



BUDGET SPOTLIGHT

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Army Corps of Engineers: Budgetary History and Projections

The Army Corps of Engineers participates in the development and management of the nation's water resources. The Corps has three main objectives:

- Supporting commercial navigation by maintaining and regulating commercial ports and waterways,
- Protecting the environment by preserving and restoring aquatic ecosystems, and
- Building and maintaining flood control projects.

Every two years since 2014, lawmakers have enacted the Water Resources Development Act (WRDA), which authorizes new construction and rehabilitation projects and directs the Corps to study the feasibility of future projects. (The most recent, the Water Resources Development Act of 2020, was enacted on December 27, 2020, as division AA of the Consolidated Appropriations Act, 2021, Public Law 116-260.) That authorization legislation, which establishes priorities for the Corps, is one of two types of legislation that specifically address the Corps' activities; the other is appropriation bills, which provide most of the funds to carry out those activities.

Notes: All years referred to in this report are federal fiscal years, which run from October 1 to September 30 and are designated by the calendar year in which they end. All amounts are in nominal dollars (in other words, not adjusted for inflation) except those labeled as 2022 dollars; those amounts have been adjusted using the gross domestic product price index. The period of analysis covered in this report is 1992 through 2021. Numbers may not sum to totals because of rounding.

This brief is one of a series of reports examining trends in funding and spending for particular federal programs. The Budget Spotlight series initially focuses on programs that could be directly affected by the consequences of climate change—which include increases in average temperatures, sea levels, and the severity of storms—and provides information about how the Congressional Budget Office treats those programs in its baseline and cost estimates. For a list of CBO's publications that address the topic of climate change, see www.cbo.gov/topics/climate-and-environment/climate-change.

How Are the Corps' Activities Funded?

Annual discretionary appropriations provide most of the Corps' funding. Over the 1992–2021 period, about 70 percent was provided through such appropriations. An additional 25 percent was provided in supplemental appropriations—generally for responding to disasters—and the last 5 percent was from mandatory sources that are available without annual appropriation action.

In 2021, the most recent year for which the Congressional Budget Office has complete data on the Corps' funding, the agency received about \$7.5 billion in discretionary funding and used about \$550 million in mandatory funding to carry out its activities. The mandatory spending portion was offset by receipts that the Corps is authorized to collect.¹ Those offsetting receipts, which are recorded in the budget as negative spending, totaled about \$800 million in 2021.

The Corps has 11 discretionary budget accounts. Two of those draw on resources from trust funds: the Harbor Maintenance Trust Fund and the Inland Waterways Trust Fund. Like spending from the Corps' other discretionary accounts, spending from the trust funds is subject to appropriation. But unlike the appropriations for those other accounts, which draw on the Treasury's general fund, amounts appropriated for the trust fund accounts draw on tax receipts and interest credited to the trust funds. Historically, appropriated amounts have not been tied to annual amounts deposited into the trust funds but are limited by their balances. In 2021, for example, \$2.1 billion of the Corps' \$7.5 billion in discretionary appropriations came from the trust funds; receipts credited to the trust funds in 2021 totaled \$1.7 billion.² (For further discussion of the trust funds, see Box 1.)

When hurricanes and other natural disasters occur, lawmakers usually provide supplemental funding to mitigate

their effects.³ Nearly all those supplemental amounts have been appropriated since 2005, in the aftermath of Hurricanes Katrina, Rita, and Wilma and subsequent hurricanes (see Figure 1). Over the 2005–2021 period, the Corps' total appropriations averaged \$8.8 billion a year (equivalent to \$10.7 billion a year in 2022 dollars). Of that amount, about 35 percent was provided in supplemental appropriations. By comparison, over the 1992–2004 period, total appropriations averaged \$4.0 billion a year (equivalent to \$6.5 billion a year in 2022 dollars), 3 percent of which was provided in supplemental appropriations.

The amounts provided in annual discretionary appropriations have grown gradually over time but otherwise do not vary much from year to year. Supplemental appropriations, by contrast, have varied widely from year to year and across accounts, because the regions affected by disasters and the severity of disasters vary (see Table 1).

