



Proposed Report¹

DEPARTMENT OF THE ARMY
CHIEF OF ENGINEERS
2600 ARMY PENTAGON
WASHINGTON, DC 20310-2600

DAEN

SUBJECT: Turpentine Run, St. Thomas, United States Virgin Islands, Flood Risk Management Study

THE SECRETARY OF THE ARMY

1. 1. I submit for transmission to Congress my report on the study of flood risk management along Turpentine Run, Nadir, St. Thomas, United States Virgin Islands (USVI). It is accompanied by the report of the Jacksonville District Engineer and the South Atlantic Division Engineer. The report was prepared under the authority of Section 209 of the Flood Control Act of 1966 (Public Law 89-789), which authorizes studies for flood control in the United States and its territories.

2. In 1994, a Detailed Project Report (DPR) was conducted and approved under Section 205 of the Flood Control Act of 1948, as amended (33 U.S.C. 701s) (referred to as the Continuing Authorities Program (CAP)). The project was not constructed because the project cost exceeding the Section 205 CAP federal funding limit per project. Due to the impacts of Hurricane Maria in 2017 and subsequent non-federal sponsor request, Turpentine Run was selected (in accordance with the Bipartisan Budget Act of 2018, Public Law 115-123) to be converted to a specifically authorized project.

3. 3. The reporting officers recommend a project that will contain structural measures to manage flood risks along Turpentine Run in St. Thomas, USVI. The National Economic Development plan, which is also the recommended plan, involves replacement of the existing concrete channel with a new channel having greater capacity. Improvements would begin at the north end of the Nadir development and be completed downstream of the new Bovoni bridge at the Nadir racetrack. The recommended plan includes the following:

- a. A levee (260 feet long) along the northern edge of the Nadir development.
- b. A sheetpile wall (170 feet long) along the development side of the channel.
- c. A drop structure (60 feet long) near the entrance to the existing concrete channel.
- d. A "U" shaped concrete channel (460 feet long) that transitions to a trapezoidal, earthen channel lined with rip rap (1,385 feet long).
- e. A levee on the west side of the channel, south of the new Bovoni Road Bridge (1,300 feet long) ending at the Nadir racetrack at the south end of the channel.
- f. An interior drainage system to convey water from the small existing concrete channel to the

¹ This report contains the proposed recommendation of the Chief of Engineers. The recommendation is subject to change to reflect Washington-level review and comments from federal and state agencies.

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Mangrove Lagoon, including 1,745 feet of pipe.

g. Recreation features include a nature trail on top of the levee, picnic tables and parking.

4. The USVI Department of Public Works is the cost-sharing non-federal sponsor for all features. Based on November 2019 (FY 20) price levels, the estimated total first cost of the recommended plan is \$43,662,000. This cost includes the cost of constructing the project and the value of lands, easements, rights-of-way, relocations, and disposal areas (LERRDs).

a. Funding. In accordance with the Bipartisan Budget Act of 2018, Public Law 115-123, the study of this project under the Investigations heading was conducted at full federal expense. Upon study approval, this project will be eligible for funding under the Construction heading to complete construction at full federal expense.

b. Estimated federal and non-federal cost shares. If funded by regular appropriations, in accordance with the cost sharing provisions of Section 103 of the Water Resources Development Act (WRDA) of 1986, as amended, the non-federal sponsor must contribute a minimum of 35 percent of construction costs, up to a maximum of 50 percent of construction costs, with a minimum 5% cash contribution. The remaining portion of the non-federal share can be provided in LERRDs, in-kind contributions, cash, or a combination. The estimated share of costs is adjusted based on Section 1156 of WRDA 1986, as amended, (33 USC 2310) which provides a waiver for a portion of non-federal cost sharing for Puerto Rico, Territories and Indian Tribes. The estimated federal and non-federal shares of the project first cost are approximately \$28,864,000 and \$14,798,000, respectively.

c. Operation and Maintenance Costs (O&M). The non-federal sponsor would be responsible for operation, maintenance, repair, replacement and rehabilitation (OMRR&R) of the project after construction. The estimated annual O&M cost is \$35,000.

d. The non-federal sponsor would be responsible for any investigations 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 are on real property interests required for construction or O&M. If any such hazardous substances are found, the non-federal sponsor would be responsible for the costs of cleanup and response. Currently, no hazardous substances actions are anticipated.

e. Authorized Project Cost and Section 902 Calculation. The project first cost, for the purposes of authorization and calculating the maximum cost of the project pursuant to Section 902 of WRDA 1986, as amended, is \$43,662,000 at the Fiscal Year (FY) 2020 Price Level.

5. Based on Fiscal Year (FY) 2020 price levels, a 2.75-percent discount rate, and a 50-year period of analysis, the total economic costs are estimated to be \$45,292,000, including project first costs and interest during construction. The recommended plan provides average annual benefits of \$879,460 (1991 Price Level), average annual costs of \$765,000 (1991 Price Level), and a benefit-to-cost ratio of 1.15. The recommended plan as designed is expected to reduce flood risk up to the 25-year design event.

