



SUPERFUND

ACCOMPLISHMENTS REPORT

FY 2017

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The Superfund Program *in Action* Commencement Bay (Tacoma, Washington)

In 2017, EPA Region 10 completed all anticipated active remedial actions to reduce groundwater contamination at the Commencement Bay, South Tacoma Channel Superfund site. Achievements include an 88 percent reduction in mass discharge of contaminants of concern, a 99 percent reduction in mass discharge of parent compounds, and five of the six contaminants of concern reduced to below maximum contaminant levels in groundwater extraction treatment system influent.

At the Thea Foss Waterway portion of the site, the city of Tacoma, the Washington State Department of Ecology, EPA and other stakeholders have collaborated to engage the public, clean up the area, address liability issues, establish public-private partnerships, secure funding and revitalize the waterway. Today, the cleanup of the Thea Foss Waterway is complete. A public esplanade extends along the shore, punctuated by public parks, apartment buildings, restaurants and diverse businesses.



Welcome to Superfund

Congress created the Superfund program in 1980 to protect human health and the environment by responding to releases or threatened releases of hazardous substances, pollutants and contaminants.

Superfund cleanups provide significant public health and economic benefits:

20-25%↓ Reductions in birth defects among children living near sites.



Reductions in children's blood-lead levels nationwide.

19-24%↑ Residential property value increases within three miles of sites after cleanup.

Superfund cleanups also facilitate job creation and enhance local tax bases. As of 2017, 450 Superfund sites have been returned to productive use. These sites:



Support more than 6,600 businesses.



Host more than 155,000 employees.



Generate more than \$11 billion in annual employment income.



The Superfund removal program conducts emergency and shorter-term responses when contamination poses an imminent and substantial threat to human health or the environment.



The Superfund remedial program is responsible for long-term cleanups of contaminated sites.

This report shares the fiscal year (FY) 2017 accomplishments of the Superfund program.



In May 2017, EPA established a task force to restore the Superfund program to its rightful place at the center of the Agency's core mission to protect health and the environment.

epa.gov/superfund/superfund-task-force

FISCAL YEAR 2017 ACCOMPLISHMENTS

EPA's Superfund program tracks the following measures on an annual basis to keep the public and internal and external stakeholders apprised of the program's progress in cleaning up sites and supporting their return to beneficial use.

Protecting communities' health and ecosystems



EPA actions at a net total of **24** additional sites controlled potential or actual exposure risk to public health, bringing the cumulative total at the end of FY 2017 to **1,475** sites.



EPA controlled the migration of contaminated groundwater through engineered remedies or natural processes at a net total of **14** additional sites, bringing the cumulative total to **1,169** sites.

Safeguarding communities from imminent threats



EPA completed or provided oversight at **255** removal actions to address imminent and substantial threats to communities. Removal responses address sites where contamination poses an immediate threat to human health and the environment. sites.



Superfund Cleanups

EPA uses two types of response authorities to address polluted sites under Superfund: **removal** and **remedial**. Superfund responds to chemical releases and other urgent situations under its emergency response and time-critical **removal** authorities. Superfund's **remedial** program conducts long-term cleanups of contaminated sites and, in many cases, returns them to beneficial use.

Sites EPA cleans up under the Superfund remedial program fall under either the NPL or the Superfund Alternative Approach (SAA).

The NPL is the list of national priorities among the known or threatened releases of hazardous substances, pollutants or contaminants. It is intended to guide EPA in determining which sites warrant further investigation and/or cleanup. Sites posing an unacceptable level of risk to human health or the environment are remediated.

The SAA is an alternative to listing a site on the NPL. SAA sites have the same investigation and cleanup standards as NPL sites, but are led and funded by a cooperative and capable potentially responsible party under an enforceable agreement with EPA. It can save time and resources compared to listing a site on the NPL.

Preparing for future cleanup efforts



EPA completed **747** remedial site assessments, for a cumulative total of **95,416**.