Generally, the funding provided to the Corps in annual and supplemental appropriations does not expire but is available for intended purposes until it is spent.

How Are the Corps' Appropriations Allocated?

Four major accounts receive and expend roughly 70 percent of the agency's annual appropriations and 99 percent of its supplemental appropriations.

- The **construction** account received annual appropriations averaging \$2.2 billion (in 2022 dollars) over the 1992–2021 period to construct projects in the nation's rivers, harbors, and coasts to reduce floods, protect shorelines, and restore aquatic ecosystems. Such projects include the expansion of the Houston Ship Channel, construction of Louisiana's levee and floodwall system, and Florida's Everglades Restoration Project. The largest supplemental appropriation during that period totaled \$16 billion. It was provided in 2018, mostly to assist Puerto Rico and the U.S. Virgin Islands in the aftermath of several hurricanes, to repair damage

1. The Corps' offsetting receipts stem mostly from payments made by nonfederal partners to cover their share of the costs of Corps' projects. Those partners are generally public entities that include state or local governments and their agencies or departments.

2. Department of the Treasury, Bureau of the Fiscal Service, "Inland Waterways Trust Fund," 96X8861, FY 2021 (September 2021), <https://tinyurl.com/4bha5sc7>, and "Harbor Maintenance Trust Fund," 96X8863, FY 2021 (September 2021), <https://tinyurl.com/you9x9phu>.

3. The most recent supplemental appropriation for the Corps was provided in the Extending Government Funding and Delivering Emergency Assistance Act (P.L. 117-43); it totaled \$5.7 billion for fiscal year 2022. For more information about hurricane damage and federal spending in response, see Congressional Budget Office, *Potential Increases in Hurricane Damage in the United States: Implications for the Federal Budget* (June 2016), www.cbo.gov/publication/51518.

Box 1.**Funding for the Army Corps of Engineers' Trust Funds**

The Water Resources Development Act of 1986 (WRDA, Public Law 99-662) created the Inland Waterways Trust Fund (IWTF) and the Harbor Maintenance Trust Fund (HMTF) and established taxes to provide a funding source for each of them. Amounts in those trust funds can be spent for their authorized purposes only if they are provided through annual appropriations. Supplemental appropriations from the trust funds are unusual. When they have occurred, they have been funded by the HMTF and reflected in the Corps' operation and maintenance (O&M) account, where they were transferred and spent.¹

Inland Waterways Trust Fund

Revenues deposited into the IWTF are derived from an excise tax imposed on diesel fuel for commercial vessels operating on most inland waterways. In fiscal year 2021, that tax generated \$128 million in revenues. In general, one-half of the costs of projects to construct, rehabilitate, and expand federal inland waterways can be appropriated from the trust fund. The other half is appropriated from the Treasury's general fund. Over the years, balances in the trust fund have often been too small to cover half of eligible expenses. In such years, appropriations from the general fund have made up the difference. As of September 30, 2022, the balance in the fund was \$200 million.²

1. On four occasions, lawmakers provided supplemental funding from the HMTF for disasters by specifying a total amount for O&M and indicating that the portion that is spent on certain specified activities be derived from the trust fund. Therefore, the total amount that was and will be derived from the trust fund from those appropriations depends on decisions by the Corps on how to allocate the appropriated amounts. The total amounts provided for O&M were \$150 million in 1997, \$105 million in 1998, \$608 million in 2018, and \$908 million in 2019.

2. Department of the Treasury, Bureau of the Fiscal Service, "Inland Waterways Trust Fund," 96X8861, FY 2022 (September 30, 2022), www.treasurydirect.gov/ftp/dfi/tfmb/dfiww0922.pdf.

Harbor Maintenance Trust Fund

Revenues deposited into the HMTF are derived from a 0.125 percent tax on the value of the cargo of commercial vessels that use specified U.S. ports. In 2021, those revenues—plus interest credited to the fund—totaled \$1.6 billion. The fund is used to operate and maintain harbors and navigation projects and for dredging. By 2020, the balance in the HMTF stood at roughly \$9 billion because deposits exceeded amounts appropriated from the fund for several years. As of September 30, 2022, the balance in the fund was \$9.5 billion.³

In 2020, to facilitate more spending from the trust fund, lawmakers enacted authorizing legislation to exclude certain funding from the HMTF from estimates used to enforce provisions of the Congressional Budget Act of 1974 and the Balanced Budget and Emergency Deficit Control Act of 1985. Specifically, the following amount can be excluded from the estimated cost of an appropriation bill in a fiscal year: tax receipts and interest credited to the trust fund during the fiscal year two years before the year for which the appropriation is made, plus an adjustment specified in section 101 of WRDA 2020.

