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Army Corps of Engineers: Water Resource Authorizations, Appropriations, and Activities

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Summary

The U.S. Army Corps of Engineers (Corps) undertakes activities to maintain navigable channels, reduce flood and storm damage, and restore aquatic ecosystems. The agency's water resource projects can have significant local and regional economic benefits and environmental effects. Congress directs the Corps through authorizations; appropriations; and oversight of its studies, construction projects, and the ongoing operations of Corps infrastructure. This report summarizes congressional project authorization and annual appropriations processes for the Corps.

Authorizations. Congress generally authorizes Corps activities prior to funding them. The authorization can be project specific, programmatic, or general. The agency's ability to act on an authorization is often determined by funding. Congress typically authorizes numerous new Corps site-specific activities and provides policy direction in an omnibus Corps authorization bill, often titled a Water Resources Development Act (WRDA). Congress often considers a WRDA biennially. WRDAs generally do not provide funds to conduct activities, nor are they reauthorization bills.

During the 114th Congress, Congress enacted the Water Infrastructure Improvements for the Nation Act (WIIN; P.L. 114-322). Title I of the bill had the short title of Water Resources Development Act of 2016 (WRDA 2016). WIIN Title I contained many provisions similar to two WRDA 2016 bills considered earlier in the 114th Congress—S. 2848 and H.R. 5303. For a discussion of water resource issues in the 115th Congress, including issues that may shape congressional oversight of WRDA 2016 and consideration of a WRDA bill in the 115th Congress, see CRS Report R44738, *Water Resource Issues in the 115th Congress*, by Charles V. Stern et al.

Appropriations. Federal funding for authorized Corps activities is provided in annual Energy and Water Development appropriations acts or supplemental appropriations acts. Annual Corps appropriations for its water resource activities have ranged from $4.5 billion to nearly $6.0 billion during the last decade. An increasing share of the agency's appropriations has been used for operation and maintenance. In recent years, some new studies, new construction projects, and new programs have been funded using enacted appropriations. However, many of the projects authorized for construction by previous Congresses have yet to be initiated, in part because of competition for funds and because Corps authorizations have outpaced appropriations.

Standard Project Development. The standard process for a Corps project requires two separate congressional authorizations—one for studying feasibility and a subsequent one for construction—as well as appropriations for both. Congressional authorization for project construction in recent years has been based on a favorable report by the Chief of Engineers (known as a Chief's Report) and an accompanying feasibility report. For most activities, Congress requires a nonfederal sponsor to share some portion of study and construction costs. Cost-sharing requirements vary by type of project. For some project types (e.g., levees), nonfederal sponsors own the completed works after construction and are responsible for operation and maintenance.

Other Corps Activities and Authorities. Although most Corps projects are developed under the standard project-development process, exceptions exist. Congress has granted the Corps some general authorities to undertake some studies, small projects, technical assistance, and emergency actions (e.g., flood fighting, repair of damaged levees, and limited drought assistance). Additionally, under the National Response Framework, the Corps may be tasked with performing activities in response to an emergency or disaster, such as emergency power restoration.

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Army Corps of Engineers

The U.S. Army Corps of Engineers (Corps) is an agency within the Department of Defense with both military and civil works responsibilities. For its civil works mission, Congress directs the agency through authorizations, appropriations, and oversight of the agency's study, construction, and ongoing operations of water resource projects. The agency's civil works responsibilities are principally to support navigation, reduce flood and storm damage, and protect and restore aquatic ecosystems.[1] The Corps attracts congressional attention because its projects can have significant local and regional economic benefits and environmental effects.

The civil works program is led by a civilian Assistant Secretary of the Army for Civil Works, who reports to the Secretary of the Army. A military Chief of Engineers oversees the agency's civil and military operations and reports on civil works matters to the Assistant Secretary for Civil Works. A Director of Civil Works reports to the Chief of Engineers. The agency's civil works responsibilities are organized under eight divisions that are further divided into 38 districts.[2]

This report provides an overview of the Corps water resource activities, including congressional authorization and appropriations. The report also covers the standard project development process for Corps projects and other Corps activities and authorities.

Corps Authorizations

Congress generally authorizes Corps activities prior to funding those activities. The authorization can be project-specific, programmatic, or general. Authorizations by themselves are usually insufficient for the Corps to proceed with a study or construction project; agency action on an authorization often requires funding.

Water Resources Development Acts

In recent decades, Congress has legislated on most Corps authorizations in Water Resources Development Acts (WRDAs).[3] WRDAs authorize Corps studies, projects, and programs and establish policies for Corps civil works activities (e.g., nonfederal cost-share requirements). A WRDA is not a reauthorization bill; rather, it is an authorization bill. That is, WRDAs generally authorize new activities that are added to the pool of existing authorized activities. Most project-specific authorizations in WRDAs fall into three general categories: project studies, construction projects, and modifications to existing project authorizations. WRDAs also have deauthorized projects and established deauthorization processes.

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[1] Other responsibilities of the Corps include flood emergency and natural disaster response, such as flood-fighting, repair to damaged levees, and emergency water supply assistance. Congress also has authorized Corps assistance for select environmental infrastructure activities (e.g., municipal water and wastewater treatment systems) and other nontraditional activities. The **Appendix** provides more on the evolution of the agency's civil works missions and authorities.

[2] A division map and district links are available at http://www.mvn.usace.army.mil/Locations.aspx.

[3] Water Resources Development Acts (WRDAs) are distinguished from each other by referencing the year of enactment; that is, WRDA 1986 refers to the act passed in 1986. The authorizing committee generally develops a bill for introduction by the chairperson; alternatively, the Administration can propose a bill for congressional consideration. The House Transportation and Infrastructure Committee and the Senate Environment and Public Works Committee are the congressional committees that generally authorize Corps civil works activities. If the Administration proposes a WRDA, Congress generally receives the proposal at the same time as the President's budget. More than 16 years have passed since an Administration has proposed a WRDA bill.

Congressional authorizations make certain projects and activities eligible to receive federal funding. WRDAs typically do not appropriate funds for Corps activities; project funding is provided typically through the annual appropriations process for the agency. While use of monies from trust funds associated with Corps activities generally requires congressional appropriations action (i.e., the funds are "on-budget"), a WRDA may be a legislative vehicle for altering trust fund collections and disbursement policies and procedures.

Authorization provisions at times have appeared in appropriations or supplemental appropriations legislation, especially in years when a WRDA was not enacted. If authorization provisions are included in an appropriations bill, they could be subject to a point of order on the floor for being non-germane.

Enactment of Water Resources Development Acts

Beginning with WRDA 1986, a biennial WRDA cycle was loosely followed for a number of years. WRDAs were enacted in 1988 (P.L. 100-676), 1990 (P.L. 101-640), 1992 (P.L. 102-580), 1996 (P.L. 104-303), 1999 (P.L. 106-53), 2000 (P.L. 106-541), and 2007 (P.L. 110-114). The Water Resources Reform and Development Act of 2014 (WRRDA 2014; P.L. 113-121) was enacted in June 2014.[4] WRDA 2016, which was enacted as Title I of the Water Infrastructure Improvements for the Nation Act (WIIN; P.L. 114-322), was enacted in December 2016. (See "WRDA 2016—Title I of WIIN" text box.)

WRDA 2016—Title I of WIIN

Title I of the Water Infrastructure Improvements for the Nation Act (WIIN; P.L. 114-322) contains 140 provisions related to Corps projects and activities; the short title for WIIN Title I is WRDA 2016. WRDA 2016 authorized new Corps water resources studies and projects and modifications to ongoing construction projects. Each of the new project construction authorizations was based on a completed report by the agency's Chief of Engineers. WRDA 2016 authorized 30 new construction projects at a federal cost of more than $10 billion. Various Corps provisions in WRDA 2016 related to how nonfederal sponsors participate in the financing of water infrastructure activities. For example, Section 1111 increased the federal construction cost share for harbor deepening that occurs between 45 feet and 50 feet, at an estimated federal cost increase of $430 million over the FY2017-FY2026 period. Other sections, such as Sections 1127, 1166, and 1171, changed authorities for crediting and reimbursing nonfederal entities for project-related expenditures. Section 1120 required a review of Corps tribal consultation policies for projects and permits. (For more information on Corps tribal consultation, see CRS Insight IN10608, *Army Corps Projects and Tribal Consultation: Requirements, Policies, and Controversy*, by Nicole T. Carter.)

