Army Corps Fiscal Challenges: Frequently Asked Questions

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Summary

The Army Corps of Engineers is responsible for much of the federal water resources infrastructure in the United States. The Corps is faced with more demands for building and maintaining its projects than available federal funding allows. This situation is raising basic questions about how the Corps functions, including the efficacy, efficiency, and equity of Corps planning and implementation.

Corps fiscal challenges have multiple underlying causes. The Corps and its infrastructure is expected to help meet the nation's increasing demands on water resources and the services they provide; however, what the agency can accomplish given the level of federal funding provided is declining. At the same time, Corps asset management costs are increasing as facilities age. Nonfederal project sponsors that pay a portion of the cost for most Corps projects can become frustrated as Corps studies and projects are authorized, but remain unfunded or are slowed by lower levels of appropriated funding than anticipated. The Administration and appropriators make choices about what to fund out of an increasing pool of authorized activities. For example, the agency now faces a construction backlog of more than $62 billion, while receiving roughly $2 billion a year in construction funding. As Corps fiscal challenges become more apparent, frequently asked questions about the Corps fall into four broad categories:

- appropriations,
- backlog of project delivery,
- authorizations and missions, and
- navigation expenditures and trust funds.

At issue for Congress is deciding how to tackle challenges facing the Corps in the context of a tight fiscal climate and other constraints (e.g., earmark moratoriums). In the past, Congress generally has increased the agency's budget above the Administration's request and expanded the list of projects and types of projects funded. At present, fundamental questions about what the agency does and how it operates are being asked by some observers. The perspectives on how to proceed among Members of Congress, project sponsors, fiscal conservatives, environmental interests, and other stakeholders vary widely. These perspectives often diverge based on views of the appropriate federal role in water resources management and infrastructure and the priorities for the limited federal water resources funding. Some stakeholders see the Corps backlog as a justification to direct more funds to Corps activities. Others see a need to reduce the level and types of Corps activities authorized, while still others want to make gains through efficiency improvements to reduce the expense and time needed to complete a Corps project. Some also are interested in pursuing private sector involvement in and alternative federal financing (e.g., infrastructure banks) for water resources infrastructure in order to reduce the demands on the agency. Some of these perspectives are apparent in proposed legislation in the 112th Congress, including H.R. 104, H.R. 235, H.R. 1861, H.R. 2354, S. 475, and S. 573.

This report addresses many of the basic questions regarding Corps of Engineers activities under a constrained fiscal climate. It also includes limited discussion of larger trends and proposals that may be of interest to Congress as it considers Corps activities going forward.

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Introduction to Army Corps Fiscal Challenges

The Army Corps of Engineers is responsible for building and maintaining much of the federal water resources infrastructure in the United States. The Corps is faced with more demands for building and maintaining its projects than available federal funding allows. This situation raises a number of basic questions about how the Corps functions, including the efficacy, efficiency, and equity of Corps planning and implementation. Recently the National Research Council identified a number of challenges facing the Corps (see box below).

This report discusses selected frequently asked questions (FAQs) related to Corps fiscal challenges which are commonly raised by congressional staff. Where available, it also includes related recommendations from expert and government reports, as well as current legislation that may be considered in regard to these challenges (see **Table 8** for examples of legislation in the 112th Congress). The FAQs are organized into four categories: Appropriations; Backlog and Project Delivery; Authorizations and Missions; and Navigation Trust Funds. For more detailed background on Corps processes, see CRS Report R41243, *Army Corps of Engineers Water Resource Projects: Authorization and Appropriations*, by Nicole T. Carter and Charles V. Stern.

Corps Challenges According to the National Research Council

Unrealistic Expectations Given the Level of Federal Funding—

"The Corps of Engineers reflects a national water planning paradox: national water resources demands are increasing and becoming more complex, while at the same time, national investments in water infrastructure exhibit a declining trend."

"Despite declining investment levels and numbers of Corps personnel, the nation expects the Corps to provide a number of services, including flood control, water-based recreation, commercial navigation, ecosystem restoration, hydropower production, and coastal and beach protection. This situation leads to expectations that the Corps of Engineers and its civil works construction program cannot meet consistently."

"Despite decreasing emphasis on new construction, Congress and the nation continue to rely upon the Corps for emergency response activities and for periodic upgrades to civil works infrastructure."

Broadened Scope of Responsibilities and Inefficient Project Delivery—

"Over time, Congress has greatly broadened the Corps' work program and responsibilities."

"The collective backlog of unfinished work leads to projects being delayed, conducted in a stop-start manner, and to overall inefficient project delivery."

Managing Existing Assets and Changing Demands—

"Future Corps water resources activities will be less dedicated to construction of major new civil works, and more heavily focused on: (1) operating, maintaining, rehabilitating, and upgrading existing infrastructure, (2) reallocating reservoir storage and releases among changing water resources demands and users, and (3) providing some degree of ecosystem restoration and ecological services in heavily-altered riparian and aquatic ecosystems."

New Business Model Needed—

"The modern context for water resources management involves smaller budgets, cost sharing, an expanded range of objectives, and inclusion of more public and private stakeholders in management decisions. Two important implications of these conditions are (1) given current budget realities, the nation may have to consider more flexible, innovative, and lower cost solutions to achieving water-related objectives, and (2) the Corps of Engineers will by necessity work in settings with more collaboration and public and private participation than in the past."

Source: Quotes are from National Research Council, *National Water Resources Challenges Facing the U.S. Army Corps of Engineers*, Washington, DC, 2011.

Appropriations

The frequently asked questions on Corps appropriations address the Corps' annual appropriations and supplemental funding, trends and categories of funding, and earmarks and emergency operations. After the appropriations FAQs, **Table 3** provides some of the recommendations made in government and expert reports for addressing issues raised in the appropriations FAQs.

What Activities Are Typically Funded in the Corps Budget?

The Corps budget funds a wide variety of activities. The Corps owns and operates 650 dams and maintains 926 coastal and inland harbors, and 12,000 miles of inland waterways; it also has constructed over 11,750 miles of levees to manage flooding. The agency also undertakes environmental or ecosystem restoration activities. Some are required for compliance with federal law; others are authorized by Congress for environmental mitigation, protection, and restoration purposes, including in the Florida Everglades, Columbia River, and the Missouri River. These environmental projects are often closely associated with Corps navigation, flood control, and hydroelectric investments.

Annual Corps appropriations are part of the Energy and Water Development (E&W) appropriations bill.[1] Congressional action on Corps appropriations is organized by budget account.[2] The Administration's budget request is presented to Congress by account. However, starting with FY2006, the Administration has developed the Corps budget along business lines (e.g., navigation, flood, ecosystem/environment) and increasingly has relied on performance-based metrics to prioritize funding within a business line. Prior to that, requests had been developed more on a geographic basis.

Figure 1 shows the FY2010 enacted Corps appropriation first by business line and second by account.[3] As shown in the first part of this figure, the FY2010 appropriation can be divided into three broad categories of Corps business lines—flood and coastal storm damage prevention (FSDR), navigation, and all other business lines, which includes Corps ecosystem restoration and environmental work. Looking at the Corps budget by account, the bottom half of **Figure 1** shows that one of the primary Corps accounts, Construction, was dominated by flood-related investments in FY2010. Funding for flood-related investments also made up a significant share of the Corps Operations and Maintenance (O&M) account, although the majority of this account's budget was devoted to navigation. Although other business lines may be smaller, cumulatively they represent a significant share of the agency's appropriations.

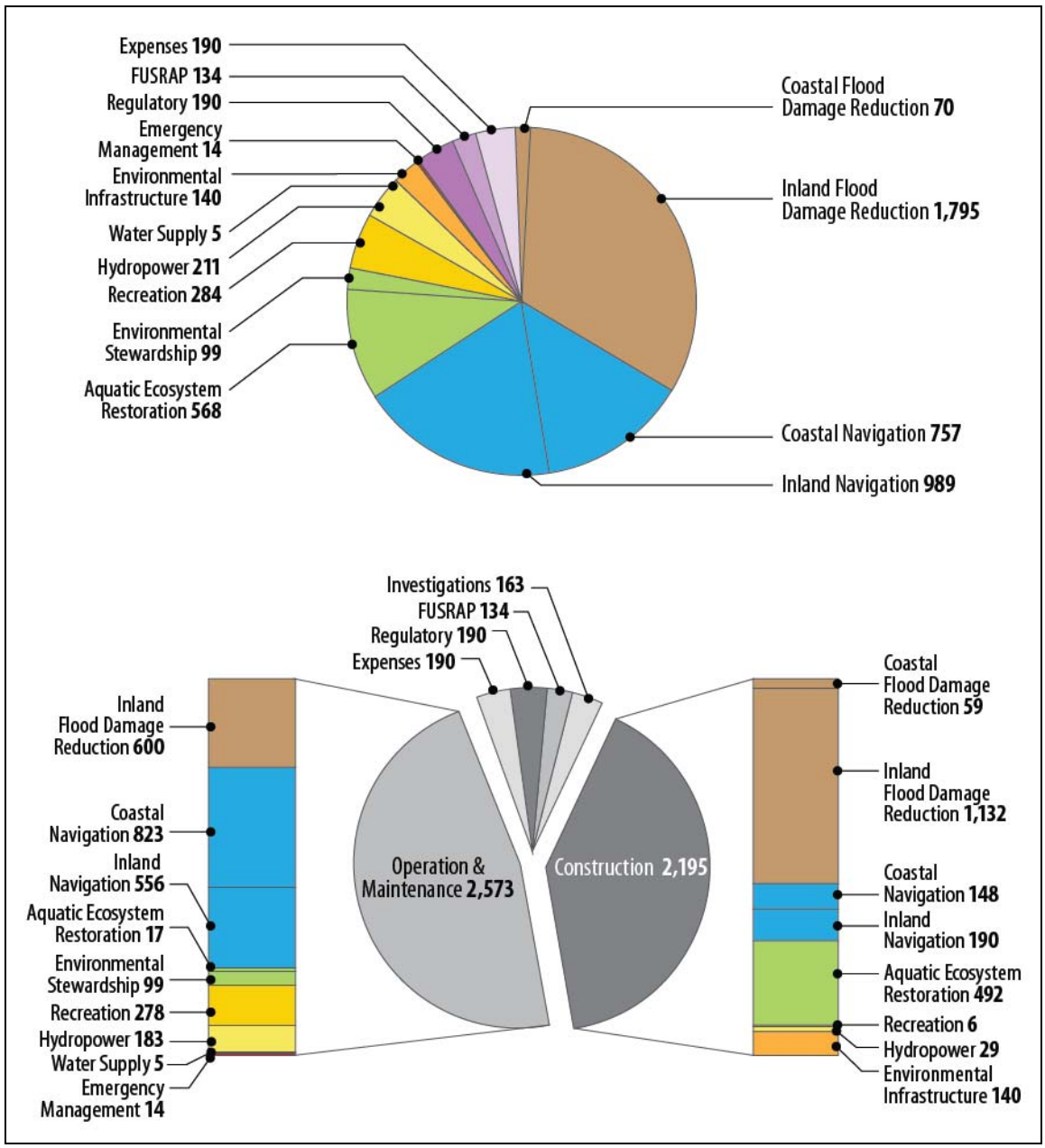
[1] The Energy and Water Development Appropriations acts appropriations include general Treasury funds as well as funds released from the Harbor Maintenance Trust Fund (HMTF) and the Inland Waterway Trust Fund (IMTF).