EPA placed seven sites on and proposed four sites to the NPL. At the end of FY 2017, the NPL had **49** proposed, **1,342** final and **394** deleted sites. As of October 2017, there are approximately 51 sites with active SAA agreements and 13 additional sites that have completed work under a Superfund Alternative approach.

EPA selected **34** cleanup remedies and amended **34** cleanup plans.

EPA obligated about **\$210 million** in resources to conduct and oversee site assessments and investigations, selection and design of cleanup plans, and support for state, tribal, community involvement and other activities.



Funding Superfund work



EPA's cleanup enforcement program protects human health and the environment by getting those responsible for a hazardous waste site to

either clean it up or reimburse EPA for its cleanup. In FY 2017, EPA obtained about **\$1.2 billion** in commitments from PRPs to clean up Superfund sites. EPA billed PRPs approximately **\$99 million** in oversight costs associated with cleanup work at sites in FY 2017. PRPs also committed to reimburse approximately **\$143 million** of EPA's past costs from cleanup work at Superfund sites.

EPA obligated approximately **\$442 million** in appropriated funds, state cost-share contributions and PRP settlement resources for construction and post-construction projects.

In FY 2017, EPA disbursed or obligated more than **\$357 million**, including reclassifications, from Superfund special accounts for site-specific work.

As of the end of FY 2017, more than **\$4.0 billion** has been disbursed or obligated for Superfund cleanups from special accounts.

Conducting construction work



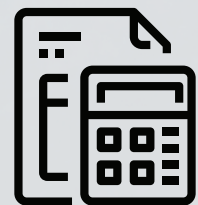
EPA and other project leads started **75** new remedial construction projects, including **22** government-led projects, **30** PRP-led projects (25 NPL sites and five SAA sites) and **23** federal facility-led projects.

EPA and other project leads conducted construction or provided oversight at **472** remedial construction projects started in prior fiscal years, including **133** government-led projects, **193** PRP-led projects (184 NPL sites and nine SAA sites) and **146** federal facility-lead projects.

EPA was unable to fund new construction work at **18** NPL sites that would have otherwise been ready for construction in FY 2017. Unfunded Superfund construction projects result when a PRP is not found or cannot pay, and no other funding sources are available.

Superfund Special Accounts

Special account funds may be used to partially reimburse parties performing CERCLA response work at a site, pay for EPA's future cleanup-related costs at a site, or pay for EPA's past cleanup-related costs at a site (i.e., reclassification).



The Agency's goal in establishing and using special accounts is to ensure PRPs pay for cleanup at Superfund sites. This conserves annually appropriated resources from the Superfund Trust Fund for sites where there are no liable or viable PRPs.

Completing remedial construction projects



EPA and other project leads completed **97** remedial construction projects. This total includes **30** government-led projects, **38** PRP-led projects (33 NPL sites and five SAA sites) and **29** federal facility sites.

“Superfund continues to improve the health, living conditions and economic opportunity of thousands of people living near Superfund sites.”

Completing construction work



“Construction completion” is a site-wide measure that documents the completion of all physical construction of cleanup actions, including actions to address all immediate threats and to bring all long-term threats under control. In FY 2017, all physical construction of the cleanup remedy was completed at seven NPL sites and three SAA sites. EPA and other project leads have now completed construction of all remedies at **1,195** NPL sites and **13** SAA sites.

Getting sites ready for redevelopment



In FY 2017, Superfund identified **43** additional sites as having all long-term protections, including institutional controls, in place to meet Superfund’s Sitewide Ready for Anticipated Use measure, bringing the cumulative total to **836**.

ACTING EPA ADMINISTRATOR ANDREW WHEELER

Ensuring long-term protection



EPA conducted **257** five-year reviews, including **33** at federal facility sites, to ensure site remedies remain protective.

Optimizing Superfund work to increase efficiency



Through Superfund’s optimization program, teams of independent technical experts identify opportunities to improve the effectiveness and cost efficiency of Superfund remedies. In FY 2017, Superfund completed **25** optimization projects and had a total of **68** underway.

