A Cache of Cleanup Tools: Using a Spectrum of EPA Cleanup Programs to Address a Wide Range of Properties

Cross-Program Theme

EPA's Brownfields Program has helped to bring about a cultural shift in the way abandoned and idle urban properties are perceived, from risky liabilities to dormant assets with enormous potential. Equally important are the Program's statistical successes: EPA grants have assessed thousands of properties and enabled the cleanup of hundreds. These grants have also been critical in leveraging billions of dollars to complete projects, and providing local jobs.

The Program's success in using grants and other financial incentives, technical assistance, liability clarifications, and other resources to promote land reuse has influenced other cleanup programs within EPA's purview—including Superfund, Resource Conservation and Recovery Act (RCRA), Federal Facilities, Innovations, Underground Storage Tanks (UST), and unique, innovative programs that address specific areas. EPA's cleanup programs have shifted their focus toward a land revitalization approach, where a property's intended reuse is an essential part of the process, to ensure that the reuse will provide the maximum benefit to the environment, the economy, and to surrounding residents. In some instances, particularly in urban areas, multiple sites that are in close proximity or even adjacent can use assistance and oversight from multiple EPA cleanup programs. Ideally, these programs can complement each other's efforts and contribute to an area-wide revitalization that positively changes economic and environmental outlooks on a grand scale.

Oklahoma City, Oklahoma

Located centrally in the state, Oklahoma City, Oklahoma has made excellent use of multiple EPA cleanup programs to complement its own, area-wide revitalization effort. Known as the Metropolitan Area Projects (MAPS) initiative, this effort has completely transformed downtown Oklahoma City's economic and cultural outlook. New hotels, office buildings, museums, residential complexes, and public transportation options have emerged, in addition to the large-scale cultural and entertainment facilities envisioned through MAPS. As part of its revitalization, the city never hesitated to make use of the spectrum of resources available through EPA Programs including Superfund, Brownfields, RCRA, Federal Facilities, and Innovations grants. Today, with the MAPS initiative officially complete, Oklahoma City is a new and vibrant version of what it was just a decade ago.

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JUST THE FACTS:

- Brownfields Cleanup, Assessment, and RLF grants awarded to Oklahoma City, OK have helped to leverage more than $2.3 million in cleanup and more than $49 million in redevelopment funds from the public and private sectors.
- Bellingham, WA has been one of only three cities to receive assistance under EPA's Portfields Initiative, which will ultimately help to transform a targeted waterfront area into a mixed-use development that includes parks, housing, and commercial space—all while remaining protective of natural habitat.
- A Superfund Redevelopment Initiative grant to the City of Houston, TX helped to conduct assessments and public outreach associated with a 36-acre industrial site that has been abandoned since 1992. The property is now being cleaned up to residential standards, at a cost of $6.6 million.

The Brownfields Program's use of grants, technical assistance, liability clarifications, and other resources to promote land reuse has influenced other EPA cleanup programs including Superfund, Federal Facilities, Innovations, and Underground Storage Tanks (UST). EPA wants its programs to complement each other's efforts and contribute to revitalization projects that promote positive economic and environmental changes on a grand scale.

EPA support for Oklahoma City arrived in the 1990s though the Superfund Program, which helped address four high-priority contaminated sites including two landfills and two former refineries. The city held multiple public meetings and charrettes to keep the public informed and gather feedback on suggested reuses. With funding and support from EPA and the Oklahoma Department of Environmental Quality (DEQ), both of the former refineries were cleaned to commercial and industrial standards. While monitoring is ongoing, one of the properties is being used for industrial storage and the second is slated to become a large-scale commercial and industrial complex. Cleanup of the two former landfills is still in progress.

Oklahoma City's historic Skirvin Hotel, during renovations.

Oklahoma City Brownfields Coordinator Jimmie Hammontree describes Superfund Program assistance as a "stepping stone" to the Brownfields grants received by the city, the first of which was an Assessment grant awarded in 1998. "The early [EPA] Brownfields grants were managed by the [Oklahoma City] Public Works Department… which made sense, as the city was recovering from a big economic downturn and we were undertaking MAPS," explained Hammontree. "Back then, the focus was on public, catalyst-type redevelopment projects. Because those early [Brownfields] projects led to a huge amount of leveraged, private investment, the newer Brownfields grants have been awarded to the city's Planning Department. The amount of private investment in the urban core is going to continue to increase."

