

Federal Assistance for Nonfederal Dam Safety

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Nonfederal entities (e.g., state or local governments, public utilities, private entities) own most dams in the United States: 97% of the more than 91,000 dams in the National Inventory of Dams (NID). Although these dams may provide one or more benefits for communities, dam failure and incidents—episodes that, without intervention, likely would have resulted in dam failure—may threaten public safety, local and regional economies, and the environment. In recent years, several dam safety incidents at nonfederal facilities have highlighted the public safety risks posed by the potential failure of and incidents at nonfederal dams and related facilities. Actions to address dam safety may include inspections and emergency preparations, operation and maintenance activities, and rehabilitation (i.e., bringing a dam up to current safety standards) and repair projects. For more information on dam safety, see CRS Report R45981, *Dam Safety Overview and the Federal Role*.

Congress authorized and funded the National Dam Safety Program (NDSP) to facilitate dam safety activities and collaboration among the various federal agencies, states, and owners with responsibility for dam safety. The National Dam Safety Program Act, as amended (Section 215 of the Water Resources Development Act of 1996; P.L. 104-303; 33 U.S.C. §§467f et seq.), authorized the Federal Emergency Management Agency (FEMA) through the NDSP to provide dam safety information resources and training, conduct research and outreach, and support with grant assistance state dam safety programs that oversee nonfederal dams. Every state (except Alabama) and Puerto Rico has a regulatory program for dam safety. State dam safety programs may use NDSP grants for training, dam inspections, dam safety awareness workshops and outreach materials, identification of dams in need of repair or removal, development and testing of emergency action plans, permitting activities, and improved coordination with state emergency preparedness officials. Annual appropriations for each of FY2022 and FY2023 provided \$9.7 million for the NDSP. The Infrastructure Investment and Jobs Act (IIJA; P.L. 117-58) provided \$148 million for state dam safety program grants and \$67 million for other NDSP activities.

Nonfederal dam owners generally are responsible for ensuring the safety of their dams and investing in dam rehabilitation and repair, if necessary. In 2022, the Association of State Dam Safety Officials estimated that \$75.7 billion was needed to rehabilitate nonfederal dams; of that amount, \$24.0 billion was needed for nonfederal dams that are designated as high hazard potential (i.e., dams whose failure likely would result in the loss of at least one human life). Some states provide a limited amount of assistance for dam safety projects (i.e., rehabilitation, repair, or removal projects) through a grant or loan program, and certain federal programs may provide limited assistance for nonfederal dam safety projects (see table below).

Selected Federal Programs That May Support Nonfederal Dam Safety Projects

Agency	Program	Type of Federal Assistance
Federal Emergency Management Agency	Rehabilitation of High Hazard Potential Dam Grant Program	Grant
	Flood Mitigation Assistance Program	Grant
	Hazard Mitigation Grant Program	Grant
	Building Resilient Infrastructure and Communities Program	Grant
	Safeguarding Tomorrow Revolving Loan Fund Program	Grants to capitalize state revolving funds
U.S. Army Corps of Engineers	Corps Water Infrastructure Financing Program	Credit assistance, such as secured loans or loan guarantees
	P.L. 84-99 Rehabilitation Program	Repair of damaged flood control works
Natural Resources Conservation Service	Small Watershed Rehabilitation Program	Grant
Department of Energy	Maintaining and Enhancing Hydroelectricity Incentives	Incentive payment

Source: Congressional Research Service.

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Contents

Introduction	1
National Dam Safety Program.....	4
Assistance to State Dam Safety Programs	4
Authorizations and Appropriations	6
Federal Assistance for Nonfederal Dam Safety Projects.....	6
FEMA Rehabilitation of High Hazard Potential Dam Grant Program.....	10
FEMA Hazard Mitigation Programs	12
Hazard Mitigation Grant Program	13
Building Resilient Infrastructure and Communities	13
Flood Mitigation Assistance	14
Safeguarding Tomorrow Revolving Loan Fund Program.....	14
USACE Corps Water Infrastructure Financing Program	15
USACE P.L. 84-99 Rehabilitation Program.....	16
NRCS Small Watershed Rehabilitation Program	17
DOE Maintaining and Enhancing Hydroelectricity Incentives.....	18

Figures

Figure 1. Recent Dam Incidents	3
Figure 2. New River Dam Outlet Channel Repair Through P.L. 84-99 Rehabilitation Program	16

Tables

Table 1. Selected Federal Programs That Support Nonfederal Dam Safety Projects.....	8
---	---

Contacts

Author Information.....	19
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Introduction

Dams may be used to provide flood control, navigation, water supply, hydroelectric power, irrigation, recreation, fish and wildlife management, or waste management benefits. Construction of dams often causes environmental change (e.g., alteration of riverine habitat). Owning a dam also may require financial costs for operation and maintenance, rehabilitation (i.e., bringing a dam up to current safety standards), and repair.¹ Most dams in the United States are owned by private entities, state or local governments, or public utilities. In 2022, states reported in the National Inventory of Dams (NID) that these nonfederal entities own 97% of the more than 91,000 dams in the database.²

Dam failure and incidents—episodes that, without intervention, likely would have resulted in dam failure—may threaten public safety, local and regional economies, and the environment; they also may result in the loss of services provided by a dam.³ Dams can deteriorate as they age, which may increase the risk of a potential safety threat.⁴ Lack of maintenance and misoperation may amplify dam deterioration. Development in areas surrounding dams and their reservoirs and security threats may amplify the risks of dam deterioration. Seismic events, floods, and wildfire and associated debris flows also may impact dams.

Actions to address dam safety may include inspections and emergency preparations, operation and maintenance activities, and rehabilitation and repair projects. (For more information on dam safety, see CRS Report R45981, *Dam Safety Overview and the Federal Role*, by Anna E. Normand.) Policies and efforts to improve dam safety have reduced the number of fatalities due to dam failure in the past several decades compared with events in the 1960s-1970s, early 1900s, and late 1800s.⁵ However, in recent years, several dam safety incidents have highlighted the inherent public safety risks posed by the failure of or incidents at nonfederal dams and related facilities:

¹ These costs may vary widely based on dam design, age, and upkeep. Association of State Dam Safety Officials (ASDSO), *Living With Dams: Know Your Risks*, 2012, at https://damsafety.org/sites/default/files/ASDSO-LivingWithDams-Know%20Your%20Risk-NO%201_ASDSO-WEB.pdf.

² U.S. Army Corps of Engineers (USACE), National Inventory of Dams (NID), at <https://nid.usace.army.mil/#/>. NID data in this report were accessed on November 14, 2022, with NID showing data as of November 3, 2022. For the purposes of inclusion in the NID, a *dam* is defined as any artificial barrier that has the ability to impound water, wastewater, or any liquid-borne material for the purpose of storage or control of water that (1) is at least 25 feet in height with a storage capacity of more than 15 acre-feet, (2) is greater than 6 feet in height with a storage capacity of at least 50 acre-feet, or (3) poses a significant threat to human life or property should it fail (i.e., high or significant hazard dams). 33 U.S.C. §467. Thousands of dams do not meet these criteria; therefore, they are not included in the NID.

³ Dam incidents may include overtopping, spillway malfunction or failure, and piping (i.e., internal erosion caused by seepage), among others. Federal Emergency Management Agency (FEMA), *The National Dam Safety Program, Biennial Report to the United States Congress, Fiscal Years 2018-2019*, FEMA P-2189, November 2022, at https://www.fema.gov/sites/default/files/documents/fema_ndsp-report-congress-fy18-fy19.pdf.

