

Evaluation of Risks to Federal Facility Superfund Site Remedies from Inland Flooding

March 25, 2026 | Report No. 26-E-0019



► *This Report Is Part of an Oversight Series*

According to the EPA, 13 million people live within three miles of a federal facility Superfund site. It is important that the EPA understand when cleanup remedies at these sites may be threatened. If the remedies fail or are otherwise impaired, contaminants may be released into the surrounding communities, and the federal funds expended to implement the remedies may be wasted. To that end, the EPA OIG is issuing a limited series of reviews to help identify any such threats. This is the second report in that series. The first, which addresses [sea-level rise and storm surge risks](#), was issued in June 2025. We issued the third, which addresses [wildfire risks](#), simultaneously with this report, which addresses inland flooding risks.

Abbreviations

EPA U.S. Environmental Protection Agency
OIG Office of Inspector General

Cover Image

Inland flooding resulting from Hurricane Irene in 2011 at the American Cyanamid Superfund site, a nonfederal facility located in EPA Region 2 in Bridgewater Township, New Jersey. The flooding caused significant damage to the facility, though there were no major releases of contaminants. The image shows three large areas of murky brown water surrounded by green forests, with water also appearing among the trees. (EPA image)

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OFFICE OF INSPECTOR GENERAL
U.S. ENVIRONMENTAL PROTECTION AGENCY

March 25, 2026

MEMORANDUM

SUBJECT: Evaluation of Risks to Federal Facility Superfund Site Remedies from Inland Flooding Report No. 26-E-0019

FROM: Nicole N. Murley, Deputy Inspector General performing the duties of the Inspector General *Nicole N. Murley*

TO: Steven Cook, Principal Deputy Assistant Administrator
Office of Land and Emergency Management

This is our report on the subject evaluation conducted by the U.S. Environmental Protection Agency Office of Inspector General. The project number for this evaluation was [OSRE-FY25-0085](#). This report contains findings that describe the problems the OIG has identified. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

A response to this report is not required because the report contains no recommendations. If your office submits a response, however, it will be posted on the OIG's website, along with our memorandum commenting on the response. The response should be provided as an Adobe PDF file that complies with the requirements of section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that your office does not want released to the public; if the response contains such data, your office should identify the data for redaction or removal along with corresponding justification.

We will post this report to our website at www.epa.gov/oig.

cc: Elizabeth Shaw, Deputy Assistant Administrator for Management, Office of Land and Emergency Management



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Background, Scope, & Methodology

The U.S. Environmental Protection Agency Office of Inspector General initiated an evaluation of the risks to federal facility Superfund site remedies from inland flooding. The Comprehensive Environmental Response, Compensation, and Liability Act, which is commonly called Superfund, authorizes the EPA to clean up contaminated sites to protect human health and the environment. The sites that the EPA identifies for cleanup under this program are referred to as Superfund sites. The Superfund sites that have been prioritized for cleanup are included on the EPA's [National Priorities List](#).

A Superfund site can be either a federal facility site that is owned or operated by the federal government or a nonfederal facility site. As of October 2025, there were 157 federal facility Superfund sites on the National Priorities List. Federal facility sites individually average more than 6,000 acres. According to the EPA, about three million people live within one mile of a federal facility Superfund site, while about 13 million people live within three miles of one.

When contaminants remain on a Superfund site at levels that require site-use restrictions after a remedy has been implemented to clean up the site, the EPA requires the lead agency for the site to review the remedy every five years. These five-year reviews assess remedy implementation and performance to ensure that human health and the environment are protected. Agency guidance specifies that the five-year reviews should address impacts from natural disasters, such as increased flooding risks.

Inland flooding occurs from sustained moderate rain, intense rain in a short period, or river overflow. These flooding events can increase the risk that Superfund site contamination may be released into the environment, exposing the surrounding communities. For example, after Hurricane Harvey in 2017, flooding at the San Jacinto River Waste Pits in Texas resulted in the release of toxic dioxin chemicals.

We conducted this evaluation from September 2025 to February 2026 in accordance with the *Quality Standards for Inspection and Evaluation* published in December 2020 by the Council of the Inspectors General on Integrity and Efficiency. Those standards require that we perform the evaluation to obtain sufficient and appropriate evidence to support our findings. Using mapping software and the EPA's "Heavy Precipitation" and "Height Above Nearest Drainage" datasets, we identified which federal facility Superfund sites may be at risk from flooding and examined whether their five-year review reports, if available, addressed the potential impacts. These mapping data were not available for Hawaii, Alaska, and the U.S. territories. Thus, we were able to map and analyze only the 148 federal facility Superfund sites in the contiguous United States.