For example, in 2023 up to about \$2.4 billion could be excluded from the estimated cost for budget enforcement purposes if such an amount was provided from the HMTF in appropriation legislation. That amount is derived from the total of \$1.6 billion deposited into the fund in 2021 plus an adjustment of \$756 million, in keeping with section 101 of WRDA 2020.

3. Department of the Treasury, Bureau of the Fiscal Service, "Harbor Maintenance Trust Fund," 96X8863, FY 2022 (September 30, 2022), www.treasurydirect.gov/ftp/dfi/tfmb/dfihm0922.pdf.

to existing Corps infrastructure caused by natural disasters, and to construct projects to mitigate future damage.

- The **operation and maintenance (O&M)** account received annual appropriations averaging \$2.1 billion (in 2022 dollars) over the 1992–2021 period to operate and maintain existing federal infrastructure within the nation's rivers and harbors. The largest supplemental appropriation for responding to natural disasters totaled \$908 million and was provided in

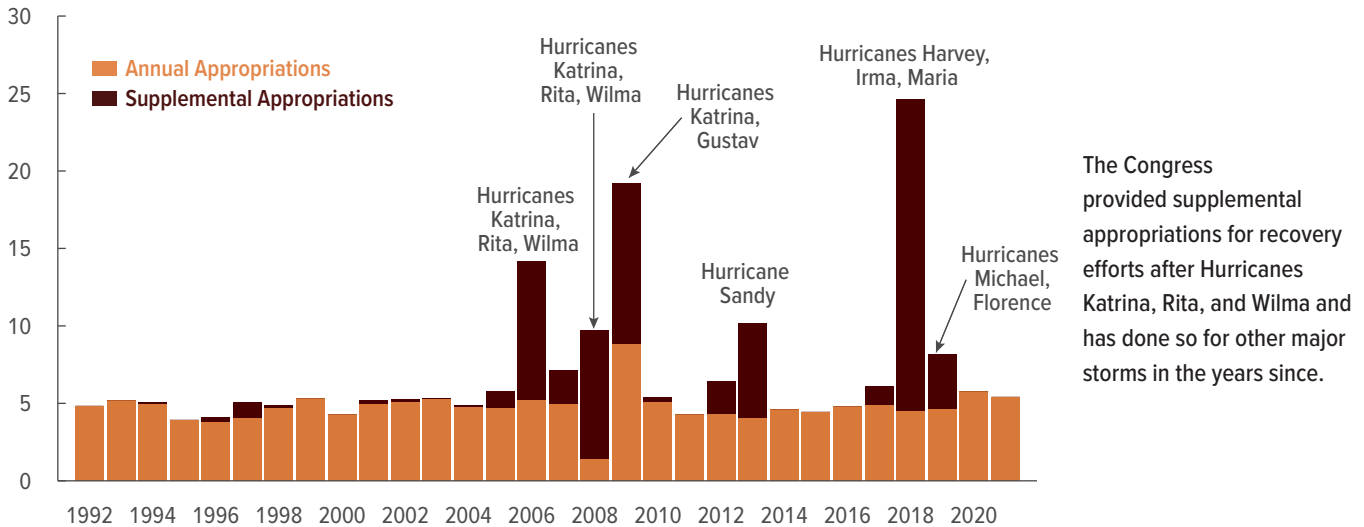
2019. An even larger supplemental appropriation of \$2.1 billion was provided for O&M in 2009, not for responding to natural disasters but to stimulate the economy during the 2007–2009 recession.

- The **Mississippi River and tributaries** account received annual appropriations averaging \$460 million (in 2022 dollars) over the 1992–2021 period for projects to mitigate the risks of flooding along the Mississippi River's Alluvial Valley south of Cape Girardeau, Missouri. The two largest

Figure 1.