[2] The Corps budget accounts are: Investigations; Construction General; Operations and Maintenance; Mississippi Rivers & Tributaries; Formerly Utilized Sites Remedial Action Program (FUSRAP); Flood Control and Coastal Emergencies; Regulatory; Expenses; and Assistant Secretary of the Army. For more on Corps budget and appropriations for FY2012, see CRS Report R41908, *Energy and Water Development: FY2012 Appropriations*, coordinated by Carl E. Behrens.

[3] FY2010, rather than FY2011, often is used as the basis of analysis in this report for multiple reasons; most significantly, in FY010 the agency operated under regular annual appropriations, rather than continuing resolutions.

Figure 1. FY2010 Corps Annual Appropriations

$5.4 Billion Breakout by Business Line in Color and Budget Account in Grey ($ millions in bold)



Source: CRS presentation of Corps data.

Notes: Top pie chart is for all Corps FY2010 appropriations broken out by business line; bottom pie chart breaks down the same funds by Corps budget account. This figure does not include ARRA funds.

What Are the Recent Trends in the Corps Budget?

Figure 2 compares budget requests and enacted appropriations from FY1986 to FY2011. Congressional appropriations regularly exceeded the executive branch requests over this period. Because of inflation in the cost of civil works activities, the purchasing power of the Corps annual appropriations has been relatively flat for two decades. That is, while **Figure 2** shows that the nominal value of the Corps budget has increased since 1986, the real value increase has been less dramatic. A comparison of the real values of the 1990 and 2010 appropriations, using a general GDP deflator, shows a 10% increase in Corps appropriations.[4] These real values likely overestimate the Corps' ability to use appropriations to accomplish activities since they do not reflect inflation for the types of construction (e.g., steel and concrete material costs) and services associated with a Corps project. **Figure 3** uses a construction cost index that reflects that these construction and service costs increased faster than the general GDP deflator; the graph shows that the real value of Corps construction appropriations has been flat over the last 20 years.

Generally, supplemental funds are directed to flood fighting and repair of flood control infrastructure and navigation channels after floods. At times, such as in response to Hurricane Katrina, supplemental funds have also been provided for construction of flood and storm damage reduction infrastructure. In many recent years, supplemental appropriations for the Corps have significantly augmented annual appropriations, especially in FY2006, FY2007, and FY2008; and in FY2009 and FY2010 through the American Recovery and Reinvestment Act (ARRA). Although the Corps received no supplemental appropriations in FY2011, it continued to spend supplemental appropriations previously provided (e.g., contracts for hurricane storm damage protection projects for Louisiana). The figures below do not reflect supplemental appropriations (except where noted in **Figure 2**).

How Is Funding Allocated Under a Continuing Resolution?

If an annual Energy and Water Development appropriations bill has not been enacted at the start of a fiscal year, Congress typically uses a continuing resolution (CR) to fund the operations and activities of the Corps and other agencies. In recent years, the Corps often has operated under short-term CRs, and at times has long-term CRs (e.g., FY2007 and FY2011). Absent explicit congressional guidance on account or project funding levels in a CR, the Administration distributes funds among authorized activities using criteria crafted by the Corps and the Office of Management and Budget (OMB).[5] Among other things, recent criteria have prioritized projects that are ongoing, projects that have high benefit-cost ratios (BCRs), and a few large-scale ecosystem restoration projects associated with Corps projects or legally required environmental actions.[6] For the FY2011 long-term CR, Congress required the Corps to submit, within 60 days of enactment, a plan that provided funding information at a level below the account level (i.e., the project level).[7] This enabled Congress to review final project-level allocations.

[4] Adjusted using the GDP deflator from the Bureau of Economic Analysis, National Income and Product Accounts, Table 1.7.4, Price Indexes for Gross Domestic Product.

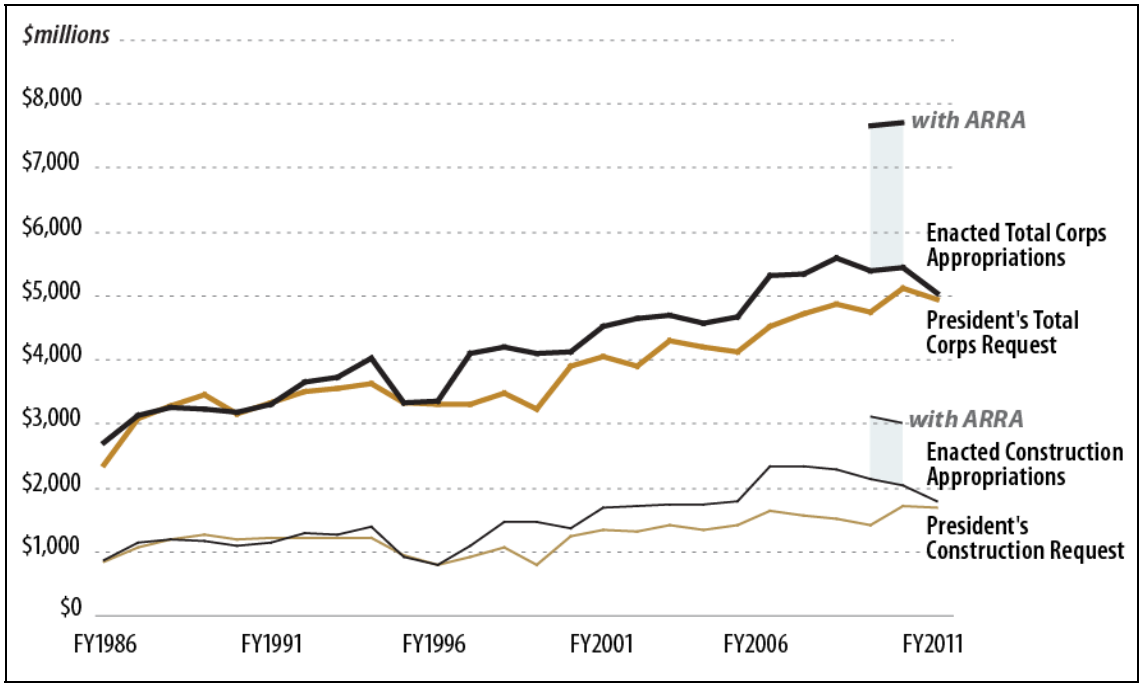
[5] The Administration's criteria to select activities to fund under a CR often are based on the annual budget formulation criteria. Thus, activities included in the President's budget request are indicators of likely CR funding priorities.

[6] See later section, "What Role Do Benefit-Cost Ratios Play in Corps Planning?"

[7] The work plan for FY2011, is available at http://www.usace.army.mil/CECW/PID/Pages/cecwm_progexe.aspx.

Figure 2. Corps Budget Request and Congressional Appropriations

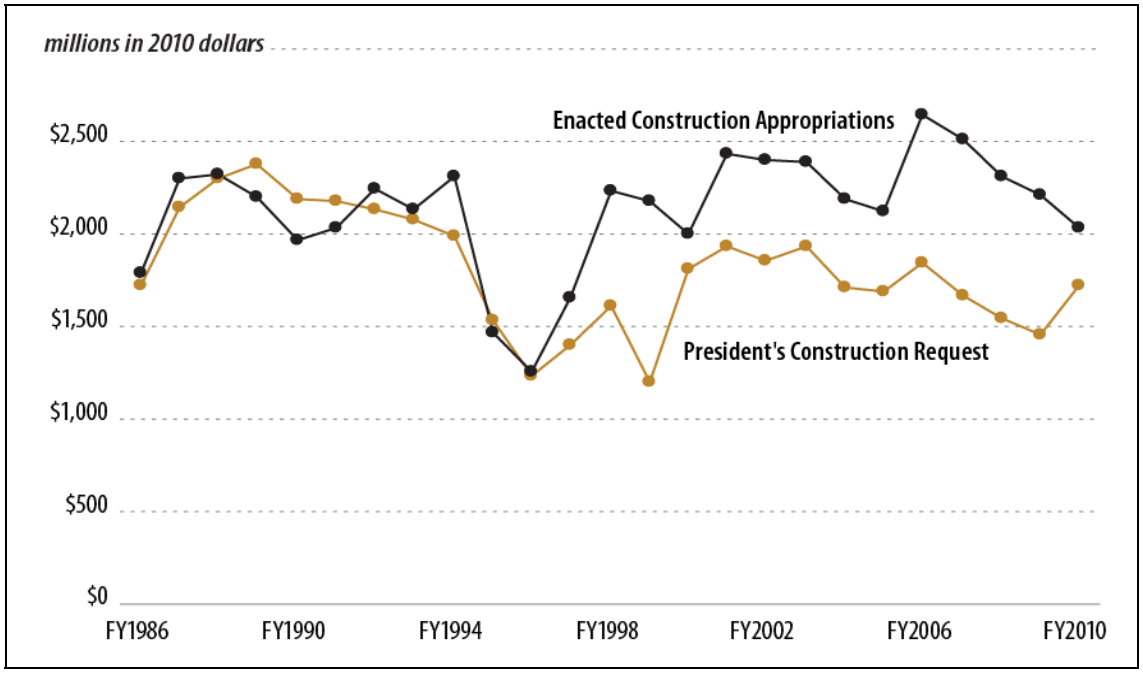
($ in current dollars, not adjusted for inflation)



Source: CRS using annual Energy and Water Appropriations Acts and ARRA legislation.