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Findings

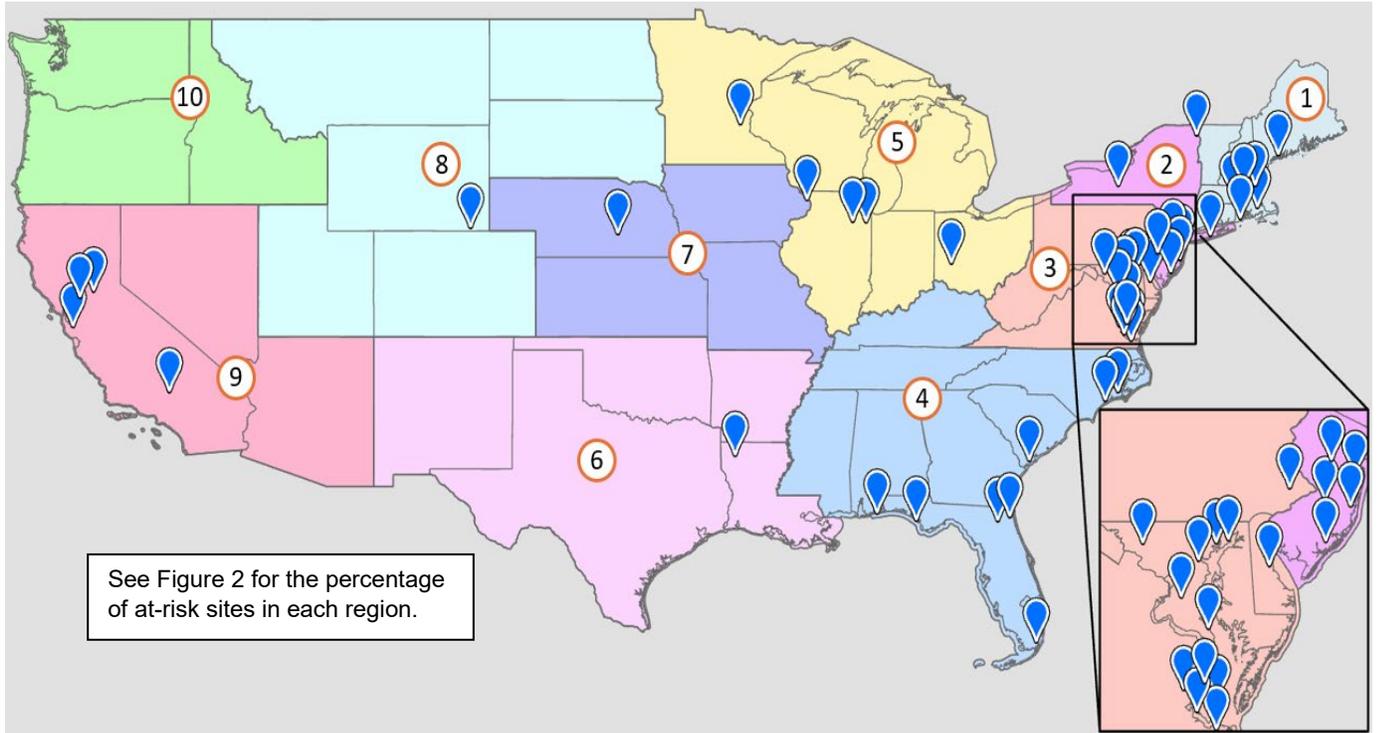
Of the 148 federal facility Superfund sites that we analyzed, 47 of them, or 32 percent, have potential inland flooding risks, as shown in Figures 1 and 2. These threatened sites are spread across the United States. We were able to review a report from the most recent five-year review period, 2021 through 2025, for 37 of these 47 at-risk sites. Twenty-one, or 57 percent, of the 37 reports acknowledged potential impacts from flooding, adhering to the EPA's guidance. The remaining 16 did not.