⁴ Many dams are built for an intended operational lifespan of 50 years. Only 33% of the nonfederal dams listed in the NID (as of a November 3, 2022, update) are reported as built in the last 50 years. Some dams, including older dams, also may not meet current dam safety standards, which have evolved as scientific data and engineering have improved over time. Dams may continue to operate for their purpose after the 50-year time frame and may benefit from rehabilitation to expand their operational lifespan and address current safety standards.

⁵ The time frames mentioned represent periods of high fatality dam incidents and failures in the United States. Stanford University, Department of Civil and Environmental Engineering, National Performance of Dams Program, *Dam Failures in the U.S.*, September 2018, at http://npdp.stanford.edu/sites/default/files/reports/npdp_dam_failure_summary_compilation_v1_2018.pdf.

- From 2015 to 2018, over 100 dams breached in North Carolina and South Carolina due to record flooding.⁶
- In 2017, the near failure of Oroville Dam’s spillway in California resulted in a precautionary evacuation of approximately 200,000 people and more than \$1.1 billion in emergency response and repair (see left panel in **Figure 1**).⁷
- In March 2019, the latest dam failure fatality occurred when a hydropower dam in Nebraska failed because of an icy flood. There was no formal emergency action plan because the dam was not classified as a *high hazard potential dam*.⁸
- In May 2020, following several days of heavy rain, two dams failed in Michigan, resulting in widespread flooding and the evacuation of approximately 10,000 downstream residents (see right panel in **Figure 1**).⁹

⁶ Federal Emergency Management Agency (FEMA), *The National Dam Safety Program: Biennial Report to the United States Congress, Fiscal Years 2016-2017*, May 2019, at https://www.fema.gov/sites/default/files/2020-08/national-dam-safety_biennial-report-2016-2017.pdf. Hereinafter FEMA, *National Dam Safety Program*, 2016-2017.

⁷ *Spillways* are structures to release water from a dam, either as part of regular operations or as part of emergency operations to reduce water volume or water pressure on the dam and mitigate the risk of failure. ASDSO, Lessons Learned, “Case Study: Oroville Dam (California, 2017),” at <https://damfailures.org/case-study/oroville-dam-california-2017/>.

⁸ Hazard potential classification reflects the amount and type of damage that a failure would cause. *High hazard potential* means the loss of at least one life is probable. ASDSO, *Spencer Dam Failure Investigation Report*, April 2020, at <https://damsafety.org/SpencerDamReport>.

⁹ On May 19, 2020, following several days of heavy rain, the Edenville Dam on the Tittabawasee River in Gladwin County, MI, failed and sent a large volume of water downstream; this water overtopped the Sanford Dam in Midland County, MI. U.S. Geological Survey, “Dam Breaks in Michigan,” at <https://www.usgs.gov/centers/eros/dam-breaks-michigan>.

Figure 1. Recent Dam Incidents

Oroville Dam Spillway, CA (left panel), and Sanford Dam, MI (right panel)



Source: Defense Imagery Management Operations Center, “2017 Oroville Dam Flood,” at <https://www.dvidshub.net/image/3195148/2017-oroville-dam-flood>; Defense Imagery Management Operations Center, “Sanford Dam Assessment,” at <https://www.dvidshub.net/image/6232937/sanford-dam-assessment>.

Notes: Left panel: Oroville Dam main service spillway gates were opened in February 2017 following higher-than-forecasted inflows, which resulted in the spillway crumbling on one side. Right panel: reconnaissance survey of the Sanford Dam after the dam was breached by floodwaters on May 19, 2020.

Nonfederal dam owners generally are responsible for ensuring dam safety and investing in rehabilitation and repair of their dams.¹⁰ In 2022, the Association of State Dam Safety Officials estimated that \$75.7 billion was needed to rehabilitate nonfederal dams; of that amount, \$24.0 billion was needed for high hazard potential nonfederal dams.¹¹ Currently, 22 states provide a limited amount of assistance for these activities (e.g., rehabilitation, repair) through grant or low-interest revolving loan programs.¹²

¹⁰ FEMA, *National Dam Safety Program*, 2016-2017.

¹¹ ASDSO, *The Cost of Rehabilitating Our Nation’s Dams*, March 2022, at <https://damsafety-prod.s3.amazonaws.com/s3fs-public/files/Cost%20of%20Rehab%20Report-2022%20FINAL.pdf>. There were 13,676 high hazard potential dams in the NID, as of a November 3, 2022, update. 11,538 dams did not have a hazard potential classification (i.e., there was no indication of whether the dam has a high, significant, or low hazard classification).

¹² The number of states with a grant or loan program was self-reported by states through a State Dam Safety Program Performance Questionnaire conducted by ASDSO in 2021. Personal correspondence between CRS and ASDSO, October 17, 2022.

In 1996, Congress authorized and funded the National Dam Safety Program (NDSP), which provides assistance to state dam safety programs overseeing nonfederal dams, among other activities. In addition, other federal programs may provide limited assistance for nonfederal dam safety projects. Many of these federal programs assist in mitigating flood risk or are authorized specifically for certain types of dams (e.g., high hazard potential dams, hydropower dams).

This report provides background and funding information on the NDSP and other federal programs that may support nonfederal dam safety projects. Some of these programs are relatively new (i.e., were provided funding for the first time in FY2021 or FY2022) and/or have received increased funding in recent years (e.g., through supplemental appropriations, such as the Infrastructure Investment and Jobs Act [IIJA, P.L. 117-58]).

Congress may examine policy and funding considerations regarding these programs and how they address nonfederal dam safety. Broadly, Congress may reexamine what the federal role should be for nonfederal dam safety and whether the level and type of federal assistance currently provided effectively address that role. Congress may also conduct oversight in how effectively these programs are utilizing appropriations and are addressing risks from dams. Oversight and funding considerations may be of particular interest for programs that have received first-time funding or increased funding during FY2021 through FY2023 (e.g., through recent supplemental appropriations).

National Dam Safety Program

The National Dam Safety Program Act, as amended (Section 215 of the Water Resources Development Act of 1996; P.L. 104-303; 33 U.S.C. §§467f et seq.), established the NDSP as a federal program to facilitate dam safety activities and collaboration among the various federal agencies, states, and owners with responsibility for dam safety.¹³ Administered by the Federal Emergency Management Agency (FEMA), the NDSP also provides dam safety information resources and training, conducts research and outreach, and supports state dam safety programs with grant assistance. (This section of the report does not cover NDSP assistance for nonfederal dam safety projects, which is discussed in the “Federal Assistance for Nonfederal Dam Safety Projects” section.) The NDSP does not mandate uniform standards across dam safety programs but has developed the *Model State Dam Safety Program*, a guideline for developing state dam safety programs.¹⁴

Assistance to State Dam Safety Programs

The National Dam Safety Program Act authorized assistance for state dam safety programs under the NDSP. Every state (except Alabama) has established a regulatory program for dam safety, as has Puerto Rico.¹⁵ Collectively, these programs have regulatory authority over 71% of the NID

¹³ The stated purpose of the National Dam Safety Program (NDSP) is “to reduce the risks to life and property from dam failure in the United States through the establishment and maintenance of an effective national dam safety program to bring together the expertise and resources of the Federal and non-Federal communities in achieving national dam safety hazard reduction.” FEMA, *National Dam Safety Program*, 2016-2017. For information on the NDSP, see FEMA, “National Dam Safety Program,” at <https://www.fema.gov/national-dam-safety-program>.