Figure 3. Corps Construction Budget Request and Congressional Appropriations

($ adjusted using construction cost index to 2010 dollars)



Source: CRS using annual Energy and Water Appropriations and Army Corps of Engineers, *Civil Works Construction Cost Index System*, EM 1110-2-1304, March 2011. Figure does not include ARRA funds.

How Do Congressional Earmark Moratoriums Affect the Corps?

Corps funding often is a part of the debate on congressionally directed spending, or "earmarks." Because Corps activities are typically geographically specific in their authorizations and appropriations,[8] they have been subject to earmark disclosure rules. In the 112th Congress, the House Republican Conference, Senate Republican Conference, and the Senate Appropriations Committee have all adopted moratoriums on earmark requests that are significant to how Congress directs the agency's activities.

While congressionally directed spending makes up a relatively small percentage of most agencies' activities, a significant number of Corps activities have in the past been fully or partially funded through congressional earmarks (including O&M expenditures). Much of the congressional direction of the Corps budget historically has occurred through funds that Congress provided the agency that were above the President's budget request. From 2000 to 2010, Congress added an average of $533 million annually to the Corps budget. Most of these funds were directed to specific projects. The congressional increase in Corps funding and the projects specified by Congress can be seen as Congress adjusting the President's request to reflect its perception of the nation's water resource needs and its perception of shortcomings in the Administration's budget. Because much of the congressionally directed spending was for geographically specific projects, earmark opponents instead saw funding for these projects as circumventing the Administration's performance and metric-based budgeting process.

Earmark moratoriums appear to be altering the makeup of Corps appropriations by reducing the addition of specific projects to the Corps budget and by funding broad categories of activities rather than specific projects. Some projects which have historically benefitted from congressional support have received less funding (or no funding) in FY2011 enacted appropriations and FY2012 markups, respectively. This includes individual projects, which typically receive little or no support in the Administration's budget proposal (e.g., ongoing projects with BCRs below the Administration's cutoff), as well as projects that the Administration typically considers outside of Corps mission areas (e.g., municipal water and wastewater projects). While the current earmark moratoriums have limited congressional ability to direct funding to individual Corps projects not included in the President's budget, funding levels for some projects and activities that were included in the President's budget request have been altered by Congress. Additionally, Congress has funded broad categories of Corps projects and has provided the agency discretion to select specific projects that will receive this funding.[9]

In addition to funding impacts, the earmark moratoriums also influence Corps authorizations and may contribute to deauthorization of Corps activities. Water Resources Development Acts (WRDAs), which are the primary vehicle for Corps authorizations, historically have been omnibus bills that include many provisions for site-specific activities. Consideration of a WRDA 2010 (H.R. 5892, 111th Congress) in the House was affected by the House Republican Conference moratorium on members requesting congressional earmarks in 2010.[10] H.Rept. 111-654,

[8] Roughly 85% of the Corps budget is for geographically specific activities.

[9] Under the FY2011 long-term CR, Congress provided $174 million more than requested, but left it largely to the agency to determine how to spend the funds for each account. In House-passed Energy and Water Appropriations for FY2012 (H.R. 2354), Congress included significant funding for unspecified projects.

[10] The House Republican Conference moratorium in the 111th Congress reportedly referred to the House Rules XXI for defining the term earmark. That House rule defined an earmark to include provisions or committee reports "authorizing" some activities. The House Republican Conference moratorium for the 112th Congress and House Rule (continued...)

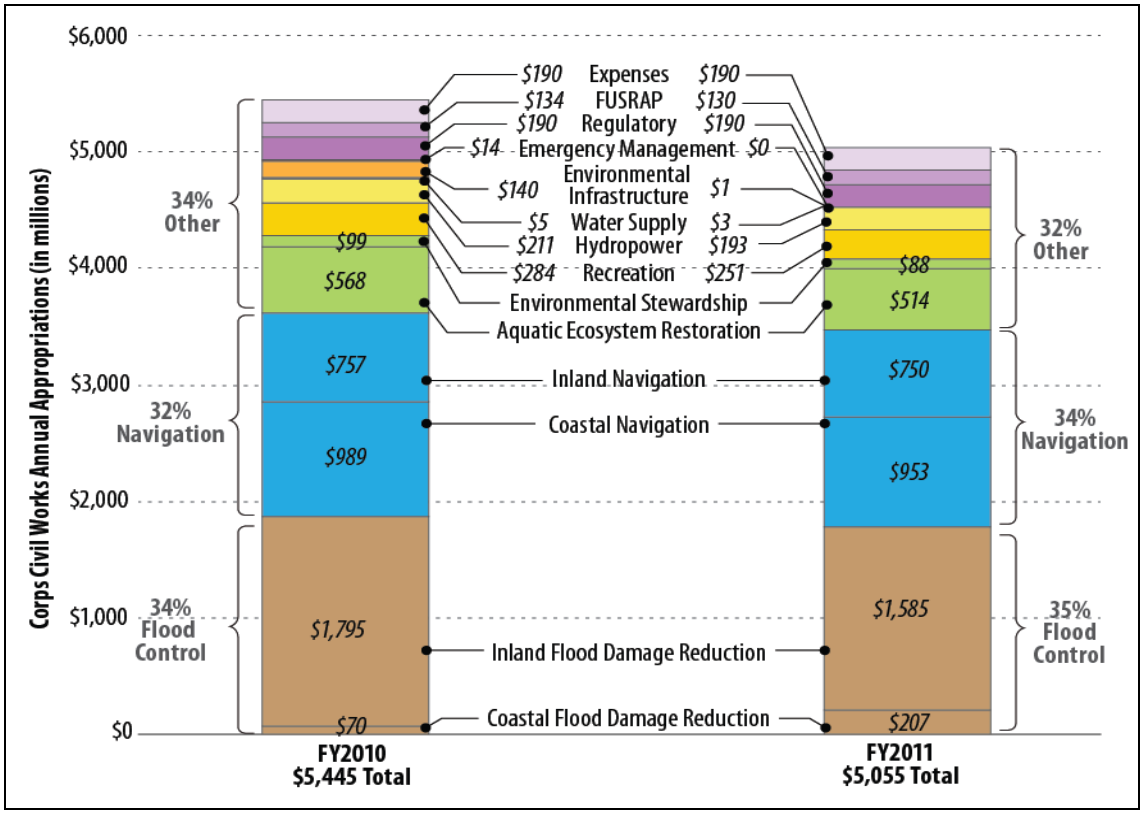
accompanying the House Transportation and Infrastructure Committee-reported version of H.R. 5892, included a statement of "minority views" that cited numerous reasons, including economic conditions, for not supporting the bill at the time. Additionally, the decline in congressionally directed spending of specific Corps activities may contribute to more authorized projects and studies being deauthorized under established deauthorization procedures;[11] many activities authorized in WRDA 2007 (P.L. 110-114) have yet to receive funding.

How Do FY2010 and FY2011 Corps Appropriations Compare?

Overall, the Corps received less funding in FY2011 than in FY2010; funding decreased for most of the agency's business lines. **Figure 4** provides a comparison of enacted Corps appropriations by business line for FY2010 and FY2011. Coastal Flood Damage Reduction was the only business line to increase in FY2011.

Figure 4. Corps Annual Appropriation FY2010 and FY2011

(in millions)



Source: Data from Corps Business Line/Account Cross-Walk for FY2010 and FY2011 enacted appropriations, provided to CRS in February 2010 and August 2011.

(...continued)

XXI for the 112th Congress are similarly worded. The Senate Rule XLIV paragraph 5 similarly defines a "congressionally directed spending item" to include some authorizing provisions; for the full definition, see http://rules.senate.gov/public/index.cfm?p=RuleXLIV.

[11] For more on deauthorization processes, see "How Are Corps Activities Deauthorized?"

There are many significant differences between how the agency's FY2010 and FY2011 appropriations were enacted and implemented, including the aforementioned issues associated with continuing resolutions and earmark moratoriums. For instance, as a result of the FY2011 CR, Congress did not weigh in on FY2011 appropriations at a level of specificity comparable to FY2010. Furthermore, although the Corps received less appropriations overall in FY2011 than it did in FY2010, the overall trend of the Corps receiving more funding from Congress than was requested in the President's budget continued. This trend is notably counter to larger budgetary trends for most agencies, which for the most part saw reductions compared to the President's budget request. Due to the Administration's lack of support for Corps environmental infrastructure projects, the Administration's FY2011 work plan provided $1 million to complete a project phase begun in FY2010; the congressionally directed spending for environmental infrastructure in FY2010 had totaled $140 million.

While **Figure 4** shows how the Corps' FY2011 work plan distributed the agency's appropriations across business lines, the agency's actual FY2011 use of funds is likely to differ due to the significant flooding along the Mississippi River, Missouri River, and the Midwest in 2011. As the result of the need to fund emergency operations, the Corps is transferring money away from the activities listed in the FY2011 work plan to emergency operations.