Appropriations to Major Accounts of the Army Corps of Engineers That Receive Supplemental Funding for Disaster Response

Billions of 2022 Dollars



The Congress provided supplemental appropriations for recovery efforts after Hurricanes Katrina, Rita, and Wilma and has done so for other major storms in the years since.

Data sources: Army Corps of Engineers; Congressional Budget Office. See www.cbo.gov/publication/58415#data.

The Corps' major accounts are construction, operation and maintenance, Mississippi River and tributaries, and flood control and coastal emergencies.

supplemental appropriations during that period were each around \$800 million. They were provided in 2012 to respond to severe flooding in several states along the Mississippi River and in 2018 after Hurricane Harvey.

- The **flood control and coastal emergencies (FCCE)** account received annual appropriations averaging \$32 million (in 2022 dollars) over the 1992–2021 period to prepare for hurricanes, storms, and other natural disasters likely to cause damage from flooding. Annual appropriations for that account are small compared with the Corps' other accounts because it receives most of its funding through supplemental appropriations for disaster response. In 2006, the FCCE account received supplemental appropriations that totaled more than \$5 billion after Hurricanes Katrina, Rita, and Wilma. That was the largest amount appropriated to the FCCE account over the period.

The Corps' seven other accounts that receive annual appropriations are for expenses of the Office of the Assistant Secretary of the Army for Civil Works, general administrative expenses, harbor maintenance, an infrastructure loan program, inland waterways projects,

investigation of the economic and environmental feasibility of future projects, and regulatory enforcement. In total, those accounts received annual appropriations averaging \$1.9 billion (in 2022 dollars) over the 1992–2021 period. A growing share of those appropriations has been derived from the Harbor Maintenance Trust Fund (more than 70 percent in the past few years) for operating and maintaining the nation's waterways, harbors, and ports.⁴

How Has the Corps' Spending Varied Over Time?

On average, spending (labeled in the budget as outlays) from the Corps' four main accounts has been higher since 2004 than it was before then (see Figure 2). Between 1992 and 2004 (the period before Hurricanes Katrina, Rita, and Wilma), annual outlays averaged \$4.9 billion (in 2022 dollars). After those three hurricanes, the federal government responded with significant

4. For more information on federal, state, and local spending on infrastructure for ports, waterways and water containment systems (dams, levees, reservoirs, and watersheds), see Congressional Budget Office, *Public Spending on Transportation and Water Infrastructure, 1956 to 2017* (October 2018), www.cbo.gov/publication/54539.

Table 1.

Supplemental Appropriations to Major Accounts of the Army Corps of Engineers for Disaster Response, 2005 to 2021

Billions of 2022 Dollars

Major Disaster	Year	Major Accounts				Total
		Construction	Operation and Maintenance	Mississippi River and Tributaries	Flood Control and Coastal Emergencies	
Hurricanes Harvey, Irma, and Maria	2018	17.6	0.7	0.9	0.9	20.1
Hurricanes Katrina and Gustav	2009	4.6	3.7	0.6	1.5	10.4
Hurricanes Katrina, Rita, and Wilma	2006	0.9	0.5	0.2	7.4	9.0
Hurricanes Katrina, Rita, and Wilma	2008	3.8	0.4	0	4.1	8.3
Hurricane Sandy	2013	4.0	0.9	0	1.2	6.1
Other Disasters	All other years	1.0	2.7	2.0	4.7	10.3
All Disasters		31.9	8.8	3.7	19.8	64.1

Data sources: Army Corps of Engineers; Congressional Budget Office. See www.cbo.gov/publication/58415#data.

The largest supplemental appropriation was provided for Corps’ construction projects after Hurricanes Harvey, Irma, and Maria. That money went toward recovery efforts in Puerto Rico and mainland states, including Texas and Louisiana.

supplemental appropriations for disaster assistance through the Corps and other agencies and continued to do so in response to subsequent major storms. From 2005 to 2021, average outlays from those four accounts were higher, at about \$6.4 billion a year (in 2022 dollars). Over the entire 30-year period, annual spending averaged \$5.7 billion (in 2022 dollars).