In this same five-year period, the United States experienced a catastrophic inland flooding event after Hurricane Helene made landfall in 2024. Although there were no reported releases of contaminants, the hurricane crossed or skirted several federal facility Superfund sites that did not address inland flooding risks in their five-year review reports. Figure 3 shows the proximity of federal facility Superfund sites to extreme rainfall during Hurricane Helene, highlighting that even sites not identified as threatened may still face inland flooding risks as site conditions change and underscoring that all federal facility Superfund sites should consider how such events may affect the efficacy of their cleanup remedies.

Conclusion

We issued this report to highlight the threat posed to federal facility Superfund sites and their surrounding communities by inland flooding. If these sites do not analyze inland flooding risks, there is an increased risk that such events may cause toxic contaminants to be released, threatening the health and environment of millions of U.S. residents. The EPA can help keep cleanup remedies effective and viable in the long term by ensuring that federal facility Superfund sites assess inland flooding risks as part of their five-year reviews. The EPA did not provide a formal response to our draft report but did provide technical comments, which we incorporated into this report as appropriate.

Figure 1: Federal facility Superfund sites threatened by inland flooding by EPA region

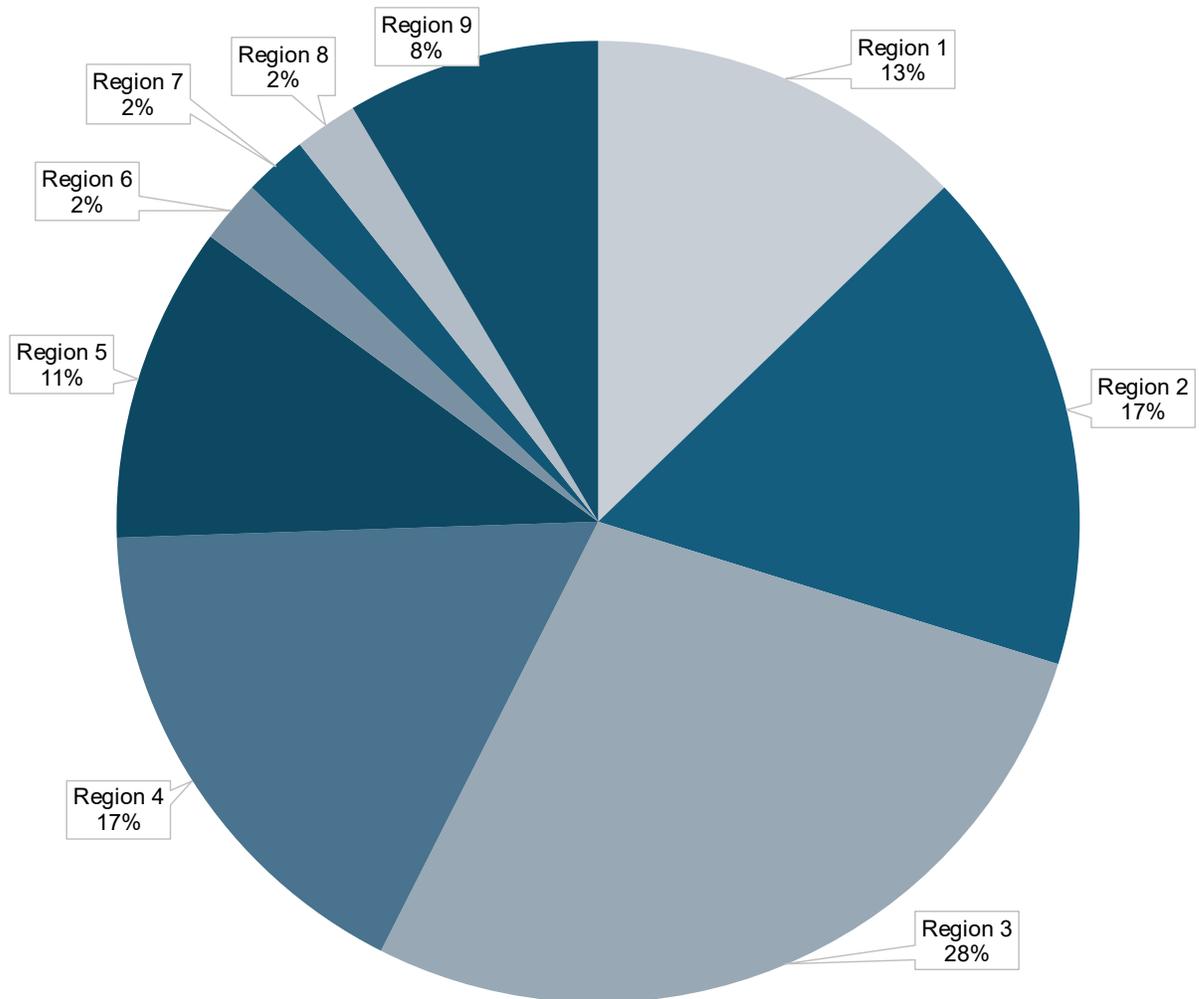


Source: OIG analysis of EPA datasets. (EPA OIG image)

Note: Inland flooding mapping datasets were not available for Hawaii, Alaska, and the U.S. territories. For the purpose of this evaluation, we classified a federal facility Superfund site as one “threatened by inland flooding” if EPA data indicated that it fell within the 40th percentile of a census tract block group for heavy precipitation and the lowest median height above nearest drainage.

