



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

DAEN

11 APR 2014

SUBJECT: Truckee Meadows, Nevada

THE SECRETARY OF THE ARMY

1. I submit for transmission to Congress my report on flood risk management for the Truckee Meadows area near the city of Reno, Nevada. It is accompanied by the report of the Sacramento District Engineer and the South Pacific Division Engineer. The Truckee Meadows Flood Control Project was authorized by Section 3(a) (10) of P.L. 100-676, the Water Resources Development Act (WRDA) of 1988. The Secretary of the Army received additional guidance regarding the preparation of the General Reevaluation Report (GRR) pursuant to the House Report 104-293 associated with P.L. 104-46, the Energy and Water Development Appropriations Act (EWDAA) of 1996, to consider additional flood protection along the Truckee River downstream of Reno as well as potential for environmental restoration along the Truckee River and tributaries in the Reno-Sparks area. Congress also gave direction as to the crediting of certain non-federal contributions in Section 113 of P.L. 109-103, the EWDAA of 2006.

2. The reporting officers recommend authorizing a plan to reduce flood risk by construction of floodwalls, levees, and floodplain terracing in the Truckee Meadows Reach and basic recreation features. The recommended plan includes approximately 9,650 linear feet of on-bank (6,500 feet) and in-channel (3,150 feet) floodwalls along the north bank and 31,000 linear feet of levees along the north and south banks in the Truckee Meadows Reach. The floodplain terracing feature involves excavating a benched area along portions of the south (right) bank of the Truckee River between Greg Street and McCarran Boulevard. Floodplain terracing would increase the flood flow channel capacity and thereby reduce water surface elevations in the Truckee Meadows area during a flood. The recommended plan for recreation consists of one small group picnic shelter; one medium group picnic shelter, with parking, playground, and restrooms; and 50 individual picnic areas located north of Mill Street between Greg Street and McCarran Boulevard. In addition, approximately 9,700 linear feet of paved trails and 8,900 linear feet of unpaved trails will be constructed linking the picnic areas with four kayak and canoe input areas and 13 fishing areas along the river. All recreation features would be located on lands required for flood risk management purposes. The estimated project first cost of the recommended plan is \$280,820,000.

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3. The recommended plan would reduce flood risk to the Truckee Meadows area. The project would reduce Expected Annual Damages (EAD) within Truckee Meadows by approximately 40 percent (\$24,880,000). The residual EAD (\$36,601,000) would be caused by flooding from the Truckee River for infrequent flood events and flooding from small tributaries. Annual Exceedance Probabilities (AEP) for flooding within Truckee Meadows would be reduced from approximately 4-10 percent (depending on location) to approximately 1 percent. The project would increase the water surface elevations within the Truckee Meadows area along the downstream reaches of Steamboat Creek, Boynton Slough, and the North Truckee Drain by 4-8 inches for events between 2 percent and 1 percent Annual Chance Exceedance (ACE). The increased 1 percent ACE flood elevations would be inconsistent with National Flood Insurance Program (NFIP) regulatory requirements that prevent communities from allowing floodplain encroachments that would cause increased base flood elevations in areas with existing structures. Under U.S. Army Corps of Engineers (USACE) policy, compliance with the NFIP is a non-federal responsibility and compliance costs would be borne by non-federal interests. These estimated additional costs for NFIP regulatory compliance are identified as regulatory requirement costs which are not included as economic costs of the project. The recommended plan would cause temporary and permanent losses of riparian habitat from construction activities affecting about 28 acres of native riparian habitat. The recommended plan would convert about 66 acres of prime farmland for levee construction. The potential adverse environmental effects would be reduced to a less than significant level through project design, construction practices, preconstruction surveys and analysis, regulatory requirements, and best management practices. No compensatory mitigation would be required.

4. The project first cost was estimated on the basis of October 2013 price levels and amounts to \$280,820,000. The federal portion of the estimated first cost is \$181,652,000. The non-federal portion of the estimated first cost is \$99,168,000 including \$78,572,000 for lands, easements, rights-of-way, relocations, and dredged or excavated material disposal areas (LERRD). The Truckee River Flood Management Authority would also be responsible for the operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) of the project, a cost currently estimated at about \$862,000 per year. The Authority is also responsible for the NFIP regulatory compliance requirements, currently estimated at \$195,000,000. The NFIP regulatory compliance costs are not included in project first cost.