How Does CBO’s Baseline Account for That Spending?

CBO’s baseline is not intended to be a forecast of budgetary outcomes; rather, it is meant to provide a benchmark that policymakers can use to assess the potential effects of policy decisions. CBO constructs its baseline in accordance with provisions of the Balanced Budget and Emergency Deficit Control Act of 1985 (P.L. 99-177) and the Congressional Budget and Impoundment Control Act of 1974 (P.L. 93-344).

As required by section 257 of the Deficit Control Act, the baseline projections that CBO prepares for discretionary appropriations, including those provided to the Corps’ 11 accounts, start with the current-law discretionary appropriation and then adjust annual funding over the following 10 years to account for anticipated inflation.⁵ In fiscal year 2022, lawmakers appropriated a

total of \$13.8 billion for the Corps’ activities; \$10.9 billion of that amount was provided for the agency’s four major accounts. In its most recent baseline projections (from May 2022), CBO increased those 2022 appropriated amounts for inflation in each year over the 2023–2032 period. In total, funding is projected to reach \$17.9 billion in 2032 (including \$14.2 billion for the four major accounts).⁶

One consequence of the rules for constructing baseline projections is that the baseline is not a projection of how climate change might affect spending from the Corps. Climate change affects the Corps’ baseline only to the extent that it affects the amount of money that

\$14.6 billion for the four major accounts) in advance appropriations. Those advance appropriations are not inflated in the same manner as annual appropriations. Instead, CBO’s baseline includes the specific amounts appropriated by the IJA for each of the years for which they were provided. The periods of those advance appropriations vary for each Corps account. Some received appropriations only for 2022, and others received appropriations for each year over the 2022–2024 period. In the years following the last year of an advance appropriation, the baseline includes that last year’s appropriation adjusted to account for anticipated inflation. Because of the varying periods covered by advance appropriations, in some cases that inflation adjustment begins in 2023 and in others, 2025.

5. The Infrastructure Investment and Jobs Act (IIJA; P.L. 117-58), enacted in November 2021, provided an additional \$15.0 billion (or

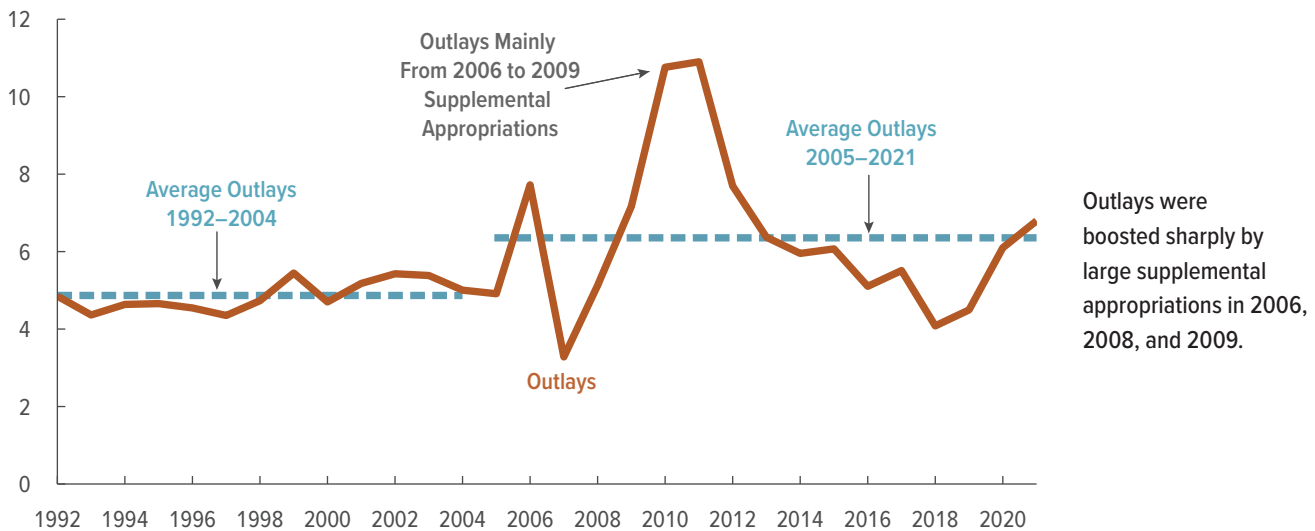
6. For CBO’s latest baseline budget projections, see Congressional Budget Office, *The Budget and Economic Outlook: 2022 to 2032* (May 2022), www.cbo.gov/publication/57950.



