UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 2
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October 12, 2021

Mr. Peter R. Blum, P.E.
U.S. Army Corps of Engineers
Philadelphia District
Wanamaker Building
100 Penn Square East
Philadelphia, PA 19107

Re: New Jersey Back Bays Coastal Storm Risk Management Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement

Dear Mr. Blum:

The U.S. Environmental Protection Agency (EPA) has conducted a review of the U.S. Army Corps of Engineer's (USACE) Coastal Storm Risk Management Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement (IFR/EIS) for the New Jersey Back Bays project. This review was conducted in accordance with the National Environmental Policy Act (NEPA), the Council on Environmental Quality (CEQ) regulations (40 CFR Parts 1500 - 1508), and Section 309 of the Clean Air Act. EPA understands that the purpose of the study is to evaluate coastal storm risk and recommend a project for implementation that would reduce that risk from future storms and compounding impacts of sea level change throughout the Study Area.

As part of the study, the USACE identified flood risk areas, evaluated comprehensive coastal storm risk management measures, and developed an array of alternatives including the no action plan and various combinations of structural and nonstructural measures to reduce coastal flood risk. The Preferred Alternative, or Tentatively Selected Plan (TSP) was selected based on a number of decision criteria including net National Economic Development (NED) benefits, environmental acceptability, residual risk, long-term performance and sea level change adaptability. In particular, the TSP proposes:

- Three storm surge barriers (SSB) or inlet closures at Manasquan Inlet, Barnegat Inlet, and Great Egg Harbor Inlet;
- Two cross-bay barriers (CBB) at Absecon Boulevard, and southern Ocean City;
- Perimeter measures including floodwalls, levees and seawalls which tie storm surge and cross-bay barriers into adjacent higher ground; and
- Nonstructural solutions such as elevation and floodproofing of 18,800 structures in the Shark River region and in Ocean, Atlantic and Cape May Counties.

At this stage USACE acknowledges that the TSP could have adverse impacts on aquatic and other resources, though additional studies are necessary to determine precise engineering components and associated impacts. Based on the current level of analysis, the project is expected to directly affect over 153 acres of aquatic habitat. It is anticipated that 170 to 256 acres of mitigation will be required to compensate for project-related impacts to the aquatic environment.

Based on our review of the draft IFR/EIS, EPA has several areas of concern. We have enclosed detailed technical comments and recommendations for your consideration.

Thank you for the opportunity to provide comments on the draft IFR/EIS. EPA looks forward to the receipt and review of additional information in the final IFR/EIS.

Should you have any questions or wish to discuss our concerns, please contact Samantha Nyer at (212) 637-3666 or nyer.samantha@epa.gov.

Sincerely,

Mark Austin

Mark Austin, Team Leader
Environmental Review Team

Detailed Technical Comments on New Jersey Back Bays Coastal Storm Risk Management Draft Integrated Feasibility Report and Tier 1 Environmental Impact Statement

General Comments:

- EPA recognizes that the draft IFR/EIS does not include the same level of detail as a project-specific environmental review. Nonetheless, there is a need to thoroughly review all of the potential environmental and related social and economic effects of the proposed action. Additional analyses to determine the changes in hydrology and sediment transport capacity of waters; the potential for headward and downstream erosion; decreases in water quality both upstream and downstream; and disruption of hydrological and ecological connectivity is needed. This fundamental information is vital for the lead agency to make an informed project decision.

- Additionally, given the expansive extent of the project and the linear nature of the affected region, interconnections and interactions between the structural solutions implemented and the potential for a cascade of synergistic adverse impacts should be thoroughly evaluated.

- Given the project's potential significant impacts and the varying degrees of uncertainty associated with modeling constraints, EPA recommends the development and incorporation of a Monitoring and Adaptive Management Plan following implementation of the proposed action. Such a plan should include details about monitoring goals and objectives, monitoring thresholds and information on how monitoring efforts may direct or trigger management decisions.