5. Based on a 3.5 percent discount rate and a 50-year period of analysis, the total equivalent average annual economic costs of the project (including OMRR&R) are estimated to be \$11,823,000 (\$11,211,000 for flood risk management and \$612,000 for recreation). The recommended plan is estimated to be 95-99 percent reliable (depending on location) in providing flood risk management for the Truckee Meadows area, from a 2 percent ACE flood event. Total average annual economic benefits are estimated to be \$25,505,000 (\$24,880,000 for flood risk management and \$625,000 for recreation); net average annual economic benefits are \$13,682,000 (\$13,669,000 for flood risk management and \$13,000 for recreation). The overall benefit-to-cost ratio is 2.2 to 1 (1.0-to-1 for recreation).

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6. The goals and objectives included in the Campaign Plan of the USACE have been fully integrated into the Truckee Meadows 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 recommended plan uses environmentally sustainable design including revegetation of floodplain terraces with native species. Environmental experts were consulted during the planning process, and coordination was conducted with a local community coalition to integrate project goals and public concerns.

7. An earlier USACE project, designated as the Truckee River and Tributaries Project, was authorized and constructed in this area pursuant to Section 203 of P.L. 83-780, the Flood Control Act (FCA) of 1954, and Section 203 of P.L. 87-874, the FCA of 1962. The reporting officers have recommended that the part of the existing Truckee River and Tributaries Project between Glendale Avenue and Vista be modified in accordance with the recommended plan for the Truckee Meadows Flood Control Project within that same reach. The Truckee River and Tributaries Project involved improvements at various reaches of the Truckee River between Lake Tahoe and Pyramid Lake. In the Truckee Meadows reach, maintained by the State of Nevada, the first project involved channel straightening and enlargement to provide a channel capacity of 6,000 cubic feet per second (cfs) of flow for flood risk management purposes. The proposed project will modify the Truckee River and Tributaries Project by increasing channel capacity, and by the placement of rip rap on banks and around bridge piers to avoid scouring. The operations and maintenance responsibility will be transferred from the State of Nevada to the present non-federal sponsor. This transfer of operations and maintenance responsibility for the Truckee River and Tributaries Project will ensure that the non-federal sponsor for the Truckee Meadows Flood Control Project has full and clear responsibility to the Department of the Army for OMRR&R of all federal flood risk management elements between Glendale Avenue and Vista. OMRR&R responsibilities for the parts of the Truckee River and Tributaries Project upstream of Glendale Avenue or downstream of Vista would not be changed by the recommended plan.

8. The reporting officers have further recommended additional studies to investigate further reduction of the residual flood risk to the Reno-Sparks area and/or ecosystem restoration opportunities along the Truckee River. Such studies could be part of a future comprehensive investigation of the Truckee River watershed, or a portion thereof. The previously authorized purpose of fish and wildlife enhancement (i.e., ecosystem restoration) may be retained for the Truckee Meadows Flood Control Project for potential future implementation.

9. In accordance with the Engineer Circular 1165-2-214, entitled "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), an Independent External Peer Review (IEPR) (Type I), and a USACE Headquarters policy and legal review. ATR concerns have been addressed and incorporated into the final report. The IEPR was completed by Battelle Memorial Institute. A total of 58 comments were documented. The IEPR comments identified significant concerns in areas of the explanation of the plan

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formulation, hydraulic analysis, and environmental analyses. This resulted in expanded narratives throughout the report to support the decision-making process and justify the recommended plan. All comments from the above referenced reviews have been addressed and incorporated into the final documents. Overall the reviews resulted in improvements to the technical quality of the report. A safety assurance review (IEPR Type II) will be conducted during the design phase of the project.