How Are Corps Emergency Flood Operations and Recovery Activities Funded?

Congress first authorized the Corps in the Flood Control Act of 1941 (55 Stat. 638, 33 U.S.C. 701n) to assist in flood fighting and repair efforts. The Corps can assist at the discretion of the Corps Chief of Engineers (Chief) in order to protect life and improved property, principally when state resources are overwhelmed. Congress also has authorized the Corps to operate a program—the Rehabilitation and Inspection Program (RIP, also known as the P.L. 84-99 program)—to fund the repair of participating flood control works (e.g., levees, dams) damaged by natural events.[12]

Corps funding for flood fighting and repair of flood control works generally has come through supplemental appropriations deposited into the agency's Flood Control and Coastal Emergencies (FCCE) account (see **Table 1** for level of funding). Funding could be provided through annual appropriations, but the FCCE account generally receives minimal or no annual appropriations. As shown in the bottom of **Table 1**, recent budget requests have proposed that some flood fighting preparedness activities be funded through annual appropriations, but Congress has not appropriated these funds as part of its Energy and Water Development appropriations acts.

Congress has given the Secretary of the Army (generally the Assistant Secretary of the Army (Civil Works)) discretion to transfer from existing appropriations the monies necessary for emergency work, until funds become available in the FCCE account. With the significant flooding of FY2011, the Corps is transferring from ongoing projects to pay for its emergency actions. The effect these transfers may have on ongoing, non-emergency Corps projects may depend on how long and at what level funds are used for emergency operations and repair efforts.

[12] See CRS Report R41752, *Locally Operated Levees: Issues and Federal Programs* , by Natalie Keegan et al.

Table 1. Emergency Flood Operations, Repair of Damaged Flood Control Works, and Flood Control and Coastal Emergency (FCCE) Account

(in millions)

	FY2005	FY2006	FY2007	FY2008	FY2009	FY2010	FY2011	FY2005-FY2010 Average
Emergency Operations	$32	$113	$25	$55	$50	$56	NA	$55
RIP, Non-Katrina	$0	$57	$562	$187	$44	$143	NA	$166
RIP, Katrina	$200	$4,828	$2,926	$0	$439	$1,260	NA	$1,609
Total	**$232**	**$4,998**	**$3,513**	**$242**	**$533**	**$1,459**	NA	**$1,830**
FCCE Budget Request	$50	$70	$81	$40	$40	$41	$30	$54
FCCE Annual Appropriations	$0	$0	$0	$0	$0	$0	$0	$0

Source: CRS using data provided by Corps to CRS in April and May 2010 and August 2011.

Notes: NA=not available. The table does not reflect the work performed by the Corps under FEMA's emergency response activities. Emergency Response Operations include flood fighting to supplement state and local efforts to protect lives and critical public infrastructure.

What Is the History of Corps Supplemental Appropriations?

As indicated above, the Corps has received significant supplemental appropriations since 2001 as shown in **Table 2**. The vast majority of the supplemental funding has been for its flood fighting and recovery efforts, with the exception of the ARRA funding. Roughly $15 billion in supplemental funding was provided in response to Hurricanes Katrina and Rita for not only repair of damaged hurricane protection infrastructure but also improved hurricane storm damage protection for New Orleans and other coastal areas of Louisiana and Mississippi.

Table 2. Corps Supplemental Appropriations, 2001 Through July 2011

Supplemental Appropriations Act Name	Public Law	Amount (in millions)
Military Construction Act, 2001	P.L. 106-246	$7
Supplemental Appropriations, 2001	P.L. 107-20	$146
Dept. of Defense Emergency Supplemental for Terrorist Attacks Response and Recovery	P.L. 107-117	$139
Supplemental Appropriations for Further Recovery and Response to Terrorist Attacks	P.L. 107-206	$108
Emergency Wartime Supplemental Appropriations, 2003	P.L. 108-11	$39
Legislative Branch Appropriations Act, 2004	P.L. 108-83	$60
Emergency Supplemental for Hurricane Disaster Assistance Act	P.L. 108-324	$362
Second Emergency Supplemental for Hurricane Katrina, 2005	P.L. 109-62	$400
Emergency Supplemental to Address Hurricanes and Pandemic Influenza, 2006	P.L. 109-148	$2,900
Emergency Supplemental for Defense, the War on Terror, and Hurricane Recovery, 2006	P.L. 109-234	$3,701

Supplemental Appropriations Act Name	Public Law	Amount (in millions)
Additional Hurricane Disaster Relief/Recovery	P.L. 110-28	$1,433
Supplemental Appropriations, 2008	P.L. 110-252	$6,367
Supplemental Appropriations, 2008	P.L. 110-329	$2,777
American Recovery and Reinvestment Act (FY2009 and FY2010 funding)	P.L. 111-5	$4,600
Supplemental Appropriations Act, 2009	P.L. 111-32	$797
Total, 2001 Through July 2011		**$23,835**

Source: CRS compiled using public laws cited in the table.

Notes: Some bill titles have been abbreviated.

Recommendations from Expert and Government Reports

Most of the recommendations shown in **Table 3** were made in a report by a panel of the National Academy of Public Administration (NAPA). NAPA is chartered by Congress to assist public sector leaders with management challenges; it is a non-profit, independent coalition of public management and organization leaders. Congress asked the Corps to engage NAPA to evaluate the criteria used by the Corps to prioritize projects and to recommend improvements.

Table 3. Appropriation Recommendations From Expert and Government Reports

Issue	Recommendation and Source Report	Status
Funding Priorities and Processes	Move from project-by-project prioritization, to multi-criteria performance-based priorities, to watershed and basin justifications. Project funding should be replaced by appropriations by Corps division, with amounts guided by a collaborative planning process. (NAPA 2007)	The Administration funds authorized projects using multiple performance-based metrics, with benefit-cost ratios remaining as the dominant metric for most construction projects. Congressional processes are changing due to earmark moratorium and fiscal climate.
Budget Data Transparency and Usefulness	The Administration should as part of or a supplement to its annual budget submission include (1) information on decisions across project categories, business lines, and accounts; (2) project-level details for O&M account; (3) project-level information on all projects with continuing resource needs; and (4) estimated carryover of unobligated appropriations by project. (GAO 2010)	The Administration's FY2012 budget request appears to have satisfied (2) and (4); data on (1) and (3) have not been released publically. According to GAO, the lack of project-level information inhibits informed congressional decision-making (GAO 2010)
Funding Priorities	Collaborative plans should provide for long-range solutions (e.g., 20 years) with five-year implementation programs based on realistic financial constraints. (NAPA 2007)	The Corps annually produces a 5-year development plan. CRS was unable to identify Corps supported or developed 20-year plans.
Strategic Plan	Corps should restructure its strategic plan around key national outcome goals and long-range goals with annual targets. (NAPA 2007)	The Corps' 5-year development plan includes strategic objectives and annual performance targets.

Sources: U.S. Government Accountability Office, *Army Corps of Engineers: Budget Formulation Process Emphasizes Agencywide Priorities, but Transparency of Budget Presentation Could be Improved*, GAO-10-453, April 2010. National Academy of Public Administration, *Prioritizing America's Water Resources Investments*, Washington, DC, February 2007, http://www.napawash.org/wp-content/uploads/2007/07-05.pdf.

Backlog and Project Delivery

The FAQs on the Corps backlog and project delivery discuss the size and elements of the agency's construction backlog and operations and maintenance backlog, as well as the factors contributing to the expansion of the construction backlog. After the backlog FAQs, **Table 4** provides recommendations made in an expert report for addressing the backlog.

What Is the Corps Construction and Maintenance Backlog?

There is no authoritative list of the projects in the backlog that is publically available. Estimates of the Corps backlog vary widely, depending on which project categories are included (e.g., no funding, partially funded but not complete, only active projects). Congress requested in Section 2027 of Water Resources Development Act 2007 a fiscal transparency report, which would have expanded the publically available information. The study was never funded in the President's budget or by congressional appropriations, and no significant work has been performed on it.[13]

Recent Corps estimates put the total construction backlog for projects at more than $62 billion; **Figure 5** provides a breakdown of this amount. The "active" backlog of $60 billion includes approximately $22 billion in activities that have been included in the President's budget but have yet to be completed, as well as more than $38 billion for other "active" projects which have yet to be included in the budget. Additionally, there is $2 billion in authorized construction projects which are no longer active or have been deferred by nonfederal sponsors.

The Corps construction backlog includes not only activities authorized by Congress but also dam safety and other rehabilitation and repair projects that may not require congressional authorization. Aging infrastructure investments are included in the $60 billion estimate if they have been the subject of a Corps study, but at many Corps facilities these needs have not been studied. This is why the total construction backlog estimate is *more* than $62 billion.

The significance of the Corps backlog depends on whether it is viewed as a "needs" or a "wants" backlog, and whether it represents unmet nonfederal expectations and unaddressed water resources problems. Although backlogs are not new to the Corps,[14] some of the current concern is that since 1986 nonfederal project sponsors significantly share in the costs of most Corps projects, and many sponsors are frustrated by the lack of certainty about when their cost-shared projects will be completed and the benefits forthcoming. Another concern is that the backlog results in inefficient funding levels for many projects and in added pressure for congressionally directed spending.