¹⁴ ASDSO notes that a task force has updated the *Model Dam Safety Program* and has provided FEMA the draft update for final review. Personal correspondence between CRS and ASDSO on October 17, 2022. FEMA, *Model State Dam Safety Program*, 2007, at https://damsafety-prod.s3.amazonaws.com/s3fs-public/files/FEMA%20316_%20Model%20State%20Dam%20Safety%20Program_2007.pdf.

¹⁵ FEMA, *National Dam Safety Program*, 2016-2017.

dams.¹⁶ State dam safety programs typically include safety evaluations of existing dams, review of plans and specifications for dam construction and major repair work, periodic inspections of dams and construction work on new and existing dams, reviews and approval of Emergency Action Plans (EAPs) required for certain dams,¹⁷ and engagement with local officials and dam owners on emergency preparedness activities.¹⁸ Funding levels and narrow state statutory authorities may limit the activities of some state dam safety programs.¹⁹ In 2021, 15 states had more than seven full-time employees in their dam safety program.²⁰ In addition, some states—Alabama, Florida, Indiana, Kentucky, Vermont, and Wyoming—do not have the authority to require dam owners of high hazard potential dams to develop EAPs.²¹

States working toward or meeting minimal requirements as established by the National Dam Safety Program Act are eligible for assistance grants.²² The grant program’s objective is to improve state programs using the *Model State Dam Safety Program* as a guide. Grant assistance is allocated to state programs via a formula: one-third of funds are distributed equally among states participating in the matching grant program, and two-thirds of funds are distributed in

¹⁶ NID as of a November 3, 2022, update. States define their own regulatory jurisdiction (the height, volume, and type of dams to be regulated). According to ASDSO, most states follow the NID criteria, but regulatory statutes vary among states. Some states exempt categories of dams from inspection based on the purpose of the impoundment or the owner type. For example, Delaware law exempts dams owned by private individuals and entities; Missouri law exempts all agricultural purpose dams and dams less than 35 feet in height, regardless of storage volume and potential hazard; and Texas law exempts privately owned significant hazard and low hazard potential dams storing less than a maximum of 500 acre-feet in counties with population less than 350,000, excluding dams within municipal corporate limits. Personal correspondence between CRS and ASDSO on August 30, 2019. ASDSO, *Summary of State Laws and Regulations on Dam Safety*, May 2022, at https://damsafety-prod.s3.amazonaws.com/s3fs-public/files/FINAL%20-%202020%20Update%20State%20Laws%20and%20Regulations%20Summary_0.pdf.

¹⁷ An Emergency Action Plan (EAP) is a formal document that identifies potential emergency conditions at a dam and specifies preplanned actions to minimize property damage and loss of life. EAPs identify the actions and responsibilities of different parties in the event of an emergency, such as the procedures to issue early warning and notification messages to emergency management authorities. EAPs also contain inundation maps to show emergency management authorities the critical areas for action in case of an emergency.

¹⁸ FEMA, *Model State Dam Safety Program*, 2007, at https://damsafety-prod.s3.amazonaws.com/s3fs-public/files/FEMA%20316_%20Model%20State%20Dam%20Safety%20Program_2007.pdf; FEMA, *National Dam Safety Program*, 2016-2017.

¹⁹ ASDSO, “State Performance and Current Issues,” at <https://damsafety.org/state-performance>.

²⁰ Past recommendations were for one full-time employee (FTE) for every 20 state-regulated dams. Updated draft guidance to states may provide broader recommendations for staffing needs based on the different types of programs, such as state agencies that perform most dam safety work in-house compared with states that outsource work or require dam owners to hire engineers to perform inspections. Personal correspondence between CRS and ASDSO on October 17, 2022.

²¹ Regulations for high hazard potential dams vary by state, although FEMA has encouraged requiring EAPs for high hazard potential dams. Personal correspondence between CRS and ASDSO on October 17, 2022. ASDSO, *Summary of State Laws and Regulations on Dam Safety*, May 2022, at https://damsafety-prod.s3.amazonaws.com/s3fs-public/files/FINAL%20-%202020%20Update%20State%20Laws%20and%20Regulations%20Summary_0.pdf.

²² The National Dam Safety Program Act, as amended (Section 215 of the Water Resources Development Act of 1996; P.L. 104-303), established 10 criteria that state dam safety programs must meet or be working toward meeting to be eligible for the grant assistance program (33 U.S.C. §467f). At the request of states, FEMA also provides technical training to dam safety inspectors. The training program is available to all states by request, regardless of state participation in the matching grant program. Intermediate inspections focus on the current status of the dam through field inspections of the dam and associated structures. In addition to field inspections of dam features, formal inspections include a review to evaluate the dam’s design and construction relative to current or state-of-the-art criteria to identify potential dam safety concerns that may not be apparent from a visual inspection. FEMA, *Federal Guidelines*. For more information, see FEMA, “Dam Safety Training,” at <https://www.fema.gov/emergency-managers/risk-management/dam-safety/training>.

proportion to the number of state-regulated dams in the NID for each participating state.²³ Grant funding may be used for training, dam inspections, dam safety awareness workshops and outreach materials, identification of dams in need of repair or removal, development and testing of EAPs, permitting activities, and improved coordination with state emergency preparedness officials. For some state dam safety programs, the grant funds support the salaries of full-time employees that conduct these activities.²⁴ This money is not available for rehabilitation and repair activities.²⁵

Authorizations and Appropriations

The total annual authorization of appropriations of \$13.4 million for the NDSP through FY2023 includes \$9.3 million for grant assistance to state dam safety programs, \$1.0 million for state staff, \$0.8 million for training, \$1.5 million for research, and \$1.0 million for public awareness. Annual appropriations for FY2009 and FY2010 funded the NDSP at \$10.7 million in nominal dollars, and annual appropriations for the program ranged from \$9.1 million to \$9.7 million in nominal dollars between FY2011 and FY2023.²⁶ Over FY2009 and FY2022, between 64% and 84% of NDSP annual appropriations supported grant assistance to state dam safety programs.²⁷ The IJA provided \$67 million in FY2022, to remain available until FY2026, for non-grant related NDSP activities, and \$148 million in FY2022, to remain available until expended, for grant assistance to state dam safety programs. According to FEMA correspondence in December 2022, the agency had not yet produced a spend plan on how the NDSP intends to use IJA funds.²⁸ The agency stated it is coordinating with the National Dam Safety Review Board and the Interagency Committee on Dam Safety to determine how to use IJA funding, and has scheduled stakeholder listening sessions for late January 2023. In FY2022, FEMA distributed \$11 million in dam safety program grants to 49 states and Puerto Rico (ranging from \$77,409 to \$736,995 per state), using annual appropriations and some IJA appropriations.²⁹

Federal Assistance for Nonfederal Dam Safety Projects

Congress has created various federal programs that may be able to assist state, local, territorial, and tribal entities with their dam safety projects (see summary of selected programs in **Table 1**).³⁰

²³ Allocation of state assistance grants is determined by the National Dam Safety Review Board and the Director of FEMA. For more information, see FEMA, “Dam Safety Grants,” at <https://www.fema.gov/emergency-managers/risk-management/dam-safety/grants#state>.

²⁴ Personal correspondence between CRS and FEMA on June 26, 2019.

²⁵ 33 U.S.C. §467f(e).

²⁶ Personal correspondence between CRS and FEMA in June 26, 2019 and October 21, 2022. Explanatory statements accompanying Division F of P.L. 117-103 and Division F of P.L. 117-328 recommended \$9.7 million for the National Dam Safety Program in FY2022 and FY2023.

²⁷ As of December 2022, FEMA has not announced how much funding is available for state grants out of FY2023 National Dam Safety Program appropriations.