10. The final GRR and EIS were published for State and Agency Review on 17 January 2014. Comments from other federal agencies generally requested minor clarifications and encouraged further cooperation through the project life. Two more extensive comment letters were received from the Pyramid Lake Paiute Tribe (PLPT) and Reno-Sparks Indian Colony (RSIC). The PLPT expressed concerns relating to tribal coordination and consultation, potential downstream impacts and impacts to the delta at Pyramid Lake, and cumulative impacts of other flood control projects. The PLPT also requested that ecosystem restoration work be included in this project. USACE responded to PLPT with commitments for further coordination and clarification on modeling analyses. Additional studies to investigate further ecosystem restoration opportunities are recommended in the report by the reporting officers. The RSIC letter expressed continued concern with not being a signatory to the Programmatic Agreement (PA) per Section 106 of the National Historic Preservation Act. The RSIC also requested revisions to the final EIS relating to Tribal claims, traditional cultural property (TCP) identification, and provision of funding for tribal monitors during construction. In the response letter sent to the RSIC, USACE committed to including RSIC as a signatory party to the PA and to abide by the stipulations of the PA, which will govern future activities to determine the presence of historic properties, including TCPs, and potential effects of the project.

11. 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. Also the views of interested parties, including federal, state and local agencies have been considered.

12. I concur in the findings, conclusions, and recommendations of the reporting officers. Accordingly, I recommend that the plan to reduce flood damage in the Truckee Meadows area near the City of Reno, Nevada, be authorized in accordance with the reporting officers' recommended plan at an estimated cost of \$280,820,000 with such modifications 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 laws and policies, including Section 103 of P.L. 99-662, WRDA 1986, as amended (33 U.S.C. 2213). These requirements include, but are not limited to, the following items of local cooperation from the non-federal sponsor:

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a. Provide a minimum of 35 percent, but not to exceed 50 percent, of total flood risk management costs and 50 percent of total recreation costs as further specified below:

(1) Provide, during design, 35 percent of design costs allocated to flood risk management and 50 percent of design costs allocated to recreation.

(2) Pay, during the first year of construction, funds so its contribution equals 35 percent of the costs of the reevaluation report for the project.

(3) Pay, during construction, 5 percent of total flood risk management costs.

(4) 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, and perform or ensure the performance of all relocations, as determined by the government to be required for the construction, operation, and maintenance of the project.

(5) During construction, pay any additional funds necessary to make its total contribution equal to at least 35 percent of total flood risk management costs and 50 percent of total recreation costs.

b. Provide, during construction, 100 percent of the total recreation costs that exceed 10 percent of the federal share of total flood risk management costs.

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 P.L. 99-662, the WRDA 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.

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 which might reduce the level of protection the flood risk management features afford, hinder operation and maintenance of the project, or interfere with the project's proper function.

e. Keep the recreation features, and access roads, parking areas, and other associated public use facilities, open and available to all on equal terms.

f. 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

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with applicable federal and state laws and regulations and any specific directions prescribed by the federal government.

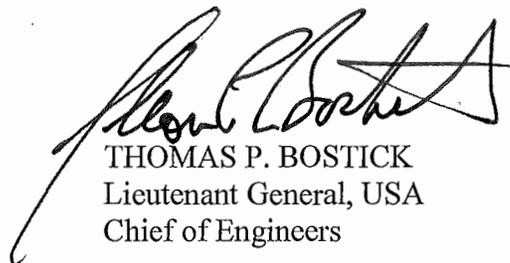
g. Hold and save the United States free from all damages arising from the construction, operation, maintenance, repair, rehabilitation, and replacement of the project, except for damages due to the fault or negligence of the United States or its contractors.

h. 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), P.L. 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, and maintenance of the project.

i. 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, and maintenance of the project.

j. 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.

13. The recommendation contained herein reflects the information available at this time and current departmental policies governing formulation of individual projects. It does not reflect program and budgeting priorities inherent in the formulation of a national civil works construction program or the perspective of higher review levels within the executive branch. Consequently, the recommendation may be modified before it is transmitted to the Congress as a proposal for authorization and implementation funding. However, prior to transmittal to Congress, the 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.



THOMAS P. BOSTICK
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