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JUN 0 4 2026

THE SECRETARY OF THE ARMY

SUBJECT: Little Goose Creek, Sheridan, Wyoming

1. I submit for transmission to Congress my report on aquatic ecosystem restoration recommendations for Little Goose Creek, Sheridan, Wyoming. It is accompanied by the report of the Omaha District and Northwestern Division engineer(s). This study was conducted under the authority of Section 216 of the Rivers and Harbors Act of 1970 (33 U.S.C. § 549a). Section 216 authorizes the Secretary of the Army, acting through the Chief of Engineers, to review the operation of projects for which construction has been completed and which were constructed by the U.S. Army Corps of Engineers (USACE) in the interest of navigation, flood control, water supply, and related purposes when found advisable due to significantly changed physical or economic conditions, and to recommend to Congress on the advisability of modifying the structures or their operations and for improving the quality of the environment in the overall public interest. The goal of the current study is to review the existing Sheridan Flood Control Project, which was authorized by the Flood Control Act of 1950 (Public Law 81-516), and constructed by USACE in the 1960's, to address fish passage and ecosystem restoration opportunities for the Little Goose Creek channel. The authorized project, designed to protect the city of Sheridan from Goose Creek and Little Goose Creek flood discharges, consists of levees, drainage structures, concrete chutes and drop structures, and channel alterations. Although the flood control project is operating as intended, the aquatic ecosystem in the vicinity of the project has become severely degraded. Preconstruction engineering and design activities will continue under the study authority.

2. The reporting officers recommend authorizing a plan that will restore approximately 87 acres of aquatic and riparian habitat through removal of a USACE-constructed concrete chute located in downtown Sheridan. The project will connect recently restored up- and down-stream reaches of the Goose Creek system and is anticipated to improve aquatic habitat and enable fish passage through the area. The project includes ancillary recreation features. The Recommended Plan is the National Ecosystem Restoration (NER) Plan. The Recommended Plan includes the following features

a. Removal of the existing concrete chute to restore stream form and function that will connect upstream and downstream reaches of the creek and enable fish and other aquatic species passage.

b. In-stream restoration measures (e.g., boulder clusters, riffles) that restore aquatic habitat. Riparian restoration measures including plantings to restore terrestrial habitat and create a more natural transition between the aquatic and terrestrial zones.

c. Recreation features consisting of walking trails, overlooks, educational signage, and a kayak access and cleaning station.

3. The City of Sheridan is the non-federal cost sharing sponsor for all features of the project. Based on October 2026 price levels, the estimated total project first cost is $80,934,000. Of the estimated first cost of the recommended plan, the first cost of ecosystem restoration features is $78,734,000, and the first cost of recreation features is $2,200,000. The total project first cost includes the value of lands, easements, rights-of-way, relocations (LERR) estimated to be $34,501,000. The current project plan requires: (a) Fee – There are a total of ±3.47 acres of fee lands required for the project; of the ±3.47 acres, ±3.24 acres are owned by the Sponsor (City of Sheridan) and are currently being utilized as the creek channel and other public rights-of-way. The remaining ±0.23 acres required are privately owned, (b) Temporary Work Area Easement (TWAE) – There are a total of ±0.54 acres of TWAE lands required for the project. The ±0.54 acres are currently owned by the Sponsor and will be utilized for work area for the duration of the project construction. In addition to the lands and easements, the project includes the replacement and relocation of utilities, three roadway bridges, one pedestrian bridge, and water mains. The bridges are being replaced to accommodate the larger channel. Cost sharing is applied in accordance with the provisions of Section 103 of the Water Resources Development Act (WRDA) of 1986 (33 U.S.C. § 2213), as follows:

a. The cost of construction of ecosystem restoration features is shared 65 percent federal and 35 percent non-federal. The cost of construction of recreation features is shared 50 percent federal and 50 percent non-federal. The federal share of the project first cost for initial construction is estimated at $45,332,000 ($44,233,000 for ecosystem restoration and $1,100,000 for recreation) and the non-federal share is estimated at $35,601,000 ($34,501,000 for ecosystem restoration and $1,100,000 for recreation), which equates to approximately 56 percent federal and 44 percent non-federal. The non-federal sponsor will receive credit for the value of LERRs, included in the estimate, toward the non-federal share. However, the non-federal sponsor will voluntarily waive reimbursement of the value of LERRs that exceeds 35 percent of the project first cost for initial construction.

