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CHIEF OF ENGINEERS
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WASHINGTON, DC 20310-2600

DAEN (1105-2-10a)

FEB 23 2016

SUBJECT: Princeville, North Carolina, Flood Risk Management Study

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on proposed modifications to a flood risk management project for the Town of Princeville, Edgecombe County, North Carolina, authorized under Section 205 of the Flood Control Act of 1948, as amended. It is accompanied by the report of the district and division engineers. This report is provided under Section 216 of the Flood Control Act of 1970, 33 U.S.C. 549a, which authorizes the Secretary of the Army, acting through the Chief of Engineers, to review flood control projects previously constructed by the Corps of Engineers and to report to Congress on the advisability of any recommended modifications. Initial funding for the study was specifically provided in the Emergency Supplemental Act, 2000, (Public Law No. 106-246, Division B, Chapter 2), dated 13 July 2000, which appropriated \$3.5 million in additional General Investigations funds, of which \$1.5 million "shall be for a feasibility study and report of a project to provide flood damage reduction for the Town of Princeville, North Carolina." Additional direction was provided in an Executive Order (E.O. 13146) issued on 29 February 2000, by President William Clinton, which required, in part, "agency assessments and recommendations to repair and rebuild Princeville, and, *to the extent practicable, protect Princeville from future floods*" (emphasis added). In a memorandum dated 19 July 2012, the Assistant Secretary of the Army (Civil Works) granted an exception to the National Economic Development (NED) plan selection rule for the selected plan based on a determination that the selected plan is more comprehensive than the NED plan and best balances flood risk reduction, life and safety considerations, cost effectiveness, and preservation of the cultural environment while fully responding to E.O. 13146. Preconstruction engineering and design activities, if funded, would be continued under the Section 216 study authority cited above.

2. The Town of Princeville was the first municipality in America incorporated by freed slaves in 1885. At the end of the Civil War freed slaves occupied low-lying land in the Tar River floodplain, purchased plots from local landowners, and eventually incorporated the town as the "Town of Princeville." Princeville has been repeatedly flooded during many years since its founding. In 1967, the Corps of Engineers completed a flood control levee project under Section 205 of the Flood Control Act of 1948, as amended, that was designed to protect the town from the recurrence of the 1919 flood, the largest flood of record. Unfortunately, Princeville was subjected to catastrophic flooding and the damage and destruction of 1,000 residential structures resulting from Hurricane Floyd in 1999. Up to twenty feet of water stood in Princeville for nearly 10 days until the Tar River water levels subsided enough that the floodwaters drained or

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could be pumped from town. Hurricane Floyd revealed flaws and vulnerabilities in the levee design that were previously overlooked. Floodwaters initially entered the town through a number of un-gated culverts located under a section of U.S. Highway 64, over-topped low spots in the highway embankment, and circumvented the north end of the existing levee. Princeville remains at risk today from flood inundation, loss of critical services, blockage of access to evacuation routes, and potential trapping of its citizens.

3. The reporting officers recommend authorization of a plan to reduce flood damages and risks to life and safety by installing flap gates on twelve un-gated culverts beneath U.S. Highway 64 and NC Highway 111; raising a highway interchange to prevent floodwaters from entering the community; constructing a levee to prevent over-topping along a low spot on a U.S highway; and constructing a low levee and raising sections of roads in the northern and eastern areas of town to prevent circumvention of floodwaters around the existing Section 205 levee project. Unavoidable environmental impacts would be fully mitigated for by the purchase of environmental credits equal to approximately five acres of lower and moderate quality forested wetlands.

4. The State of North Carolina's Department of Environment Quality is the non-federal cost-sharing sponsor for all features. Based on October 2016 price levels, the estimated first cost of the plan is \$21,540,000. In accordance with the cost-sharing provisions of Section 103 of the Water Resources Development Act (WRDA) of 1986, as amended by Section 202 of WRDA 1996, the federal share of the first costs is estimated at \$14,001,000 (65 percent), and non-federal share at \$7,539,000 (35 percent). The cost of lands, easements, rights-of-way, and relocations is estimated at \$5,729,000. The State of North Carolina would be responsible for the operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) of the project after construction, a cost currently estimated at \$58,000 per year.