²⁸ FEMA has committed less than \$2 million to various activities as of December 2022. Personal correspondence between CRS and FEMA on October 21, 2022, and December 9, 2022.

²⁹ This included \$7 million from the Consolidated Appropriations Act, 2022 (P.L. 107-103), and \$4 million from the Infrastructure Investment and Jobs Act (IIJA; P.L. 117-58). FEMA, “Grant Assistance to States,” at <https://www.fema.gov/emergency-managers/risk-management/dam-safety/grants>.

³⁰ More general federal programs offer broader funding opportunities for which dam rehabilitation and repair may

Some of these programs are broad in focus (e.g., addressing flood risks), whereas others were established specifically to address dam infrastructure. **Table 1** provides information on funding that each program received in FY2022 and FY2023. The IIJA provided an influx of funds eligible for nonfederal dam safety projects, which included some programs' first appropriations. The programs shown in **Table 1** may receive similar or different levels of appropriations in subsequent fiscal years. Program-specific discussions below provide more information on these selected programs and are presented by agency in the following order: FEMA, the U.S. Army Corps of Engineers (USACE), the Natural Resources Conservation Service (NRCS) in the U.S. Department of Agriculture, and the Department of Energy (DOE).

qualify under certain criteria. For example, Land and Water Conservation Fund financial assistance to states may be available to restore or preserve existing dams and other impoundments if the primary purpose is to provide public outdoor recreation, such as swimming, fishing, and boating (U.S. Department of the Interior, National Park Service, *Land and Water Conservation Fund State Assistance Program, Federal Financial Assistance Manual*, vol. 71, effective March 11, 2021, at <https://www.nps.gov/subjects/twcf/upload/LWCF-FA-Manual-Vol-71-3-11-2021-final.pdf>).

Table 1. Selected Federal Programs That Support Nonfederal Dam Safety Projects

Dollars in Millions (M) and Billions (B)

Program	Agency	Program Purpose	Type of Federal Assistance	Eligible Dam Projects	FY2022 Funding	FY2023 Funding
High Hazard Potential Dam Rehabilitation Grant	FEMA	Dam rehabilitation	Grant	High hazard potential dams meeting certain criteria	\$597 M ^a	—
Hazard Mitigation Grant Program	FEMA	Hazard mitigation	Grant	Actions that increase hazard mitigation capabilities	Determined per disaster	Determined per disaster
Building Resilient Infrastructure and Communities	FEMA	Hazard mitigation	Grant	Actions that increase hazard mitigation capabilities	\$2.295 B ^b	Not known yet
Flood Mitigation Assistance	FEMA	Flood mitigation of properties insured by NFIP	Grant	Actions that increase hazard mitigation capabilities	\$800 M ^c	Not known yet
Safeguarding Tomorrow Revolving Loan Fund Program	FEMA	Hazard mitigation	Grants to capitalize state revolving loan funds	Program details not yet available	\$100 M	\$100 M
Corps Water Infrastructure Financing Program	USACE	Finance water resource projects	Credit assistance, such as secured loans or loan guarantees	NID dams with state, local government, public utility, or private ownership	\$69 M for credit assistance support for dam safety (may support up to \$6.5 B in loans)	—
P.L. 84-99 Rehabilitation Program	USACE	Repair of damaged flood control works	Pay for 80%-100% of repair costs	Projects sponsored by a nonfederal public entity with active program status	\$939 M ^d	\$519 M ^e
Small Watershed Rehabilitation Program	NRCS	Dam rehabilitation	Grants and technical services	Dams originally constructed with NRCS assistance	Discretionary: \$119 M ^f Mandatory: unspecified portion of \$50 M	Discretionary: \$2 M Mandatory: unspecified portion of \$50 M

Program	Agency	Program Purpose	Type of Federal Assistance	Eligible Dam Projects	FY2022 Funding	FY2023 Funding
Maintaining and Enhancing Hydroelectricity Incentives	DOE	Grid resiliency, dam safety, and environmental improvements	Incentive payment	Qualified hydroelectric facilities	\$277 M	\$277 M

Source: CRS using enacted laws.

Notes: DOE = Department of Energy; FEMA = Federal Emergency Management Agency; NFIP = National Flood Insurance Program; NID = National Inventory of Dams; NRCS = Natural Resources Conservation Service; USACE = U.S. Army Corps of Engineers. FY2022 and FY2023 funding means the amount that a program received for that respective fiscal year, which may include annual appropriations, Infrastructure Investment and Jobs Act (IIJA; P.L. 117-58) appropriations and other supplemental appropriations, and set-aside funding. Subsidy costs are the present value of estimated future government losses from loans and loan guarantees. FEMA defines *mitigation* as any sustained action to reduce or eliminate long-term risk to people and property from natural hazards and their effects. FEMA distinguishes between post-disaster mitigation funding, which is awarded after a specific incident, and pre-disaster mitigation funding, which is awarded to reduce future damage from an anticipated event.

- a. \$12 M is from annual appropriations and \$585 M is from the IIJA. FEMA included \$10 M of IIJA funding as part of the \$22 M available for the FY2022 application period. IIJA funding is available until expended, so IIJA funding may be available as part of future funding announcements.
- b. The \$2.295 B is mostly from the 6% set-aside in the Disaster Relief Fund, but \$200 M is from the IIJA. The set-aside changes every month as new disasters are declared.
- c. For the FY2022 awards, \$700 M of this total comes from the IIJA appropriation and \$100 M comes from NFIP policyholders. See Department of Homeland Security, *Flood Mitigation Assistance, Notice of Funding Opportunity Fiscal Year 2022*, August 12, 2021, pp. 5-7.
- d. \$826 M is from P.L. 117-43 and \$112.5 M from the IIJA. Amount based on USACE, email to CRS, November 21, 2022.
- e. Division N of P.L. 117-328 provided \$519 M for USACE's Flood Control and Coastal Emergencies account, which USACE may use for repairs through the P.L. 84-99 Rehabilitation Program.
- f. \$1 M is from annual appropriations and \$118 M is from the IIJA.

Federal Assistance for Nonfederal Dam Safety Activities

In addition to the National Dam Safety Program and programs in **Table I** federal agencies may provide assistance for certain nonfederal dam safety activities aside from dam rehabilitation, repair, or removal. Some of these opportunities include the following:

- Federal Emergency Management Agency (FEMA) preparedness grant programs may provide funding for dam safety under certain circumstances. These programs include the Homeland Security Grant Program, the Emergency Management Performance Grant, the State Homeland Security Program, and the Urban Area Security Initiative. FEMA preparedness grants are non-disaster grants that focus on specific locations, hazards, and first responders. Planning effective communication with emergency managers and the community that could be affected in the wake of a dam failure is an example of preparedness strategy. For additional information, see CRS Report R46696, *National Preparedness: A Summary and Select Issues*, by Shawn Reese and Lauren R. Stienstra; and FEMA, *FEMA Resources and Services Applicable to Dam Risk Management*, FEMA P-1068, September 2021, pp. 4-1 to 4-10.
- The Natural Resources Conservation Service's (NRCS's) Emergency Watershed Protection Program can provide funding to reduce hazards to life and property in watersheds that have been damaged by natural disasters. Funded activities may include implementation of selected emergency measures following a dam failure, even if the dam was not originally constructed with NRCS assistance. For additional information, see CRS Report R42854, *Emergency Assistance for Agricultural Land Rehabilitation*, by Megan Stubbs.
- Various federal agencies may assist with dam failure inundation modeling. FEMA, the Department of Homeland Security's Cybersecurity and Infrastructure Agency, and the U.S. Army Corps of Engineers (USACE) employ or contract for such modeling. For example, USACE provided technical assistance to South Dakota consisting of modeling dam failure scenarios to produce tabletop exercises and inundation maps to inform dam owners' emergency preparedness plans.
- USACE may provide post-event dam and site assessments if such technical assistance is requested by a state governor or as part of USACE's responsibilities for public works and engineering under the National Response Framework. Under its technical assistance authorities, USACE may assist with various nonfederal dam safety preparedness activities. For example, USACE assisted the state of Vermont with dam failure modeling to support an update of the state's hazard mitigation plan. The nonfederal cost sharing for USACE technical assistance varies depending on the authority and if the entity requesting assistance is public or private.