ANNUAL HIGHLIGHTS

Prioritizing the Superfund Program and Establishing the Superfund Task Force

In May 2017, EPA Administrator Scott Pruitt issued a memorandum establishing the Superfund Task Force to provide national recommendations for prioritizing and reinvigorating the program. The Task Force's July 2017 report outlined 42 recommendations under five overarching goals: Expediting Cleanup and Remediation, Reinvigorating Responsible Party Cleanup and Reuse, Encouraging Private Investment, Promoting Redevelopment and Community Revitalization, and Engaging Partners and Stakeholders.

Learn more about the Task Force and its progress to date on the Superfund Task Force website (www.epa.gov/superfund/superfund-task-force).



EPA Responds to Extreme Weather Events

The 2017 hurricane season included three of the most destructive storms in U.S. history – Harvey, Irma and Maria. **Hurricane Harvey** struck the Texas coast as a Category 4 hurricane. More than 50 inches of rain fell on parts of Southeast Texas and the storm caused \$125 billion in damage. **Hurricane Irma** made landfall on the Florida Keys on September 10 with 130 mile-per-hour winds. **Hurricane Maria** hit Puerto Rico and the U.S. Virgin Islands on September 20 as a Category 5 hurricane. The storm resulted in more than 500 fatalities and \$92 billion in damage. Superfund collaborated with other EPA program offices as well as federal, state and local disaster response agencies to deploy response teams and hundreds of personnel to help residents recover.

In addition to damage from hurricanes, Superfund remedies can be vulnerable to other weather events such as flooding, tornadoes and wildland fires. EPA's Superfund program has developed an approach that raises awareness of these vulnerabilities and implements a robust plan for building resilience into its remedies. When severe weather is predicted, EPA teams deploy to potentially vulnerable Superfund sites nearby to assess potential effects and take actions to secure vulnerable areas. After the weather events pass, the teams again deploy to assess and address any damages to the integrity of the remedies. Preliminary analysis in 2017 found that Superfund remedies generally are resilient to the effects of extreme weather events and have experienced only minor to no damage to date. To learn more, visit: <https://www.epa.gov/superfund/superfund-climate-change-adaptation>.



Redevelopment of Superfund Sites Leads to Billions in Sales and Income

Superfund cleanups provide significant economic benefits to communities. EPA's data for FY 2017 shows that at 487 Superfund sites in reuse, 6,622 businesses generated \$43.6 billion in sales and employed 156,352 people who earned a combined income of \$11.2 billion.

The annual sales total of \$43.6 billion in FY 2017 at these sites is **more than four times** the \$10.2 billion, adjusted for inflation, that EPA has spent cumulatively at these sites. Over the last seven years (2011-2017) these businesses' ongoing operations generated at least \$206 billion (inflation adjusted) in sales, which is **more than 20 times** the \$10.2 billion that EPA spent.



\$206.1 BILLION

Total employment income earned at Superfund sites in reuse since 2011.

The Superfund Program *in Action*

PJP Landfill

(Jersey City, New Jersey)