b. The additional annual cost of operation, maintenance, repair, replacement, and rehabilitation (OMRR&R) for the Recommended Plan is estimated to be $39,000. OMRR&R activities include maintenance of planted material (mowing, weed control, replacement), maintenance of constructed material (signage, access points, trails), trash removal, and maintenance of aquatic features (reshaping boulder clusters/riffles, rock/toe wood replacement, sediment management, large debris removal). The non-federal sponsor will be responsible for 100 percent of the cost of project OMRR&R. The

non-federal sponsor responsibility for the operation and maintenance of the nonstructural and nonmechanical elements of each restoration site will cease ten years after ecological success has been determined in accordance with Section 2039 of WRDA 2007, as amended (33 U.S.C. § 2330a). Risks associated with cessation of OMRR&R performance include deterioration of habitat and associated loss of benefits, and deterioration of aesthetics.

c. The estimated project first cost includes monitoring and adaptive management costs of $339,000. Cost shared monitoring will occur for up to 5 years beginning upon completion of each functional portion of the project. Monitoring will include channel features (absence of head cuts, engineered riffles and hydraulic jump, water depth during flow, channel bed composition) and riparian/wetland vegetative features (vegetative coverage, native and invasive species presence, Floristic Quality Index) monitoring. Potential adaptive management measures include, but are not limited to, applying erosion control measures, adjusting channel design or flow regulation, replanting in the case of failed vegetation establishment, and/or potentially refining the grading within the wetland areas.

4. Based on a 3.25 discount rate and a 50-year period of analysis, the equivalent total average annual costs are estimated at $3,596,000. The average annual cost per habitat unit for the restoration is $185,000, with an average annual cost per acre of $41,100. The recreation features of the project will provide annual benefits of $380,000, at an average annual cost of $100,000, for an annual net NED benefit of $280,000 and a benefit to cost ratio of 3.8.

5. Historically, the portions of Big Goose Creek and Little Goose Creek that run through Sheridan supported a thriving coldwater fish community featuring native Yellowstone cutthroat trout (*Oncorhynchus clarkii bouvieri*) and supported an economically significant recreational fishery. Due to urban development in the region, including the Sheridan Federal Flood Control Project to shorten and straighten the channel, confine it between levees, and increase conveyance with a concrete chute, the contemporary aquatic and riparian habitat conditions have deteriorated, reproductive migratory pathways have been effectively cut off, and naturally occurring native species are rarely found. Restoring the 1,734 feet of concrete chute to a more natural channel bed, and integrating FRM with ecosystem restoration objectives to naturalize grade control structures with habitat design, the project will leverage to open access to over 18.5 miles of largely natural remnant habitat throughout the Goose Creek Watershed to support nationally iconic native species such as Yellowstone cutthroat trout, and other localized species of interest to the City and State. The Recommended Plan maintains the same channel conveyance capacity as the existing FRM project. Channel spill for flows that exceed channel capacity will occur at the same frequency [between the 0.5% Annual Exceedance Probability (AEP) and the 0.2% AEP event] although the location of overbank spill differs slightly. Based on the modeling, localized stage increases may occur in events equal or greater than the 0.5% AEP event. Restoring a more natural channel to the downtown reach would also benefit the historical areas of downtown and

improve the aesthetics and recreation potential of the downtown area for the people of Sheridan, and their tourism visitors. The Recommended Plan would remove most of the approximately 4-block length of the concrete chute constructed by USACE resulting in 2.44 acres of riparian habitat and an estimated 85 acres of aquatic habitat and benefiting the community through recreation and restoration of the more natural and historic environment.

6. All compliance with required applicable environmental laws and regulations has been completed with the following exception: a water quality certification pursuant to Section 401 of the Clean Water Act (CWA) which will not be issued prior to 60% design during the PED phase per the Wyoming Department of Environmental Quality (WDEQ).

7. In accordance with USACE policy on the 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, and 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, Requirements, 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.