FEMA Rehabilitation of High Hazard Potential Dam Grant Program

Section 5006 of the Water Infrastructure Improvements for the Nation Act (P.L. 114-322), as amended, authorized FEMA to administer a Rehabilitation of High Hazard Potential Dam (HHPD) Grant Program to provide funding assistance for the repair, removal, or rehabilitation of nonfederal high hazard potential dams.³¹ The program authorizes grants to be used for technical, planning, design, and construction assistance.³² To be eligible, dams must be classified as high hazard potential, must have an EAP that is approved or is seeking state approval, must fail to meet the state's minimum dam safety standards, and must pose an unacceptable risk to the public.³³ Dams that are not eligible include federally owned dams, licensed hydroelectric dams with an authorized installed capacity of greater than 1.5 megawatts, and dams built under the authority of the U.S. Secretary of Agriculture (see "NRCS Small Watershed Rehabilitation Program").

³¹ Only 15% of nonfederal dams in the NID are high hazard potential dams. NID as of a November 3, 2022, update.

³² For more information, see FEMA, "Rehabilitation of High Hazard Potential Dams Grant Program Guidance and Resources," at <https://www.fema.gov/emergency-managers/risk-management/dam-safety/grants/resources>.

³³ 33 U.S.C. §467(4). Hereinafter, FEMA, "Rehabilitation of HHPD."

States and territories with a dam safety program may submit a single application for the Rehabilitation of HHPD Grant Program by their designated state-authorized agency (SAA). Sub-recipients, which may be nonfederal governments or nonprofit organizations, apply for and receive sub-awards directly from the SAA.³⁴ Participating SAAs and sub-recipients must comply with certain federal programs and laws (e.g., flood insurance programs and the Robert T. Stafford Disaster Relief and Emergency Assistance Act [P.L. 100-707]). Sub-recipients must commit to providing operation and maintenance for 50 years following completion of the rehabilitation activity. SAAs must have a FEMA-approved state hazard mitigation plan that includes all dam risks and complies with the Disaster Mitigation Act of 2000 (P.L. 106-390). Sub-recipients must (1) demonstrate that the tribal or local government with jurisdiction over the area in which the dam is located has a FEMA-approved hazard mitigation plan that includes all dam risks and complies with the Disaster Mitigation Act of 2000 and (2) have or develop a floodplain management plan to reduce the impacts of future flood events in the area protected by the project.³⁵

For FY2021-FY2026, Congress authorized appropriations of \$60 million annually for the Rehabilitation of HHPD Grant Program.³⁶ FEMA is to distribute grant money to SAAs based on the following formula: one-third of the total funding is to be distributed equally among the SAAs that applied for funds, and two-thirds of the total is to be distributed among the SAAs proportional to the number of eligible high hazard potential dams in the state compared with the total in all states applying. Individual grants to nonfederal sponsors are not to exceed 12.5% of total program funds or \$7.5 million, whichever is less. Grant assistance must be accompanied by a nonfederal cost share of no less than 35%, which may consist of in-kind services.

Congress first provided appropriations for the Rehabilitation of HHPD Grant Program in FY2019.³⁷ Annual appropriations in both FY2021 and FY2022 were \$12 million for the program, but no annual appropriations were provided for FY2023.³⁸ The IIJA provided \$585 million for the Rehabilitation of HHPD Grant Program in FY2022, to remain available until expended, with \$75 million specified for dam removal activities.³⁹ For FY2022, FEMA announced \$22 million in available funding between annual appropriations and IIJA funding, and it awarded funds ranging from \$0.3 million to \$3.0 million to 20 states (i.e., SAAs).⁴⁰

³⁴ According to FEMA, private dam owners that are not nonprofits are to work with their local government or state if they are interested in receiving funds for their dam. FEMA, “Rehabilitation of HHPD.”

³⁵ According to FEMA, tribal governments are not eligible sub-recipients but, if the dam is located on tribal land, the tribal plan must be approved by FEMA and must include all dam risks. If the state-authorized agency (SAA), local government, or tribal government where the dam is located does not have a mitigation plan that includes all dam risks, the SAA may request a 12-month extension to meet this requirement in coordination with the local or tribal government. FEMA, “Rehabilitation of HHPD.”

³⁶ 33 U.S.C. §467f–2.

³⁷ Explanatory statement accompanying Division A of P.L. 116-6.

³⁸ Explanatory statements accompanying Division F of P.L. 116-260, Division F of P.L. 117-103, Division F of P.L. 117-328.

³⁹ Dam removal has always been an eligible activity for the Rehabilitation of High Hazard Potential Dam Grant Program, but, as of FY2022, FEMA has not funded a removal project. FEMA plans to issue implementation guidelines for the \$75 million of IIJA funding specifically for dam removal and is coordinating with other agencies, such as the U.S. Forest Service and the U.S. Fish and Wildlife Service, to ensure complementary program criteria for dam removal projects. Personal correspondence between CRS and FEMA on October 21, 2022.

⁴⁰ FEMA, “High Hazard Potential Dams Grant Awards,” October 21, 2022, at <https://www.fema.gov/emergency-managers/risk-management/dam-safety/rehabilitation-high-hazard-potential-dams/awards>.

FEMA Hazard Mitigation Programs

Through programs other than those discussed above, FEMA may provide assistance to reduce the potential damage that could be caused by a dam failure, mainly through its Hazard Mitigation Assistance (HMA) programs: the Hazard Mitigation Grant Program (HMGP), the Flood Mitigation Assistance (FMA) Grant Program, the Building Resilient Infrastructure and Communities (BRIC) Grant Program, and the new Safeguarding Tomorrow Revolving Loan Fund (STRLF) Program. FEMA defines *mitigation* as any sustained action to reduce or eliminate long-term risk to people and property from natural hazards and their effects.⁴¹ Although all mitigation activities are essentially preparation for the next disaster, FEMA distinguishes between post-disaster mitigation funding, which is awarded after a specific incident, and pre-disaster mitigation funding, which is awarded to reduce future damage from an anticipated event. Pre-disaster mitigation funding does not require a disaster to have occurred. HMGP and Public Assistance (PA) are post-disaster funding and require a form of disaster declaration: an emergency declaration, a major disaster declaration from the President, or a Fire Management Assistance Grant declaration.⁴² BRIC, FMA, and STRLF provide pre-disaster mitigation funding. Applicants can request funding from these programs to reduce future risks without waiting for a disaster to occur. Every state and territory has a State Hazard Mitigation Officer who can help communities apply for HMA funding.⁴³

After a presidentially declared disaster, states, territories, and tribes (STTs) may request mitigation funding through HMGP and PA.⁴⁴ HMGP and PA are funded through the Disaster Relief Fund (DRF); funding is not appropriated specifically for these programs. DRF appropriations are “no year” funds that may be drawn for authorized purposes at any time until expended. Generally, Congress does not appropriate funds for the DRF for a specific disaster, year, or program.⁴⁵ HMGP and PA funding initially go to the state, which is the primary recipient of the funding. Local and tribal governments and eligible nonprofit entities submit applications to the primary recipient.

