of New York/Catherine Seavitt Studio; Chester Zarnoch, Baruch College.

Community Representatives

Friends and Residents Of Greater Gowanus

April 3, 2017

Ms. Lisa Baron
Project Manager
New York District Corps of Engineers
Attn: CENAN-PP-C
26 Federal Plaza
New York, NY 10278

lisa.a.baron@usace.army.mil

via email to: HRE_FREA_Comments@usace.army.mil

Dear Ms. Baron,

Dear Ms. Baron,
Friends and Residents Of Greater Gowanus, thank you and your colleague,Lynn Rakos, for taking the time to meet with our community these past two months regarding potential restoration work in the Gowanus Canal. It has been fifteen years since the Army Corp first came to our community to discuss the existing benthic habit and potential for restoration. Now, it seems, this is a real possibility. The Federal EPA plans to address the contaminated sludge, circulating coal tar remnants, and the excessive sewage flow. There is hope for Gowanus! We look forward to the time when this inlet no longer imposes toxins on our community and will contribute to the health of the harbor; and we are hopeful, a healthier harbor will contribute to the restoration of the canal.

We are submitting this letter as a statement of support for the proposed restoration projects currently being reviewed as part of the Hudson-Raritan Estuary Restoration plan. We understand that at this time there are no specific projects for Gowanus but wish to affirm our support for the restoration projects defined to date. We believe that all of these projects will benefit our community and the waters of the Gowanus Canal. We know from statements issued by the EPA that the best attainable water standards for the Gowanus are limited by the water quality of the harbor. Please accept this letter in support of the 33 sites recommended for construction in the 2017 HRE Regional Plan.

Sincerely,
Linda Mariano
Marlene Donnelly
Mark Karwowski
(Officers)

Brian Sandilands
15-23 parmelee Ave
Fair Lawn, NJ 07410
bsandinj@gmail.com

Comments on HRE Report:

Expansion of Newark Bay, Hackensack River, and Passaic River Planning Region.

- Region should include upper stretches of Passaic, Pompton, and Ramapo Rivers as riparian buffers are needed to offset runoff from development, making floods worse down the course of the river system.

- Region should include upper stretches of Passaic, Pompton, and Ramapo Rivers as treated water is released into it from municipalities/government organizations along the river. Understanding of water quality and characteristics needs holistic approach. Superfund sites in this expanded territory would create greater understanding of regions water table/drainage basin.

Expansion of Target Ecosystem Characteristics (TECs) framework.

- The TECs list is a sound strategy and sets good bar for current goals.
- It should be taken into consideration that the redevelopment and remediation of sites listed should be more multi-function/hybrid in land use. The following points of reflection upon the urban environment should be incorporated into this framework. To not separate the environmental TECs from the following urban TECs should push for a situation where development has to minimize impact on the environment.

    - Restoration of marshland is very beneficial but this is a region that is densely populated and land is scarce. Residential, commercial, industrial, energy production, and transit development are going to need to be getting more dense in future.

    - The site/plan for Branch Brook Park should be lowest priority, this is resources that could be used elsewhere on river.

    - The site/plan for riverfront park in Passaic and site closer to Dundee Dam should move forward with a different plan in mind that is more hybrid with respect to land use.
    - Dundee Dam should produce hydroelectric power.

    - If dredging the lower Passaic so it is navigable by significant vessels again is not an option [because it will release contaminants buried under sediment] then energy generating tidal turbines should be explored as an option in these reaches of the river.

    - The environmental restoration vision is admirable but it will be most beneficial to allow for these sites to be more interwoven into the fabric of the urbanism. To achieve both this admirable environmental vision *and* successful moments of urban planning would be desirable. The practice of having municipalities, urban planners, businesses, etc. achieve this hybridity would have many positive externalities.

The above points should all be seen as characteristics of some of these sites along with the more natural ecosystem points. There should be a public discussion of the process of defining the uses of these lands.

The plan to build a massive diversion tunnel of water from flood-prone areas where the Passaic meets the Pompton should not come to fruition.