*From contaminated landfill to economic hub
and ecological asset.*



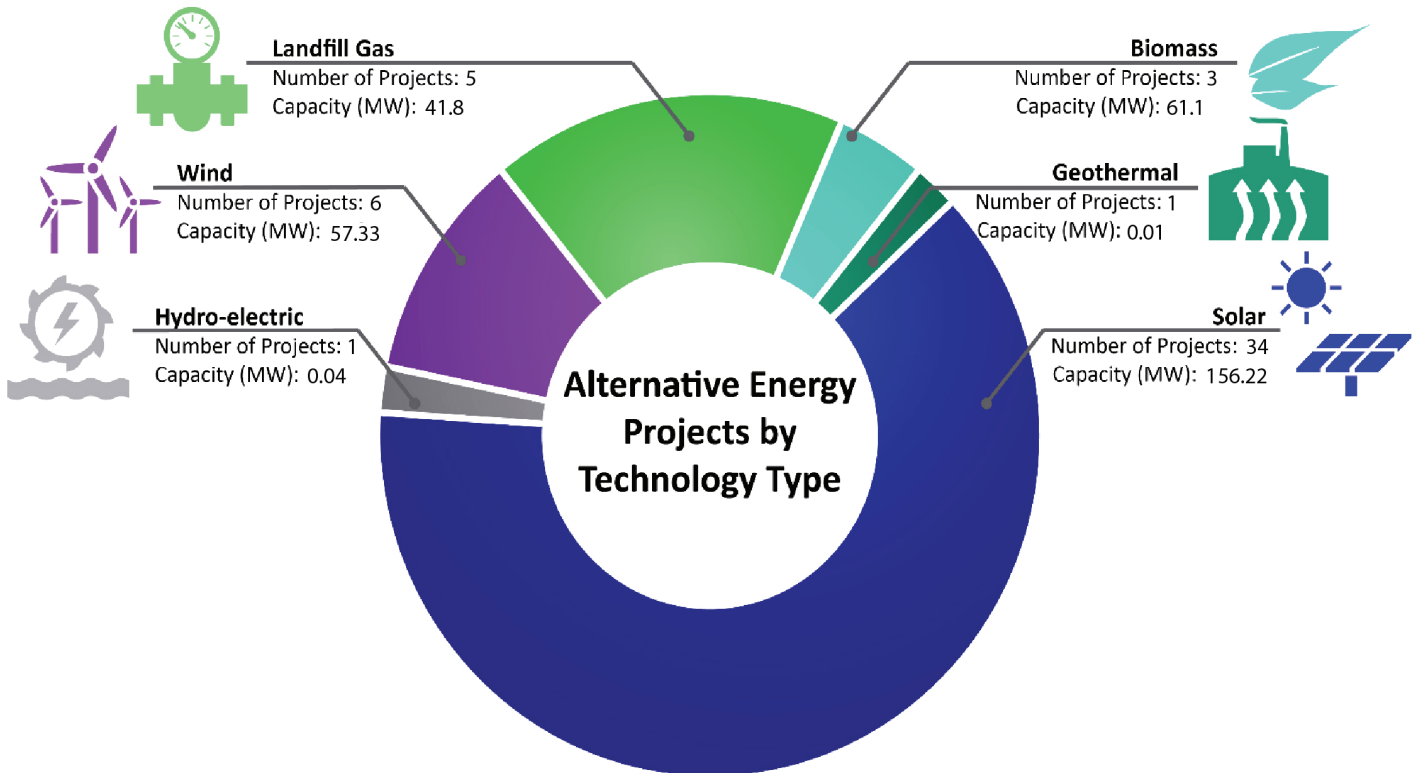
- Businesses at the site include a paper product manufacturing company, a distribution facility for an online grocery supplier, a trucking company and a gas station.
- The area also includes over 32 acres of restored green space along the Hackensack River that support wildlife.
- Site businesses employ about 1,225 people and provide estimated annual employment income of nearly \$51 million.



Superfund Sites Redeveloped for Alternative Energy Generation

Many active and former Superfund sites are now home to alternative energy facilities. As of September 2017, alternative energy facilities located at 50 Superfund sites provided an installed capacity of more than 316 megawatts.

Wind, solar and landfill gas facilities make up about 90 percent of the projects, and 62 percent of these efforts have an installed capacity of 1 megawatt or more. About 32 percent of these projects offset on-site energy demands of cleanup efforts or directly power site-related cleanup activities.



The Superfund Program in Action

Iron Horse Park (Billerica, Massachusetts)

This industrial complex is a leading example of contaminated-site revitalization and transformation. Three solar projects with a total capacity of 16 megawatts provide power to four school systems and the local government. Nine commercial and industrial businesses are currently active at the site. In 2017, site businesses generated over \$57.1 million in annual sales and employed over 350 people, providing annual employment income of \$21.3 million to the local community.