5. Based on a 3.125 percent discount rate and a 50-year period of analysis, the total equivalent average annual costs of the project are \$997,900, including OMRR&R. The recommended plan is estimated to be approximately 76 percent reliable in containing the one percent chance flood event. The recommended plan would reduce average annual flood damages by about 90 percent, and would leave average annual residual damages estimated at approximately \$48,000. The equivalent average annual benefits are estimated at \$459,900. The recommended plan benefit-cost ratio is approximately 0.54 to 1. While other smaller scale alternatives are economically justified, the recommended plan reduces flood risk to a nationally significant and historic community, provides for life-safety benefits to an economically disadvantaged, low-mobility population with links to American Heritage, reduces risk to the designated hurricane evacuation route serving eastern North Carolina and the Outer Banks during large flood events, promotes resiliency in Princeville and its population, and enhances the community's ability to recover from future events.

6. The goals and objectives included in the Campaign Plan of the U.S. Army Corps of

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Engineers have been fully integrated into the feasibility study process. The recommended plan has been designed to avoid or minimize environmental impacts, to reduce risk of loss of life, and to reasonably maximize benefits to the community in coordination with the existing flood risk management system. The feasibility study team organized and participated in stakeholder and public meetings throughout the process and worked to achieve a balance of project goals and public concerns. The study report fully describes local flood risks associated with the Tar River and risks that will not be reduced. The residual risks have been communicated to the non-federal sponsors and they understand and agree with the analysis. The feasibility study team has reviewed current available information on the estimated future impact of climate change in the region. While a trend towards wetter conditions in the future has been identified, the impacts are expected to be within the range of uncertainty addressed by the current hydrologic model.

7. In accordance with the U.S. Army Corps of Engineers policy on review of decision documents, all technical, engineering and scientific work underwent a comprehensive review process to ensure technical quality. This included District Quality Control, Agency Technical Review, Policy and Legal Compliance Review, Cost Engineering Directory of Expertise Review and Certification, and Independent External Peer Review (IEPR). Overall the reviews resulted in improvements to the technical quality of the report. The IEPR was completed by Battelle Memorial Institute. A total of 11 comments were documented. The IEPR comments identified concerns in the areas of geotechnical engineering, hydraulic engineering, climate change, risk communication, and cumulative impact analyses. The review comments resulted in expanded narratives throughout the report to better support the decision-making process and justify the recommended plan, as well as an expanded analysis on the potential impacts of climate change on the project. All comments from the above referenced reviews have been addressed and incorporated into the final documents.

8. Washington level review indicated that the plan recommended by the reporting officers is technically sound, economically justified, and environmentally and socially acceptable. The plan complies with the essential elements of the U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Land Related Resources Implementation Studies. The recommended plan complies with other administrative and legislative policies and guidelines. The views of interested parties, including federal, state, and local agencies were considered.

9. I concur in the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that the plan to reduce flood risks for the Town of Princeville on the Tar River, in North Carolina, be authorized in accordance with the reporting officers' recommended plan, at an estimated cost of \$21,540,000 with such modifications as in the discretion of the Chief of Engineers may be advisable. My recommendation is subject to cost-sharing, financial, and other applicable requirements of federal, state laws and policies, including Section 103 of WRDA 1986, as amended by Section 202 of WRDA 1996. The non-federal sponsor would provide the non-federal cost-share and all lands, easements, rights-of-way,

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relocations, and disposal areas. Further, the non-federal sponsor would be responsible for all OMR&R. This recommendation is subject to the non-federal sponsors agreeing to comply with all applicable federal laws and policies, including but not limited to the following:

a. Provide a minimum of 35 percent, but not to exceed 50 percent, of the total structural flood damage reduction costs, as further specified below:

1. Provide, during design, 35 percent of design costs in accordance with the terms of a design agreement entered into prior to commencement of design work for the project;

2. Pay, during construction, a contribution of funds equal to 5 percent of total structural flood damage reduction costs;

3. Provide all lands, easements, and rights-of-way, including those required for relocations, the borrowing of material, and the disposal of dredged or excavated material; perform or ensure the performance of all relocations; and construct all improvements required on lands, easements, and rights-of-way to enable the disposal of dredged or excavated material as determined by the federal government to be required or to be necessary for the construction, operation, and maintenance of the project, and provide relocation assistance, all in compliance with applicable provisions of the Uniform Relocation and Assistance and Real Property Acquisition Policies act of 1970, as amended (42 U.S.C. 4601-4655) and the regulations contained in 49 C.F.R. Part 24;

4. Pay, during construction, any additional funds necessary to make its total contribution equal to at least 35 percent of total project costs;

b. Prevent obstructions or encroachments on the project (including prescribing and enforcing regulations to prevent such obstructions or encroachments) such as any new developments on project lands, easements, and rights-of-way or the addition of facilities which might reduce the outputs produced by the project, hinder operation and maintenance of the project, or interfere with the project's proper function;

c. Inform affected interests, at least yearly, of the extent of protection afforded by the flood risk management features; participate in and comply with applicable federal floodplain management and flood insurance programs; comply with Section 402 of the Water Resources Development Act of 1986, as amended (33 U.S.C. 701b-12); and publicize floodplain information in the area concerned and provide this information to zoning and other regulatory agencies for their use in adopting regulations, or taking other actions, to prevent unwise future development and to ensure compatibility with protection levels provided by the flood risk management features;

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d. Operate, maintain, repair, rehabilitate, and replace the project at no cost to the federal government, in a manner compatible with the project's authorized purposes and in accordance with applicable federal and state laws and regulations and any specific directions prescribed by the federal government;

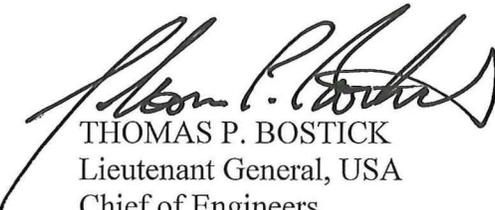
e. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, rehabilitation, and replacement of the project and any betterments, except for damages due to the fault or negligence of the United States or its contractors;

f. Perform, or ensure performance of, any investigations for hazardous substances that are determined necessary to identify the existence and extent of any hazardous substances regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. 9601-9675, that may exist in, on, or under lands, easements, or rights-of-way that the federal government determines to be necessary for the construction or operation and maintenance of the project;

g. Assume, as between the federal government and the non-federal sponsor, complete financial responsibility for all necessary cleanup and response costs of any hazardous substances regulated under CERCLA that are located in, on, or under lands, easements, or rights-of-way required for construction, operation, maintenance, repair, rehabilitation, or replacement of the project;

h. Agree, as between the federal government and the non-federal sponsor, that the non-federal sponsor shall be considered the operator of the project for the purpose of CERCLA liability, and to the maximum extent practicable, operate, maintain, repair, rehabilitate, and replace the project in a manner that will not cause liability to arise under CERCLA.

10. The recommendations contained herein reflects the information available at this time, and current departmental policies governing formulation of individual projects. They do not reflect program and budgeting priorities inherent in the formulation of a national Civil Works construction program nor the perspective of higher review levels within the Executive Branch. Consequently, the recommendations may be modified before they are transmitted to the Congress as proposals for authorization and implementation funding. However, prior to transmittal to the Congress, the sponsor, the states, interested federal agencies, and other parties, will be advised of any modifications and will be afforded an opportunity to comment further.


THOMAS P. BOSTICK
Lieutenant General, USA
Chief of Engineers