For more on WRDA 2016 and the other titles of WIIN, see CRS In Focus IF10536, *Water Infrastructure Improvements for the Nation Act (WIIN)*, by Nicole T. Carter et al.

WRDA 1986 marked the end of a stalemate between Congress and the executive branch regarding Corps authorizations. It resolved long-standing disputes related to cost-sharing, user fees, and environmental requirements. Prior to 1986, disputes over these and other matters had largely prevented enactment of major Corps civil works legislation since 1970. Biennial consideration of Corps authorization legislation resumed after WRDA 1986 in part to avoid long delays between the planning and execution of projects, and so that Congress could review proposed projects on a regular basis. Pressure to authorize new projects, increase authorized

[4] The Corps continues to develop implementation guidance for provisions in the Water Resources Reform and Development Act of 2014 (WRRDA 2014; P.L. 113-121). The implementation guidelines for WRRDA 2014 provisions are published at U.S. Army Corps of Engineers, "WRRDA 2014 Implementation Guidance," at http://www.usace.army.mil/Missions/CivilWorks/ProjectPlanning/LegislativeLinks/wrrda2014/wrrda2014_impguide.aspx.

funding levels, and modify existing projects is often intense, thus prompting regular WRDA consideration.

WRDA enactment was less consistent for a period. Controversial project authorizations and disagreements over the need for and direction of change in how the Corps plans, constructs, and operates projects contributed to WRDA bills not being enacted in the 107th, 108th, and 109th Congresses. The 110th Congress enacted WRDA 2007 in November 2007, overriding a presidential veto. WRRDA 2014, which was enacted on June 10, 2014, authorized 34 construction projects that had received agency review, had Chief of Engineers reports (also known as Chief's Reports), and had been the subject of a congressional hearing, thereby overcoming concerns related to congressionally directed projects (known as earmarks; see "Additional Funding" for more information on congressional earmark policies). WRRDA 2014 also altered processes and authorizations for project delivery options, including expanded opportunities for nonfederal entities to lead projects and for innovative financing, including public-private partnerships.[5] Congress with WRDA 2016 returned enactment of Corps authorization legislation to a biennial timeframe. For a discussion of water resource issues in the 115th Congress including issues that may shape congressional oversight of WRRDA 2014 and WRDA 2016 and consideration of a WRDA bill in the 115th Congress, see CRS Report R44738, *Water Resource Issues in the 115th Congress*, by Charles V. Stern et al.

Corps Appropriations

The Corps is typically funded through congressional appropriations provided in the annual Energy and Water Development appropriations bill.[6] Because the rate of Corps authorizations exceeds the rate of the agency's annual appropriations, only a subset of authorized activities typically are included in the President's budget request and eventually funded by enacted appropriations. This situation results in competition for funds among authorized activities during the budget and appropriations processes. In mid-2017, the estimated total for authorized Corps construction activities was $75 billion.[7] To concentrate limited resources and move ongoing projects toward completion, budget requests by the George W. Bush, Obama, and Trump Administrations focused funding on projects near completion and limited the initiation of new studies and construction projects. These Administrations also focused requested funds on projects within the agency's primary missions of flood and storm damage reduction, navigation, and aquatic ecosystem restoration.

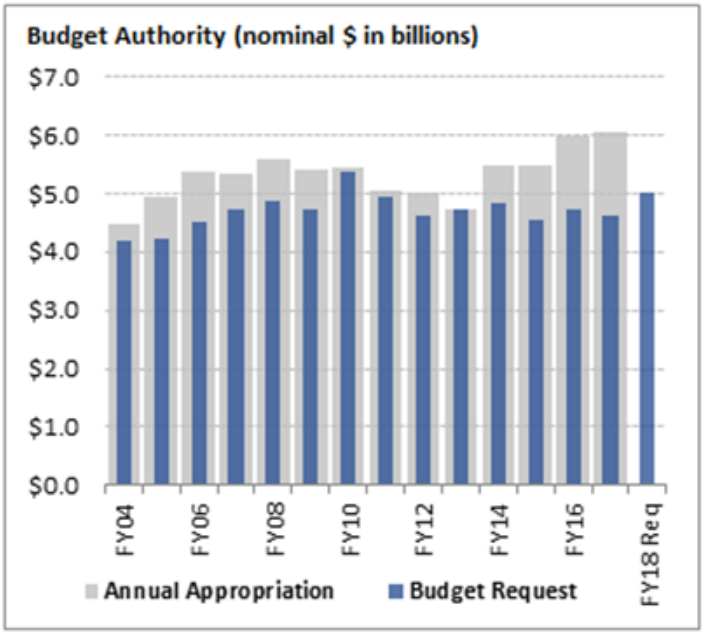
Over the last decade, enacted annual Corps civil works appropriations (excluding supplemental appropriations) have remained steady or increased slightly, ranging from $4.5 billion to nearly $6.0 billion, whereas the President's request consistently has been less than the final enacted amount. Congress appropriated $6.0 billion to the Corps for FY2017 in P.L. 115-31. Recent trends in Corps budget requests and enacted appropriations are shown below in **Figure 1**.

[5] For more on WRRDA 2014 and how it evolved during congressional deliberations, see CRS Report R43298, *Water Resources Reform and Development Act of 2014: Comparison of Select Provisions*, by Nicole T. Carter et al.

[6] For more information on Corps appropriations, see CRS In Focus IF10361, *Army Corps of Engineers: FY2017 Appropriations*, by Charles V. Stern, and CRS In Focus IF10671, *Army Corps of Engineers: FY2018 Appropriations*, by Nicole T. Carter.

[7] This amount represents the federal share of the project costs. U.S. Congress, House Committee on Transportation and Infrastructure, Subcommittee on Water Resources and Environment, *Building a 21st Century Infrastructure for America: Implementation of the Water Resources Reform and Development Act of 2014 and the Water Resources Development Act of 2016*, 115th Cong., 1st sess., July 19, 2017, https://transportation.house.gov/calendar/eventsingle.aspx?EventID=401746.

Figure 1. Annual Budget Request and Enacted Appropriations for Corps Civil Works



Source: Congressional Research Service (CRS), using U.S. Army Corps of Engineers data.

Note: Does not include supplemental appropriations.

Traditional Account Structure and Budgeting Approach

The President's budget request for the Corps typically includes funding information at both the account level (i.e., investigation, construction, operations, and maintenance) and by business line (i.e., types of activities such as navigation and flood and coastal storm damage reductions). It also includes project-specific funding levels for those projects proposed for funding. In recent years, the executive branch has justified decisions of which projects to fund and at what level through a number of metrics, including benefit-cost ratios and other metrics that are outlined in Corps budget development guidance each year.[8] Descriptions of proposed work are included in budget justifications published by the Corps after the release of the President's budget request.[9]

Congress generally provides money to the Corps at the account level in appropriations laws. Accompanying congressional reports, which are sometimes incorporated into law by reference, often identify specific Corps projects to receive appropriated funds. With the heightened attention to and restrictions on congressionally directed spending since FY2010, the projects identified in these reports have been limited largely to the projects included in the President's budget request; new project-specific line items have not been added by Congress. As such, congressional action on Corps appropriations has generally been limited to provision of additional funding for various types of Corps activities that Congress views as having received an inadequate funding request by the Administration (see below section, "Additional Funding").

The two largest Corps accounts are Construction and Operations and Maintenance (O&M), which together account for the majority of the agency's funding. The O&M account has made up a growing portion of the agency's use of funds over time. This shift is consistent with recent efforts

[8] For example, see http://www.publications.usace.army.mil/USACEPublications/EngineerCirculars.aspx.

[9] Recent justifications are available at http://www.usace.army.mil/Missions/CivilWorks/Budget.aspx.

by the Administration and Congress to limit funding for new construction activities (referred to as "new starts"), and instead focus on completing existing projects and on actions to address aging infrastructure. Enacted appropriation bills for FY2014, FY2015, FY2016, and FY2017 broke with earlier bans on new construction starts and allowed the agency to initiate a specified number of Corps new start studies and projects. However, numerous authorized projects have yet to be initiated.

