

**Passaic River Tidal Protection Area, New Jersey, Coastal Storm Risk Management
Draft Integrated Hurricane Sandy General Reevaluation Report and Environmental
Assessment**

U.S. Army Corps of Engineers Response to Independent External Peer Review

October 2018

Independent External Peer Review (IEPR) was conducted for the subject project in accordance with Section 2034 of WRDA 2007, EC 1165-2-214 and the Office of Management and Budget's *Final Information Quality Bulletin for Peer Review (2004)*. The goal of the U.S. Army Corps of Engineers (USACE) Civil Works program is to always provide the most scientifically sound and sustainable water resource solutions for the nation. The USACE review processes are essential to ensuring project safety and quality of the products USACE provides to the American people. Battelle Memorial Institute (Battelle), a non-profit science and technology organization with experience in establishing and administering peer review panels for USACE, was engaged to conduct the IEPR of Passaic River Tidal Protection Area, New Jersey, Coastal Storm Risk Management Draft Integrated Hurricane Sandy General Reevaluation Report and Environmental Assessment (HSGRR/EA).

The IEPR panel reviewed the Draft Integrated HSGRR/EA as well as supporting documentation. The Final IEPR Battelle Report was issued on 28 August 2014. Overall, eleven comments were identified and documented; one was identified as having medium-high significance, three were identified as having medium significance, four were identified as having medium-low significance, and three were identified as having low significance. The following discussions present the USACE Final Response to the eleven comments.

1. The feasibility report lacks a description of the interior drainage system, how it was designed, or its impacts.

This comment included one recommendation and was adopted as discussed below. The comment expressed the concern that the lack of information included in the draft integrated report on the details of the interior drainage system makes the cost-effectiveness and possible adverse impacts of the system hard to determine.

USACE Response: Adopted

Action Taken: As the IEPR Panel recommended, the Final Report and Preconstruction Engineering and Design (PED) phase designs will include a full description of the planning process that led to the Recommended Plan's interior drainage system design and include a description of its impacts. The team made a risk-informed decision to defer the interior drainage analysis until after the draft report was released because of the low risk the interior drainage analysis would impact the selection of the Locally Preferred Plan (LPP) as the Tentatively Selected Plan (TSP). The final report will include more details of the existing drainage system, the selection of the proposed interior drainage system, operation and maintenance requirements, and environmental impacts related to the system, as well as the need for model refinements during PED.

2. The rationale for choosing the LPP over a relatively comprehensive NED plan is not clearly defined in the feasibility report.

This comment included two recommendations and both were adopted as discussed below. The comment expressed concern that the rationale for choosing the LPP as the TSP over the National Economic Development (NED) Plan was not clearly defined.

USACE Response: Adopted

Action Taken: Both recommendations made as part of the comment were adopted. The IEPR panel recommended a comparison of the LPP to the NED Plan. A comparison of the LPP and NED Plan will be presented in the Plan Formulation chapter of the final report in both text and table form. The report will also clearly detail that the LPP was selected as the TSP because the LPP substantially reduces the risk of storm surge for a large residential community in the City of Newark and because of the non-federal sponsor's concerns over the cost of remediating Hazardous, Toxic, and Radioactive Waste (HTRW). The second recommendation was to clarify whether the TSP is proposed as a complete stand-alone plan or as an interim recommendation. The team responded that the report will clarify that the project is a final response to the P.L. 113-2 authority and a partial response to Passaic Mainstem authority; the recommendation does not de-authorize the other portions of the study area in the Tidal Protection Area under the Passaic Mainstem authority.

3. Considering the importance of Segment 7 to the function of the modified Newark Flanking Plan, it is unclear why it is not included as a feature of the LPP for the proposed Federal CSRSM project.

This comment included two recommendations and only one was adopted as discussed below. The comment expressed the concern about why Segment 7 was not included as a feature of the LPP.

USACE Response: Adopted

Action Taken: The City of Newark and Newark Parks Department designed and constructed the park in coordination with USACE to ensure that the newly constructed park's elevation would meet the elevation requirements of the LPP and complete the alignment. The independent park project's construction is already completed. Surveys were conducted and the ground elevation now meets USACE's design height and the need for a USACE floodwall as part of the LPP is no longer required; the report was revised to state this and included the construction completion date.

USACE Response: Not Adopted

The City of Newark and Newark Parks Department already completed construction in the park; therefore, the recommendation to modify the Integrated HSGRR/EA to incorporate Segment 7 as an integral feature of the LPP was not adopted.

4. It is unclear how or whether the economic analysis accounted for structures substantially damaged by Hurricane Sandy and planned resilience projects.

This comment included two recommendations and both were adopted as discussed below. The

comment expressed the concern about how the economic analysis accounted for planned resilience projects and structures substantially damaged by Hurricane Sandy.

USACE Response: Adopted

Action Taken: Both recommendations made as part of the comment were adopted. The first recommendation was to describe how structures affected by Hurricane Sandy were accounted for and the second was to describe how planned and existing resilience projects were accounted for. Text was added to the report to describe how the sample inventory reflects the impacts of Hurricane Sandy. General information on flood depths during Hurricane Sandy was also included. In response to the second recommendation, the report will acknowledge existing and planned resiliency projects, including those at the Passaic Valley Sewerage Commission treatment plant, PATH train maintenance facility, and the various PSE&G electrical generation/distribution facilities, and state that these resiliency projects were excluded from all benefit analyses.

5. The decision to replace the levees in the plan with floodwalls to decrease the potential scope of HTRW remediation is not adequately supported in the report.

This comment included two recommendations; one was adopted and one was not adopted as discussed below. The comment expressed the concern that the decision to replace the previously authorized levees with floodwalls to decrease the potential scope of HTRW remediation is not adequately supported in the report.