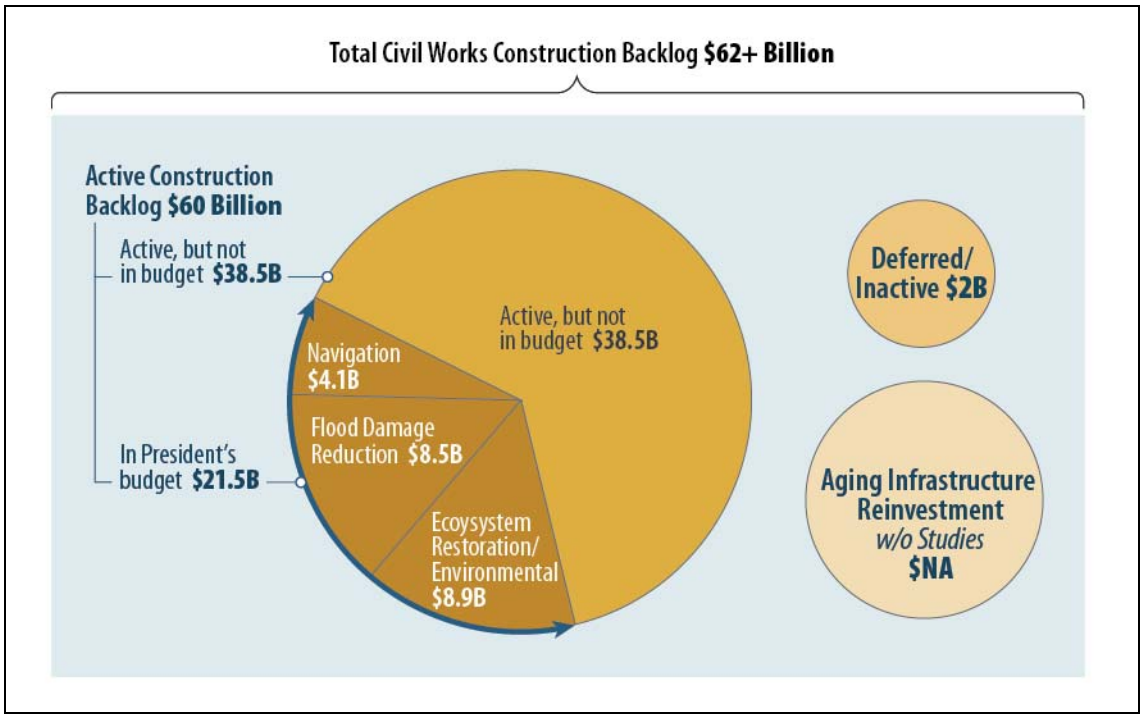
The composition of the projects in the construction backlog also provides insight into Corps fiscal challenges. Flood damage reduction and ecosystem restoration/environmental projects dominate the portion of the construction backlog that is part of the President's budget request. Efforts to manage the construction backlog may result particularly in a reevaluation of the role and priorities of the Corps in flood damage reduction projects[15] and attention to how Corps ecosystem restoration projects are developed and prioritized.

[13] Some elements of the authorized study, particularly those related to permitting, may be more challenging and costly.

[14] A 1983 GAO report identified that the Corps in FY1982 had 934 authorized water projects needing about $60 billion to complete construction. U.S. General Accounting Office, *Water Project Construction Backlog—A Serious Problem With No Easy Solution*, GAO/RCED-83-49, January 26, 1983.

[15] While Corps fiscal challenges may drive attempts to more narrowly define federal participation in flood damage (continued...)

Figure 5. Estimate of Corps Civil Works Construction Backlog



Source: CRS using data provided by Corps in April 2011 based on the projects in the President's FY2012 budget request. NA=Not Available

The desired responses to the Corps backlog supported by different Corps stakeholders vary widely. Some see the backlog as a justification for directing more funds to Corps activities, while others see it as a clarion for reducing the level and types of Corps activities authorized. Others view the backlog as a reason for efforts to reduce the expense and time needed to complete a Corps project. Some also view the Corps backlog as a reason for pursuing private sector involvement in and alternative federal financing (e.g., infrastructure banks) for water resources infrastructure.

In addition to the construction backlog, the Corps has a maintenance backlog. No current estimate of the entire operations and maintenance (O&M) backlog is available. Although ARRA funding reduced the O&M backlog, additional work needed for Corps facilities is reportedly significant. For instance, the funding provided in the FY2012 budget request for the Corps coastal navigation O&M was $2.2 billion below the potential work identified during the Corps budgeting process.

Why Is the Corps Construction Backlog Growing?

There are multiple factors contributing to backlog growth. First, authorizations have outpaced appropriations in recent years. Between 1986 and 2010, Congress authorized new Corps projects

(...continued)

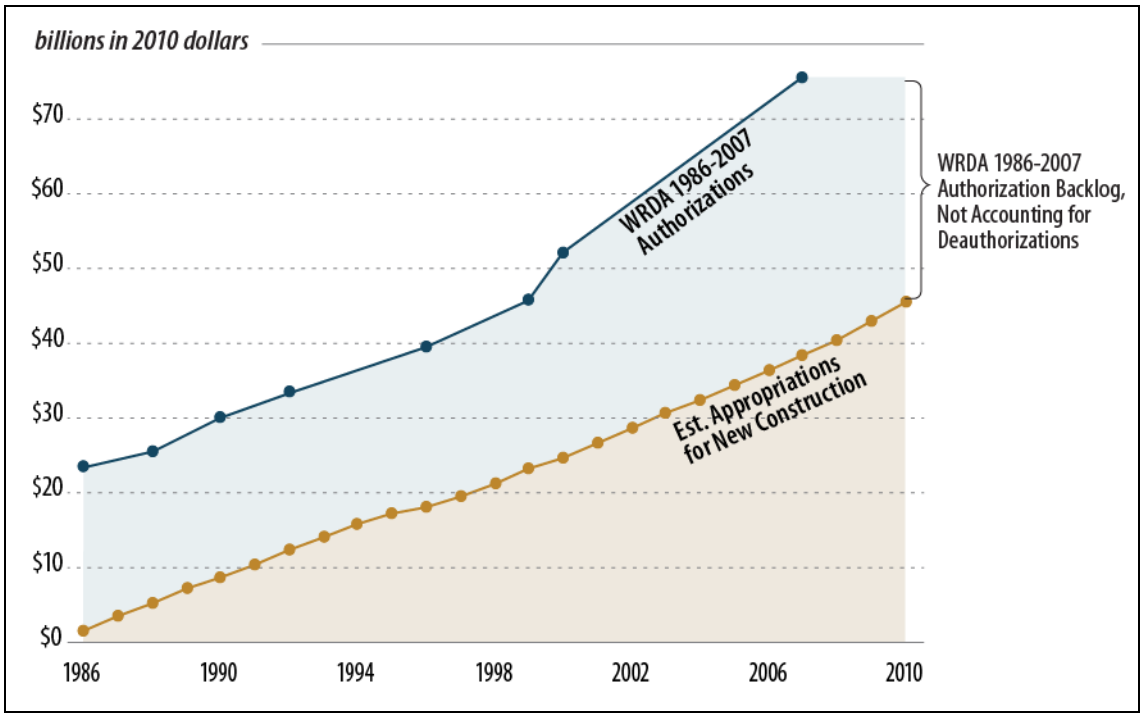
reduction projects, local issues with levee accreditation and funding levee improvements for National Flood Insurance Program mapping purposes often drive interest in expanding the Corps role in flood infrastructure (see CRS Report R41752, *Locally Operated Levees: Issues and Federal Programs*, by Natalie Keegan et al.).

at a rate that significantly exceeded appropriations; in 2010 dollars, the annual rate of authorizations was roughly $3.0 billion and the rate of appropriations for new construction was roughly $1.8 billion. **Figure 6** is an illustration of how the backlog grew since 1986 as the result of the rate of authorizations outpacing appropriations.

Second, aging infrastructure also is requiring more financial investments. A growing percentage of the Corps' annual appropriations is going toward operation and maintenance or major rehabilitation of existing infrastructure activities as the agency's infrastructure ages, which means fewer funds are available for construction of new projects. For example, 32% of the FY2010 budget request was for dam safety investments.[16]

Figure 6. Illustration of 1986-2007 Construction Backlog

Recent WRDA Authorization and Corps Annual and ARRA Construction Appropriations



Source: CRS.

Notes: This figure is an illustration based on estimates using available data. Authorization line represents estimate of federal cost of WRDAs enacted from 1986 through 2007 updated to 2010 dollars using civil works construction cost index; appropriations line represents annual fiscal year appropriations that the Corps received for new construction similarly update to 2010. Appropriations for new construction of specifically authorized activities was estimated to be 80% of the agency's construction appropriations. ARRA funds of $2 billion for construction were split between FY2009 and FY2010. Deauthorizations are not reflected in this figure; no estimate of the value of deauthorization is available. A deauthorization process is triggered if a construction project has been without funding for five years. The Corps published lists of deauthorized construction projects in 1990, 1992, 1994, 1996, 1997, 1999, 2003, and 2009.

[16] U.S. Government Accountability Office, *Army Corps of Engineers: Budget Formulation Process Emphasizes Agencywide Priorities, but Transparency of Budget Presentation Could be Improved*, GAO-10-453, April 2010.

Third, the cost to construct water infrastructure projects increased rapidly in the mid-2000s, in part because of the rises in cost of construction materials and fuels. A project authorized in the Water Resources Development Act of 2000 for $100 million dollars cost $145 million by 2010. The Corps also has had costs for some projects increase even more rapidly than the rate of construction costs. For example, dam safety and levee construction projects have reportedly had cost overrun issues in recent years, but in-depth analysis has yet to provide detailed data on the extent and causes of the cost overruns for these projects.

What Is the Corps Doing to Control Cost and Schedule Growth?

Since 2007, the Corps of its own initiative developed and implemented guidelines for identifying and estimating the cost and schedule risks when developing Corps feasibility studies. As a result, studies of Corps projects partially assess cost and schedule risk. Notably, in most cases only the preferred alternative identified by the study is analyzed for cost and schedule risk. In a few cases, cost and schedule risk analysis is being performed for multiple alternatives.

Analysis of Corps cost and schedule growth remains primarily at the individual project level. To date, no program-wide study evaluating the causes and potential means of addressing cost and schedule growth has been conducted.[17] However, in some cases, the Corps has conducted case studies to review project cost growth during construction and has extrapolated these conclusions to other projects. For instance, a 2008 study that reviewed selected inland waterway projects concluded that the causes of the cost growth beyond typical construction cost increases were related to several factors, including changes in the project during construction (e.g., changes from original design due to conditions found on construction site), inaccurate cost estimates, and federal funding being below capability (thereby prolonging the construction schedule).[18]

Do Corps Projects Cost More Than Non-Corps Projects?