- A clear comparison of the impacts associated with the alternatives for various resource areas should be provided to aid in the evaluation of the TSP. For clarity and accessibility, this could be provided in the form of a table.

- The current Adaptive Hydraulics (AdH) Model and Particle Tracking Model (PTM) applied to inform impacts has been conducted primarily with a "gates open" scenario. While we acknowledge this to be the expected condition for the majority of time, conducting the analysis with numerous gates closed scenarios is necessary to comprehensively evaluate the impacts associated with the TSP. EPA recommends the Corps attempt to include this information in the final IFR/EIS rather than in a Tier 2 document.

Further suggestions for incorporation in the final IFR/EIS are indicated below.

Water Quality:

- The Clean Water Act 404(b)(1) Guidelines (Guidelines) state that a permit cannot be issued if a practicable alternative exists that would have less adverse impact on the aquatic ecosystem (known as the Least Environmentally Damaging Practicable Alternative (LEDPA)), provided that the LEDPA does not have other significant adverse environmental consequences to other natural ecosystem components. Practicable alternatives include activities which do not involve a discharge of dredged or fill material into the waters of the United States or ocean waters. Additionally, where a discharge is proposed for a special aquatic site (such as wetlands, mud flats, vegetated shallows etc), all practicable alternatives to the proposed discharge which do not involve a discharge into a special aquatic site are presumed to have less adverse impact. In the case of the TSP, an alternative plan that does not involve discharges into waters of the U.S., the nonstructural-only plan represented in Figure ES-3, has been identified. For this reason, we are

not supportive of large-scale structural elements to increase resilience and reduce coastal storm risk as inclusion of these elements has not been supported as the LEDPA. Additionally, the draft IFR/EIS makes it clear that indirect impacts, considered secondary effects in the Guidelines, of such a project are not well understood. The draft IFR/EIS goes as far as to identify SSBs and CBBs as environmental "high risks" for implementation based on the uncertainties of indirect impacts on aquatic ecosystems, high direct impacts, potentially extensive compensatory mitigation, and complex regulatory reviews.

Additionally, as is consistent with Corps Regulatory Guidance Letter number 18-01, the federal government supports compensatory mitigation credit generation through structure removal for the associated improvements in aquatic resource physical, chemical, and biological processes. The Army Corps of Engineers has also agreed to rework it's Miami-Dade County Back Bay Coastal Storm Rick Management Feasibility Study after stakeholders urged the Corps to incorporate more nature-based solutions and less structural solutions into its plan. The Corps should be taking a consistent national approach in limiting structural solutions to climate and storm resilience.

The TSP has not been supported as the LEDPA in the current tier of project analysis. EPA recommends maximum utilization of nature-based solutions and encourages use of non-structural and perimeter measures as opposed to large-scale structural elements. This will aid in identification of the LEDPA and avoidance and minimization of both direct and indirect impacts to waters of the U.S.

- We believe that the IFR/EIS needs to better address the risks and benefits associated with the TSP. Specifically, throughout the document the risk of sea-level change was consistently cited when discussing the TSP. The TSP, particularly in regard to its structural components, is designed to reduce impacts from storm surges during extreme coastal storm events. However, it would do little to address the impacts of sea-level change to the bay's surrounding communities or it's environment. (As stated in the document, the TSP assumes barrier closures once every five years, on average.) While barrier closures during extreme events may become more frequent with sea-level change, the barriers as designed, would have no effect on sea-level change itself. In evaluating the TSP the draft IFR/EIS should better document the risk of extreme storm events to the project area and how the TSP would mitigate against damages caused by these events. It should also re-examine the ongoing risks of sea-level change under the conditions of the TSP.