EPA Adds Subsurface Intrusion Pathway to NPL Scoring System

On January 9, 2017, the Federal Register published EPA's rulemaking that added a scoring mechanism to the Hazard Ranking System (HRS) to evaluate sites with subsurface intrusion contamination for placement on the NPL. The HRS is the principal mechanism EPA uses to place environmental releases on the NPL.

The most common form of subsurface intrusion is vapor intrusion, which occurs when vapor-forming chemicals migrate from the subsurface into an overlying building. In extreme cases, the vapors may accumulate in dwellings or occupied buildings to levels that may pose near-term safety hazards from explosion or acute health effects. In buildings with lower concentrations of vapor-forming chemicals arising from vapor intrusion, the main concern is whether the chemicals may pose an unacceptable risk of health effects due to long-term exposure.

EPA and HUD Sign MOU to Improve Communication

In January, EPA and the U.S. Department of Housing and Urban Development signed a [Memorandum of Understanding \(MOU\)](#) regarding "Improving Communication About Certain Public and HUD-Assisted Multifamily Housing Near Superfund Sites." EPA and HUD entered into this MOU to facilitate communication, information exchange and EPA access to HUD properties when further investigation is appropriate. EPA accomplishments during FY 2017 include:

- Identifying hundreds of Superfund sites where public housing, or subsidized multifamily properties, were within the site footprint or nearby. These sites were reviewed to ensure there were no immediate risks to the residents.
- Adding public housing and subsidized properties to EJSCREEN, EPA's environmental justice mapping and screening tool, to enable quick and reliable identification of potentially impacted residents.
- Providing training and communications materials to Superfund remedial project managers and community involvement coordinators to facilitate communications between the agencies.



U.S. Smelter and Lead Refinery (East Chicago, Indiana)

In 2017, EPA continued to clean up residential areas of the U.S. Smelter and Lead Refinery, Inc. Superfund site in East Chicago, Indiana. This construction season, soil and interior dust cleanup work was conducted at residential properties. As of November 30, 2017, EPA completed soil cleanups at 229 properties and interior dust cleanings at 62 properties. This brings the total over the last two years of work to 284 soil cleanups and 88 interior dust cleanings.