Two congressionally authorized trust funds are administered by the Corps and require annual appropriations to draw on their balances; that is, these funds are "on budget." The Harbor Maintenance Trust Fund (HMTF) and the Inland Waterways Trust Fund (IWTF) support cost-shared investments in federal navigation infrastructure for harbors and inland waterways, respectively. Use of HMTF monies is restricted largely to maintenance, and use of IWTF monies is limited largely to construction. Federal funding for harbor-related maintenance activities is funded in large part from the HMTF. This trust fund receives revenues from taxes on waterborne commercial cargo imports, domestic cargo, and on cruise ship passengers at federally maintained ports. Similarly, roughly half of inland waterways construction appropriations are from the IWTF, which receives the proceeds of a fuel tax on barge fuel for vessels engaged in commercial transport on designated waterways.

In recent fiscal years, the HMTF has developed a surplus balance (approximately $9 billion in FY2017) as appropriations from the fund have been less than the receipts accruing to it. Conversely, the IWTF has faced revenue shortages in recent years that have prevented it from supporting earlier levels of expenditures on waterway construction. Both trust funds were addressed in 2014 authorizing legislation that made changes to their financing structures, and spending from both subsequently increased.[10] Whether these trust funds will continue to provide for increased spending on inland and coastal navigation will depend on future appropriations legislation and actions on other legislative proposals. For example, harbor interests support increasing harbor maintenance to maintain authorized channel dimensions and related legislation (e.g., H.R. 1908). In January 2017, the Corps estimated the cost to achieve and maintain constructed widths and depths of coastal navigation channels at $7.6 billion over the subsequent five-year period (i.e., $1.5 billion annually) and for an additional $7.0 billion to maintain those dimensions for the five years that follow.[11] In FY2017, the Corps used $1.2 billion (most of which was derived from the HMTF) on coastal navigation maintenance. The economic benefit of maintaining channels to these dimensions would vary from channel to channel depending on the cost of the dredging and the reduced transportation cost to shippers (and the benefits to the broader economy) resulting from improved navigation conditions.

[10] For more information on these trust fund expenditures, see CRS In Focus IF10020, *Inland Waterways Trust Fund*, by Charles V. Stern, and CRS Report R43298, *Water Resources Reform and Development Act of 2014: Comparison of Select Provisions*, by Nicole T. Carter et al.

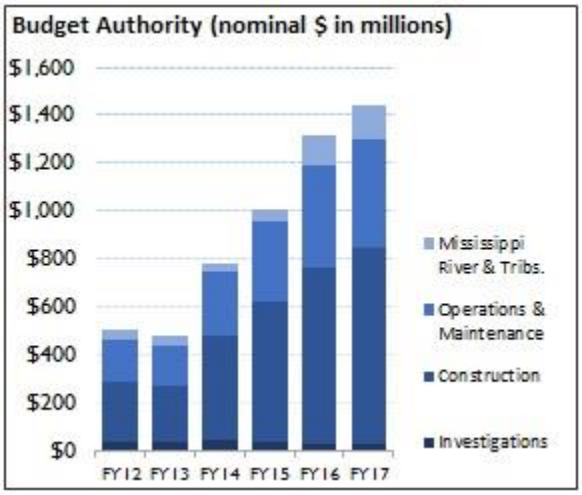
[11] Information provided to Congressional Research Service from U.S. Army Corps of Engineers, January 17, 2017. The information also included estimates for inland navigation maintenance (exclusive of operations costs) at $1.9 billion for the next five years, and $1.7 billion for the subsequent five years, and estimates for other low-use coastal and inland waterways at $1.5 billion for the next five years and $0.7 billion for the subsequent five years. It is unclear how much of these inland and other low-use maintenance activities would be eligible for HMTF funding. It also is unknown how much of the coastal navigation maintenance investment of $1.2 billion in FY2017 was directed to work at low-use coastal channels.

Additional Funding

Roughly 85% of the Corps budget is typically for geographically specified studies or projects. In addition to specific projects identified for funding in the President's budget, for decades Congress annually identified during the discretionary appropriations process many additional Corps projects to receive funding (e.g., dredging of low- and medium-use harbors at specific locations).[12] In the 112th Congress, site-specific project line items added by Congress (i.e., earmarks or congressionally directed spending) were subject to newly instated House and Senate earmark moratorium policies. Since FY2010, enacted congressional appropriations generally have adhered to these moratorium policies and refrained from inserting funds for specific projects in appropriations bills that were not requested in the President's budget.

In lieu of the traditional project-based increases, Congress has included "additional funding" categories for various types of Corps projects (e.g., additional funding for ongoing maintenance of small, remote, or subsistence harbors), along with directions and limitations on the use of these funds. The Corps typically has been directed to report back to Congress in annual work plans on how these funds will be allocated at the project level.[13] Most recently, Congress continued the practice of adding funding for various categories of Corps work within the agency's major accounts in FY2017, providing over $1.4 billion in additional funding for various categories of Corps activities. Recent levels of additional funding are shown below in **Figure 2**.

Figure 2. Corps "Additional Funding" Appropriations, FY2012-FY2017



Source: FY2012 and FY2014-FY2017 amounts based on data from conference reports for enacted appropriations from FY2012 to FY2017. FY2013 amount is a CRS estimate based on data in the Corps Work Plan for FY2013.

Supplemental Appropriations

The Corps also at times receives funding through supplemental appropriations. From FY1987 to FY2017, Congress appropriated $33.2 billion in supplemental funding to the Corps, with approximately 92% of this funding provided in supplemental appropriations that were enacted

[12] While congressionally directed spending made up a relatively small percentage of most agency budgets, a significant number of Corps projects historically received congressionally directed funding for construction or operational expenditures.

[13] Recent Corps Work Plans are available at http://www.usace.army.mil/Missions/CivilWorks/Budget.aspx.

between 2006 and 2016. The majority of the aforementioned supplemental appropriations funded Corps flood-fighting activities, repairs, and storm damage infrastructure investments in focused geographic areas (e.g., activities in response to the 2005 hurricanes, including Hurricane Katrina; the 2008 Midwest floods; and the 2011 Missouri and Mississippi floods). Some of these investments supplemented support for projects that had been previously proposed or funded in annual discretionary appropriations. The most recent supplemental appropriation for the Corps was enacted in December 2016, when Congress provided the Corps with $1.03 billion in supplemental appropriations under P.L. 114-254 to respond to natural disasters. For a detailed discussion of Corps supplemental appropriations, see CRS Report R42841, *Army Corps Supplemental Appropriations: Recent History, Trends, and Policy Issues*, by Charles V. Stern and Nicole T. Carter.

WIFIA and "Innovative" Project Finance

Competition for Corps discretionary appropriations has increased interest in "innovative" finance, including encouragement of additional private-sector investment in federal water infrastructure. To that end, WRRDA 2014 authorized a new financing mechanism, the Water Infrastructure Finance and Innovation Act (WIFIA), to be administered by the Corps and the Environmental Protection Agency (EPA).[14] WIFIA authorized both agencies to provide assistance, in the form of loans and loan guarantees, for a range of water project types. The WIFIA concept is modeled after a similar program that assists transportation projects: the Transportation Infrastructure Finance and Innovation Act, or TIFIA, program. Under WIFIA, EPA and the Corps are each authorized a total of $175 million over five years (beginning with $20 million for each agency in FY2015 and increasing to $50 million in FY2019) to provide assistance.

Under the WIFIA program, the Corps is authorized to provide WIFIA support for a number of different project types, including flood damage reduction projects, hurricane and storm damage reduction projects, environmental restoration projects, coastal or inland harbor navigation improvement projects, inland and intracoastal waterways navigation projects, or a combination of these projects.[15] WRRDA 2014 included a number of project selection criteria that would affect whether individual projects are eligible to receive Corps WIFIA funding.

Implementation of WIFIA requires congressional appropriations for administrative expenses (i.e., "start-up" costs) as well as subsidy costs (i.e., the presumed default rate on loans) for that agency's program. Each agency must also promulgate regulations for the implementation of its WIFIA program. As of the end of FY2017, the Corps had yet to take the initial steps to implement its WIFIA authority, including requesting and/or receiving funds for WIFIA start-up costs. This is a notable contrast to EPA, which has received funding and is implementing this authority.[16]

Standard Corps Project Delivery Process

The congressional authorization and the appropriations processes are critical actions in a multi-step process to deliver a Corps project. This section describes the standard study and construction

[14] P.L. 113-121, Title V, Subtitle C, §§5021-5035.