- As you are aware, pursuant to Section 320 of the Clean Water Act (33 U.S.C. 1330; as amended by P.L. 100-4 *et seq.*), the Barnegat Bay-Little Egg Habor was established as an estuary of national significance. The Barnegat Bay Partnership (BBP), which comprises federal, state, and local government agencies, academic institutions, nongovernmental organizations, and businesses working together to restore and protect the Bay, recently revised its Comprehensive Conservation and Management Plan (CCMP) for Barnegat Bay-Little Egg Harbor Estuary (January, 2021). The CCMP identifies the following goals, all of which are meant to be considered/achieved in consideration of sea level rise, and includes objectives towards achievement of these goals:
  • **Water Quality** – To protect and improve water quality throughout Barnegat Bay and its watershed by reducing the causes of water quality degradation to achieve swimmable, fishable, and drinkable water, and to support aquatic life.

• **Water Supply** – To ensure adequate water supplies and flow in the Barnegat Bay watershed for ecological and human communities now and in the future.
• **Living Resources** – To protect, restore, and enhance habitats in the Barnegat Bay and its watershed as well as ensure healthy and sustainable natural communities of plants and animals both now and in the future.
• **Land Use** – To improve and sustain collaborative regional approaches to responsible land use planning and open space preservation in the watershed that protect and improve soil function(s), water quality, water supply, and living resources

Thank you for incorporating information pertaining to the BBP and CCMP in the draft IFR/EIS (Section 4.8.2.1.8).

- The draft IFR/EIS states that the TSP is based upon detailed analyses but represents a step in the phased, iterative planning process and that additional more detailed analyses will be performed going forward in the NJBB CSRM Study. As a BBP partner, we hope that the Corps will keep in mind the CCMP goals and assure that the activities proposed will not affect achievement of those goals.

- The draft IFR/EIS admits in various places that impacts of the TSP (both direct and indirect) remains to be assessed, including "except for current structural alignments where direct footprint impacts can be assessed on the various habitats affected, indirect impacts such as on water quality and aquatic life can only be assessed at this level with existing physical modeling. Therefore, only general impacts and/or a range of impacts utilizing existing information have been identified at this stage of the NJBB CSRM feasibility study and associated NEPA analysis, which will continue into a Tier 2 level during the Preconstruction, Engineering and Design (PED) phase. In the Tier 2 EIS, subsequent refinements in structural design features, detailed physical and biological modeling, and the practice of avoiding and minimizing impacts with design refinements and appropriate compensatory mitigation will further inform the environmental risk level with a goal of reducing the environmental risks to a lower level than is currently identified." We question how the Corps can evaluate the TSP in light of CCMP goals and assure that the TSP will assist in achieving, rather than negatively impacting, the CCMP goals without detailed information regarding potential impacts. It would seem that maximum utilization of nature-based solutions and non-structural and perimeter measures, as opposed to large-scale structural elements, would better help us achieve our CCMP goals.

- Additionally, portions of Barnegat Bay and other bodies of water within the study area are classified as "impaired" based on water quality indicators. Eutrophication impacts are known to be directly related to a water body's flushing and residence time. As modeling efforts indicate the flushing time and residence time (particularly in Barnegat Bay) was shown to be negatively impacted by the implementation of the TSP, this may cause further deterioration of water quality in these vulnerable regions. EPA recommends that the direct impacts to water quality associated with these structural solutions should be more adequately discussed in the final IFR/EIS.

- The study area is subject to historical losses of wetlands from human development, coastal erosion, and sea level rise. Barriers that block natural wetland migration paths will likely contribute to wetland loss. The final EIS should more comprehensively characterize the compounding impacts associated with loss of wetlands due to the implementation of the TSP (or other alternatives) and should include projected losses due to sea level rise. EPA notes the need for jurisdictional wetland delineation at a later date.