Figure 2.

Outlays From Major Accounts of the Army Corps of Engineers

Billions of 2022 Dollars



Data sources: Army Corps of Engineers; Congressional Budget Office. See www.cbo.gov/publication/58415#data.

The Corps' major accounts are construction, operation and maintenance, Mississippi River and tributaries, and flood control and coastal emergencies.

lawmakers choose to appropriate under current law. Such amounts can vary widely from year to year.⁷

To estimate the Corps' spending of annual appropriations, CBO uses historical data and information about the agency's projects, accounting for the size of active and proposed projects and the anticipated schedules for completing them. In general, amounts provided for construction projects are estimated to take more than five years to be spent, on average, compared with amounts provided for operating and maintaining the Corps' existing projects, which are estimated to be spent over two years, on average.

CBO analyzes the Corps' spending of supplemental appropriations separately. That is because those amounts tend to be substantially larger (sometimes accounting for multiples of annual appropriations) and because they generally have a narrower, more urgent purpose.

How Quickly Does the Corps Spend Money Provided After Disasters?

Historically, the Corps has not reported its spending in response to disasters separately from its spending of annual appropriations. Under the Disaster Relief Appropriations Act, 2013 (P.L. 113-2), however, lawmakers required the agency to make such information publicly available for spending in response to Hurricane Sandy.⁸ Because of that requirement, CBO was able to separate information about the spending of supplemental appropriations for Hurricane Sandy from that for the spending of annual appropriations for each account. CBO has nine years' worth of data on recovery spending from Hurricane Sandy, covering the 2013–2021 period.

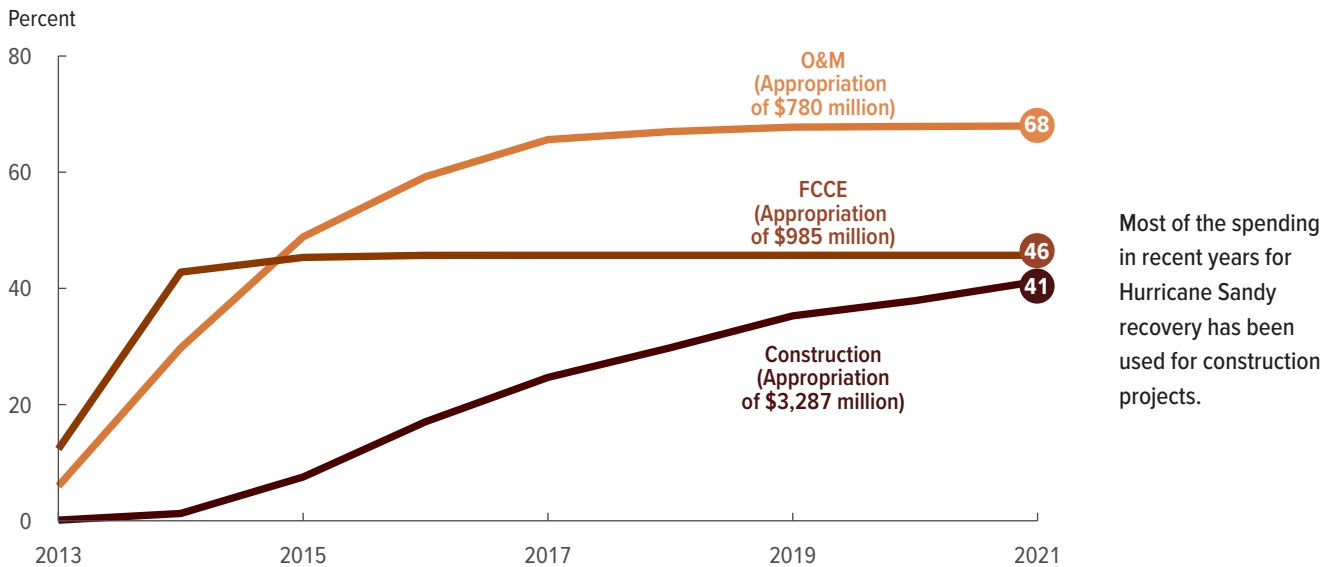
Generally, the pace of spending for Hurricane Sandy has varied among the Corps' accounts (see Figure 3). Spending for flood control ramped up quickly and then plateaued. For O&M, spending increased steadily and then slowed. And construction spending began