[15] As of mid-2016, the Corps WIFIA authorization does not include water supply projects.

[16] For more information, see CRS Report R43315, *Water Infrastructure Financing: The Water Infrastructure Finance and Innovation Act (WIFIA) Program*, by Jonathan L. Ramseur and Mary Tiemann.

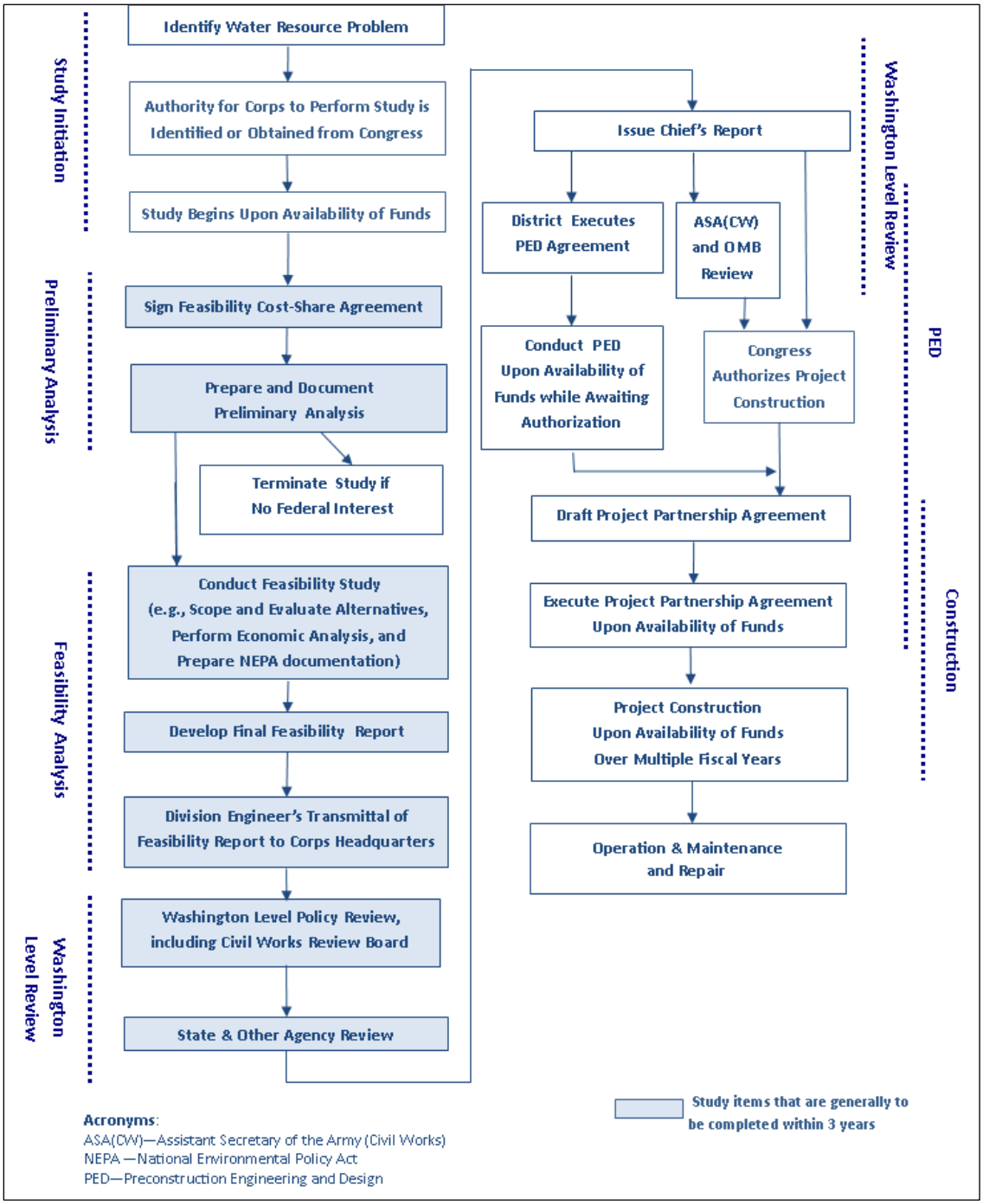
process for most Corps projects, and it provides some exceptions to the standard process. The standard process consists of the following basic steps:

- Congressional study authorization is obtained in a WRDA or other legislation.
- The Corps performs a feasibility study if funds are appropriated.[17]
- Congressional construction authorization is pursued. The Corps can perform preconstruction engineering and design while awaiting construction authorization if funds are appropriated.
- Congress authorizes construction in WRDA or other legislation, and the Corps constructs the project if funds are appropriated.

The process is not automatic. Appropriations are required to perform studies and construction; that is, congressional study and construction authorizations are necessary but alone are insufficient for the Corps to pursue a project. Major steps in the process are shown in **Figure 3**.

[17] The Corps has roughly 200 active feasibility studies. §1002 of WRRDA 2014 consolidated the contents of the Corps preliminary analysis (which previously was reported as a separate reconnaissance study) and its feasibility study.

Figure 3. Major Steps in Corps Project Development and Delivery Process



Source: CRS.

For most activities, the Corps also needs a nonfederal sponsor to share the study and construction costs. Since WRDA 1986 (P.L. 99-662), nonfederal sponsors have been responsible for a significant portion of the financing of studies, construction, and O&M of most projects. Nonfederal sponsors generally are state, tribal, county, or local agencies or governments. Although sponsors typically need to have some taxing authority, some Corps activities can be cost shared with nonprofit and other entities; a few authorities allow for private entities as

partners. Generally, projects take longer than shown in **Table 1** because some steps require congressional authorization before they can begin and action on each step is subject to the availability of appropriations.

WRRDA 2014 expanded and consolidated the authorities for nonfederal entities to both perform studies and construct projects (or elements of projects) that typically would be undertaken by the Corps and for the cost of these nonfederal-led studies and construction to be shared by the federal government largely as if the Corps had performed them. While nonfederal study and project delivery may increase under these authorities, the process described herein is the standard Corps process in which the Corps is the manager of the study and project, and the nonfederal sponsor contributes a portion of the costs and associated real estate, easements, etc.

Table 1. Corps Project Phases, Average Phase Duration If Fully Funded, and Federal Cost Share

	Feasibility Study	Preconstruction Engineering and Design (PED)	Construction	Operation & Maintenance
Avg. Duration (years), once congressionally authorized and funded[a]	3[b]	Approx. 2	Varies	Authorized project duration
Federal Share of Costs	50%[c]	Varies by project purpose[d]	Varies, see **Table 2**	Varies, see **Table 2**

Source: CRS.

a. Generally projects take longer than the duration of the individual steps. Some steps require congressional authorization before they can begin, and action on each step is subject to availability of appropriations.

b. WRRDA 2014 requires most feasibility studies to be completed within three years of initiation and deauthorizes any feasibility study not completed after seven years.

c. Inland waterways feasibility studies are 100% federal funded (33 U.S.C. §2215). These projects are not considered "local" by their nature. Prior to WRRDA 2014, the preliminary analysis was included within a reconnaissance study that was produced at 100% federal expenses. Post-WRRDA 2014 cost sharing of preliminary analysis has not been clarified. WRDA 2014 establishes a maximum federal cost of $3 million for most feasibility studies.

d. Generally, PED cost shares are the same as construction cost shares shown in **Table 2**.

Study Authority

A Corps project starts with a study of the water resource issue and alternatives to address it. The purpose of the Corps study process is to inform federal decisionmakers on whether there is a federal interest in authorizing a Corps construction project. The Corps generally requires two types of congressional action to initiate a study—study authorization and then appropriations.