- The draft IFR/EIS states that the TSP will affect 153 acres of aquatic habitats, which includes about 60 acres of subtidal soft-bottom habitats, about two acres of intertidal mud/sand flats, about nine acres of intertidal sandy beach, and 73 acres of low and high saltmarshes. The remaining 10 acres are adjacent scrub-shrub and other supratidal wetlands. EPA supports the Corps commitment to conducting detailed surveys to characterize these regions more accurately. We further recommend that that the IFR/EIS be modified to include a table documenting the habitat loss in a regional context so that impacts to each portion of the study area are clear.

Air Quality:

- Conformity refers to the requirement that an agency of the federal government must take into account (*i.e.,* conform to) the provisions of the air pollution prevention and control program (*i.e.,* implementation plan) established by a state or tribe, when the federal agency proposes an action to occur within areas under state/tribal jurisdiction that are experiencing poor or vulnerable air quality. Such areas are either currently exceeding (*i.e.,* violating) the National Ambient Air Quality Standards (NAAQS), referred to as nonattainment areas, or have recently attained the standards after a period of nonattainment and the standards must now be maintained (*i.e.,* maintenance areas). The implementation plan is a collection of rules and regulations applicable within the nonattainment/maintenance areas which are intended to improve the air quality for the timely attainment of the NAAQS. The plan is legally enforceable on both the state and federal levels.

- Under the CAA section 176(c) conformity requirement, a federal agency must work with state, tribal and local air governments responsible for improving air quality. A federal action cannot go forward if the action's emissions would cause new violations of the NAAQS, increase the frequency or severity of existing violations, or delay attainment or interfere with milestones used to mark the progress of attaining or maintaining the NAAQS.

- Conformity applies to federal agencies taking actions that support transportation plans and non-transportation projects, where actions supporting non-transportation projects are referred to as "general" federal actions, hence, General Conformity. The regulations implementing the CAA conformity requirement for general federal actions are found at 40 CFR part 93 subpart B. Thus, the General Conformity regulations ensure that emissions caused by a general federal action proposed to occur within a nonattainment or maintenance area will conform to the provisions of the applicable implementation plan, which will assist the state or tribe in attaining the NAAQS in a timely manner.

- Federal agencies supporting projects that are planned to occur within either a nonattainment or maintenance area may be subject to the General Conformity regulations at 40 CFR part 93 subpart B. If otherwise subject to General Conformity, the agency would calculate the annual increase in annual emissions (*i.e.,* net emissions) of the criteria pollutant(s) that caused the area to be nonattainment (*i.e*, the relevant pollutants). Specifically, if the annual net increase in the relevant pollutant(s) caused by the action would equal or exceed the threshold rates in the tables under 40 CFR 93.153(b)(1) and (b)(2), the federal agency must prepare an analytical demonstration of conformity that shows the action will not cause new violations of the NAAQS in the nonattainment/maintenance area, will not make existing violations worse, and will not delay attainment of the NAAQS within the area, as required by the provisions of the applicable implementation plan. Based on the demonstration, the federal agency would be required to make

a positive finding (*i.e.*, determination) of conformity.

- As indicated in the draft IFR/EIS, the study area is currently part of the nonattainment area for both the 2008 and 2015 ozone NAAQS. Please note that the nonattainment classification under the 2008 ozone NAAQS is higher than under the 2015 ozone standard. Therefore, the General Conformity requirements are more stringent and take precedence over the requirements under the 2015 standard. Under the 2008 standard, Monmouth County is classified as serious and Atlantic, Burlington, Cape May and Ocean Counties are classified as marginal non-attainment areas.

Alternatives:

- We recommend that managed retreat be given more attention in the TSP. Managed retreat is a strategy that can mitigate against risks from both extreme coastal storm events and sea-level change. Measures to reduce building density in the most vulnerable sections of the study area have the potential to limit property damage in a cost-effective way and should be considered as a component of the plan. Additionally, under some circumstances, buffers established adjacent to the aquatic environment can enable the future migration of coastal wetlands in response to sea-level change. Without the consideration of managed retreat, the TSP cannot be supported as the LEDPA.