- There is significant risk of devaluing real estate of properties which this could damage in construction and so on.

Testing of water quality should be more frequent and more evident and visually communicated to public.

- There should be a system set up, or elements of the build environment erected, that would communicate fluctuations and severities of water quality.
- There should be more studies of the sediments in the river, especially the Lower Passaic, than are currently planned.

Friends of the Earth-NY, c/o Gabel, 72 Jane St., NY NY 10014, 212-243-1022
Clean Air Campaign Inc. Open Rivers Project, 307 7th Ave., NY NY 10001, 212/582-2578

April 28, 2017

Colonel David A. Caldwell, Commander and District Engineer
Lisa Baron, Project Manager
Stephan A. Ryba, Chief, Regulatory Branch
U.S. Army Corps of Engineers, New York District
26 Federal Plaza
New York NY 10278

By email to:
HRE_FREA_Comments@usace.army.mil

Re: Comments on Army Corps New York District's Draft FONSI and Feb. 2017 Draft Integrated Feasibility Report and Environmental Assessment (Draft FR/EA) for the Feb. 2017 Hudson-Raritan Estuary (HRE) Ecosystem Restoration Feasibility Study

Dear Colonel Caldwell, Ms. Baron, and Mr. Ryba,

Friends of the Earth-NY (FoE) and Clean Air Campaign Inc. (CAC) and its Open Rivers Project urge the Corps to change its priorities, and focus on keeping all possible kinds of dredged and fill material and other pollutants **out of the water**, instead of promoting so-called "ecosystem restoration" projects that put habitat-threatening projects **into** the water.

We call on the Corps to put the preservation and protection of existing, naturally occurring aquatic habitats first, rather than trying to "restore" habitats that once were degraded or destroyed--but at inappropriate new locations. The short way to put this is "protection must come first."

The Corps' New York District ("the Corps" below) is accepting public comments through May 1, 2017 on its Feb. 2017 Draft Integrated Feasibility Report and Environmental Assessment (Draft FR/EA) for the Feb. 2017 Hudson-Raritan Estuary (HRE) Ecosystem Restoration Feasibility Study. The Corps prepared the latter document along with the Port Authority of NY & NJ and other regulated entities and federally-funded partners, including but not limited to the fairly recently privatized NY-NJ Harbor Estuary Program (HEP).

FoE and CAC strongly **oppose the Corps' proposal to issue a Finding of No Significant Impact (FONSI)** for the enormous Draft FR/EA document (hundreds of pages long), because the HRE Ecosystem Restoration Feasibility Study and the Corps' "Tentatively Selected Plan" ("TSP") would have significant adverse impacts on coastal fisheries and other living marine resources if they were implemented as planned. Furthermore, there are **far better practicable alternatives** for achieving all of the Corps' goals that are appropriate.

In addition, many of the new in-water projects the Corps is proposing would also **make human beings less safe** in such severe storms as Superstorm Sandy, because some of the in-water fills and structures the "Ecosystem Restoration" plan promotes are designed attract people out to newly built projects in offshore Hurricane Evacuation Zones.

The world has changed since the 2009-2014 CRPs. The HRE Ecosystem Restoration

Feasibility Study and the Corps' "Tentatively Selected Plan" ("TSP") indicate that they are building on the Corps' 2009 Comprehensive Restoration Plan (CRP). Among the documents the Corps posted on its website in February, March and April 2017 are a 2014 Executive Summary of the Corps' and its partners' Hudson-Raritan Estuary Comprehensive Restoration Plan (CRP). During the 2009-2014 period, the CRP's authors may have believed they had virtually unlimited taxpayer dollars at their disposal to squander on habitat-altering and habitat-destroying in-water projects. We hope that such lavish funding for ineffective or harmful habitat-threatening in-water projects will begin to dry up under the Trump Administration and in the current Congress.