6. Approximately 118 structures in the study area, primarily single-family homes, are subject to

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flooding impacts. The 1994 study report describes the flood risks that Turpentine Run imposes on the structures in the Nadir area. The project is expected to reduce flood levels over existing conditions and is economically justified. After project construction and implementation, the risk of flooding remains for large flood events. The residual risks have been communicated to the non-federal sponsor, which understands and agrees with the analysis. The recommended plan has been designed to avoid or minimize environmental impacts while maximizing safety and economic benefits to the community. The feasibility study team organized and participated in stakeholder meetings and public workshops throughout the original study process and met again with members of the community and elected officials during development of the CAP Conversion Study.

7. In accordance with the Corps guidance on review of decision documents, all technical, engineering and scientific work underwent an open, dynamic and rigorous review process to ensure technical quality. This included District Quality Control review, Agency Technical Review and policy and legal review. All comments from these reviews have been addressed and incorporated into the final documents. Overall the reviews have resulted in improvements to the quality of the feasibility analyses supporting the recommended plan. Type I Independent External Peer Review (IEPR) was not required for this CAP Conversion Study. A safety assurance review (Type II IEPR) will be conducted during the preconstruction engineering and design phase of the project.

8. Washington-level review indicates that the project recommended by the reporting officers is technically sound, environmentally and socially acceptable, and economically justified. The plan complies with all essential elements of the 1983 U.S. Water Resources Council's Economic and Environmental Principles and Guidelines for Water and Land Related Resources Implementation Studies and complies with other administrative and legislative policies and guidelines. A 2020 Environmental Assessment (EA) was prepared to evaluate the effects of flood damage reduction measures of the recommended plan applying current environmental regulations and standards to assure that the recommended plan remains environmentally justified. The 2020 EA completes the required analysis, consultation, and coordination as required by the National Environmental Policy Act of 1969 and incorporates information and analyses from the 1994 DPR and EA, when the information is valid and applicable to this current evaluation. The comments from interested parties, including federal, state, and local agencies have been considered. All comments submitted during the public review period were considered in developing the final EA and Finding of No Significant Impact. Few changes in the environmental conditions of the project area have occurred. The freshwater swamp forest present during the 1994 investigations is no longer intact, possibly due to erosion, pollution, and/or the recently completed construction of the Bovoni Road Bridge by the Federal Highway Administration. Ongoing natural erosion and scouring of the gut bed and banks have continued to degrade the streambank wetlands. Levee construction, channelization, clearing, and grubbing activities would occur in portions of the project located outside of the existing concrete channel. While there appear to be degraded wetlands in the project's vicinity, the project design avoids and minimizes destruction, loss, and/or degradation of wetlands and preserves and enhances the natural and beneficial values of wetlands in adjacent lands. Design work during PED is expected to reduce further potential impacts to areas that might be jurisdictional wetlands, and the clearing and construction actions are not expected to reduce the value or function of the existing degraded wetlands. Upon project completion, impacted areas will be restored to the extent practicable. Within the project footprint, revegetation is expected to occur quickly. Further, best management practices during construction will be employed and the Recommended Project will not have more than negligible impacts on ecological resources, including wetlands, and therefore, mitigation is not

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required as there will be no loss of wetland function. The identification of and impacts to jurisdictional wetlands will be readdressed during PED to ensure restoration is accomplished to the maximum extent practicable and reconfirm the conclusion that mitigation is not required.

9. 9. I concur in the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that the selected plan to reduce flood risks for Turpentine Run, St. Thomas, USVI be authorized for implementation, as a federal project, with such modifications thereof as in the discretion of the Chief of Engineers may be advisable. My recommendation is subject to cost sharing, financing, and other applicable requirements of federal and state laws and policies. Federal implementation of the recommended plan would be subject to the non-federal sponsor agreeing to comply with applicable federal laws and policies, including but not limited to:

a. Provide all lands, easements, and rights-of-way, perform or ensure the performance of all relocations, and provide relocation assistance, as determined by the federal government to be required for the initial construction or the operation and maintenance of the project, 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.

b. For as long as the project remains authorized, operate, maintain, repair, rehabilitate, and replace the project, or functional portions of 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.

c. Inform affected interests, at least annually, of the extent of protection afforded by the project; 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 project.

d. 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 that may reduce the level of protection the project affords, hinder operation and maintenance of the project, or interfere with the project's proper function.

e. Give the federal government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-federal sponsor owns or controls for access to the project for the purpose of completing, inspecting, operating, maintaining, repairing, rehabilitating, or replacing the project.

f. Give the federal government a right to enter, at reasonable times and in a reasonable manner, upon property that the non-federal sponsor owns or controls for access to the project for the purpose of completing, inspecting, operating, maintaining, repairing, rehabilitating, or replacing the project.

g. Perform, or ensure performance of, any investigations for hazardous substances that are

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determined necessary to identify the existence and extent of any hazardous substances regulated under the CERCLA, Public Law 96-510, as amended (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 required for construction, operation, or maintenance of the project. However, for lands that the federal government determines to be subject to the navigation servitude, only the federal government shall perform such investigations unless the federal government provides the non-federal sponsor with prior specific written direction, in which case the non-federal sponsor shall perform such investigations in accordance with such written direction.

h. 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 that the federal government determines to be required for construction, operation, or maintenance of the project.

i. 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 reflect the information available at this time and current departmental policies governing formulation of individual projects. These recommendations 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 a proposal for authorization and implementation funding. However, prior to transmittal to the Congress, the non-federal sponsor, the state, interested federal agencies, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.

Encls

TODD T. SEMONITE
Lieutenant General, USA
Chief of Engineers