Congress generally authorizes Corps studies in WRDA legislation.[18] WRRDA 2014 created a new process for identifying potential Corps studies. In Section 7001 of WRRDA 2014, Congress

[18] While most Corps authorizations are in legislation, some studies also potentially could be undertaken under other authorities. Some studies reviewing operations of completed projects proceed under general study authorizations without new project-specific congressional action, pursuant to §216 of the Flood Control Act of 1970 (P.L. 91-611, 33 U.S.C. §549a). Also, authorizing committees have in the past authorized studies using a committee resolution to reexamine a geographic area previously studied by the Corps for a similar purpose; this authority derives from §4 of the Rivers and Harbors Act of 1913 (37 Stat. 801, 33 U.S.C. §542). From 2010 to early 2016, neither authorizing committee acted on resolutions for Corps studies. On April 28, 2016, the Senate Environment and Public Works Committee approved six committee resolutions related to Corps studies. These resolutions were related to Au Sable Harbor, MI; Calcasieu River, LA; Caseville Harbor, MI; Cass River, MI; Imperial streams (Salton Sea), CA; and Yuba

called for the Secretary of the Army to submit an annual report to the congressional authorizing committees (the House Transportation and Infrastructure Committee and Senate Environment and Public Works Committee) of potential and publicly submitted study and project authorization proposals for Congress to consider for authorization.[19] The Corps delivered to Congress an annual report in February 2015 and February 2016.[20] Public submissions for consideration for the third Section 7001 report were due September 19, 2016; the report was delivered to Congress in March 2017. A fourth call for proposals was completed in the summer 2017; the report for those proposals is anticipated to be delivered to Congress early in 2018.

Feasibility Study

Once a study is authorized, appropriations are sought from monies provided in the annual Energy and Water Development appropriations acts. Within the Corps, projects are largely planned at the district level and approved at the division level and Corps headquarters. Early in the study process, the Corps assesses the level of interest and support of nonfederal entities that may be potential sponsors. It also investigates the nature of the water resources problem and assesses the federal government's interest.

If a nonfederal sponsorship is secured and the Corps recommends proceeding, a feasibility study begins. The cost of the feasibility study (including related environmental studies) is split equally between the Corps and the nonfederal project sponsor, as shown in **Table 1**. The objective of the feasibility study is to formulate and recommend solutions to the identified water resources problem. During the first few months of a feasibility study, the local Corps district formulates alternative plans, investigates engineering feasibility, conducts benefit-cost analyses, and assesses environmental impacts under the National Environmental Policy Act of 1969 (NEPA, 42 U.S.C. §4321).[21] The evaluation of Corps water resources projects remains governed by the 1983 *Principles and Guidelines for Water and Related Resources Implementation Studies*, and policy direction provided in WRDA bills and other enacted legislation.[22] An important outcome of the

River, CA. A resolution by one of the two authorizing committees is sufficient authorization for a study to reexamine a project to proceed if funded.

[19] While the Section 7001 annual reports may be used in the development of Corps authorization legislation, WRRDA 2014 did not change the underlying responsibilities of Congress in authorizing Corps studies and construction projects. The Section 7001 report instead is a mechanism that assists in the identification of activities that both meet the Section 7001 criteria and for which there exists nonfederal or Administration interest in congressional authorization. Prior to attention to and chamber rules associated with authorization and appropriation earmarks, individual Members often brought attention to similar activities for congressional authorization.

[20] The Section 7001 annual reports are available at http://www.usace.army.mil/Missions/CivilWorks/ProjectPlanning/LegislativeLinks/wrrda2014/wrrda2014_proposals.aspx. According to Section 7001 of WRRDA 2014, the criteria for inclusion in the annual report are as follows:

> The Secretary shall include in the annual report only those feasibility reports, proposed feasibility studies, and proposed modifications to authorized water resources development projects and feasibility studies that—(i) are related to the missions and authorities of the Corps of Engineers; (ii) require specific congressional authorization, including by an Act of Congress; (iii) have not been congressionally authorized; (iv) have not been included in any previous annual report; and (v) if authorized, could be carried out by the Corps of Engineers.

[21] CRS Report R43209, *Environmental Requirements Addressed During Corps Civil Works Project Planning: Background and Issues for Congress*, by Linda Luther, discusses how the Corps study process is combined with its NEPA compliance process.

[22] During FY2017, the Corps planning activities remained under the 1983 *Principles and Guidelines*, pursuant to language in the explanatory statement accompanying the Energy and Water Development Appropriations title of the Consolidated Appropriations Act, 2016 (P.L. 114-113). As of June 2015, most other federal water resource investments are being developed and evaluated under a set of Administration documents known as the Principles, Requirements,

feasibility analysis is determination of whether the project warrants further federal investment (i.e., whether it has sufficient national economic development benefits).[23]

Once the final feasibility report is available, the Chief of Engineers signs a recommendation on the project, known as the Chief's Report. The Corps submits the completed Chief's Reports to the congressional authorizing committees (33 U.S.C. §2282a) and also transmits the Chief's Report to the Assistant Secretary and the Office of Management and Budget (OMB) for Administration review. Since the mid-1990s, Congress has authorized many projects based on Chief's Reports prior to completion of the project review by the Assistant Secretary and OMB.[24]

Preconstruction Engineering and Design

Corps preconstruction engineering and design (PED) of a project may begin after the Chief's Report while awaiting congressional authorization for project construction (33 U.S.C. §2287).[25] PED consists of finalizing the project's design, preparing construction plans and specifications, and drafting construction contracts for advertisement. Corps work on PED is subject to the availability of Corps appropriations. Once funded, the average duration of PED is two years, but the duration varies widely depending on the size and complexity of a project. PED costs are distributed between the federal and nonfederal sponsor in the same proportion as the cost-share arrangement for the construction phase.

Construction and Operation and Maintenance

Once the project receives congressional construction authorization, federal funds for construction are sought in the annual appropriations process. Once construction funds are available, the Corps typically functions as the project manager; that is, Corps staff, rather than the nonfederal project sponsor, typically is responsible for implementing construction. While some construction may be performed by Corps personnel and equipment, the majority of work typically is contracted out to private engineering and construction contractors. Post-construction ownership and operations responsibilities depend on the type of project. When construction is complete, the Corps may own and operate the constructed project (e.g., navigation projects), or ownership may transfer to the nonfederal sponsor (e.g., most flood damage reduction projects).

The cost-share responsibilities for construction and O&M vary by project purpose, as shown in **Table 2**. **Table 2** first provides the cost share for the primary project purposes; next, it provides the cost shares for those additional project purposes, which can be added to a project that has at least one of the three primary purposes at its core. How to allocate construction and O&M costs

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and Guidelines; for more on these documents, see CRS In Focus IF10221, *Principles, Requirements, and Guidelines (PR&G) for Federal Investments in Water Resources*, by Nicole T. Carter and Charles V. Stern.

[23] For a discussion of the economic evaluations of Corps projects (including the discount rate used and the development of benefit-cost ratios) and the evolution of guidance for Corps project planning, see CRS Report R44594, *Discount Rates in the Economic Evaluation of U.S. Army Corps of Engineers Projects*, by Nicole T. Carter and Adam C. Nesbitt.

[24] WRRDA 2014 authorized 34 new construction projects. Of these, 25 had been transmitted to Congress by the Assistant Secretary of the Army, and nine were awaiting the transmittal to Congress by the Assistant Secretary when the bill was sent to the President; all 34 projects had a Chief of Engineers report. At times Congress also has authorized construction of a small set of projects prior to the availability of informational copies of feasibility studies; these construction authorizations generally are contingent on a favorable Chief's Report or a determination of feasibility by the Secretary of the Army.

[25] In practice, preconstruction engineering and design (PED) may overlap with much of the Washington Level Review shown in **Figure 3**. Some Corps guidance indicates that PED may be initiated after the Division Engineer's transmittal of the feasibility report to Corps headquarters.

of Corps projects among nonfederal sponsors and beneficiaries and the federal government has been debated for decades. WRDA 1986 increased local cost-share requirements; some subsequent WRDAs further adjusted cost sharing. The waiving of cost-share requirements for individual projects is infrequent and typically requires specific authorization by Congress.[26]

Changes After Construction Authorization

A project may undergo some changes after authorization. If project features or the estimated costs change significantly, additional congressional authorization may be necessary. Congressional authorization for a significant modification is typically sought in a WRDA. Requests for such modifications or for the study of such modifications also are solicited through the Section 7001 annual report process. For less significant modifications, additional authorization often is not necessary. Section 902 of WRDA 1986, as amended (33 U.S.C. §2280), generally allows for increases in total project costs of up to 20% (after accounting for construction cost inflation) without additional congressional authorization.