The nearshore waters in the lower Hudson-Raritan Estuary are a national treasure. Furthermore, Mother Nature continues to provide prime, irreplaceable Hudson River habitats for coastal fisheries **at no charge**. Safeguarding the physical integrity of these habitats while keeping conventional pollutants out of their waters is essential for sustaining fisheries from Canada to the Carolinas all along the Atlantic Coast.

A few points. Foe and CAC have submitted extensive comment letters to the Corps detailing problems with previous CRPs, and criticizing scores of proposals to build out into the lower Hudson River and other nearshore waters. Our comment letters have also always included relevant information on the "practicable alternatives" the Corps is required to consider in a serious and responsible way under the Clean Water Act and other bedrock federal environmental laws.

Since the Corps did not even see fit to send our organizations notices about the 2017 HRE Ecosystem Restoration Feasibility Study and TSP, much less adequately reflect our previous comments in these 2017 plans, we will only repeat a few general points and make a few new points in this comment letter.

1. The TSP proposes to start by building roughly **$641 million worth of projects** at 33 sites in eight planning regions throughout the estuary. These eight regions include the "Lower Hudson River" planning region, among others. Mercifully, the first 33 ($641 million worth) "restoration" projects in the draft plan do not yet include any in the environmentally critical 490-acre habitat in the "Hudson River Park Trust" (HRPT) project area in the lower Hudson River off Manhattan. (2017 HRE Ecosystem Restoration Feasibility Study/Draft Integrated Feasibility Report & Environmental Assesment, hereinafter "ER Report", pp. 44-45 and Appendix L.)

However, this doesn't allay FoE's and CAC's concerns that "ecosystem restoration," "public access," "resiliency," "sustainability," "eco-park" and/or other so-called "nature-based" projects will be eventually be included in the overall piecemealed effort under way to turn the lower Hudson River into real estate for non-water-dependent uses. One reason for this concern: the Corps also posted on its website in connection with the 2017 ER Report a 2009-2014 Progress Report "Toward Restoration of the New York-New Jersey Harbor Estuary" by the NY-NJ Harbor & Estuary Program et al.

The latter Progress Report cited on p. 9 (p. 13 pdf) HRPT's (and others') "New York City Pier Restoration" project, and gave the "Status" of that "550-acre park" project as "On-Going." (The "550-acre park" cited includes 60 acres of upland along the lower Hudson River's shoreline below W. 59th Street--what we call the real park--along with 490 acres of critical habitat **in the waters of the Hudson River itself** out to the U.S. Pierhead Line offshore.)

Building in and over this environmentally critical habitat of extraordinary national importance in the lower Hudson River needs to be brought to an end.

2. **The Orwellian language** mentioned above is the tip of the iceberg as far as benign-sounding names for habitat-destroying in-water projects go. The Corps cannot meet its National Environmental Policy Act (NEPA), Clean Water Act, Endangered Species Act, or other responsibilities until Corps documents start using clearer, more honest and direct language to describe what is actually being proposed.

3. **Aquatic habitats are not fungible** (the way dollars and cents are), and location matters--especially for fish migration.

So using dredged material as fill and planting spartina in that fill to build "more" so-called wetland restoration projects in the open waters of the lower Hudson River off Manhattan in 2017 (for example) cannot possibly serve the same functions that tidal wetlands in Jamaica Bay once allegedly served in the 1600's. "More" in this context isn't better. "More" in this context is usually worse.

4. **Mother Nature does it best**.

Mother Nature creates and adapts natural systems better over time than human engineers do. Natural systems in the NY-NJ Harbor & Estuary have often had centuries or milleniums of experimentation by Mother Nature to get things right. Even well-intentioned engineers and scientists cannot replicate natural systems that they do not begin to adequately understand.

We would be happy to provide more information on request.

Sincerely,

Bunny Gabel, New York Representative, Friends of the Earth
Marcy Benstock, Executive Director, Clean Air Campaign Inc. and Open River Project

Private Entities

EVERGREEN ENVIRONMENTAL

April 24, 2017

Lisa.a.baron@usace.army.mil

HRE_FREA_Comments@usace.army.mil

Re: Evergreen Environmental, LLC – Comments
Hudson Raritan Estuary Ecosystem Restoration Draft Integrated Feasibility Report & Environmental Assessment, February 2017. Prepared by the New York District, North Atlantic Division, U.S. Army Corps of Engineers.