FEMA provides pre-disaster mitigation grants not linked to a particular disaster through FMA and BRIC grants, which are awarded competitively on an annual basis. FEMA generally issues the Notice of Funding Opportunity at the end of September, with applications due in late January of the following year.⁴⁶ Neither BRIC nor FMA receives annual appropriations, although the IIJA appropriated funding for both programs for FY2022-FY2026. In addition to the IIJA, BRIC is

⁴¹ FEMA, *Hazard Mitigation Assistance Guidance*, Washington, DC, February 27, 2015, p. 1, at https://www.fema.gov/sites/default/files/2020-07/fy15_HMA_Guidance.pdf.

⁴² For more information on FMAG declarations, see FEMA, *Fire Mitigation Assistance Grants*, at <https://www.fema.gov/assistance/public/fire-management-assistance>; and CRS Report R43738, *Fire Management Assistance Grants: Frequently Asked Questions*, by Diane P. Horn, Katie Hoover, and Bruce R. Lindsay.

⁴³ See FEMA, *State Hazard Mitigation Officers*, at <https://www.fema.gov/grants/mitigation/state-contacts>.

⁴⁴ Public Assistance (PA) also funds disaster recovery, but PA can fund mitigation measures under Section 406 of the Robert T. Stafford Disaster Relief and Emergency Assistance Act (P.L. 100-707). For more information on PA, see CRS Report R46749, *FEMA’s Public Assistance Program: A Primer and Considerations for Congress*, by Erica A. Lee.

⁴⁵ For more information on the Disaster Relief Fund, see CRS Report R45484, *The Disaster Relief Fund: Overview and Issues*, by William L. Painter.

⁴⁶ For example, the FY2022 application period for the Building Resilient Infrastructure and Communities (BRIC) grant program opened on September 30, 2022, and is to close at 3 p.m. ET on January 27, 2023. FEMA, “Building Resilient Infrastructure and Communities,” at <https://www.fema.gov/grants/mitigation/building-resilient-infrastructure-communities>.

funded by a set-aside to the DRF, and FMA is funded by National Flood Insurance Program (NFIP) policyholders (see sections on “Building Resilient Infrastructure and Communities” and “Flood Mitigation Assistance”).

Hazard Mitigation Grant Program

HMGP funding is available to all areas of a state, territory, or tribal land where a governor or tribal chief executive requests such funding following a major disaster declaration from the President or a Fire Management Assistance Grant declaration.⁴⁷ HMGP’s key purpose is to ensure that the opportunity to take critical mitigation measures is not lost during the reconstruction process following a disaster. The level of HMGP funding available for a given disaster is based on a percentage of the estimated total federal assistance under the Stafford Act for the declaration, awarded on a sliding scale as a percentage of the estimated amount of total federal assistance for the disaster.⁴⁸ HMGP funds any eligible activity for any type of hazard and is not limited to the hazard or area for which the grant was awarded. For example, funding allocated for wildfire mitigation in one county could be used for dam risk reduction in a different county, as long as the dam risk reduction activity is eligible.⁴⁹

Building Resilient Infrastructure and Communities

BRIC is a pre-disaster mitigation grant program that makes funding available on a competitive basis to reduce the risk of natural hazards before they occur. Any state that has had a major disaster declaration under the Stafford Act in the seven years prior to the application start date is eligible to apply for BRIC funding.⁵⁰ Any federally recognized tribe that has had a major disaster declaration or is entirely or partially located in a state or territory that has had a major disaster declaration in the seven years prior to the application start date is also eligible. All STTs are eligible for BRIC at least through FY2026 due to the COVID-19 pandemic disaster declarations.⁵¹ BRIC is funded from the National Public Infrastructure Pre-Disaster Mitigation Fund, which allows the President to set aside from the DRF an amount equal to 6% of the estimated aggregate amount of funding awarded under seven sections of the Stafford Act.⁵² As of October 31, 2022, \$3.999 billion was set aside in the DRF for pre-disaster mitigation; this funding is available until expended.⁵³ The IJA appropriated \$1 billion for BRIC, with \$200 million for each of FY2022-FY2026. This funding is in addition to the 6% set-aside.

⁴⁷ 42 U.S.C. §5170c.

⁴⁸ Hazard Mitigation Grant Program funding is up to 15% of the first \$2 billion of estimated aggregated amounts of disaster assistance; up to 10% of amounts between \$2 billion and \$10 billion; up to 7.5% of amounts between \$10 billion and \$35.3 billion; or 20% for any state with an approved Enhanced State Hazard Mitigation Plan in effect before the disaster.

⁴⁹ For more information on FEMA Hazard Mitigation Assistance programs, see CRS Report R46989, *FEMA Hazard Mitigation: A First Step Toward Climate Adaptation*, by Diane P. Horn.

⁵⁰ 42 U.S.C. §5133(g).

⁵¹ Eligible applicants for Building Resilient Infrastructure and Communities funding include states, the District of Columbia, U.S. territories, and federally recognized Indian tribal governments. Local governments and federally recognized Indian tribal governments are eligible sub-applicants.

⁵² Stafford Act Sections 403 (Essential Assistance), 406 (Repair, Restoration, and Replacement of Damaged Facilities), 407 (Debris Removal), 408 (Federal Assistance to Individuals and Households), 410 (Unemployment Assistance), 416 (Crisis Counseling Assistance and Training), and 428 (Public Assistance Program Alternative Program Procedures). See CRS Report R45819, *The Disaster Recovery Reform Act of 2018 (DRRA): A Summary of Selected Statutory Provisions*, coordinated by Elizabeth M. Webster and Bruce R. Lindsay, for further details.

⁵³ FEMA, *Disaster Relief Fund: Monthly Report as of October 31, 2022*, Fiscal Year 2023 Report to Congress,

Flood Mitigation Assistance

The FMA Grant Program is a pre-disaster mitigation grant program that makes funding available on a competitive basis to communities that participate in the NFIP to assist in an effort to reduce or eliminate flood damage to buildings and structures insurable under the NFIP, particularly repetitive loss and severe repetitive loss properties.⁵⁴ Until FY2022, the FMA program was funded entirely through revenue collected from NFIP policyholders as spending authority from offsetting collections.⁵⁵ The IIJA appropriated \$3.5 billion for the FMA program, with \$700 million for each of FY2022-FY2026. This figure represents a significant increase in the amount of funding available for flood mitigation and the first time that funding has been appropriated for the FMA program.

Safeguarding Tomorrow Revolving Loan Fund Program

The newest source of hazard mitigation funding is through the STRLF. Through this program, FEMA is authorized to enter into agreements with states, eligible federally recognized tribes, Puerto Rico, and the District of Columbia to establish hazard mitigation revolving loan funds (RLFs) for local governments to reduce risk from natural hazards and disasters.⁵⁶ An RLF is a self-replenishing financial mechanism that starts with a base level of capital, often consisting of grants from the federal government or a state or private investment. RLFs can make loans targeted to specific types of borrowers or specific types of activities and are designed to use loan repayments to recapitalize the fund and make additional loans.⁵⁷ The STORM Act (P.L. 116-284) authorized the appropriation of \$100 million annually for FY2022 and FY2023 to make grants to capitalize new RLFs to be administered by states or insular areas, but the act did not appropriate any funding. The IIJA appropriated \$500 million for the STRLF program, with \$100 million for each of FY2022-FY2026. FEMA released the first Notice of Funding Opportunity for the STRLF program on December 20, 2022, with \$50 million available for FY2023. This funding will be available to the 50 states, the District of Columbia, and Puerto Rico. Funding for the other territories was not available in FY2022.⁵⁸

Washington, DC, February 7, 2022, p. 24, at https://www.fema.gov/sites/default/files/documents/fema_disaster-relief-fund-report_112022.pdf.