USACE Response: Adopted

Action Taken: The first recommendation that was addressed involved reconciling the inconsistencies regarding the details of the authorized alignment. The identified inconsistencies in the report are being corrected for the final report.

USACE Response: Not Adopted

The second recommendation was to incorporate a more complete discussion of the rationale for changing the levee/floodwall combination in the authorized plan to an all floodwall configuration, including the trade-offs, risks, and uncertainties in the final report. Instead of including the information in the final report, the rationale for changing the levees in the authorized plan to floodwalls was added in the decision log and risk register for internal USACE review. The decision log and risk register detail the potential risks of the project, such as underestimating benefits due to the increased cost of floodwalls as compared to levees.

6. The potential impacts of the TSP/LPP on socio-economic/environmental justice issues have not been sufficiently addressed in the report.

This comment included two recommendations and both were adopted as discussed below. The comment expressed the concern that the potential impacts of the TSP/LPP on socio-economic/environmental justice issues were not sufficiently addressed in the report.

USACE Response: Adopted

Action Taken: Both recommendations made as part of the comment were adopted. The

recommendations resulted in expanding the discussion on residential developments in the study area, Environmental Justice communities and impacts, and noting that the project will not induce flooding.

7. Flooding and frequency relationships have not been confirmed for the TSP/LPP or outlined in the feasibility report.

This comment included three recommendations and none of them were adopted as discussed below. The comment expressed the concern that the flooding and frequency relationships have not been confirmed for the TSP/LPP or outlined in the feasibility report.

USACE Response: Not Adopted

Action Taken: All three recommendations made as part of the comment were not adopted. The first and second recommendations were to explain an analysis of the LPP's potential impacts on coastal areas outside the risk management area. The responses explained that due to the recessed location of the proposed alignment from the Newark Bay shoreline and the relatively small volume of tidal surge which would be kept out of the Ironbound area compared with the volume in the flooded areas, it was assumed that this impact will be negligent to minimal. The third recommendation was to address scour potential of contaminated areas. It can reasonably be assumed that any potential measurable impacts from increased flows and scour in the Passaic River are not influenced by the NED or TSP/LPP plans. The effort to model the entire study area and adjacent reaches is significant and it was assumed that the impact would be negligent to minimal. The District will evaluate whether additional study of induced coastal flooding or increased river scour is warranted during the PED phase of the project.

8. The TSP/LLP alternative has not been evaluated from an engineering perspective in the HSGRR/EA or its appendices.

This comment included two recommendations and both were adopted as discussed below. The comment expressed the concern that the TSP/LLP alternative had not been evaluated from an engineering perspective in the HSGRR/EA or its appendices.

USACE Response: Adopted

Action Taken: Both recommendations made as part of the comment were adopted. The first recommendation was to revise the supporting project documentation to reflect the LPP locations and conditions. The lack of additional data and modelling for the TSP/LLP had already been acknowledged in the Decision Log and Risk Register. The second recommendation was to confirm that the lack of available analyses for TSP/LLP would not affect the conclusions. The response confirmed that the conclusions made are not anticipated to change because, although wave analyses were not performed, of the shoreline and floodwall orientations and the short wave fetches.

9. The assumption that the Harrison 2 Section is hydrologically independent is not supported in the main report.

This comment included one recommendation that was adopted as discussed below. The

comment expressed the concern that the assumption that Harrison 2 Section is hydrologically independent is not supported in the main report.

USACE Response: Adopted

Action Taken: The one recommendation made as part of the comment was adopted. The recommendation was to explain why the Harrison 2 Section is hydrologically independent from the remaining TSP/LPP components. The response explained that the Harrison areas, as well as Kearny Point, are across the Passaic River and Newark Bay from the TSP/LPP components in Newark; this makes them hydraulically independent of the TSP/LPP areas. Additionally, a small independent floodwall project is not possible in those areas due to limited high ground tie-offs.

10. It is unclear which models were used to produce the results presented in the report.

This comment included two recommendations and both were adopted as discussed below. The comment expressed the concern that it was unclear what models were used to produce the results presented in the report or additional modeling that will be conducted.

USACE Response: Adopted

Action Taken: Both recommendations made as part of the comment were adopted. The response clarified that the North Atlantic Coast Comprehensive Study's (NACCS) coastal model was used for coastal reaches and that FEMA data was used for inland reaches. As per the first recommendation, the interior drainage analysis will be refined to evaluate how the proposed drainage features will interact with the existing regulators and storm overflows. The Passaic Valley Sewerage Commission (PVSC) has developed an INFOWORKS Model to assess subsurface drainage and operational controls for the entire PVSC tributary area. For PED, it is anticipated that the design will utilize the updated INFOWORKS Model with modifications to allow analysis of surface flow using a 2-D terrain. The need for model refinements during PED and approach was added to Section 4.7 as recommended. The second recommendation was to include a full calibration and validation for the flood stages from the NACCS model. The response explained that the model was calibrated and verified as part of the initial development at the Engineering Research and Development Center and that the Hydrology and Hydraulics appendix was updated with clarifying text.

11. FEMA-accredited levee criteria have not been considered, which may not be consistent with goals based on similar, on-going HUD-financed flood protection projects.

This comment included one recommendation which was adopted as discussed below. The comment expressed the concern that FEMA-accredited levee criteria were not considered.

USACE Response: Adopted

Action Taken: The one recommendation made as part of the comment was adopted. The recommendation was to confirm that FEMA accreditation should not be a project goal with key stakeholders. The response explained the non-Federal sponsor was already made aware that USACE does not formulate nor design to meet FEMA's standards. This was also explained to the public at a public meetings when the question was asked.