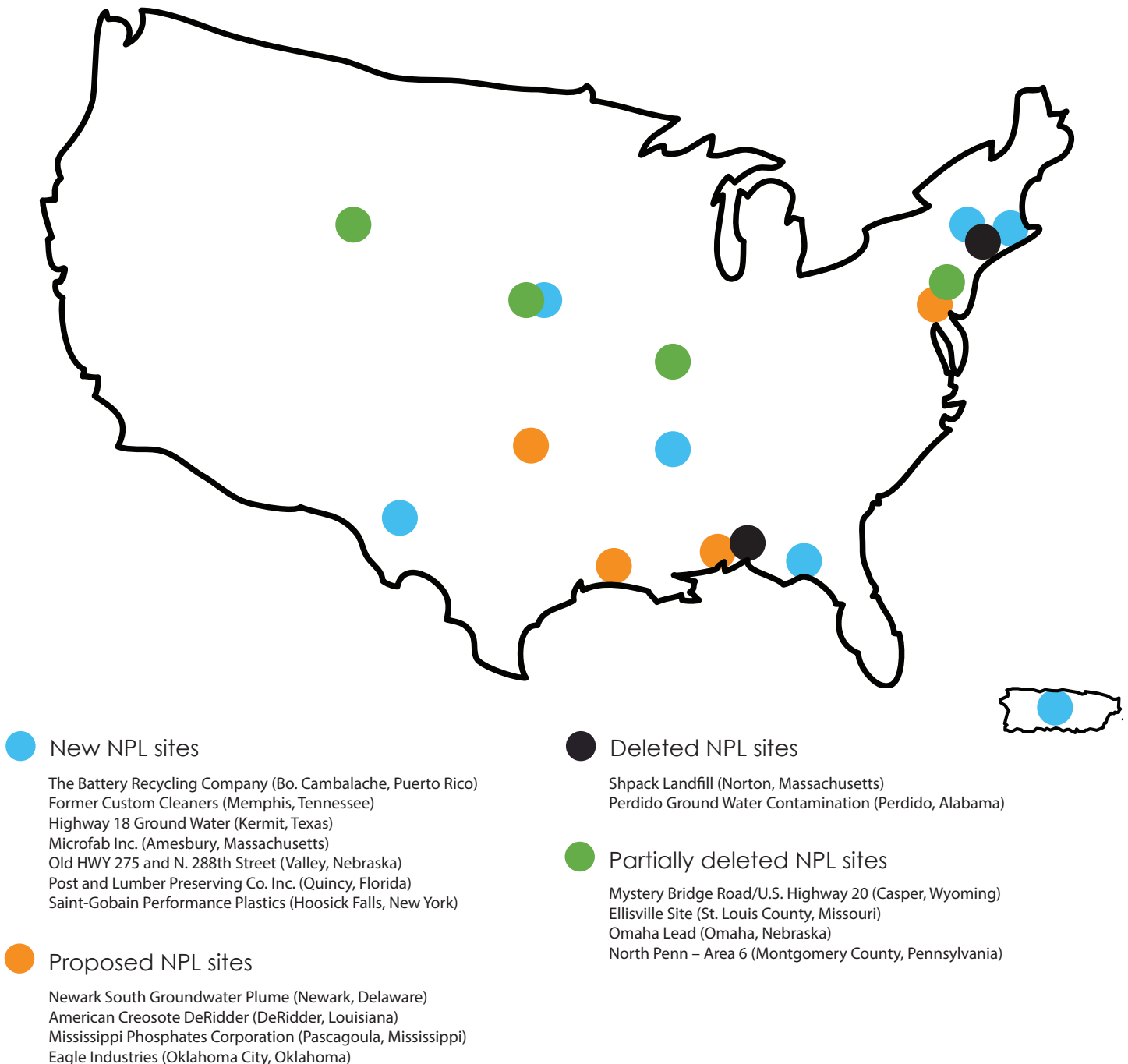
EPA's community involvement team made more than 1,200 contacts with residents and provided Superfund for Communities training for residents in the affected area. In addition, EPA began a feasibility study for the West Calumet Housing Complex property to support a potential remedy change due to the pending demolition of the housing complex.

EPA Adds and Proposes New NPL Sites

On August 3, 2017, EPA added seven sites and proposed addition of four sites to the NPL. EPA adds sites to the NPL when contamination threatens public health and the environment. The NPL guides EPA in determining which sites warrant further investigation and/or cleanup. Sites posing an unacceptable level of risk to human health or the environment are remediated.

EPA Completes Deletion Activities at Six NPL Sites

EPA may delete a final NPL site if it determines that no further response is required to protect human health or the environment. In FY 2017, EPA deleted two sites from the NPL, bringing the total of deleted sites to 394. In addition, EPA partially deleted four sites in FY 2017. There have now been 86 partial deletions at 65 NPL sites.



SITE HIGHLIGHTS

The Superfund Program *in Action*: Cleanup and Reuse Successes Across the Country



Portland Harbor (Portland, Oregon)

On January 6, EPA released its cleanup plan for 10 miles of the Lower Willamette River within the Portland Harbor Superfund site, which runs through the economic heart of Portland. EPA's plan addresses contaminated sediments through dredging, capping, enhanced natural recovery and monitored natural recovery, including removal of over 3 million cubic yards of contaminated sediments. The plan also addresses contaminated groundwater that could re-contaminate the river and river banks. About 1,774 acres of the site with lower contaminant levels are expected to recover naturally over time. Active cleanup work at the site is now expected to take as much as 13 years and cost about \$1 billion.