The data are not available to answer this question. For some types of Corps projects there would be few analogous non-Corps projects (e.g., harbor deepening). Also Corps projects have requirements that may not apply to other entities. For example, the Corps has some additional responsibilities because it is a federal agency performing and funding the work (e.g., documentation and process compliance for the National Environmental Policy Act,[19] Davis-Bacon prevailing wage rates for construction contracts).[20] Whether these types of requirements significantly affect Corps project costs is the subject of debate.

[17] For example, no data comparing actual Corps construction costs for different types of projects to original cost estimates are available. Similarly, data have not been compiled on how many Corps projects have cost overruns and how large are the cost overruns when they occur.

[18] U.S. Army Corps of Engineers, Great Lakes and Ohio River Division, *Inland Navigation Construction Selected Case Studies*, White Paper, July 16, 2008.

[19] CRS Report RL33152, *The National Environmental Policy Act (NEPA): Background and Implementation*, by Linda Luther.

[20] CRS Report R40663, *The Davis-Bacon Act and Changes in Prevailing Wage Rates, 2000 to 2008*, by Gerald Mayer.

Recommendations from Expert Report

Table 4 provides the recommendations provided in the 2007 National Academy of Public Administration report on the Corps budgeting process. The report's recommendations addressed both the agency's backlog and the schedule growth of its projects.

Table 4. Backlog Recommendations From an Expert Report

Issue	Recommendation and Source Report	Status
Backlog	A multi-party planning process for Corps projects should be used to reduce the backlog of authorized but unfunded projects. (NAPA 2007)	Congress has continued to use the deauthorization process it established in 1986, but tightened the timeframe for the deauthorization process to kick-in, most recently in WRDA 2007.
Schedule Growth	Corps should track project accomplishments and system performance and adjust project schedules accordingly. (NAPA 2007)	Corps initiated a cost and schedule risk assessment of projects being planned.

Source: National Academy of Public Administration, *Prioritizing America's Water Resources Investments*, Washington, DC, February 2007.

Authorizations and Missions

The FAQs on the Corps authorization and missions address the processes in place for authorization and deauthorization of Corps activities, perspectives on the Corps mission and role, and past efforts to refocus the agency. After the authorization and mission FAQs, **Table 5** provides recommendations made in an expert report for addressing the backlog.

How Are Corps Studies and Projects Authorized?

Congressional authorization is required for the Corps to proceed with most studies and construction projects.[21] Typically Congress authorizes Corps activities in a Water Resources Development Act (WRDA); some studies can be authorized through resolution of the authorizing committee in the House or Senate. While the authorization and appropriations for Corps activities are managed largely as separate processes,[22] the authorization process functions as the gateway for federal appropriations eligibility. In addition to congressional authorization, most Corps studies and projects require a nonfederal cost-share partner.

Congress generally authorizes studies of water resource problems as a result of concerns raised by nonfederal interests (e.g., local or state government; community, nonprofit, or private sector interests) or by the Corps. Congress weighs many factors when choosing to authorize Corps construction projects; a Corps feasibility study is a central document in the information available to Congress. In 1954, Congress established a policy to generally base Corps construction

[21] For more on the Corps authorization process, see CRS Report R41243, *Army Corps of Engineers Water Resource Projects: Authorization and Appropriations*, by Nicole T. Carter and Charles V. Stern.

[22] At times, authorizations are included in appropriations bills. If they are included in an appropriations bill, the provision may be subject to a point of order on the floor for being non-germane.

authorization on completed feasibility reports that are favorably recommended by the Chief of Engineers (33 U.S.C. §701b-8). Some projects are turned over to nonfederal sponsors for operations after construction (e.g., flood damage reduction projects constructed after 1970), while others are operated and maintained by the Corps (e.g., coastal harbors and inland navigation channels). For the projects operated by the Corps, operations are authorized as part of the congressional construction authorization.

The authorization process for Corps studies and projects is driven by congressional discretion; that is, Congress chooses which authorizations are included or not included in a WRDA or other legislative vehicle. Whether, and if so how, the authorization process is used as a means to limit or define which projects are eligible for appropriations is up to Congress. With the rate of construction authorization outpacing available appropriations in recent decades, the appropriations process has selected from an increasing pool of authorized activities.

What Role Do Benefit-Cost Ratios Play in Corps Planning?

Congress declared in 1936 that the benefits of Corps projects should exceed their costs (33 U.S.C. 701a). For economic development projects such as navigation and flood control, this has meant that a benefit-cost analysis is performed to identify whether the national benefits exceed the cost; that is, a benefit-cost ratio greater than one generally is required for the project to be recommended for construction authorization. The project alternative that produces the greatest national economic development benefits is generally the recommended alternative. The general project development guidance that the Corps follows in planning its projects is the 1983 "Economic and Environmental Principles and Guidelines for Water and Related Land Resources Implementation Studies" (known as the Principles & Guidelines or P&G).[23] For environmental projects, the benefit-cost requirement has been interpreted to mean that the preferred alternative should be the most cost-effective means of producing environmental benefits. Corps plans are developed using a discount rate to place a present value on benefit and costs; whether the discount rate used for Corps planning is too high or low remains the subject of debate.[24]

The Corps planning process does not rank potential projects; it merely determines whether minimum financial eligibility criteria (e.g., BCR>1.0) are met for pursuing construction authorization. In contrast, the Administration's budgeting process in recent years has used BCRs as one metric for selecting projects for funding. For example, for its FY2010 budget request, the Administration required ongoing navigation and flood control projects generally to have a BCR>2.5, and for new projects to have a BCR>3.2. The BCR cutoffs and other criteria used by the Administration vary annually. For example, instead of using a BCR metric for the FY2007 budget request for ongoing projects, the Administration used a remaining benefit to remaining cost metric. The annual changes in budget criteria have resulted in some projects qualifying for one year's budget request, but not qualifying in subsequent years. Projects, particularly ongoing projects, that were above the authorization BCR criterion of 1.0 but below the Administration's BCR cutoff for budgeting often are the projects receiving congressionally directed spending.

[23] The P&G are available at http://www.usace.army.mil/cw/hot_topics/ht_2008/pandg_rev.htm. WRDA 2007 directed the Secretary of the Army to update the P&G; the Administration is currently updating the P&G for all relevant agencies, not only the Corps. The 1983 P&G focused the federal objective in planning more on economic criteria than earlier federal guidance from 1973, which included both economic and environmental objectives.

[24] For a CRS report on the Corps discount rate, see CRS Report RL31976, *Benefit-Cost Analysis and the Discount Rate for the Corps of Engineers' Water Resource Projects: Theory and Practice*, by Kyna Powers.

How Are Corps Construction Recommendations Reviewed?

Congress ultimately decides which Corps activities to authorize. Corps projects generally are required to comply with all federal laws, which results in input from other federal agencies (e.g., Fish and Wildlife Service for Endangered Species Act compliance) during the planning process. Congress increased the review requirements for Corps feasibility studies in WRDA 2007; Section 2034 required that many Corps studies receive independent peer review of the analysis and data used to justify proposed projects.

The entities informing these Corps studies and recommendations have evolved over time.[25] From 1902 until 1992, a National Board of Engineers for Rivers and Harbors operated within the Corps; it evaluated proposed projects and made recommendations to the Chief of Engineers. From the late 1960s to the early 1980s, another source of information shaping Corps project development and the information available for congressional decision making was the federal Water Resources Council, as well as federally supported river basin commissions. These entities coordinated state, federal, and regional water resources planning processes. Today, Corps studies are reviewed by an internal Civil Works Review Board and the Office of Policy Review prior to a Chief's report being released. Currently Corps studies and projects, for the most part, are undertaken and analyzed as individual projects. The role of projects in larger watersheds or water resource systems is considered, but generally there are few formal requirements in this regard.[26]

How Are Corps Activities Deauthorized?

Once Congress authorizes a study or construction activity it remains authorized unless it falls within established deauthorization processes or Congress deauthorizes it in legislation. Processes exist for deauthorizing incomplete Corps construction activities and studies. No deauthorization process is in place for completed projects that are owned and operated by the agency.

In 1986, Congress replaced previous deauthorization processes for Corps projects.[27] Under current law (33 U.S.C. §579a(b)(2)), a deauthorization process is triggered if a construction project has been without funding for five years. Every year the Secretary is directed to transmit to Congress a list of authorized projects and separable elements of projects without funding for the last full five fiscal years. If funds are not obligated during the fiscal year following a list's transmittal, a project or element would be deauthorized. The project deauthorization list also is published in the *Federal Register*. The Corps published the lists in 1990, 1992, 1994, 1996, 1997, 1999, 2003, and 2009.

A study deauthorization process also exists. Under current law (33 U.S.C. §2264), every year the Secretary of the Army is to transmit to Congress a list of incomplete authorized studies that have been without funding for five full fiscal years. Unlike the project list, the study list is not published in the *Federal Register*. Congress has 90 days after submission to appropriate funds;

[25] For more information, see W. Viessman, Jr., "A History of the United States Water Resources Planning and Development," in *The Evolution of Water Resource Planning and Decision Making*, ed. C.S. Russell and D.D. Baumann (Edward Elgar, Northampton, MA, 2009), pp. 14-81.

[26] One exception is in coastal areas; for more on coastal zone management efforts, see CRS Report RL34339, *Coastal Zone Management: Background and Reauthorization Issues*, by Harold F. Upton.

[27] The GAO evaluated the efficacy of the previous Corps deauthorization process (e.g., U.S. General Accounting Office, *Information on Corps of Engineers Deauthorization Program For Water Projects*, CED-82-55, March 1982), but has not reviewed the current process.

otherwise the study is deauthorized. In August 2011, the Corps was unable to locate records indicating that a deauthorization study list has been transmitted to Congress since enactment of the requirement in 1986.