To Whom It May Concern:

Evergreen Environmental, LLC supports the HRE Ecosystem Restoration Initiative and has followed the progress of this study for many years. We look forward to implementation and as a mitigation banking entity look forward to contributing wetland and aquatic habitat restoration consistent with HRE goals and objectives.

The costs associated with this effort are significant. Does the Corps believe these costs to be accurate, reasonable and justified?

Is it correct that for many proposed restoration sites the costs do not include land costs?

Does contaminated sediment removal and capping with clean material improve aquatic ecosystem resources and generate functional uplift?

Does the New York District approve and endorse the EPW method to determine functional uplift? Is this method adopted by the New York District?

Meadowlark Marsh Wetland Restoration Site - Bergen County
HRE cost estimates range between $42M to $64M. It appears the project enhances 80 acres of marsh at a cost of $525K - $800K per acre (excluding land cost, etc.). Please confirm this is the estimated unit cost. We note that if this were a mitigation site or bank where it often requires three acres of restoration to mitigate for one acre of impact (a 3:1 ratio) this effort would generate enough wetland mitigation to compensate for 26.7 acres of permitted impact often called mitigation credits. Based on the gross cost estimate, credit generation costs would range from $1.6M to $2.4M per credit again not including land or carrying costs. Please confirm.

Metro Media Wetland Restoration Site – Bergen County
The HRE cost estimates range between $32.5M to $49.8M. It appears the project enhances 58.2 acres of marsh at a cost of $558K - $856K per acre. At a 3:1 ratio this would generate 19.4 mitigation mitigation credits. Based on the gross cost estimate, credit generation costs would range from $1.7M to $2.6M per credit again not including land costs or carrying costs typical to a mitigation bank. Please confirm.

The proposed clean cap at Metro Media is 6 inches thick. Many agency members on the mitigation bank IRT's recommend or require thicker caps as thick as 2 feet. What is the rationale for a 6 inch cap? Why is Regulatory not consistent with Planning on this critical component of wetland restoration in urban estuaries affected by contaminated sediments and invasive species?

The biggest impediment to wetland restoration in the HRE is contamination. It seems the HRE Feasibility Study tries to avoid this topic, assumes a site is clean, or makes it the local sponsor's responsibility. The fact is no wetland restoration will be implemented in the HRE if this topic is not addressed. Calling a 6-inch cap a "growing medium" is a fig leaf covering the fact the cap is really about contamination containment especially when the wetland plants of the marshes of the region do not require an imported growing medium and thrive in native medium, even with elevated contaminant levels. The correlation between contaminated sediments and clean water and the Clean Water Act, the foundation of EPA and Corps authority over waters of the U.S. including wetlands, is undeniable. The HRE should address this issue directly and set an example for Regulatory, who by their own admission cannot quantify the ecological uplift value of contaminant removal from wetlands in an objective manner (Corps letter of 8/11/16).

The HRE CRP states: *In the HRE study area, mitigation banks are uniquely positioned to provide programmatic benefits for the CRP. Mitigation banks offer opportunities for interagency collaboration during the project-planning phase; agencies work together to develop standardized functional assessment and sampling methodologies as well as standardized measures of restoration success.*

Question: Why are there only three mitigation banks in the HRE, of which one is still pending? Why are there only 6 federally approved mitigation banks in the entire New York District? Many banks have been proposed in the New York District but met significant resistance over many years of consultation. The New York District lags behind many other Districts where mitigation banking is a major component of watershed restoration such as Norfolk with 295, Baltimore with 27, Buffalo with 29 and Wilmington with 612. The New York District Planning and Regulatory branches do not seem to support the same watershed objectives espoused in the HRE and mitigation banking is at a standstill with no new mitigation banks implemented since 2012. Is mitigation banking a programmatic benefit to the HRE mission?