[26] Congress has established that cost shares shall be subject to the nonfederal sponsors' ability to pay (33 U.S.C. §2213(m)(2)); however, this authority is rarely employed. The most recent publicly available guidance on how the Corps implements the ability to pay provision is from 1989, which is available at http://140.194.76.129/publications/eng-regs/er1165-2-121/toc.htm. It does not reflect enacted changes in the Corps authority, including those in §2019 of WRDA 2007.

Table 2. Cost Shares for Construction and Operation and Maintenance (O&M)

Project Purpose	Maximum Federal Share of Construction	Maximum Federal Share of O&M
Navigation		
Coastal Ports—		
<20 ft. harbor	80%[a]	100%[b]
20 ft.-50 ft. harbor	65%[a]	100%[b]
>50 ft. harbor	40%[a]	50%[b]
Inland Waterways	100%[c]	100%
Flood and Hurricane Damage Reduction		
Inland Flood Control	65%	0%
Coastal Hurricane and Storm Damage Reduction except Periodic Beach Renourishment	65% 50%	0% 0%
Aquatic Ecosystem Restoration	65%	0%
Multi-Purpose Project Components		
Hydroelectric Power	0%[d]	0%
Municipal and Industrial Water Supply Storage	0%	0%
Agricultural Water Supply Storage	65%[e]	0%
Recreation at Corps Facilities	50%	0%
Aquatic Plant Control	Not Applicable	50%

Source: CRS, using 33 U.S.C. §§2211-2215, unless otherwise specified below.

a. Percentages reflect that nonfederal sponsors pay 10%, 25%, or 50% during construction and 10% over a period not to exceed 30 years.

b. Appropriations from the Harbor Maintenance Trust Fund, which is funded by collections on commercial cargo imports at federally maintained ports, are used for 100% of these costs.

c. Appropriations from the Inland Waterway Trust Fund, which is funded by a fuel tax on vessels engaged in commercial transport on designated waterways, are used for 50% of these costs.

d. Capital costs initially are federally funded and are repaid by fees collected from power customers.

e. For the 17 western states where reclamation law applies, irrigation costs initially are federally funded, then repaid by nonfederal water users.

Study and Project Deauthorization

Although WRDAs largely are authorization bills, Congress has used WRDAs to deauthorize projects and establish deauthorization processes. Authorizations of Corps construction projects generally are not time limited; however, there are processes for deauthorizing them.

- WRDA 2016 in Section 1301 created a one-time process to deauthorize projects with federal costs to complete of $10 billion that are "no longer viable for construction."[27]

[27] WRRDA 2014 created a one-time process to deauthorize projects with federal costs to complete of $18 billion; this deauthorization process is restricted to projects authorized prior to WRDA 2007. On March 25, 2016, the Corps published a final deauthorization list identifying 143 potential projects or project elements for deauthorization, with a federal cost to complete estimated at $14.26 billion. The final deauthorization list pursuant to WRRDA 2014 can be found at http://www.usace.army.mil/Portals/2/docs/civilworks/budget/final_deauth_report_23feb2016.pdf.

- WRDA 2016 requires that any project authorized in WRDA 2016 be automatically deauthorized if after seven years of enactment no funding had been obligated for its construction.
- WRRDA 2014 requires that any project authorized in WRRDA 2014 be automatically deauthorized if after seven years of enactment no funding had been obligated for its construction.
- The Secretary of the Army is directed to transmit to Congress annually a list of authorized projects and project elements that did not receive obligations of funding during the last five full fiscal years (33 U.S.C. §579a(b)(2)).[28] The project deauthorization list is published in the *Federal Register*. If funds are not obligated for the planning, design, or construction of the project or element during the following fiscal year, the project or element is deauthorized.[29]

For studies, there are two deauthorization processes:

- WRRDA 2014 required that any feasibility study that is not completed seven years after initiation is automatically deauthorized.
- The Secretary of the Army is directed to transmit to Congress annually a list of incomplete authorized studies that have not received appropriations for five full fiscal years (33 U.S.C. §2264). The study list is *not* published in the *Federal Register*. Congress has 90 days after submission of the study list to appropriate funds for a study; otherwise the study is deauthorized.[30]

Other Corps Activities and Authorities

Although the project delivery process described above is standard, there are exceptions. The Corps has some general authorities to undertake small projects, technical assistance, and emergency actions. Congress also has specifically authorized the Corps to undertake numerous municipal water and wastewater projects. These exceptions are described below.

Small Projects Under Continuing Authorities Programs

The agency's authorities to undertake small projects are called Continuing Authorities Programs (CAPs). Projects under these authorities can be conducted without project-specific congressional study or construction authorization or project-specific appropriations; these activities are performed at the discretion of the Corps. For most CAP authorities, Congress has limited the project size and scope as shown in **Table 3**.[31] The CAPs typically are referred to by the section number in the bill in which the CAP was first authorized. WRRDA 2014 requires the Assistant Secretary of the Army to publish prioritization criteria for the CAPs and an annual CAP report.[32]

[28] §1175 of WRDA 2016 made certain projects authorized to receive funds from the Inland Waterways Trust Fund exempt from this requirement.

[29] The deauthorization of 26 projects and the earlier automatic deauthorization of 33 projects were announced in the *Federal Register* on August 10, 2016.

[30] CRS has no data indicating that studies have been deauthorized through this process in recent years.

[31] There also is an authority under 33 U.S.C. §610 for the Corps to control noxious aquatic plant growths at a 70% federal and 30% nonfederal cost share; the authority is capped at $15 million annually. This authority has not been operated as a CAP. Most, but not all, of the work under this authority has been for research.

[32] No *Federal Register* publication or annual report was available as of mid-October 2017.

Table 3. Select Corps Continuing Authorities Programs (CAP) for Small Projects and Their Enacted Appropriations

(in millions of dollars)

Common Name of the CAP Authority	Eligible Activities and U.S. Code Citation	Max. Federal Cost Share	Per-Project Federal Limit	Annual Federal Program Limit	FY2015	FY2016	FY2017
§14	Streambank and shoreline erosion of public works and nonprofit services; 33 U.S.C. §701r	65%	$5	$20	$4.5	$2.0	$5.0
§103	Beach erosion/ hurricane storm damage reduction; 33 U.S.C. §426g	65%	$10	$30	$1.3	$0.5	$0.5
§107	Navigation improvements; 33 U.S.C. §577	Varies (see **Table 2**); 50% for recreational	$10	$50	$2.4	$7.0	$8.5
§111	Prevention/ mitigation of shore damage by federal navigation projects; 33 U.S.C. §426i	Same as the project causing the damage	$10	Not Applicable	$0.7	$0.5	$0.5
§204	Regional sediment management/ beneficial use of dredged material; 33 U.S.C. §2326	65%	$10	$50	$3.5	$0.5	$1.0
§205	Flood control (including ice jam prevention); 33 U.S.C. §701s	65%	$10	$55	$10.0	$8.0	$8.0
§206	Aquatic ecosystem restoration; 33 U.S.C. §2330	65%	$10	$50	$8.0	$8.0	$8.0
§208	Removal of obstructions, clearing channels for flood control; 33 U.S.C. §701g	65%	$0.5	$7.5	$0	$0	$0
§1135	Project modifications for improvement of the environment; 33 U.S.C. §2309a	75%	$10	$40	$6.6	$3.0	$3.0

Sources: CRS, using Corps construction work plans for FY2015, FY2016, and FY2017 available at http://www.usace.army.mil/Missions/Civil-Works/Budget/.

Technical Assistance and Tribal Programs

Congress also has granted the Corps some general authorities to provide technical assistance and assistance specifically for tribes. The Corps does not need project-specific authority to undertake activities that are eligible under the authorities listed in **Table 4**.