<p>EPA Region 1:</p> <ol style="list-style-type: none"> Hanscom Field/Hanscom Air Force Base, MA Natick Laboratory Army Research, Development, and Engineering Center, MA Naval Weapons Industrial Reserve Plant, MA South Weymouth Naval Air Station, MA Brunswick Naval Air Station, ME Davisville Naval Construction Battalion Center, RI <p>EPA Region 2:</p> <ol style="list-style-type: none"> Naval Weapons Station Earle (Site A), NJ McGuire Air Force Base #1, NJ Middlesex Sampling Plant, NJ Naval Air Engineering Center, NJ Federal Aviation Administration Technical Center, NJ Seneca Army Depot, NY Plattsburgh Air Force Base, NY Brookhaven National Laboratory, NY <p>EPA Region 3:</p> <ol style="list-style-type: none"> Dover Air Force Base, DE Aberdeen Proving Ground (Edgewood Area), MD Aberdeen Proving Ground (Michaelsville Landfill), MD Curtis Bay Coast Guard Yard, MD 	<ol style="list-style-type: none"> Patuxent River Naval Air Station, MD Brandywine Defense Reutilization and Marketing Office, MD Fort Detrick Area B Ground Water, MD Willow Grove Naval Air and Air Reserve Station, PA Fort Eustis, VA Langley Air Force Base/National Aeronautics and Space Administration Langley Research Center, VA Naval Weapons Station Yorktown, VA Naval Weapons Station Yorktown—Cheatham Annex, VA Norfolk Naval Base (Sewells Point Naval Complex), VA <p>EPA Region 4:</p> <ol style="list-style-type: none"> Tyndall Air Force Base, FL Naval Air Station Cecil Field, FL Jacksonville Naval Air Station, FL Homestead Air Force Base, FL Pensacola Naval Air Station, FL Cherry Point Marine Corps Air Station, NC Camp Lejeune Military Reservation, NC Parris Island Marine Corps Recruit Depot, SC 	<p>EPA Region 5:</p> <ol style="list-style-type: none"> Joliet