⁵⁴ 42 U.S.C. §4121(a)(7) defines *repetitive loss structure* as a structure covered by a contract for flood insurance that (1) has incurred flood-related damage on two occasions, in which the cost of repair, on the average, equaled or exceeded 25% of the value of the structure at the time of each such flood event, and (2) at the time of the second incidence of flood-related damage, the contract for flood insurance contained increased cost-of-compliance coverage. *Severe repetitive loss properties* are those that have incurred four or more claim payments exceeding \$5,000 each, with a cumulative amount of such payments over \$20,000, or at least two claims with a cumulative total exceeding the value of the property. See 42 U.S.C. §4014(h) and 44 C.F.R. §79.2(h).

⁵⁵ Annual appropriations provide a limitation on the amount of spending authority from offsetting collections. For further explanation, see CRS Report R44593, *Introduction to the National Flood Insurance Program (NFIP)*, by Diane P. Horn and Baird Webel.

⁵⁶ 42 U.S.C. §5135.

⁵⁷ For additional information on revolving loan funds, see CRS Report R46471, *Federally Supported Projects and Programs for Wastewater, Drinking Water, and Water Supply Infrastructure*, coordinated by Jonathan L. Ramseur; and CRS In Focus IF11449, *Economic Development Revolving Loan Funds (ED-RLFs)*, by Julie M. Lawhorn.

⁵⁸ See FEMA, *Safeguarding Tomorrow Revolving Loan Program*, at <https://www.fema.gov/grants/mitigation/storm-rlf>; and Department of Homeland Security, *Notice of Intent to Publish a Notice of Funding Opportunity for the Safeguarding Tomorrow Through Ongoing Risk Mitigation Revolving Loan Program*, December 20, 2022, pp. 6-7, at <https://www.grants.gov/web/grants/search-grants.html?keywords=fema%20notice%20of%20intent>.

USACE Corps Water Infrastructure Financing Program

USACE is in the process of establishing the Corps Water Infrastructure Financing Program (CWIFP). As of December 2022, Congress has funded the program to provide credit assistance exclusively for nonfederal dam safety projects.⁵⁹ Dam safety represents a subset of the broader suite of water resource projects that Congress authorized CWIFP to support through credit assistance, in the form of secured loans or loan guarantees, in the Water Infrastructure Finance and Innovation Act of 2014 (WIFIA 2014; Title V, Subtitle C, of P.L. 113-121; 33 U.S.C. §§3901-3914, as amended).⁶⁰

USACE is in the process of clarifying which projects and entities are eligible for CWIFP assistance. USACE proposed a rule in June 2022 for CWIFP implementation that reflected the enacted appropriations' limitation of lending to only nonfederal dam safety projects.⁶¹ Projects are eligible if they are dam safety projects to maintain, upgrade, or repair dams identified in the NID with a primary owner type of state, local government, public utility, or private. Neither the statute nor the proposed rule requires that the dam(s) associated with a CWIFP application be classified as high hazard potential. The proposed rule identifies dam removal as an eligible project. CWIFP-eligible entities include various state, local, and tribal government entities and various private entities (e.g., corporations, partnerships, trusts) that are publicly sponsored.⁶²

Once CWIFP is operational, USACE may be able to support up to \$7.5 billion in loans with the \$81 million in CWIFP appropriations provided for credit subsidies in FY201 and FY2022.⁶³ USACE anticipates accepting preliminary applications in spring 2023, following publication of a final rule.⁶⁴ The first loans are expected to close roughly two years later.

Each project (or set of projects combined into a single credit-assistance application) receiving CWIFP assistance would need to cost more than \$20 million (with some exceptions) and would need to be creditworthy, technically sound, economically justified, and environmentally acceptable.⁶⁵ The amount of CWIFP credit assistance may not exceed 49% of the reasonably anticipated project costs. Regarding selection criteria, the proposed rule adds CWIFP's criteria to the statutory criteria. For example, it proposes as a criterion the extent to which a project serves, and spurs economic opportunity for, "economically disadvantaged communities."

⁵⁹ See Division D of P.L. 116-260, Division D of P.L. 117-103, and the IIJA.

⁶⁰ For more information on CWIFP, see CRS Insight IN12021, *Corps Water Infrastructure Financing Program (CWIFP)*, by Nicole T. Carter.

⁶¹ USACE, "Proposed Rule: Credit Assistance and Related Fees for Water Resources Infrastructure Projects," 87 *Federal Register* 35473.

⁶² *Ibid.*, which cites 33 U.S.C. §3907(a)(4).

⁶³ USACE, "Corps Water Infrastructure Financing Program (CWIFP)," at <https://usace.contentdm.oclc.org/utls/getfile/collection/p16021coll11/id/5811>. Under the Federal Credit Reform Act of 1990 (P.L. 101-508, Title XIII, Subtitle B), appropriations for federal credit programs, such as CWIFP, primarily cover long-term credit subsidy costs (2 U.S.C. §661a). The subsidy costs of such programs reflect potential losses to the government due to loan defaults. For FY2023, Congress provided CWIFP appropriations are only for program administration.

⁶⁴ USACE, "Corps Water Infrastructure Financing Program (CWIFP)," June 2022, at <https://usace.contentdm.oclc.org/digital/collection/p16021coll2/id/7626/rec/1>.

⁶⁵ *Ibid.*

USACE P.L. 84-99 Rehabilitation Program

USACE's P.L. 84-99 Rehabilitation Program may provide assistance for nonfederally operated flood control works if a facility is damaged by qualifying floods, storms, or seismic activity.⁶⁶ The majority of the works in the P.L. 84-99 Rehabilitation Program are levees, but the program may provide federal support to repair damage for nonfederal dams that opt into the program and meet certain criteria (e.g., the reservoir behind the dam has storage capacity for a 200-year flood event, otherwise referred to as a flood event having 0.5% chance of occurring in any given year).⁶⁷ See **Figure 2** for an example of these repairs. According to USACE, there are 124 dams active in the program.⁶⁸

Figure 2. New River Dam Outlet Channel Repair Through P.L. 84-99 Rehabilitation Program



Source: USACE, "New River Dam Outlet Channel Repair Benefits from Emergency Funding," Peoria, AZ, September 2021, at <https://www.spl.usace.army.mil/Media/Images/igphoto/2002864982/>.

USACE regulations for the P.L. 84-99 Rehabilitation Program indicate that the nonfederal sponsor for a work in the program must be a public entity;⁶⁹ that is, the agency does not consider private entities eligible. To be eligible for assistance, a dam would need to be maintained by the nonfederal owner in a minimally acceptable condition at the time of damage. The P.L. 84-99 program is funded through USACE's Flood Control and Coastal Emergencies account. Because annual appropriations for the account are limited primarily to flood preparedness activities,

⁶⁶ The program's authorization is from P.L. 84-99, as amended (33 U.S.C. §701n).

⁶⁷ USACE, *Emergency Employment of Army and Other Resources: Civil Emergency Management Program*, ER 500-1-1, 2001, at https://www.publications.usace.army.mil/Portals/76/Publications/EngineerRegulations/ER_500-1-1.pdf?ver=2013-09-08-233252-360 (hereinafter ER 500-1-1).