8. USACE decision documents recognize cost risk and uncertainty surrounding implementation. All cost estimates will carry a degree of uncertainty. The estimated total project first cost for the Recommended Plan at the 80% confidence interval is estimated at $80,934,000. This project carries a degree of uncertainty such that if the main drivers described below are realized, the first cost for the Recommended Plan could increase to approximately $96,989,000. The Recommended Plan has various construction and non-construction components. These components range from 40-80 percent in project definition. The overall Recommended Plan is at 35 percent design maturity. Based on the recommended project design of the construction components and scope definition of the non-construction components, the total project cost is designated as a Class 3 estimate. The total project first cost includes a contingency value of $21,350,000, which is approximately 36 percent of the estimated base project cost of $59,584,000. The contingencies are intended to cover cost and schedule increases due to the identified project risks and their probability of occurrence. Changes to assumptions or the basis of design can result in additional risks not currently identified. For the Recommended Plan project first costs, the currently known major uncertainty drivers are the following: 1) final design of the ecosystem restoration features may result in quantity changes; 2) Defined Acquisition Strategy – the estimate is built on the assumption that this will be a two-step Invitation for Bid (IFB). If the acquisition strategy changes it may impact the

current cost estimate; 3) variation in major material costs and bid assumptions, 4) ability of the non-federal sponsor to provide their share of funds and real estate requirements in a timely fashion as reflected in the project schedule, 5) any changes to assumptions on productivity, construction sequencing due to funding allocations and future market conditions can affect overall project cost, and 6) weather uncertainty can influence both plant establishment and construction timeline if unseasonable high flows are encountered. As the project moves into the next phases, USACE will focus risk management and mitigation on the primary cost and other significant risk drivers to the extent within USACE control. However, there still exists the potential for other unanticipated and uncontrollable changes in environmental or economic conditions that could further increase the total project first cost beyond the current estimate and/or necessitate changes in the project's design.

9. In full consideration of the risks as documented in the preceding paragraphs in this report, I concur with the findings, conclusions, and recommendation of the reporting officers. Accordingly, I recommend that the Little Goose Creek, Sheridan, Wyoming project be authorized in accordance with the reporting officers' Recommended Plan at an estimated total project first cost of $80,934,000 with such modifications as in the discretion of the Chief of Engineers may be advisable. My recommendation is subject to cost sharing and other applicable requirements of federal laws, regulations, and policies. Federal implementation of the project for ecosystem restoration includes, but is not limited to, the following items of local cooperation to be undertaken by the non-federal sponsor in accordance with applicable federal laws, regulations, and policies:

a. Provide the non-federal share of project costs including 35 percent of construction costs allocated to ecosystem restoration and 50 percent of construction costs allocated to recreation, as further specified below:

i. 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;

ii. Provide all lands, easements, and rights-of-way, including those required for relocations and placement areas, and perform all relocations determined by the Federal Government to be required for the project; and

iii. Provide, during construction, any additional contribution necessary to make its total contribution equal to 35 percent of construction costs for ecosystem restoration and 50 percent of construction costs for recreation.

b. Prevent obstructions or encroachments on the project (including prescribing and enforcing regulations to prevent such obstructions or encroachments) that might reduce the outputs produced by the project, hinder operation and maintenance of the project, or interfere with the project's proper function;

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

d. Ensure that the project or lands, easements, and rights-of-way required for the project shall not be used as a wetlands bank or mitigation credit for any other project;

e. Operate, maintain, repair, rehabilitate, and replace the project or functional portion thereof at no cost to the Federal Government, in a manner compatible with the project's authorized purposes and in accordance with applicable federal laws and regulations and any specific directions prescribed by the Federal Government;

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

g. Perform, or ensure performance of, any investigations for hazardous toxic, and radioactive wastes (HTRW) that are determined necessary to identify the existence and extent of any HTRW regulated under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §9601-§9675, and any other applicable law, that may exist in, on, or under real property interests that the Federal Government determines to be necessary for construction, operation, and maintenance of the project.

h. Agree, as between the Federal Government and the non-federal sponsor, to be solely responsible for the performance and costs of cleanup and response of any HTRW regulated under applicable law that are located in, on, or under real property interests required for construction, operation, and maintenance of the project, including the costs of any studies and investigations necessary to determine an appropriate response to the contamination, without reimbursement or credit by the Federal Government;

i. Agree, as between the Federal Government and the non-federal sponsor, that the non-federal sponsor shall be considered the owner and operator of the project for the purpose of CERCLA liability or other applicable law, and to the maximum extent practicable shall carry out its responsibilities in a manner that will not cause HTRW liability to arise under applicable law; and

j. Comply with the applicable provisions of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970, Public Law 91-646, as amended, (42 U.S.C. §4630 and §4655) and the Uniform Regulations contained in 49 C.F.R. Part 24, in acquiring real property interests necessary for construction, operation, and maintenance of the project including those necessary for relocations, and placement area improvements; and inform all affected persons of applicable benefits, policies, and procedures in connection with said Act.

10. 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 non-federal sponsor, interested federal agencies, and other parties will be advised of any significant modifications and will be afforded an opportunity to comment further.

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