Army Ammunition Plant (Packing Area), IL Joliet Army Ammunition Plant (Manufacturing Area), IL Savanna Army Depot Activity, IL New Brighton/Arden Hills/Twin Cities Army Ammunition Plant, MN Wright-Patterson Air Force Base, OH <p>EPA Region 6:</p> <ol style="list-style-type: none"> Louisiana Army Ammunition Plant, LA <p>EPA Region 7:</p> <ol style="list-style-type: none"> Cornhusker Army Ammunition Plant, NE <p>EPA Region 8:</p> <ol style="list-style-type: none"> F.E. Warren Air Force Base, WY <p>EPA Region 9:</p> <ol style="list-style-type: none"> Edwards Air Force Base, CA Laboratory for Energy-Related Health Research/Old Campus Landfill, CA Moffett Field Naval Air Station, CA Sacramento Army Depot, CA <p>EPA Region 10:</p> <p>None</p>
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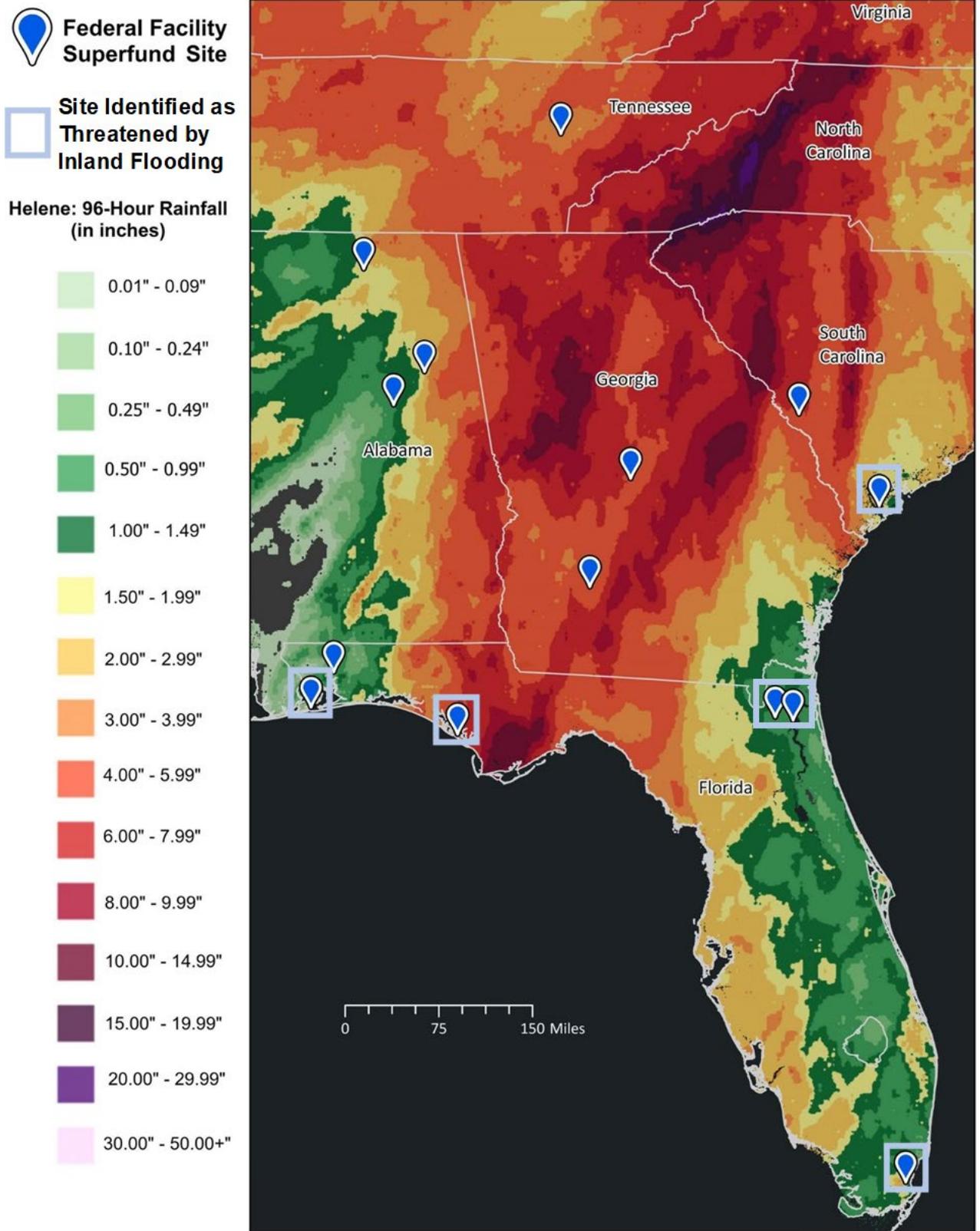
Figure 2: Percentage of the 47 federal facility Superfund sites threatened by inland flooding located in each EPA region



Source: OIG analysis of EPA datasets. (EPA OIG image)

Notes: Region 10 is not featured in this figure, as we did not identify any at-risk sites in that region. For a list of the at-risk sites in each region, see Figure 1.

Figure 3: 96-hour rainfall during Hurricane Helene and federal facility Superfund sites in the Southeast



Source: Datasets from the EPA and the National Oceanic and Atmospheric Administration. (EPA OIG image)

Note: The federal facility Superfund sites identified as threatened by inland flooding, as shown in Figure 1, are depicted in light blue boxes. The other sites shown on this map may still face inland flooding risks as site conditions change and rainfall and associated floods increase.



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