There is no similar general authority for deauthorization or transfer of existing projects owned and operated by the Corps. In 1980, the authority for the Chief of Engineers to recommend discontinuing appropriations for any work deemed unworthy of further improvement was repealed (33 U.S.C. §549). Transfer of project ownership occurs only when Congress authorizes the transfer of a specific project.

What Are "Low Priority Construction" Projects?

While recent legislation has referred to "low-priority construction" projects, there is no exact definition for this term.[28] The term at times has been applied to projects that the Administration considers outside of Corps primary missions and projects that were not competitive using the Administration's annual budget development metrics (e.g., inland waterways and coastal harbors with low commercial traffic). The most easily identified category of what the Administration considers "low priority" construction projects are the Corps' "environmental infrastructure" projects (i.e., municipal water and wastewater projects). Congress has authorized and funded these projects since 1992; all Administrations since 1992 have considered these activities outside the agency's principal missions and cite the availability of assistance for these activities from other federal programs.[29] In FY2010, environmental infrastructure projects received $140 million in annual appropriations, representing more than 6% of the enacted annual construction appropriations. Additionally, ARRA provided an additional $200 million for environmental infrastructure activities in FY2009 and FY2010; that is, more than 4% of the $4.6 billion in ARRA funding for the Corps was for environmental infrastructure. No funding was provided for these projects in the Corps work plan for the FY2011 long-term continuing resolution.[30]

What Were the Recent Efforts to Refocus the Corps?

Opinions on what the Corps and its federal funding should be focused on vary widely. The range of opinions and approaches can be seen through past attempts to redefine the Corps more narrowly. Most attempts to refocus the agency would require congressional authorization and possibly near-term funding to realize implementation.

Some see the Corps' civil works as distracting from its military purpose. In 2002 and 2003, then-Secretary of the Army White included the Corps in his efforts to concentrate Army activities on its "core competencies" and asked that divestiture and privatization of some Corps functions be investigated. Congress curtailed this effort through limitations on appropriations.

In the early 1990s, initially as part of the Defense Base Realignment and Closure process, but later as part of a Corps initiative, the Corps' divisions and districts were reorganized (e.g., fewer Corps districts, divisions, and personnel) in an effort to reduce Corps administrative expenses. This reorganization largely occurred, but a related effort in 1995 was never completed. A review

[28] H.R. 235 refers to "low-priority" Corps construction projects.

[29] For more on these projects, see CRS Report RL30478, *Federally Supported Water Supply and Wastewater Treatment Programs*, coordinated by Claudia Copeland.

[30] FY2011 work plan documents are available at http://www.usace.army.mil/CECW/PID/Pages/cecwm_progexe.aspx.

of options for civil works missions and activities was underway, which was expected to compare options such as transferring responsibilities to other federal agencies, devolving responsibilities to states, and private sector participation. The report was never publically released. As part of the FY1996 budget request, the Clinton Administration proposed major changes, including turning over 500 small or low-use harbor projects to nonfederal interests and limiting flood control projects to those with a strong interstate nexus.[31] Congress did not adopt these proposals.

Prior to the 1990s, there also were discussions about changing the Corps' position in the federal bureaucracy; no enactment of these changes occurred. One approach considered combining the Corps with the other federal owner of large dams and water resources infrastructure—the Department of the Interior's Bureau of Reclamation, which has more of a water delivery mission than the Corps. This approach received particular attention during the Reagan Administration. During the Nixon Administration, there were discussions of a Department of Natural Resources to house the multiple resource-oriented agencies, including the Corps.

Recommendations from Expert Report

Table 5 provides the recommendations provided in the 2007 National Academy of Public Administration report on the Corps budgeting process. The report's recommendations addressed the agency's missions, authorization and deauthorization processes, and project development.

Table 5. Authorization and Mission Recommendations from an Expert Report

Issue	Recommendation and Source Report	Status
Authorization Priorities	Collaborative planning should be the basis for authorization. (NAPA 2007)	Corps projects are largely developed on a project-by-project basis, with a few examples of larger-scale watershed or ecosystem based plans.
Project Development	Administration should update the Principles & Guidelines, with revisions reflecting performance-based government efforts and more integrated and comprehensive multi-actor solutions. (NAPA 2007)	The Administration is in the process of updating the Principles and Guidelines as directed by Water Resources Development Act of 2007 (§2031 of P.L. 110-114).
Core Missions	Corps should conduct periodic mission reviews to identify key missions and allocate efforts among them. (NAPA 2007)	No mission review process is in place. Administration budgets for key missions across related business lines. Congress often has authorized and appropriated Corps activities for activities beyond those that fall within the missions identified by the Administration.
Deauthorization	Collaborative planning process should be the process for managing the backlog and identification of projects for deauthorization. (NAPA 2007)	Deauthorization process is triggered by a 5-year absence of appropriations.

Source: National Academy of Public Administration, *Prioritizing America's Water Resources Investments*, Washington, DC, February 2007.

[31] For a list of the harbor projects to be turned over, see U.S. Congress, Senate Committee on Appropriations, *Energy and Water Development Appropriations for Fiscal Year 1996*, hearing on H.R. 1905, 104th Cong., 1st sess., May 2, 1995, S.Hrg. 104-407 (Washington: GPO, 1996), pp. 462-470.

Navigation Expenditures and Trust Funds

The below FAQs on navigation expenditures and trust funds address coastal harbor and inland waterway funding, including proposals to alter trust fund collections and their use and funding challenges for operations and maintenance/low use navigation projects. At the end of this section, **Table 7** provides recommendations by government and expert reports for addressing navigation funding issues.

Would Guaranteeing HMTF Annual Spending of Collected Receipts Reduce Corps Fiscal Challenges?

The Corps has a harbor maintenance backlog; as previously noted, there is roughly $2.2 billion of coastal navigation O&M work that could be budgeted if funds were available. A consequence of the current level of Corps harbor maintenance activities is that full channel dimensions at the nation's busiest 59 ports are available less than 35% of the time.

The Harbor Maintenance Trust Fund (HMTF) has a growing balance of roughly $6 billion. The HMTF collections and interest averaged $1,409 million from FY2006 to FY2011.[32] Monies used from the trust fund for the same period have averaged over $832 million annually. A "guarantee," such as that proposed in H.R. 4844 and S. 3213, would require that the sum of receipts coming in to the HMTF annually be dedicated toward harbor maintenance expenditures. If followed, a guarantee would be expected to make over $500 million more available annually for HMTF eligible expenses. HMTF eligible expenses are primarily operations and maintenance activities, while some construction activities are also eligible (e.g., construction of dredged material disposal facilities). If congressional appropriators were subject to the guarantee or otherwise chose to appropriate HMTF funds at the level of incoming receipts, the backlog of HMTF eligible funds would be anticipated to decrease.[33]

While improving the situation for coastal navigation operations, the guarantee may not necessarily change total Corps appropriations. In budgetary terms, HMTF funds are on-budget; that is, they fall within the budget for the Energy and Water (E&W) Development Appropriations acts and are not available without appropriation. A potential guarantee would not alter the size of the budget for the E&W bill; this is negotiated annually as part of the budget process. Therefore, with no changes in the overall size of the E&W bill, the more than $500 million in additional funds for HMTF eligible activities would be offset by decreases for other E&W funded activities; these include the other activities of the Corps of Engineers (e.g., harbor construction, inland waterways, flood damage reduction projects, environmental restoration) and the budgets for the Department of the Interior's Bureau of Reclamation (roughly $1 billion annually) and the Department of Energy (between $25 billion and $30 billion annually). Depending on which accounts Congress would choose to cut, the Corps might or might not see an increase in its total annual appropriations; that is, the HMTF eligible activities might receive a greater portion of the E&W, but it might come at the expense of other Corps activities.

[32] For more on the HMTF, see CRS Report R41042, *Harbor Maintenance Trust Fund Expenditures*, by John Frittelli.

[33] While the backlog would be anticipated to decrease, it may not disappear entirely if the costs to dredge all harbors to authorized depths exceeds incoming receipts. Additionally, these projections do not take into account any potential new authorizations. See below section, "How Much Would It Cost the Corps to Maintain All Navigation Projects at Their Authorized Depths?"

The guarantee also would not increase the total amount of money available for funding discretionary spending activities. Therefore, while Congress could increase the amount of funds available for the Energy and Water Appropriations bill as a way to meet the requirements of the HMTF guarantee, a cut in federal discretionary spending in some other area would have to occur.

How Much Would It Cost the Corps to Maintain All Navigation Projects at Their Authorized Depths?

The Corps has been unable to maintain all existing federal navigation projects to depths and widths authorized by Congress. This includes maintenance of harbors (cost-shared with the HMTF, discussed above) and inland waterways (funded 100% out of the General Fund of the Treasury).[34] From FY2007 to FY2011, excluding supplemental appropriations, the Corps spent an average of approximately $758 million per year maintaining projects through dredging and other methods. This included approximately $639 million for dredging coastal harbors and $119 million for inland waterways channels and harbors.[35]

The Corps estimates that in order to maintain all channels at their authorized depths, O&M expenditures would need to be about three times the aforementioned average. According to the Corps, initially (i.e., over the first five years), up-front costs to dredge some areas to new depths would require additional funding. After the first five years, expenditures are generally expected to stabilize. The Corps estimates that total costs over the first five years would be $2.23 billion per year, including $1.93 billion in dredging for coastal harbor projects and $370 million for inland waterway dredging.[36] After the first five years, costs would drop to $1.81 billion per year, including $1.5 billion for harbor maintenance and $305 million for dredging expenditures on inland waterways. The Corps estimates are summarized below in **Table 6**.