⁶⁸ USACE, email to CRS, November 21, 2022.

⁶⁹ 33 C.F.R. §203.15.

Congress may provide USACE with supplemental appropriations to pay for repairs through the P.L. 84-99 Rehabilitation Program.⁷⁰

Under the P.L. 84-99 Rehabilitation Program, the rehabilitation of damaged dams constructed by a nonfederal entity are cost shared at 80% federal and 20% nonfederal for construction costs, supervision and administration costs, and contingency costs for construction.⁷¹ Costs for rehabilitation of dams constructed by USACE and operated by a nonfederal entity are 100% federal.⁷²

NRCS Small Watershed Rehabilitation Program

NRCS, within the U.S. Department of Agriculture, provides assistance for selected watershed activities generally related to managing water on or affecting agricultural or rural areas. The Watershed Protection and Flood Prevention Act (P.L. 83-566) and the Flood Control Act of 1944 (P.L. 78-534) provide the authority for NRCS to construct dams through the Watershed and Flood Prevention Operations Program.⁷³ Dams constructed under the Watershed and Flood Prevention Operations Program are owned, operated, and maintained by local project sponsors.

Over 11,800 watershed dams have been constructed with NRCS assistance since 1948.⁷⁴ More than half of those watershed dams have reached the end of their designed life span.⁷⁵ In 2000, Congress created the Small Watershed Rehabilitation Program to rehabilitate aging dams originally constructed with NRCS assistance.⁷⁶ The rehabilitation program is intended to extend the approved service life of the dams and bring them into compliance with applicable safety and performance standards or to decommission the dams so they no longer pose a threat to life and property. Only dams constructed with NRCS assistance are eligible, and the local project sponsor must request funding. From 2000 to 2021, the program authorized the rehabilitation of 263 dams, of which 171 have been rehabilitated.⁷⁷

⁷⁰ For example, Congress designated \$35 million for the Flood Control and Coastal Emergencies account in FY2022 (H.Prt. 117-35, accompanying P.L. 117-103). **Table 1** provides information on the supplemental appropriations in FY2022 and FY2023.

⁷¹ ER 500-1-1.

⁷² ER 500-1-1.

⁷³ The projects authorized under the two laws are referred to as P.L. 566 and P.L. 534 projects. The Natural Resources Conservation Service (NRCS), through the Watershed and Flood Prevention Operations Program, provides technical and financial assistance to state and local organizations to plan and install measures to prevent erosion, sedimentation, and flood damage and to conserve, develop, and use land and water resources. For inquiries related to the NRCS's Watershed and Flood Prevention Operations and Small Watershed Rehabilitation Programs, congressional clients may contact Megan Stubbs, CRS Specialist in Agricultural Conservation and Natural Resources Policy.

⁷⁴ In addition to dams constructed under Watershed and Flood Prevention Operations authority, dams may have been constructed with NRCS assistance under the pilot watershed program authorized under the Department of Agriculture Appropriations Act, 1954 (P.L. 83-156) and the program commonly known as the Resource Conservation and Development Program authorized in the Agriculture and Food Act of 1981 (P.L. 97-98; 16 U.S.C. §§3451 et seq.).

⁷⁵ Some of these dams may not meet requirements for inclusion in the NID.

⁷⁶ The Small Watershed Rehabilitation Program is authorized in Section 313 of the Grain Standards and Warehouse Improvement Act of 2000 (P.L. 106-472; 16 U.S.C. §1012) as Section 14 of the Watershed Protection and Flood Prevention Act (P.L. 83-566). Regulations are codified at 7 C.F.R. §622.

⁷⁷ USDA, *FY2023 USDA Budget Congressional Justification*, “2023 USDA Explanatory Notes—Natural Resources Conservation Service,” pp. 29-77.

NRCS may provide 65% of the total rehabilitation costs, which may include up to 100% of the actual construction.⁷⁸ No funding may be provided for operation and maintenance. Rehabilitation projects also present an opportunity to modify projects to provide additional benefits, including municipal water supplies. Local watershed project sponsors provide 35% of the total cost of a rehabilitation project and obtain needed land rights and permits. The source of these funds varies from state to state and may include bonds, local taxing authority, state appropriations, or in-kind technical services. In addition to rehabilitation, the program funds assessments of high hazard potential dams.⁷⁹

The Small Watershed Rehabilitation Program has discretionary funding authority of up to \$85 million annually.⁸⁰ Since FY2000, Congress has appropriated more than \$820 million for rehabilitation projects. The Small Watershed Rehabilitation Program received \$118 million in the IIJA in FY2022; this funding is available until expended.⁸¹ The FY2022 annual appropriation reflected the IIJA addition and provided \$1 million for FY2022.⁸² The FY2023 annual appropriation provided \$2 million for FY2023.⁸³ In addition to annual appropriations, the Small Watershed Rehabilitation Program and the Watershed and Flood Prevention Operations Program receive a total of \$50 million annually in mandatory funds.⁸⁴

DOE Maintaining and Enhancing Hydroelectricity Incentives

The Maintaining and Enhancing Hydroelectricity Incentives Program is a new program established under the IIJA, to be administered by DOE. The program provides incentive payments to owners and operators of qualified hydroelectric facilities for capital improvements related to grid resiliency, dam safety, and environmental concerns.⁸⁵ Dam safety improvements include the maintenance or upgrade of spillways or other appurtenant structures, dam stability improvements, and upgrades or replacements of floodgates or natural infrastructure restoration or protection to improve flood risk reduction. Incentive payments may not exceed 30% of the cost of the capital improvement. Only one incentive payment can be made to a facility in a fiscal year, and the payment shall not exceed \$5 million. The program was authorized to be appropriated \$553.6 million for FY2022, to remain available until expended.⁸⁶ IIJA provided \$276.8 million for each of FY2022 and FY2023.⁸⁷

⁷⁸ 16 U.S.C. §1012(b)(2).

⁷⁹ 16 U.S.C. §1012(i).

⁸⁰ 16 U.S.C. §1012(h)(2)(E).

⁸¹ Division J, Title I of the IIJA.

⁸² Division A of the Consolidated Appropriations Act, 2022 (P.L. 117-103). The FY2022 joint explanatory statement notes the IIJA additions in reference to the reductions in the annual appropriated levels.

⁸³ The FY2023 explanatory statement did not include a similar reference as in FY2022 (“Explanatory statement submitted by Mr. Leahy, Chair of the Senate Committee on Appropriations, regarding H.R. 2617, Consolidated Appropriations Act, 2023,” *Congressional Record*, vol. 168, part 198 (December 20, 2022), p. S7826). The program has received an average annual appropriation of \$6.6 million over the last five years, including \$1 million in enacted FY2022 appropriations and \$2 million in enacted FY2023 appropriations.

⁸⁴ 16 U.S.C. §1012a.

⁸⁵ §40333 of P.L. 117-58.

⁸⁶ 42 U.S.C. §15883(d).

⁸⁷ P.L. 117-58, 135 STAT 1370.

DOE has not begun accepting applications for this program. DOE issued a request for information and feedback from stakeholders in summer 2022.⁸⁸ DOE reports an estimated application opening date in the second quarter of 2023.⁸⁹

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⁸⁸ Department of Energy, "Notice of Request for Information (RFI) Regarding Hydropower Incentive Programs Development," 87 *Federal Register* 40515-40516, July 7, 2022.

⁸⁹ Department of Energy, "Maintaining and Enhancing Hydroelectricity Incentives," November 28, 2022, at <https://www.energy.gov/bil/maintaining-enhancing-hydroelectricity-incentives>.