



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS  
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WASHINGTON, DC 20314-1000

CECW-NAD

OCT 27 2016

MEMORANDUM FOR THE ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)

SUBJECT: Director's Report for the South Shore of Staten Island, Fort Wadsworth to Oakwood Beach, New York, Coastal Storm Risk Management Project

1. Purpose: To provide for your review and concurrence with the recommendations provided in the Final Interim Feasibility Report and Environmental Impact Statement for the South Shore of Staten Island, New York, Coastal Storm Risk Management Project (enclosed). The report was prepared in response to a resolution of the U.S. House of Representatives Committee on Public Works and Transportation and adopted 13 May 1993. The Disaster Relief Appropriations Act of 2013 (P.L. 113-2), enacted in response to Hurricane Sandy (October 29-30, 2012), authorizes construction of this project, subject to a determination by the Secretary that the coastal storm risk management plan is feasible. This report addresses the most critical and vulnerable portion of the authorized study area from Fort Wadsworth to Oakwood Beach, which was heavily impacted by Hurricane Sandy. Hurricane Sandy was one of the largest Atlantic hurricanes to reach the United States on record, and resulted in great devastation along the Atlantic coast, particularly in the New York metropolitan area. Twenty-four people on the south shore of Staten Island died during Hurricane Sandy, which accounts for over 45% of the total deaths due to Hurricane Sandy in the state of New York.

2. Recommendation: That the Assistant Secretary of the Army for Civil Works (ASA(CW)) approve the South Shore of Staten Island, New York plan to manage the risks of coastal storm damages by construction of an armored stone seawall, floodwall, earthen levee (line of protection) and associated interior drainage features. The line of protection would extend along the south shore of Staten Island from Fort Wadsworth to Oakwood Beach for approximately 5.3 miles at an elevation of 19.4 feet North American Vertical Datum of 1988 (NAVD88).

3. Background: The recommended plan is the National Economic Development Plan and would reduce the coastal storm flood risk to the south shore of Staten Island. The proposed project would reduce expected annual damages (EAD) by approximately \$30,374,000 or 87% with a residual EAD of approximately \$6,916,000. Annual exceedance probabilities for the south shore of Staten Island from Fort Wadsworth to Oakwood Beach would be reduced from approximately a 20% flood event to a 0.3% flood event. The implementation of the recommended plan will not eliminate the potential for loss of life. However, with a design elevation 2 feet higher than storm surge water levels recorded during Hurricane Sandy, the recommended plan could

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reduce the risk of loss of life and property damage during a Hurricane Sandy type flood event.

4. Discussion: The New York State Department of Environmental Conservation is the non-federal cost-sharing sponsor for the authorized project. Based on an October 2016 price level, the estimated total first costs of the recommended plan is \$571,250,000. The federal share of the estimated first cost of initial construction is currently estimated at \$371,310,000 and a non-federal share of \$199,940,000. The cost of lands, easements, rights-of-way, relocations, and disposal is estimated at \$86,410,000. The state of New York would be responsible for the operation, maintenance, repair, replacement and rehabilitation (OMRR&R) of the project after construction, a cost currently estimated at \$570,000 per year. Based on a 2.875% discount rate for Fiscal Year 2017 and a 50-year period of analysis, the total equivalent average annual costs of the project are estimated to be \$23,458,000, including OMRR&R. The plan has primary outputs based on coastal storm risk management and damage reduction. With equivalent average annual benefits estimated at \$30,374,000 and the net average annual benefits of approximately \$6,916,000, the benefit-to-cost ratio is 1.3 to 1.

a. The recommended plan would have unavoidable impacts to cultural resources. As stipulated in a Programmatic Agreement among the U.S. Army Corps of Engineers, National Park Service (NPS) and the New York State Historic Preservation Office (SHPO), mitigation measures for unavoidable impacts are being developed with the SHPO, NPS, federally recognized tribes (Delaware Tribe of Indians, Delaware Nation, and the Stockbridge-Munsee Community Band of Mohican Indians) and other interested parties. The project would impact the viewshed and setting of the National Register of Historic Places (NRHP)-listed Miller Army Airfield Historic District and sever coastal access from historic seaplane Hangar 38. The potentially NRHP-eligible WWII fire tower would also be demolished. However, these impacts will be mitigated through project design, construction practices, and best management practices (BMPs). The potential adverse environmental effects on other resources would be reduced to a less significant level through project design, construction practices, preconstruction surveys and analysis, regulatory requirements, and BMPs. With these BMPs (such as native vegetation planting and tree replacements) in place, no significant adverse impacts to trees or vegetation are anticipated as a result of construction. The plan will impact approximately 145 acres of existing *Phragmites* monoculture low quality wetland habitat. Excavation, re-grading and seeding/planting of native vegetation (and removal of the existing *Phragmites* monoculture) will provide emergent wetland habitat in these areas where wetlands did not previously exist. Taken as a whole, the recommended plan would produce a net positive impact on wetland habitats and the quality of wetlands in the project area. The recommended plan also includes post-construction monitoring and adaptive management for a period of five years to ensure project



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performance. As a result of the implementation of the best management practices and other mitigation, no compensation measures would be required.

b. The goals and objectives included in the Campaign Plan of the U.S. Army Corps of Engineers (USACE) have been fully integrated into the South Shore of Staten Island, Coastal Storm Risk Management study process. The proposed plan has been designed to avoid or minimize environmental impacts while maximizing future safety and economic benefits to the community. The study team organized and participated in stakeholder meetings and public workshops throughout the process and worked with local groups to achieve a balance of project goals and public concerns. The study report fully describes flood risk associated with the South Shore of Staten Island and risks that will not be reduced; these residual risks have been communicated to the state of New York, the city of New York, and the residents of Staten Island.

c. In accordance with EC 1165-2-214, Civil Works Review, all technical, engineering and scientific work underwent an open, dynamic and vigorous review process to ensure technical quality. This included an Agency Technical Review (ATR), a Type I Independent External Peer Review (IEPR) and a Headquarters USACE policy and legal review. All concerns of the ATR have been addressed and incorporated in the final report. The IEPR was managed by Battelle Memorial Institute. The IEPR comments helped to more clearly communicate the information that was provided in the report. The reviews, have resulted in the improvement of the technical quality of the report. A safety assurance review, Type II IEPR, will be conducted during the design phase of the project.

5. Conclusion: I have reviewed and concur with the conclusions and recommendations in the Final Feasibility Report and Environmental Impact Statement. Based upon this review, I find the recommended plan is technically and environmentally sound, justified based on the monetary and non-monetary benefits it provides, and is socially acceptable. The proposed project complies with applicable USACE planning procedures and regulations. Also, the views of interested parties, including federal, state and local agencies have been considered.



JAMES C. DALTON, P.E.  
Director of Civil Works

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