



DEPARTMENT OF THE ARMY
CHIEF OF ENGINEERS
2600 ARMY PENTAGON
WASHINGTON, D.C. 20310-2600

DAEN

DEC 14 2018

SUBJECT: Little Colorado River at Winslow, Navajo County, Arizona, Flood Risk Management Project

THE SECRETARY OF THE ARMY

1. I submit, for transmission to Congress, my report on the study of flood risk management along the Little Colorado River at Winslow within Navajo County, Arizona. It is accompanied by the report of the Los Angeles District Engineer and the South Pacific Division Engineer. The study is being conducted as an interim response to the authority provided by Section 5 of the Flood Control Act of 1937, and also the resolution adopted by the Committee on Public Works of the House of Representatives, adopted May 17, 1994. The resolution requested a review of "reports of the Chief of Engineers on the State of Arizona...in the interest of flood damage reduction, environmental protection and restoration, and related purposes."

2. The reporting officers recommend authorizing a plan to reduce flood risks to the community in and near Winslow, Arizona. The principal features of the plan include:

a. Approximately 22,570 feet of new and reconstructed levees within and near the city of Winslow, Arizona, including removal and reconstruction of approximately 2,000 feet of the Ruby Wash Diversion Levee (RWDL) to its abutment with the Winslow Levee, removal and reconstruction of approximately 3,500 feet of the Winslow Levee from its abutment with the RWDL to Interstate-40, construction of a new levee segment parallel to I-40 (approximately 3,700 feet), and the removal and reconstruction of the Winslow Levee from Interstate-40 to a point approximately 0.8 miles north of North Road, including a setback of approximately 1,600 feet.

b. Improvement of conveyance under the Burlington Northern Santa Fe Railroad Bridge through channelization and saltcedar removal.

c. A flood warning system.

3. The Navajo County Flood Control District is the non-federal cost-sharing sponsor for all features. Based on October 2018 price levels, the estimated total first cost of the recommended plan is \$79,093,000.¹ The federal share of the project first cost is estimated at \$51,410,000 and the non-federal share is estimated at \$27,683,000, which equates to 65 percent federal and 35 percent non-federal. The non-federal costs include the value of lands, easements, rights-of-way, relocations and dredged or excavated material disposal areas estimated at \$1,279,000. The total costs includes \$205,000 for potential cultural resources mitigation. The Navajo County Flood Control District would be responsible for operation, maintenance, repair, replacement and rehabilitation (OMRR&R) of the project after construction, a cost currently estimated at \$50,000

¹ This plan is recommended under a categorical exclusion from identifying and selecting the National Economic Development (NED) Plan pursuant to Engineer Regulation 1105-2-100, paragraph 3.3-b(11)

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per year. In addition to the above, the Navajo County Flood Control District would be fully responsible for performing the investigation, cleanup, and response of hazardous materials on the project sites. Currently, no hazardous material work is anticipated.

4. Based on a 2.875 percent discount rate and a 50-year period of analysis, the total equivalent average annual costs of the project are estimated at \$3,215,000, including OMRR&R. All project costs are allocated to the authorized purpose of flood risk management. The recommended plan is estimated to be about 90 percent reliable in reducing flood risk to the most densely developed portions of the city of Winslow, Arizona from a flood which has a one percent chance of occurrence in any year. The recommended plan would reduce average annual flood damages by approximately \$8,590,000, or 82 percent, and would leave average annual residual damages estimated at \$1,905,000. Net average annual benefits are estimated at \$5,375,000, with a benefit to cost ratio of approximately 2.67 to 1.

5. The city of Winslow, Arizona, and vicinity are at risk of flooding under moderate to high flow events on the Little Colorado River mainstem. An existing levee system has been built to reduce the flood risk to the city of Winslow and immediate vicinity; however, this levee system is at risk of overtopping or failure under current conditions. The study report fully describes these flood risks associated with the Little Colorado River and describes the residual risk. The residual risks have been communicated to the non-federal sponsor, and they understand and agree with the analysis. Residual flood risk would be addressed through wise floodplain management measures including the flood warning system that is part of the recommended plan. The goals and objectives included in the Campaign Plan of the U.S. Army Corps of Engineers (Corps) have been fully integrated into the feasibility study process. The recommended plan has been designed to avoid or minimize environmental impacts while maximizing future safety and economic benefits to the community. The feasibility 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.

6. 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, Independent External Peer Review (IEPR) (Type 1), and Corps Headquarters policy and legal review. All comments from the above referenced 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. Incorporation of review recommendations resulted in expanded narratives and plan evaluations in plan formulation. Recommended improvements better support the decision-making process in the plan selection process. A safety assurance review (Type II IEPR) will be conducted during the design phase of the project.

7. 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

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studies and complies with other administrative and legislative policies and guidelines. Also, the views of interested parties, including federal, state, and local agencies have been considered. The recommended plan would not have any significant adverse effects; therefore, no compensatory mitigation would be required.

8. I concur in the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that the selected plan (Alternative 10.1) to reduce flood risks for Little Colorado River at Winslow, Arizona 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. The cost of the plan recommended in this report will be cost shared in accordance with Section 103 of the Water Resources and Development Act of 1986, as amended (33 U.S.C. 2213), with a minimum non-federal share of 35 percent, not to exceed 50 percent, of total project first costs. Applying these requirements, the federal portion of the estimated total first cost is \$51,410,000 and the non-federal portion is \$27,683,000, or a federal share of 65 percent and a non-federal share of 35 percent. 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 a minimum of 35 percent, but not to exceed 50 percent, of total project costs as further specified below:

(1) Provide 35 percent of design costs in accordance with the terms of a design agreement entered into prior to commencement of design work;

(2) Provide, during construction, a cash contribution of funds equal to 5 percent of total project costs;

(3) 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;

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

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;

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

g. 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), 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, and;

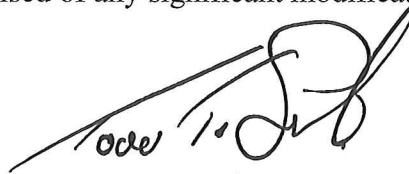
i. Agree, as between the Federal Government and the non-federal sponsor, that the non-federal sponsor shall be considered the operator of the project for the purpose of CERCLA liability, and to the maximum extent practicable, operate, maintain, repair, rehabilitate, and replace the project in a manner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

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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 proposals 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.

*CRITICAL PROJECT;
I PERSONALLY VISITED
AND VALIDATED THIS
PROJECT LAST FALL.
STRONGLY ENDORSE
FOR FUNDING FOR LIFE/
SAFETY. STRONG
COST RATIO. BENEFIT/*



TODD T. SEMONITE
Lieutenant General, USA
Chief of Engineers