7. For discretionary accounts, in any year, the Congress could appropriate a different annual amount, provide supplemental appropriations, or rescind previously appropriated funds.

8. Although the data are no longer available on the website at which they were originally posted, the Corps has continued to provide data on annual spending for Hurricane Sandy to CBO upon request. See Department of Housing and Urban Development, "Sandy Recovery Progress," www.hud.gov/sandyrebuilding/recoveryprogress.

Figure 3.

Cumulative Outlays as a Share of Amounts Appropriated to Major Accounts of the Army Corps of Engineers for Hurricane Sandy Recovery



Data sources: Army Corps of Engineers; Congressional Budget Office. See www.cbo.gov/publication/58415#data.

Because the states affected by Hurricane Sandy are in the Northeast, the Congress did not provide supplemental appropriations to the Mississippi River and tributaries account for recovery from that disaster.

FCCE = flood control and coastal emergencies; O&M = operation and maintenance.

slowly—about 40 percent of appropriated amounts were spent through 2021—but CBO expects that spending to continue for many years. Because use of the FCCE and O&M accounts had diminished by 2017, in 2018 the Congress transferred unspent amounts of \$519 million from the FCCE account and \$210 million from the O&M account to the construction account for projects to mitigate future damage.

Through 2021, about \$1.9 billion of the funding provided for construction in response to Hurricane Sandy remained unspent (of which \$1.8 billion remained unobligated). That total does not include the \$729 million transferred from the O&M and FCCE accounts in 2018. In CBO’s estimation, spending for construction will continue to grow before flattening, leaving some funding unspent at the end of the decade.

How Does CBO Estimate the Duration of Spending?

When estimating the duration of spending for a particular disaster, CBO considers the patterns of spending following earlier disasters of similar size and scope.

The detailed data on recovery spending for Hurricane Sandy are a major source of information that has guided CBO’s estimates of how quickly funds will be spent to respond to other disasters. That pattern suggests that addressing immediate flood control and operational challenges related to the Corps’ existing projects occurs in the first few years after a disaster. Spending to address longer-term solutions that require the Corps to construct projects occurs later, after research and design are complete.

Why Does Projected Spending for the Corps Differ in CBO’s Baseline and Cost Estimates?

One of CBO’s responsibilities is to estimate the effects that authorizing legislation would have on federal spending. When preparing cost estimates for legislation that authorizes funding for the Corps’ programs—or any other discretionary program—CBO estimates the potential changes in discretionary spending that would result if the legislation was enacted and if future appropriations were provided consistent with the legislation’s provisions. Those estimates are measured relative to current law (that



is, existing appropriations for one year, with no future appropriations assumed). They are not measured relative to CBO's baseline projections, which incorporate an assumption about future appropriations (namely, that appropriations grow with inflation) and their spending over time.

This report was prepared to enhance the transparency of the work of the Congressional Budget Office. In keeping with CBO's mandate to provide objective, impartial analysis, it makes no recommendations.

Aurora Swanson wrote the report with major contributions and coordination from Robert Reese and with guidance from Theresa Gullo and Susan Willie. Christina Hawley Anthony, Joseph Kile, Kevin Laden, and Chad Shirley provided comments. Mark Hadley, Jeffrey Kling, and Robert Sunshine reviewed the report. Christine Bogusz edited it, and Jorge Salazar created the graphics, designed the cover, and prepared the text for publication. This report is available at www.cbo.gov/publication/58415.

CBO seeks feedback to make its work as useful as possible. Please send comments to communications@cbo.gov.



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