Table 4. Corps Technical Assistance Authorities
(in millions of dollars)

Program	Activities Authorized	Max. Federal Cost Share	Per-Project Federal Limit	Annual Federal Program Limit	FY2016	FY2017
Planning Assistance to States	Technical assistance to states, communities, and multiple states for regional water resources planning, and eligible levee system evaluations of federally authorized levees; 42 U.S.C. §1962d-16	Varies	$5.0 annually per state for state assistance	$30 for state assistance $15 for technical assistance	$6.00	$6.75
Flood Plain Management Service	Technical assistance on flood and floodplain issues; 33 U.S.C. §709a	100% for eligible activities	Not Applicable	$50	$15.00	$15.30
Tribal Partnership Program	Studies and construction of water resources development projects that benefit Indian tribes; 33 U.S.C. §2269	50% for construction; 50% for water-related planning, except 75% for watershed and river basin assessments	$10	Not Applicable	$1.50	$1.75

Sources: CRS, using Corps investigations work plans for FY2016 and FY2017 available at http://www.usace.army.mil/Missions/Civil-Works/Budget/.

Natural Disaster and Emergency Response Activities

National Response Framework

For assistance for presidentially declared disasters pursuant to the Stafford Act (P.L. 93-288), the Corps may be tasked with performing various response and recovery activities that are funded through the Disaster Relief Fund, and performed at the direction of the Federal Emergency Management Agency (FEMA) and the President and the request of the governor of a state or territory with an affected area. Under the National Response Framework, the Corps coordinates emergency support for *public works and engineering*. This includes technical assistance, engineering, and construction management as well as emergency contracting, power, and repair of public water and wastewater and solid waste facilities. The Corps also assists in monitoring and stabilizing damaged structures and demolishing structures designated as immediate hazards to public health and safety. The agency also provides technical assistance in clearing, removing, and disposing of contaminated and uncontaminated debris from public property, and establishing ground and water routes into affected areas; contaminated debris management is coordinated with the U.S. Environmental Protection Agency.[33]

[33] For more on the Corps deployable emergency resources and expertise, see CRS Report R43560, *Deployable Federal Assets Supporting Domestic Disaster Response Operations: Summary and Considerations for Congress*, coordinated by Jared T. Brown.

Flood-Fighting and Emergency Response

In addition to work performed as part of the National Response Framework, Congress has given the Corps its own emergency response authority. This authority is commonly referred to as the agency's P.L. 84-99 authority, based on the act in which it was originally authorized, the Flood Control and Coastal Emergency Act. P.L. 84-99 (33 U.S.C. §701n) authorizes the Corps to perform emergency response and disaster assistance.[34] P.L. 84-99 authorizes disaster preparedness, advance measures, emergency operations (disaster response and post-flood response), rehabilitation of certain damaged flood control works, protection or repair of certain federally authorized shore protection works threatened by coastal storms, emergency dredging, and flood-related rescue operations. These activities are limited to actions to save lives and protect improved property (public facilities/services and residential or commercial developments). The Corps also has some authorities to assist with select activities during drought.[35]

Most of the agency's emergency response work (including the repair program described below) generally is funded through supplemental appropriations provided directly to the Corps. Until supplemental appropriations are provided, Congress has provided the Corps with authority to transfer money from ongoing Corps projects to emergency operations (33 U.S.C. §701n).

Repair of Damaged Levees and Other Flood and Storm Projects

In P.L. 84-99, Congress also authorized the Corps to rehabilitate damaged flood control works (e.g., levees) and federally constructed hurricane or shore protection projects (e.g., federal beach nourishment projects) and to conduct related inspections. This authority is referred to as the Rehabilitation and Inspection Program (RIP). To be eligible for rehabilitation assistance, the project must be in active status at the time of damage by wind, wave, or water action other than ordinary nature.[36] Active RIP status is maintained by proper project maintenance as determined during an annual or semiannual inspection and by the correction of deficiencies identified during periodic inspections.[37] Approximately 14,000 miles of levees participate in RIP: 2,250 miles of

[34] The Corps also has other limited authorities related to emergency response (e.g., an Emergency Streambank and Shoreline Erosion Protection program) and recovery (e.g., a Snagging and Clearing for Flood Control program).

[35] The Corps has authority to assist in the provision and transport of emergency water supplies when state resources have been exceeded and there is an imminent public health threat. While the Corps is authorized to assist political subdivisions, farmers, and ranchers with non-irrigation water, this authority largely has been used for assisting tribes with drinking water supplies. The agency can construct wells and transport water to provide emergency drinking water during drought conditions. Corps assistance is provided only to meet minimum public health and welfare requirements in the immediate future that cannot be met by state or local actions or through reasonable conservation measures. Transport expenses are nonreimbursable expenses (i.e., 100% federal); the purchase or acquisition of the water and the storage facility at the terminal point and permanent water facilities are reimbursable expenses. This authority cannot be used for the provision of water for livestock, irrigation, recreation, or commercial/industrial use. Eligible entities are limited to drought-distressed political subdivisions, farmers, and ranchers. A governor, his/her representative, or the governing body of a tribe must make a written request for Corps assistance. The Corps makes the determination that an area has an inadequate water supply causing, or likely to cause, a substantial threat to the health and welfare of the inhabitants of the area. Funding is provided through the agency's Flood Control and Coastal Emergencies account. The Corps has authority to reprogram its civil works funds to accomplish work under this authority. The agency also has authority to participate in temporary contracts to provide limited quantities of water (if available) for municipal and industrial purposes (33 U.S.C. §708).

[36] 33 U.S.C. §701n. For more on RIP, see U.S. Army Corps of Engineers, Engineer Regulation 500-1-1, *Emergency Employment of Army and Other Resources Civil Emergency Management Program*.

[37] The Corps-maintained National Levee Database has information on the RIP status of levees; the database is available at http://nld.usace.army.mil/egis/f?p=471:1. An aspect of RIP implementation receiving attention is the agency's

locally constructed and operated levees; 9,650 miles of Corps-constructed, locally operated levees; and 2,100 miles of federally operated levees.

For locally constructed projects, 80% of the cost to repair the damage is paid using federal funds and 20% by the levee owner. For federally constructed projects, the repair cost is entirely a federal responsibility (except for cost of obtaining the sand or other material used in the repair). For damage to be repaired, the Corps must determine that repair has a favorable benefit-cost ratio.[38] Local sponsors assume any rehabilitation cost for damage to an active project attributable to deficient maintenance. WRDA 2016 allows that in conducting repair or restoration work under RIP, an increase in the level of protection can be made if the nonfederal sponsor pays for the additional protection.

Assistance for Environmental Infrastructure/Municipal Water and Wastewater

Since 1992, Congress has authorized and provided for Corps assistance with design and construction of municipal drinking water and wastewater infrastructure projects. This assistance has included treatment facilities, such as recycling and desalination plants; distribution and collection works, such as stormwater collection and recycled water distribution; and surface water protection and development projects. This assistance is broadly labeled *environmental infrastructure* at the Corps. Although no Administration has included environmental infrastructure in a Corps budget request since the first congressional authorization in 1992, Congress regularly includes Corps environmental infrastructure funds in appropriations bills. Environmental infrastructure assistance at times has been called out by various Administrations and others as a low priority for the Corps, in part because other federal and state agencies have programs for which these projects may be eligible (e.g., U.S. Environmental Protection Agency's state revolving funds).[39]

Most Corps environmental infrastructure assistance is authorized for a specific geographic location (e.g., city, county, multiple counties) under Section 219 of WRDA 1992 (P.L. 102-580), as amended; however, other similar authorities, sometimes covering regions or states, exist in multiple sections of WRDAs and in select Energy and Water Development Appropriations acts. The nature of the involvement of the Corps (i.e., a grant from the Corps to the project owner or the Corps acting as the construction project manager) and nonfederal cost-share varies according to the specifics of the authorization. Most Corps environmental infrastructure assistance requires cost sharing, typically designated at 75% federal and 25% nonfederal; however, some of the assistance authorities are for 65% federal and 35% nonfederal cost sharing. Under Section 219, the Corps performs the authorized work; for environmental infrastructure projects authorized in

guidance on vegetation on levees. Some levee owners are having difficulty conducting regular maintenance and emergency repairs while also complying with environmental laws, such as the Endangered Species Act. In some areas, the vegetation on and near levees provides species habitat and other environmental benefits. In §3013, WRRDA 2014 provided congressional direction regarding updating and content of guidance associated with vegetation on levees. As of mid-October 2017, the Corps had not released the implementing guidance for §3013 of WRRDA 2014. This and other environmental issues associated with levee maintenance are beyond the scope of this report.

[38] §3029(a)(1) of WRRDA 2014 authorized the Corps to include among eligible repair activities modification to address major deficiencies or to implement nonstructural alternatives to repair. The agency had not released implementing guidance for §3029(a)(1) of WRRDA 2014 as of mid-October 2017.

