

DEPARTMENT OF THE ARMY

**WRITTEN STATEMENT
OF**

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U.S. ARMY CORPS OF ENGINEERS

BEFORE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

UNITED STATES SENATE

ON

**THE U.S. ARMY CORPS OF ENGINEERS EMERGENCY
RESPONSE TO HURRICANE IDA**

OCTOBER 6, 2021

Chairman Carper, Ranking Member Capito, and distinguished members of the committee, thank you for the opportunity to join Major General Graham in providing context to the U.S. Army Corps of Engineers (Corps) response to Hurricane Ida.

I am proud of the support our organization provided to states in preparation for the effects of Hurricane Ida, our response to recovery efforts, and our coordination with and support of the Federal Emergency Management Agency (FEMA) throughout this event.

As storm risk management is a shared responsibility, executed best in a whole-of-community approach, the Corps continues to partner with other Federal and non-Federal stakeholders. Our collective skillsets and capabilities form the basis for optimizing our effectiveness in preparing for, responding to, and recovering from storm events.

In my role as the commander of the Corps North Atlantic Division, I am responsible for federal engineering work throughout 14 northeastern states, from Virginia to Maine.

While Hurricane Ida hit Louisiana with the range of impacts associated with a Category 4 hurricane — coastal and fluvial flooding due to storm surge and rainfall, and wind impacts, including tornados — the remnants of Ida made their way across the North Atlantic region as a tropical storm. As a tropical storm, Ida caused fluvial impacts with rainfall overwhelming stormwater systems and inundating local streams leading to flash flood events and tornados.

Preparation

Before the storm hit the Northeast, we used the authority of Public Law 84-99, as amended, 33 U.S.C. § 701n, to obtain reliable, advance notice of potential Ida impacts from the National Hurricane Center, U.S. Geological Survey, the National Weather Service's River Forecast Centers, and other meteorological data, which assisted in the accurate prediction of potential consequences as Ida passed through the Northeast.

We communicated this risk using our Corps Common Operating Picture and Geographic Information System mapping tools to create and share shared potential flood inundation maps with FEMA as they became available. We shared information with states and other Federal agencies in real time.

We provided early support to our state and local partners by contacting them to determine their needs. We activated several of our district emergency operations centers to provide technical assistance under PL 84-99. Flood-fighting materials, such as sandbags, rolls of polyethylene plastic and alternate flood-fighting materials, were placed on standby, prepositioned, and ultimately released as needed.

To manage risk to the projects the Corps owns and operates, we conducted predictive analysis based on weather forecasts, and the division lowered its Corps' dam reservoir

elevations before the rain arrived to retain the maximum amount of flood storage available to reduce potential impacts downstream.

As you know, the flooding was significant. More than four dozen people from Virginia to Connecticut died as a result.¹ Our thoughts and prayers are with the communities who have been affected by this devastating loss of life and the significant damage to property caused by this extreme weather event. In our region, Hurricane Ida has been hailed as the costliest storm to hit the northeast since Hurricane Sandy in preliminary open-source assessments.²

In the aftermath of Hurricane Sandy, Congress asked the Corps to prepare a performance report analyzing how our completed projects performed. That report and other work following Sandy, has underscored the value of building resilience into our coastal storm risk management and flood risk management projects.

During Ida, the vast majority of our Corps projects performed as designed, lowering the damages from flooding in low-lying communities.

Response

After making landfall August 29 on the Louisiana coast, Ida weakened over land, becoming a tropical depression on August 30, as it turned northeastward. On September 1, the storm became a post-tropical cyclone accelerating through the northeastern United States, breaking multiple rainfall records, causing widespread flooding, and producing tornadoes in various locations along its path to the Atlantic Ocean the next day.

The storm exceeded our preliminary estimates. As I traveled northward touring the storm damage, I witnessed the aftermath of the event, and the projects and study areas in its path.

I first met with our team at Indian Rock Dam, a Corps project in York, Pennsylvania, to see how it was responding to the influx of rain; it performed as designed. I met with the FEMA Region III team in the Pennsylvania State Emergency Operations Center (EOC) along with our Corps' liaison officer who had been embedded with them prior to the storm's arrival. The only significant request was to provide unwatering information for Pennsylvania's Department of Transportation in the Philadelphia area. I also met with the FEMA Region II team in the New Jersey State EOC, where we also deployed a Corps liaison officer and two subject matter experts for unwatering and debris removal missions. Both the FEMA Regions and the states they support — Pennsylvania, New Jersey, and New York — were satisfied with our proactive approach to this event.