Table 6. Estimated Corps Costs to Maintain Authorized Depths for Navigation

(millions of $, 2011)

	Average Expenditures (Actual):	Future Costs (Hypothetical):	
	2001-2007	Year 1-5	Year 6 and After
Coastal Harbors	$639.0	$1,928	$1,506
Inland Waterways	$118.5	$370	$305
Total	**$757.5**	**$2,298**	**$1,810**

Source: Data and estimates compiled by the Corps and adapted by CRS.

Notes: Averages for 2007-2011 do not include supplemental funding. Costs to maintain inland waterways exclude structural O&M costs (lock & dam maintenance, etc).

[34] Construction expenditures on inland waterways are discussed in the below section, "What Are the Options for Reforming the Inland Waterway Trust Fund (IWTF)?" For more information on O&M expenditures on inland waterways, see CRS Report R41430, *Inland Waterways: Recent Proposals and Issues for Congress*, by Charles V. Stern.

[35] Correspondence with Jim Walker, Navigation Branch Chief, Corps of Engineers, December 9, 2011.

[36] Ibid.

What Are the O&M Funding Prospects for Low-Use Harbors?

Since 2006, Administration budget criteria prioritize harbor funding using multiple performance based metrics; the most significant metric is commercial tonnage at a harbor. The commercial tons metric is used as a rough proxy for evaluating economic return from O&M investments. Under current budgeting guidance, "low-use" coastal projects generally are budgeted only for critical minimum dredging and other critical minimum O&M activities.[37] As a consequence many harbors considered low-use based on these metrics have been budgeted for and received less funding than under previous funding practices.[38] The long-term question arises regarding what the federal role will be in these low-use harbors, which include many shallow harbors and deep harbors with low commercial tonnage (e.g., Gray's Harbor, WA). Some of these harbors, while not supporting significant commercial tonnage, may support significant recreational boating, fisheries industries, and local or tribal economies.[39]

The extent to which additional HMTF funding under an HMTF guarantee would be used on low-use projects is unclear. The current budget criteria are focused on tons and "high output," which is calculated based on the risk that current project conditions may affect performance which is largely measured on economic, defense, and public safety. Unless other direction is provided by Congress, these criteria likely would be the basis for prioritizing investments made with additional HMTF funds under a HMTF guarantee.

What Are the Options for Reforming the Inland Waterway Trust Fund (IWTF)?

The Inland Waterway Trust Fund (IWTF) partially funds Corps construction and major rehabilitation projects on federal inland waterways, including funding for lock and dam construction.[40] The IWTF is derived from revenues from a fuel tax on commercial barges, and currently has a shortfall: eligible projects far exceed available funding under current revenue and budgetary baselines.[41] In recent years, several proposals have been submitted to amend the IWTF and provide more funding for inland waterway projects, including most recently a proposal by the user industry to make the IWTF solvent and increase funding for inland waterway projects.

As a result of the aforementioned shortfall in the IWTF, any proposal to make the trust fund solvent that also proposes to increase expenditures on inland waterway projects must inherently

[37] Generally, "low-use" has been defined by the Corps as passing less than 1 million tons of cargo per year. There are a large number of criteria used in the budgeting process, however, commercial tons and potential disruption of tons are the primary significant factors. Other secondary and tertiary factors considered include safety (e.g., harbor of refuge), national priorities (e.g., support of defense and energy facilities), and public transport and subsistence (e.g., harbors serving isolated communities). For more details, see Army Corps of Engineers, *Corps of Engineers Civil Works Direct Program, Program Development Guidance, Fiscal Year 2013*, EC 11-2-200, March 31, 2012, http://140.194.76.129/publications/eng-circulars/EC_11-2-200_2011Mar/.

[38] It is unclear whether total funding for low-use projects has reduced. The trend has been more to concentrate low-use funds on a smaller set of projects than under previous budget practices.

[39] See footnote 37.

[40] Pursuant to WRDA 1986, funds for construction and major rehabilitation are cost-shared equally between the IWTF and General Revenue funds from the Treasury (i.e., annual appropriations.) For more on inland waterway financing, see CRS Report R41430, *Inland Waterways: Recent Proposals and Issues for Congress*, by Charles V. Stern

[41] Currently funding for IWTF projects is limited to current-year fuel tax revenues, which is far less than what was appropriated for these projects prior to the shortfall.

include new revenue, either from increased user fees, increased appropriations from the General Fund of the Treasury, or both. The IWTF user proposal would make the fund solvent and increase expenditures on inland waterways by both increasing user fees and shifting the overall cost-share burden for inland waterway projects toward the federal government. While this would likely make the fund solvent, it would also require more appropriations for the Corps. Other proposals to reform inland waterway financing have argued for increased user fees, either by increasing the existing fuel tax of $0.20 per gallon or by imposing some other new fee (e.g., fees for lockages or high traffic sections) that would recover funding needed for waterway upgrades. Some have also proposed to increase the user share of operations and maintenance costs, which are fully funded by the federal government. While some argue that increased user fees are the only viable option in the current fiscal climate, users argue that the increased fees would increase costs and serve as a disincentive for commercial shippers to use inland waterways over truck or rail transport.

Recommendations from Expert and Government Reports

Table 7 provides recommendations from multiple reports related to marine transport and the financing of the Corps activities that support coastal and inland navigation. The reports' recommendations addressed the two marine transport trust funds and their fees, oversight of the use of the funds, and assessments of harbor and waterway conditions and needs.

Table 7. Navigation Recommendations from Expert and Government Reports

Issue	Recommendation and Source Report	Status
HMTF Growing Balance	Congress should consider reviewing the link between the harbor maintenance fee and the amount of expenditures for harbor maintenance. (GAO 2008)	No changes in fees or expenditures have been made. Legislation linking collections and expenditures has been introduced.
	Congress should commit to fully reinvesting all user-generated revenues back into the marine transport system. (TRB 2004)	No such guarantee exists. Proposed legislation for the HMTF would accomplish this if enacted.
Harbor Maintenance Oversight	Congress should consider establishing an advisory committee on the HMTF and the activities that it funds, that includes payers of the fees. (GAO 2008)	No advisory committee has been established.
Harbor and Waterways Conditions and Needs	Department of Transportation (DOT) should seek a mandate to produce a regular report on the use, condition, performance, and demands of the marine transport system, similar to the biennial Conditions and Performance reports for highways, bridges, and transit. (TRB 2004)	No such authority has been provided to DOT. The most recent report on harbor dredging needs was produced in 2003 for the Corps. The report is more of an analysis of trade patterns, than a conditions and performance assessment. The last national waterway study was completed in 1983 by the Corps.
Inland Waterways Financing	Congress should increase the inland waterway tax by $.06-$.08 per gallon and significantly increase federal expenditures and overall share of inland waterway costs. (IMTS 2010)	No action on the report's recommendations has been taken to date
Inland Waterways User Fees	Congress should increase user fees to recover a greater share of federal costs on the inland waterway system. (CBO 2011)	No action taken to date.

Sources: U.S. Government Accountability Office, *Federal User Fees: Substantive Reviews Needed to Align Port-Related Fees with the Programs They Support*, GAO-08-321, February 2008. Transportation Research Board, *The Marine Transportation System and the Federal Role: Measuring Performance, Targeting Improvement*, Special Report 279, Washington, DC, 2004. IMTS Capital Investment Strategy Team, *Inland Marine Transportation Systems Capital Projects Business Model, Final Report*. April 2010. (This is not an official government report; however, it was approved and

adopted by a federal advisory committee—the Inland Waterways User Board.) Congressional Budget Office, *Reducing the Deficit: Spending and Revenue Options*, Pub. No. 4212, Washington, DC, March 2011, p. 105, http://www.cbo.gov/ftpdocs/120xx/doc12085/03-10-ReducingTheDeficit.pdf.

Proposed Legislation Relevant to Corps Fiscal Challenges

There are several legislative proposals related to Corps fiscal challenges before the 112th Congress. **Table 8** provides a list of legislation related directly to Corps fiscal issues. The provisions represent different responses to the Corps' fiscal challenges. Some would deemphasize certain types of Corps activities (e.g., water and wastewater projects), while others would provide greater financing for other types of Corps activities (e.g., harbors). The Corps and its projects are part of the larger discourse about how to proceed with infrastructure investments and their role in the economy, job creation, and provision of public services.

In addition to the provisions listed in **Table 8**, other Corps authorization and appropriations processes relevant to Corps fiscal challenges also are underway, but are beyond the scope of this report. These include more focused legislative provisions, such as those related to specific Corps projects and activities (e.g., H.R. 433, H.R. 723, H.R. 892, H.R. 922, H.R. 1078, H.R. 1421, H.R. 1652, H.R. 1865, H.R. 2476, S. 793). Also not included in the table is information about the various actions related to earmarks and congressionally directed spending, which also affect the Corps congressional fiscal context.

Table 8. Select Proposed Legislative Provisions Related to Corps Fiscal Issues

Purpose	Legislation or Legislative Provision	Status
General		
Omnibus Corps authorization	No Water Resources Development Act (WRDA) bill introduced	Senate Environment and Public Works (EPW) collected Member requests
Corps FY2012 appropriations	H.R. 2354, Energy and Water Development Appropriations of FY2012	House passed
Funds for Corps Projects (from offshore federal oil and gas leases)	H.R. 1861, Infrastructure Jobs and Energy Independence Act	Introduced
Harbors		
Guarantee for Harbor Maintenance Appropriations	H.R. 104, Realize America's Maritime Promise Act	House Transportation and Infrastructure Water Resources and Environment Subcommittee hearing
Harbor Maintenance Block Grant Program	Title I, S. 573, Corps of Engineers Reform Act of 2011	Introduced
Prioritization Efforts		
Terminate Select Corps Programs	H.R. 235 and S. 475 would terminate Corps programs and funds for low priority construction projects and water and wastewater treatment activities, respectively.	Introduced
Prioritization Process for Corps Authorized Projects	Title II, S. 573 Corps of Engineers Reform Act of 2011	Introduced

Source: CRS.

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