- EPA believes that natural and nature-based features should have received greater attention in the draft IFR/EIS. In particular, we believe that the establishment, enhancement and maintenance of coastal marshes in Barnegat Bay can provided enhanced protection against extreme coastal storm events and sea-level change. The IFR/EIS should consider opportunities to increase acreage and resilience through measures such as thin layer placement and reestablishment of marsh edge to maintain these wetlands over sea-level change and as a buffer against storm surges.

- We believe the non-structural component of the TSP, regarding the elevation and floodproofing of structures, is the component of the TSP with least adverse impacts to the aquatic environment. We recommend that non-structural measures be emphasized wherever possible.

- We recommend that the draft IFR/EIS consider the feasibility of establishing smaller flood gates within the most vulnerable reaches of the bay as an alternative to full bay closure.

- Section 6 (Future Without Project Condition) should be revised to remove references to impacts associated with sea-level change where they are not likely to be affected by the TSP. As written, many of the impacts associated with sea-level change described in this section would occur with or without the project.

- Section 6.4 (Environmental Without Project Condition) should also be revised to reflect the risk of sea-level change under the TSP. Closures may protect exposed wetlands during sever storm events. However, sea-level change will continue to remain a risk to the aquatic environment with the TSP.

Mitigation

- EPA recommends the final IFR/EIS include a dedicated section to discuss mitigation efforts (including compensatory mitigation) associated with the project.

- As is consistent with the 2008 Federal Mitigation Rule, we recommend that mitigation required to compensate for any project-related impacts to the aquatic environment take place within Barnegat Bay or its watershed. Mitigation should be designed to be resilient to future sea-level change and where possible, to augment any natural or nature-based features that may arise as part of this project. Mitigation should be in-kind unless it can be clearly demonstrated that out-of-kind mitigation has a greater likelihood of offsetting the permitted impacts.

- In further regard to mitigation, the draft IFR/EIS assigned an additional 5% in mitigation acreage to account for indirect impacts associated with the barriers. We recommend that secondary impacts and its mitigation be examined more quantitatively in future documents. If the barriers are expected to be closed with more frequency in the future due to sea-level change and/or an increased frequency of sever storm events, then secondary impacts associated with the closures should be adjusted to reflect that.

- Additionally, the prolonged recovery trajectories for submerged aquatic vegetation suggest that the rate of ecological service and habitat function returns, critical for estimating compensatory mitigation goals under habitat equivalency analyses, may be underestimated. This information should be considered in the compensatory mitigation plan in the Final IFR/EIS.

Climate Change

- Climate change can make ecosystems, resources and communities more susceptible as well as lessen resilience to other environmental impacts apart from climate change. In some instances, this may exacerbate the environmental effects of the proposed action. For example, the poleward shift in geographical range of many species due to warming may increase susceptibility to impacts associated with the TSP.
- Additionally, Executive Order 13990 (E.O. 13990, 86 FR 7037; January 20, 2021) urges agencies to "consider all available tools and resources in assessing GHG emissions and climate change effects of their proposed actions, including as appropriate and relevant, the 2016 GHG Guidance". We recommend the final IFR/EIS identify sources of emissions associated with the project, quantify projected direct and indirect GHG emissions, and identify mitigation and monitoring methods that would minimize GHG emissions from construction and operational activities. Estimated emissions serve as a useful proxy for assessing effects and comparing alternatives. Useful tools that can be applied to estimate GHG emissions can be found at https://ceq.doe.gov/guidance/ghg-accounting-tools.html.
- Furthermore, EPA recommends the final IFR/EIS include an evaluation of indirect implications of the TSP on GHG emissions (such as the loss of CO_2 sequestration associated with removal of critical vegetated habitats; or the potential benefits associated with the implementation of natural based solutions).