I also conducted site surveys of the flooding at the Raritan River in Bound Brook, New Jersey, where our Green Brook Flood Control Project also performed as designed. Despite an issue with a stranded commuter train near a railroad gate, which prevented a floodgate closure, Mayor Robert Fazen told news agencies Bound Brook fared much

better than during past comparable storms like Tropical Storm Floyd in 1999, which brought 10 inches of rain to town and 15 feet of water to its Main Street.³

My site survey of the Passaic River in New Jersey showed that regular flooding continues to be an issue in this area. The Corps has studied the Passaic River Basin for 85 years. Our studies have considered buyouts, tunnels and levees. We have installed stream gauges and early warning mechanisms that more than likely saved lives in this storm. During Ida, the Passaic River Basin saw moderate levels of flooding in its low-lying areas. To date, the comprehensive flood risk management proposals developed by the Corps have met resistance from stakeholder groups and have not moved forward.

I also surveyed Manville, New Jersey, and Mamaroneck, New York. Manville was included in the Millstone Study, which was terminated due to insufficient economic justification. The Mamaroneck Study has been authorized and is now in the Preconstruction Engineering and Design Phase.

In the Brandywine and Schuylkill River areas near Philadelphia, there were significant flash floods and loss of property during this storm event. Currently, there are no Corps' studies in this area⁴, but we do own and operate Blue Marsh Lake — a dam and reservoir system used for flood risk management, water supply, water quality and recreation — which worked as designed. Unfortunately, local non-Corps' collection systems for communities located below the dam were overwhelmed by the intensity of the rainfall, which contributed to localized flash flooding.

Closing

Together with our federal and non-federal partners, the U.S. Army Corps of Engineers is currently completing post storm evaluations, including an assessment of the impacts of this storm for our projects. An initial assessment showed damages incurred to some of our flood risk management project elements, which will require an investment in repairs.

In addition to the repairs and maintenance we conduct on these projects, in some cases, the Corps recommends a comprehensive assessment of their status, to include a review of performance criteria and recommendation for updating based on current science and factors such as climate change.

The Corps recommends a comprehensive reevaluation using modern analysis to improve future performance and assess our projects' ability to withstand potentially more frequently occurring events. In common with much of the nation's infrastructure, many of our projects require a continuing investment in operation and maintenance to ensure their effectiveness.

We need to look at the overall performance of our completed works to inform future decisions on both that infrastructure and possible future infrastructure investments.

The Corps' team is committed to working together with our federal interagency, state, and local partners to provide the best engineering solutions for the tough challenges facing our communities. I am thankful of this committee's support as we continue these endeavors.

Thank you, again, for inviting us to speak to you today. I look forward to your questions.

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¹ Ida-related deaths in northeast region: 29 in New Jersey, 18 in New York, two in Pennsylvania, and at least one each in Virginia, Maryland and Connecticut.

SOURCE: https://disasterphilanthropy.org/disaster/2021-atlantic-hurricane-season/?gclid=Cj0KCQjwwNWKBhDAARIsAJ8Hkhed2RV5zeFYVQpYKDKPB2nySWPvc1CQ8J38orK0ZfNThSI9USYknPkaAp7PEALw_wcB

² Source: <https://www.marketwatch.com/story/ida-caused-an-estimated-24-billion-in-damage-in-the-northeast-but-a-dismal-number-of-people-were-insured-for-flooding-11631127448>

³ Source: <https://nj1015.com/once-synonymous-with-severe-flooding-bound-brook-did-ok-during-ida/>

⁴ On the Schuylkill, we have an aquatic ecosystem restoration study (Bartram Gardens). We also have a Flood Risk Management study near the Schuylkill in Eastwick (Southwest Philadelphia area) although the study area is focused on Darby/Cobbs Creeks area.

- Bartram's Garden Ecosystem Restoration Feasibility Study
 - o Section 1135 CAP (Project Modification for Improvement of the Environment)
 - o Purpose of study is to restore mudflats and wetland habitat at Bartram's Garden (botanical garden) along the Schuylkill River that was degraded by Schuylkill River maintenance dredging
 - o Executed FCSA in February 2020 with Bartram's Garden (\$500K total study costs)
 - o Feasibility study currently underway and anticipated to be completed in January 2023 pending receipt of additional Federal and non-Federal funds

- Eastwick neighborhood of Philadelphia Flood Risk Management Feasibility Study
 - o Section 205 of CAP (Flood Risk Management)
 - o Purpose of study is to provide flood risk management to the Eastwick neighborhood of Philadelphia near the confluence of Darby/Cobbs Creek and the Delaware River
 - o Executed FCSA in May 2019 with Philadelphia Water Department (\$930K total study costs)
 - o Feasibility study is currently underway and is evaluating an array of alternatives to address the flooding with a focus on a levee/floodwall plan in the area