San Jacinto River Waste Pits (Channelview, Texas)

In the wake of Hurricane Harvey, EPA divers conducted a damage assessment of the armored cap materials at the San Jacinto River Waste Pits site. On October 11, EPA approved the cleanup plan to address highly toxic dioxin contamination at the site. The selected remedy will protect human health and the environment by removing highly contaminated material from the site and securing less contaminated areas. EPA's cleanup plan includes installing engineering controls such as cofferdams before excavating almost 212,000 cubic yards of dioxin-contaminated material for disposal.



The Superfund Program *in Action* Chisman Creek (York County, Pennsylvania)

The Chisman Creek site is home to two popular athletic parks used by several sports leagues. These high-quality recreation facilities have been a tremendous asset to the citizens of York County. Since the parks opened, they have hosted thousands of games and visitors.



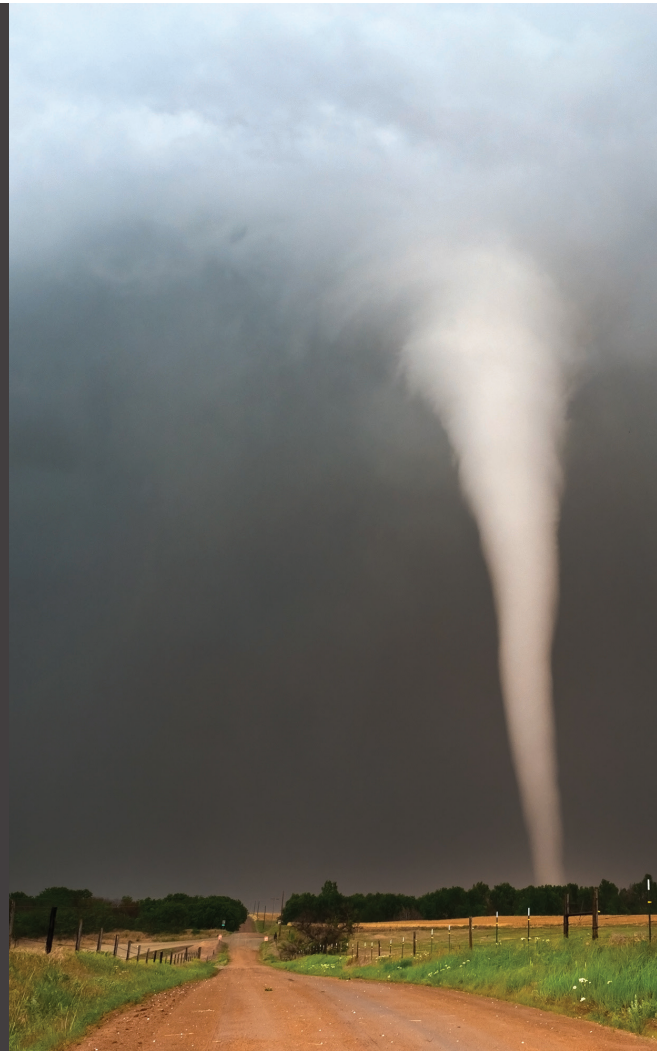
The Superfund Program *in Action*

Kinta/Elk City Oil Spill (Kinta, Oklahoma)

During spring 2017, parts of Oklahoma suffered heavy rains. On April 30, the Oklahoma Department of Environmental Quality (ODEQ) requested EPA assistance responding to reports of oil contamination impacting residential properties in Kinta. That day, EPA assessed the extent of oil contamination while working with Haskell County officials. EPA investigated and identified multiple sources of oil spills. Due to the lack of a clear responsible party, EPA initiated cleanup activities, removing oil-impacted soils and vegetation, recovering oil containers, and removing oil from the concrete drainage canal and unnamed tributary creek.