[39] National Commission on Fiscal Responsibility, *CoChairs' Proposal: $200 Billion in Illustrative Savings, Draft Document*, November 12, 2010, at http://www.fiscalcommission.gov/news/cochairs-proposal.

other provisions, the Corps often can use appropriated funds to reimburse nonfederal sponsors for work they perform.

Since 1992, Congress has authorized the Corps to contribute assistance to more than 400 of these projects and to state and regional programs, with authorizations of appropriations totaling more than $5 billion. WRRDA 2014 expanded authorizations and authorization of appropriations for specific environmental infrastructure activities in multiple states. The Corps received $140 million for environmental infrastructure assistance in FY2010 and $200 million in the American Recovery and Reinvestment Act of 2009 (P.L. 111-5). The Obama Administration did not fund any environmental infrastructure activities in its FY2013 work plan. Congress recommended $44 million for environmental infrastructure assistance in FY2014, $50 million for FY2015, and $55 million for each of FY2016 and FY2017.

Because environmental infrastructure activities are not traditional Corps water resources projects, they are not subject to the Corps planning process (e.g., a benefit-cost analysis is not performed, a feasibility report is not produced). The Corps environmental infrastructure assistance activities, however, are subject to federal laws, such as the National Environmental Policy Act.

Appendix. Evolution of Corps Civil Works Mission

The civil responsibilities of the U.S. Army Corps of Engineers began with creating and regulating navigable channels and flood control projects. Navigation projects include river deepening, channel widening, lock expansion, dam operations, and disposal of dredged material. Flood control projects are intended to reduce riverine and coastal storm damage; these projects range from levees and floodwalls to dams and river channelization. Many Corps projects are multipurpose—that is, they provide water supply, recreation, and hydropower in addition to navigation or flood control. Its environmental activities involve wetlands and aquatic ecosystem restoration and environmental mitigation activities for Corps facilities. The agency's regulatory responsibility for navigable waters extends to issuing permits for private actions that might affect wetlands and other waters of the United States.

Navigation and Flood Control (1802-1950s)

In the 19th century, the agency's mission evolved into civil and military building for the nation. In 1824, Congress passed legislation charging military engineers with planning roads and canals to move goods and people. In 1850, Congress directed the Corps to engage in its first planning exercise—flood control for the lower Mississippi River. During the 1920s, Congress expanded the agency's ability to incorporate hydropower into multipurpose projects and authorized the agency to undertake comprehensive surveys to establish river-basin development plans. The modern era of federal flood control emerged with the Flood Control Act of 1936 (49 Stat. 1570), which declared flood control a "proper" federal activity in the national interest. The 1944 Flood Control Act (33 U.S.C. §708) significantly augmented the agency's involvement in large multipurpose projects and authorized agreements for the temporary use of surplus water. The Flood Control Act of 1950 (33 U.S.C. §701n) began the agency's emergency operations through authorization for flood preparedness and emergency operations.[40] The Water Supply Act of 1958 (43 U.S.C. §390b) gave the Corps authority to include some reservoir storage for municipal and industrial water supply in reservoir projects at 100% nonfederal cost.

Corps Regulatory Activities: Permits and Their Authorities

The Corps has several regulatory responsibilities and issues several different types of permits. Sections 10 and 13 of the Rivers and Harbors Act of 1899 (22 U.S.C. §407) require that a permit be obtained from the Corps for alteration or obstruction of and refuse discharge in U.S. navigable waters. The Corps also has regulatory responsibilities under other laws, notably Section 404 of the Clean Water Act (CWA; 33 U.S.C. §1344), which requires a permit for dredging or filling activities into waters of the United States. Since the mid-1960s, court decisions and administrative actions have altered the jurisdictional reach of the agency's regulatory program. For more information, see CRS In Focus IF10125, *Overview of the Army Corps and EPA's Rule to Define "Waters of the United States" (WOTUS) and Recent Developments*, by Laura Gatz, and CRS Report 97-223, *The Army Corps of Engineers' Nationwide Permits Program: Issues and Regulatory Developments*, by Nicole T. Carter. The Corps also regulates and authorizes disposal of materials into the ocean under the Marine Protection Research and Sanctuaries Act (MPRSA; 33 U.S.C. §§1401-1455); for more information, see CRS Report RS20028, *Ocean Dumping Act: A Summary of the Law*, by Claudia Copeland.

Changing Priorities (1960-1986)

By the late 1960s, construction of major waterworks had declined. Changing national priorities and local needs, increasing construction costs, and completed projects at most prime locations

[40] Emergency response activities are also conducted under the Disaster Relief Act of 1974 (42 U.S.C. §5121), also known as the Stafford Disaster and Emergency Assistance Act.

decreased the attractiveness of additional water projects. Water supply for traditional off-stream uses, such as domestic, commercial, industrial, and agricultural uses, was increasingly in direct competition with in-stream uses, such as recreation, fisheries, and wildlife habitat. From 1970 to 1985, Congress authorized no major water projects, scaled back several authorized projects, and passed laws that altered project operations and water delivery programs to protect the environment. The 1970s marked a transformation in Corps project planning. The 1969 National Environmental Policy Act and the Endangered Species Act of 1973 (16 U.S.C. §1531) required federal agencies to consider environmental impacts, increase public participation in planning, and consult with other federal agencies. Executive orders (E.O. 11988 and E.O. 11990) united the goals of reducing flood losses and environmental damage by recognizing the value of wetlands and required federal agencies to evaluate potential effects of actions on floodplains and to minimize impacts on wetlands.

Environmental Mission and Local Responsibility (1986-2000)

Congress fundamentally transformed the rules for Corps water projects and their funding through WRDA 1986 (33 U.S.C. §2211); it established new cost-share formulas, resulting in greater financial and decisionmaking roles for local stakeholders. WRDA 1986 reestablished the tradition of biennial consideration of an omnibus Corps civil works authorization bill. WRDA 1986 also provided the Corps with authority to determine if changes can be made in existing structures or operations to improve environmental quality. WRDA 1990 (33 U.S.C. §§1252, 2316) explicitly expanded the agency's mission to include environmental protection and increased its responsibility for contamination cleanup, dredged material disposal, and hazardous waste management. WRDA 1992 (33 U.S.C. §2326) authorized the Corps to use the "spoils" from dredging in implementing projects for protecting, restoring, and creating aquatic and ecologically related habitats, including wetlands. WRDA 1996 (33 U.S.C. §2330) gave the Corps the authority to undertake aquatic ecosystem restoration projects. While the Corps has been involved with numerous environmental restoration projects in recent years, WRDA 2000 approved a restoration program for the Florida Everglades that represented the agency's first multiyear, multibillion-dollar effort of this type. These legislative changes gave the Corps an aquatic ecosystem restoration and environmental protection mission.

Evolving Demands and Processes (2001-present)

The agency's aging infrastructure and efforts to enhance the security of its infrastructure from terrorism and natural threats have expanded Corps activities in infrastructure rehabilitation, maintenance, and protection. WRDA 2007 continued the expansion of the agency's ecosystem restoration activities by authorizing billions of dollars for ecosystem restoration activities, including large-scale efforts in coastal Louisiana and in the Upper Mississippi River. The Corps also retooled its long-standing flood control mission to use a flood risk management approach. This was undertaken in response to congressional direction in WRDA 2007 and disasters like Hurricanes Katrina, Rita, Ike, and Sandy and significant floods in the Midwest. This approach emphasizes a greater appreciation for the shared responsibilities across levels of government for managing flood risks and damages. The regularity with which the Corps has received significant congressional appropriations for natural disaster response has increased attention to its role in emergency response, infrastructure repair, and post-disaster recovery. WRRDA 2014 expanded opportunities for nonfederal (including private) participation in project delivery and financing and aimed to improve the efficiency of Corps planning activities. Congress resumed the biennial enactment of WRDA legislation with WRDA 2016 and used some of the processes established by WRRDA 2014 for identifying studies and projects to authorize in WRDA 2016. WRDA 2016

authorized projects within the agency's primary mission areas as well as continued or expanded Corps involvement in regional restoration efforts in various locations across the nation.

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Specialist in Natural Resources Policy

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