Environmental Justice

- Given EPA's priorities with respect to environmental justice and children's health, we request that the EIS provide more detailed information as to how the conclusions (highlighted it italics below) were reached:

  "*Executive Order 12898,* Federal Actions to Address Environmental Justice in Minority Populations and Low- Income Populations, directs Federal agencies, "to the greatest extent practicable and permitted by law, to make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or

environmental effects of its programs, policies, and activities on minority populations and low-income populations in the United States and its territories and possessions… . To assess for potential disproportionate impacts, low-income and minority populations were identified within the study area using U.S. Census estimates. *The PDT reviewed the demographic data and determined that, due to the large-scale CSRM measures evaluated, the current alternatives would not disproportionately impact minority populations and low-income populations. There are also community cohesion and environmental justice concerns in minority populations and low-income populations in some of the communities. Atlantic County will be taken into consideration when investigating the details of nonstructural recommendations*.

9.20 Executive Order 12898, Environmental Justice: This EO directs Federal agencies to determine whether the Preferred Alternative would have a disproportionate adverse impact on minority or low-income population groups within the project area. *A review of EO 12898 has determined that EJ populations occur within the affected areas of the TSP and other measures, but they are not likely to have disproportionate adverse impacts on minority or low-income population groups.*

9.21 Executive Order 13045, Protection of Children from Environmental and Safety Risks: This EO requires Federal agencies to make it a high priority to identify and assess environmental health and safety risks that may disproportionately affect children and to ensure that policies, programs, activities, and standards address these risks. *Based on a preliminary review of all structural, nonstructural and NNBFS, it is concluded that the TSP and other measures are not likely to increase risks environmental and safety risks to children Full compliance would likely be achieved upon review of more detailed plans and locations of selected structural and nonstructural measures.*

- Additionally, environmental justice and climate justice are inextricably linked and understanding the demographic and socioeconomic composition of racial and ethnic groups in the region is important, because these characteristics are associated with health risk factors, disease prevalence, and access to care, which in turn may influence the degree of impact from climate-related threats.

- EPA recommends the final IFR/EIS provide information that documents the methodology and benchmarks used to determine minorities and/or low income communities and reach the conclusions above. In absence of this information, we encourage utilization of support tools such as EPA's Environmental Justice Screening and Mapping Tool (EJSCREEN) to provide a more robust analysis that considers possible impacts related to the proposed action on vulnerable adjacent communities.

Additional Comments and Editorial Considerations:

- The draft IFR/EIS report only addresses flooding caused by coastal storm surge. However naturally occurring significant flooding occurs and the area is subject to increased flood risk associated with climate change. These factors and how they will relate to the proposed plan should be addressed, particularly in the discussion of the affected environment with and without TSP.

- In addition to time-of-day considerations, further noise mitigation strategies should be evaluated in the final IFR/EIS.

- Additional details on revegetation plans and strategies should be provided in the final IFR/EIS.

- In considering compensatory mitigation, the New England Marsh Model does not adequately consider the value of coastal marshes for aquatic species. EPA looks forward to reviewing the results of the New York Bight Ecological Model in development.

- On page 449 the document reads “at this time, the quantity of GHG emissions is not known. However, a detailed emissions estimate will be required as part of the Tier 2 EIS prepared during the Engineering and Design Phase. These estimates require a more detailed in accordance with current CEQ guidance. Please note this sentence is not complete, please specify: a more detailed what?

- In the brief discussion on climate change and nature and natural based solutions the report states “therefore the effect on climate change is either negligible or unknown”. The effect on climate change cannot accurately be characterized as negligible, the text should be revised and additional information pertaining to this finding should be provided.

- On page 455, Section 8.2.4.34, the report states XX-46%? Please modify this to reflect the actual percentage corresponding to volumetric changes to flow associated with gate structures.

- Multiple times throughout the report there are instances of “error reference source not found”. Please check for this throughout the text and correct this in the final IFR/EIS.

- We recommend continued interagency coordination during subsequent phases of the project to assist in the development of avoidance, minimization, and mitigation measures.