On May 18, ODEQ requested EPA assistance again after a tornado struck Elk City. Two 300-gallon storage tanks were thrown 200 yards near an unnamed creek that flowed into Elk Creek and the Washita River. EPA identified a responsible party that assisted with cleanup efforts. On May 19, EPA completed cleanup of a drainage ditch and contained the source oil, preventing further contaminants from reaching Elk Creek. The team then restored the area back to pre-spill conditions.



The Superfund Program *in Action*

Kennecott South Zone (Salt Lake County, Utah)

The Kennecott South Zone serves as a national model for the use of the Superfund Alternative Agreement, which is an alternative to listing a site on the NPL that can save time and resources. EPA approved the cleanup plan, setting the stage for the site's cleanup and redevelopment. Open communication, extensive collaboration and innovative thinking helped contribute to the transformation of this industrial site into a thriving residential area and regional economic hub.



Operable unit 7 (OU7) and surrounding areas support Daybreak, the largest master-planned community in Utah. Businesses located in OU7 employ about 914 people, providing nearly \$38 million in annual employment income and generating an estimated \$143.2 million in annual sales.



Other Program Accomplishments

Report Provides Trends in Remedy Decisions

EPA published the 15th edition of the [Superfund Remedy Report](#) to provide information on remedies EPA selected to address contamination at Superfund NPL and SAA sites. The report informs stakeholders in Superfund communities about the program's remedy decisions, and helps federal, state and tribal remediation professionals select remedies. Analyzing the trends in remedy decisions also provides an indication of the future demand for remedial technologies.

Superfund Releases Best Practices Document to Inform Work at Abandoned Mines

In July, the Superfund program issued the [Planning for Response Actions at Abandoned Mines with Underground Workings: Best Practices for Preventing Sudden, Uncontrolled Fluid Mining Waste Releases Reference Document](#). To minimize the potential for sudden uncontrolled releases of fluid mine waste resulting from its response actions, EPA will use these best practices, as applicable, before carrying out Superfund activities at hardrock-mining and mineral-processing sites with fluid-release hazards.

Superfund Provides Job Training for Cleanup Work

The [Superfund Job Training Initiative \(SuperJTI\)](#) is a job-readiness program that provides training and employment opportunities for people in communities affected by Superfund sites. EPA's goal is to help these communities develop job opportunities that remain long after cleanup. In 2017, EPA conducted three SuperJTI projects at sites in Hillsboro, Illinois, East Chicago, Indiana, and Klamath Falls, Oregon. Thirty-eight trainees completed the program and are ready to go to work.

Superfund Documents Recent Optimization Reviews

EPA released the [Superfund Optimization Progress Report 2011-2015](#). The report describes EPA's

optimization efforts to make cleanups more efficient and effective. Optimization is a systematic site review by a team of independent technical experts. It identifies ways to ensure remedy protectiveness and cost efficiency, and to facilitate progress toward cleanup completion.

Superfund Redesigns Site Profile Pages

Every NPL and SAA site has its own site profile page on the web. In 2017, Superfund staff from across the nation worked together to redesign the site profile page template. The team put the needs of Superfund communities first to develop an easy-to-navigate design that aligned with EPA's overall web look-and-feel. To view the redesigned site profile pages, search for NPL and SAA sites on the [Sites Where You Live](#) page.

Superfund Issues Sediment Sites Directive

In January, EPA released a [contaminated sediment sites directive](#) containing 11 recommendations based on current best practices for characterizing sediment sites, evaluating remedial alternatives, and selecting and implementing appropriate response actions. It also included updated operating procedures for the Contaminated Sediment Technical Advisory Group.

Indiana, North Carolina and Virginia Win Redevelopment Awards

EPA developed the State Excellence in Supporting Reuse award in 2014 to recognize state partners whose work has led to lasting benefits that enhance community quality-of-life and ensure the long-term protectiveness of site remedies. The 2017 awardees are the Indiana Department of Environmental Management, the North Carolina Department of Environmental Quality and the Virginia Department of Environmental Quality.



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