CRS INSIGHT

2017 Hurricanes and Army Corps: Background for Flood Response and Recovery

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Hurricanes can produce high winds, storm surge, and heavy precipitation. This Insight summarizes flood-management activities of the U.S. Army Corps of Engineers (USACE, or Corps) related to Hurricanes Harvey and Irma.

USACE has three primary flood-related roles relevant to hurricanes:

- emergency response,
- owner and operator of flood-risk-reduction projects, and
- assistance with certain nonfederal flood-control infrastructure.

Congress may have interest in each of these roles as it responds to hurricane-related flooding.

Emergency Response

USACE often plays a prominent role in the federal emergency response to flooding. Under its P.L. 84-99 authorities, USACE can assist in flood-fighting to protect life and property, principally when state response resources are overwhelmed. These activities are limited to actions to save lives and protect improved property, such as public facilities and services.

USACE also may be tasked under the National Response Framework with a variety of other disaster-related activities. These activities include technical assistance, engineering, and construction management as well as emergency contracting, power, and repair of public water, wastewater, and solid waste facilities. USACE also assists in monitoring, stabilizing, and demolishing damaged structures. USACE provides technical assistance with establishing ground and water routes into affected areas and clearing, removing, and disposing of debris from public property. For many presidentially declared Stafford Act disasters such as floods, USACE's funding for these response activities is provided through the Disaster Relief Fund, at the direction of the Federal Emergency Management Agency (FEMA) and the

President.

USACE is conducting Hurricane Harvey-recovery actions, such as restoring emergency power, providing navigation surveys, and conducting infrastructure assessments. The agency's assignments may expand into other areas as FEMA requests additional assistance from USACE.

USACE Infrastructure

At Congress's direction, USACE plans, builds, and operates numerous riverine and coastal flood-control projects, including levees and dams. Some USACE-operated flood-risk-reduction projects are located in areas threatened by Hurricane Irma and in the Harvey-affected area.

Projects in Areas at Risk from Hurricane Irma

USACE has numerous coastal and inland flood-risk-reduction projects in southeastern states. USACE has deployed staff to the Irma-threatened areas and has begun to make releases from Lake Okeechobee to create storage capacity for excess water. The Herbert Hoover Dike is a flood-control structure that the USACE owns and operates around the perimeter of Lake Okeechobee. The dike is a high-priority dam safety project, with various deficiencies identified. It has been undergoing rehabilitation and repair since 2001, and these efforts remain under way. Until the dam safety repairs are completed, Lake Okeechobee is being operated to maintain a lower water level as a safety measure. USACE also has a number of shore protection projects in the region and along the Atlantic coast, which may be tested by Hurricane Irma's storm surge; after the storm, some may require sand re-nourishment to restore their storm protection benefits.

Projects in Harvey-Affected Area: Addicks and Barker Dams and Reservoirs

Two USACE-operated dams—Addicks and Barker dams—were of particular concern with Hurricane Harvey's rainfall. The dams are operated to reduce flooding downstream in Buffalo Bayou, which traverses the city of Houston. USACE completed the dams in the 1940s. In the late 2000s, USACE began addressing deficiencies at the two dams, which are rated as Dam Safety Action Classification I dams (i.e., high urgency due to the risk and/or consequences of failure). Since FY2015, USACE has had a major rehabilitation project under way. When a rain event occurs, the Addicks and Barker dams' gates are closed to reduce flooding downstream. Typically, the gates are reopened after downstream runoff recedes. USACE increased releases starting on August 28, 2017, while high water levels downstream continued. The releases were made because of the rapid inflow into the reservoirs and to protect the dams' safety. As the rains continued, USACE made additional unexpected releases due to rising water levels at the reservoirs. USACE had acquired lands within the reservoirs' 100-year flood pool as part of the Addicks and Barker projects. Lands above that elevation were not acquired; some neighborhoods that were constructed above the 100-year flood pool were flooded as the reservoirs' water rose with the storm's rainfall.

Nonfederal Infrastructure

In recent decades, Congress generally authorized USACE to participate in the construction of cost-shared flood-risk-reduction projects that are turned over to local entities for operation and maintenance. Nonfederal entities also construct flood-control works without USACE participation. The condition of some nonfederal-operated infrastructure has been a concern in 2017. According to the National Levee Database, USACE found various nonfederally operated works to be in an unacceptable condition during its Rehabilitation and Inspection Program (RIP) inspections, which occurred prior to Hurricanes Harvey and Irma. USACE is authorized to fund the repair of nonfederal flood-control works (e.g., levees, dams, dunes) that participate in USACE's RIP and are damaged by natural events. To be eligible for RIP assistance, damaged flood-control works must be in active RIP status at the time of damage. The works eligible for RIP assistance within the areas affected by the 2017 hurricanes will be determined in coming weeks and months.

2017 Hurricanes and USACE Issues for Congress

A common issue for Congress after a disaster is whether to provide additional funds to USACE and, if so, how much funding and for which USACE activities. In recent years, Congress has used supplemental appropriations to fund much of USACE's construction and repair of flood-risk-reduction projects in flood-damaged areas. Oversight issues for

Congress related to the 2017 hurricane season may include not only the performance of locally operated and USACE-operated levees, shore protection, and dams but also local and federal actions that exacerbate or alleviate flood risk.

Additional Reading

CRS Insight IN10763, *Congressional Considerations Related to Hurricanes Harvey and Irma*, coordinated by Jared T. Brown.

CRS Report R42841, *Army Corps Supplemental Appropriations: Recent History, Trends, and Policy Issues*, by Charles V. Stern and Nicole T. Carter.

CRS Report R41243, *Army Corps of Engineers: Water Resource Authorizations, Appropriations, and Activities*, by Nicole T. Carter and Charles V. Stern.

CRS In Focus IF10606, *Dam Safety: Federal Programs and Authorities*, by Charles V. Stern et al.