Should you have any questions, please feel free to contact me at 973/305-0643 or mrenna@evergreenenv.com.

Sincerely,
EVERGREEN ENVIRONMENTAL, LLC

Mark Renna
President

Public Information Meetings

Sign-In Sheets and Comments Received

6 April 2017 (National Museum of the American Indian)

19 April 2017 (Hackensack Meadowlands Environmental Center)

25 April 2017 (Ryan Center, Floyd Bennett Field)

1:00-3:00 PM

6:00-8:00 PM

6 APR 17
1:00PM

THE PORT AUTHORITY OF NY & NJ

NJSEA NEW JERSEY SPORTS & EXPOSITION AUTHORITY

NYC Parks

NYC Environmental Protection

the WATERS we SHARE

Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study
Draft Integrated Feasibility Report & Environmental Assessment
Public Information Meeting
April 2017

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6APR17
1:00PM

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NYC Parks

Environmental Protection

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Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study
Draft Integrated Feasibility Report & Environmental Assessment
Public Information Meeting
April 2017

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Noreen Doyle	HRPT	ndoyle@hrpt.ny.gov

6 APR 17
1:00 pm

THE PORT AUTHORITY OF NY & NJ

NYC Parks

NYC Environmental Protection

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Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study
Draft Integrated Feasibility Report & Environmental Assessment
Public Information Meeting
April 2017

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Alice Chapman	e4sciences	alice.chapman@e4sciences.com
Steven Yafet	Sierra Club	syafet@gmail.com

6APR17
1:00PM

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NYC Parks

NYC Environmental Protection

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Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study
Draft Integrated Feasibility Report & Environmental Assessment
Public Information Meeting
April 2017

Name	Community/Agency (if applicable)	Email
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Bhavin Gandhi	AECOM	Bhavin.gandhi@aecom.com
Michelle Luebke	Bronx River Alliance	michelle.luebke@parks.nyc.gov

6APR17
6:00pm

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Name	Community/Agency (if applicable)	Email
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SARAH NEILSON	DPR	> sarah.neilson@parks.nyc.gov

19 April 1-3 pm
6-8 pm

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Name	Community/Agency (if applicable)	Email
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25 Apr 17

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April 2017 1:00-3:00pm
6:00-8:00pm

Name	Community/Agency (if applicable)	Email
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6 April 17

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COMMENTS

Hudson-Raritan Estuary Ecosystem Restoration Feasibility Study
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Public Information Meeting
April 2017

COMMENT FROM: Carolyn Gibson

ADDRESS: 1 West Street #2344 NY NY 10004

AFFILIATION: Private citizen

COMMENT SUBJECT: Oyster Restoration in closed waters of HRE

What are the plans for oyster restoration in the HRE in areas designated as "closed" to both commercial and recreational shellfish harvest? The NJDEP recently prohibited research and restoration activities related to shellfish in closed areas, including most of the HRE, without additional precaution. If this remains the policy, then how can oyster restoration adequately proceed in the region? I recommend a risk assessment or some additional study/information that lets the public know that restoration will occur using site-specific information and evaluation. ~~Public access and visibility of oyster reefs~~

19 Apr 17

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April 2017

COMMENT FROM: HARVEY MORGENSTN

ADDRESS: 56 HYDE ROAD
BLOOMFIELD NJ 07003

AFFILIATION: PASSAIC RIVER BOAT CLUB

COMMENT SUBJECT: PUBLIC ACCESS
LOWER PASSIC RIVER, NEWARK BAY AREA

PLEASE CONSIDER USING A SMALL PORTION OF THESE MILLIONS OF DOLLARS FOR PLANT RESTORATION TO CONSTRUCT SEVERAL TRAILER BOAT RAMPS. THIS ACTION WILL BRING BOATERS TO THE AREA AND PROVIDE MORE SUPPORT FOR IMPROVEMENT PROJECTS.