



DEPARTMENT OF THE ARMY  
U.S. ARMY CORPS OF ENGINEERS  
441 G STREET, NW  
WASHINGTON, DC 20314-1000

CECW-MVD

MEMORANDUM FOR ASSISTANT SECRETARY OF THE ARMY (CIVIL WORKS)

SUBJECT: Lake Pontchartrain and Vicinity (LPV), Louisiana, Final General Reevaluation Report (GRR) and Environmental Impact Statement (EIS)

1. Purpose. To provide for your review and approval the attached GRR and EIS to support an extension of the authority to restore, for the LPV project, authorized levels of coastal storm risk management given the combined effects of consolidation, settlement, subsidence, and sea level rise over time.
2. Authorizations. Following Hurricanes Katrina and Rita in 2005, Public Law 109-234 and Public Law 110-252 provided authority and funding for the Secretary of the Army (Secretary) to raise levee heights where necessary and otherwise enhance the LPV project to provide the levels of protection necessary to achieve the certification required for participation in the National Flood Insurance Program under the base flood elevations current at the time of this construction. Section 3017 of the Water Resources Reform and Development Act of 2014 (WRRDA 2014), Public Law 113-121, subsequently provided the authority for the Secretary to carry out measures that address consolidation, settlement, subsidence, sea level rise, and new datum to restore the LPV project to its authorized level of protection, if the Secretary determines the necessary work is technically feasible, environmentally acceptable, and economically justified. The authority provided by Section 3017 terminates on 10 June 2024.
3. Project Background.
  - a. The existing LPV project includes features in four parishes (St. Charles, Jefferson, Orleans, and St. Bernard) located in the greater New Orleans area on the east bank of the Mississippi River. This is a high-density residential and commercial area. Currently, the LPV project includes a total of approximately 126.5 miles of levees and 56 miles of floodwalls, floodgates, water control structures, and other risk reduction features. This includes primary perimeter storm surge risk reduction features, detention basin features along the Inner Harbor Navigation Canal and the Gulf Intracoastal Waterway, and the three outfall canals.
  - b. The existing LPV project is designed to reduce the risk of flooding associated with a 1% annual exceedance probability (AEP) storm surge and wave event. Levees in the LPV project were constructed on a limited footprint with the understanding that additional height would need to be added (termed "levee lifts") in the future to

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counteract soil consolidation, settlement, subsidence, sea level rise, and to maintain the designed level of risk reduction.

c. Southeast Louisiana, including the greater New Orleans area, is generally characterized by weak soils, general subsidence, and the global incidence of sea level rise that will cause levees to require future lifts to sustain the performance of the project. The GRR re-evaluated the performance of the LPV system given the combined effects of consolidation, settlement, subsidence, and sea level rise over time and the availability of new elevation data (vertical datums) to determine if additional actions are recommended to address the economic and life safety risks associated with flooding due to hurricanes and tropical storms.

4. Study Plan and Alternatives. Fourteen structural and non-structural coastal storm risk management measures were considered. After initial evaluation and screening, measures were combined into an initial array of six alternatives. Further evaluation and screening resulted in identification of a final array of two action alternatives carried forward for further evaluation:

- a. System levee lifts to the projected 1% AEP event at 2073 (e.g., 1% AEP Plan)
- b. System levee lifts at 2073 that maximize benefits (e.g., 0.5% AEP Plan).

No minimum lift amount was assumed for alternatives; levee lifts are planned to occur when the previous lift settles to the project grade. The alternatives have been determined to meet the coastal storm risk management objectives and are deemed complete, effective, efficient, and acceptable. The U.S. Army Corps of Engineers (USACE) determined that the system levee lifts to the projected 1% AEP event in 2073 would maximize net benefits and carried this plan forward as the preferred alternative.

5. Recommended Plan. The 1% AEP Alternative is the recommended plan and the National Economic Development (NED) Plan. This alternative includes incrementally raising the elevation of levees and floodwalls over time to restore and maintain the system's ability to provide risk reduction from the projected future (2073) 1% AEP surge and wave event, as determined during the design phase prior to the time of initial construction. Construction of the recommended plan would generally occur in the same footprint as the existing LPV project and existing Mississippi River Levees Project. The recommended plan includes the following phased measures:

- a. Fifty miles of levee lifts along the existing levee alignment and in new co-located reaches along the Mississippi River, with construction timing to occur before the combined effects of consolidation, settlement, subsidence, and sea level rise reduce the levee elevations in each levee reach below the required design elevation;

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b. Three miles of floodwall replacements or new floodwall along the existing alignment and in new co-located reaches along the Mississippi River to be constructed prior to the combined effects causing the design requirements to be exceeded for each structure; and

c. Targeted areas of foreshore protection along Lake Pontchartrain in areas where foreshore protection already exists.

6. Mitigation is anticipated to be required to address potential impacts to bottomland hardwood wet habitat along the Mississippi River in the new co-located reach. The proposed mitigation plan assumes the 12.1 average annual habitat units of flood side bottomland hardwood-wet impacts (approximately 20 acres) would be mitigated through the purchase of mitigation bank credits. The total mitigation cost is \$3,713,000.

7. Project Costs. The project first cost estimate is \$1,241,000,000 (Fiscal Year (FY) 2022 price level), which includes the cost of constructing the proposed features and the value of lands, easements, rights-of-way, relocations, and disposal areas (LERRDs). LERRDs are estimated to be \$8,800,000. The estimated federal (65 percent) share is \$807,000,000 and the non-federal share (35 percent) is \$434,000,000.

Based on a 50-year period of analysis and the FY2022 discount rate of 2.25%, the recommended plan provides net benefits of \$196,000,000. The average annual cost is \$29,500,000, which includes Operation, Maintenance, Repair, Replacement, and Rehabilitation (OMRR&R) estimated at \$500,000 per year. The benefit-to-cost ratio of the recommended plan is 7.6.

However, upon project completion, the non-federal sponsor will also be required to maintain the authorized level of risk reduction to account for any future compaction, subsidence or actual sea level rise as part of its OMRR&R responsibilities. These costs are highly uncertain, primarily due to uncertainties related to long-term actual relative sea level and have not been estimated during the study.

8. National Environmental Policy Act (NEPA) Compliance. The Final EIS presented an evaluation of the coastal storm risk management alternatives. The Record of Decision represents the culmination of the NEPA process.

9. Stakeholder Input. In support of the development and selection of the recommended plan, the public and other agencies were provided an opportunity to review and comment on the process and plan selection. Input from agencies and the public was also solicited through the scoping process and public review of the Draft EIS, revised Draft EIS, and Final EIS. All comments and recommendations were reviewed and considered and are documented in the EIS.

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10. Comprehensive Review. In accordance with USACE policy on review of decision documents, all technical, engineering, and scientific work underwent an open, dynamic, and rigorous review process. The comprehensive review process included district quality control review, agency technical review, independent external peer review and a headquarters policy and legal compliance review to confirm the planning analyses, alternative design and safety, and the quality of decisions. Washington-level review indicates that the plan recommended by the reporting officers complies with all essential elements of the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Land Related Resources Implementation Studies, as well as other administrative and legislative policies and guidelines. The views of interested parties, including federal, state, and local agencies, were considered and all comments from public reviews have been addressed and incorporated into the final report documents where appropriate.

11. Recommendation. I recommend that you approve the enclosed GRR and EIS and transmit to the Congress as the basis for extending the authority provided in Section 3017 of WRRDA 2014.

Encl

ALVIN B. LEE  
Director of Civil Works