Within the realm of Brownfields, Oklahoma City has been the recipient of two, $200,000 Assessment grants; a $200,000 Petroleum Cleanup grant; and a $2 million Revolving Loan Fund (RLF) grant, awarded in 2005. The first of the two Assessment grants alone helped to map areas of contamination and allow cleanup on two targeted properties, while revealing that four additional brownfields did not require cleanup at all. The grant's findings helped to leverage more than $2.3 million in cleanup and more than $49 million in redevelopment funds from the public and private sectors, creating new transportation facilities, commercial redevelopment, and a Native American Cultural Center for residents and visitors to Oklahoma City. The BCRLF award has also played a significant role in the city's overall revitalization plan; among other projects, it funded the cleanup and removal of asbestos, mold, and lead paint from the historic Skirvin Hotel, which had been dormant for decades. The hotel's subsequent renovation retained the original building's exterior and featured an elegant lobby, restaurants, and state-of-the-art meeting rooms. Now open to guests, the hotel is within walking distance of the newly renovated Cox Convention Center and the newly built Ford Center (a sports and entertainment complex), all fitting perfectly into the city's MAPS initiative.

Hammontree credits EPA Brownfields grants with complementing the city's area-wide revitalization goals. "Those earlier Brownfields grants assisted with some important projects, and coincided with MAPS," he explained. "The original [1998 Assessment grant] dovetailed into the MAPS project itself. Brownfields redevelopment has provided the city with a new, downtown police substation and new transit stations for buses and trolleys. Brownfields funding also helped us develop our East Side Reinvestment Area Report, as well as helping to hire consultants and developing our partnership with the University of Oklahoma."

The EPA resources used by Oklahoma City are not limited to Superfund and Brownfields grants, effective as their use of that funding has been. The Agency's Federal Facilities Program is helping to ensure safe cleanup of Tinker Air Force Base, a 5,000-acre site located on the city's southeast edge. RCRA corrective action helped to identify safe and permanent cleanup solutions on two of Oklahoma City's major industrial properties—a former tire manufacturing and distribution facility and a former automotive manufacturing site. Cleanup has been completed on both of those properties.

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Oklahoma City has also been home to one of EPA's lesser-known programs: the Innovations Pilot Initiative, established in 2001. This Initiative provides funding for projects that test approaches to waste minimization, energy recovery, recycling, and land revitalization in ways that can be replicated across various sectors, industries, communities, and regions. In 2002, under this Initiative, EPA awarded the University of Oklahoma $65,000 to develop a curriculum on the use of innovative technologies to identify, assess, and remediate multiple brownfields at the same time rather than on a case-by-case approach. The University partnered with Oklahoma City, the Oklahoma Department of Environmental Quality, the Oklahoma Department of Commerce, the Oklahoma Corporate Commission, and the Chamber of Commerce for Greater Oklahoma City. Ultimately, this partnership devised methods for integrating the regulatory responsibilities of the state's Voluntary Cleanup, RCRA, and Storage Tank programs with federal Superfund, air and water programs to address contaminated properties within Oklahoma City.

Bellingham, Washington

Located approximately 80 miles north of Seattle, and overlooking Bellingham Bay, the City of Bellingham, Washington is home to more than 70,000 residents. The city's waterfront includes a major port, and historical and current industrial operations such as lumber, pulp and paper mills, shipyards, commercial fishing, and seafood processing. Like Oklahoma City, Bellingham's earliest involvement with EPA came through the Superfund Program. Sitting on prime waterfront property, Bellingham's Boulevard Park was viewed as suspect because of its industrial history; the park and surrounding area had long ago been used for cannery and lumber mill operations. The property was assessed under Superfund in 1984 and again in 1999. Those assessments led to a State-funded cleanup that eliminated further Superfund interest in the site. Today, Boulevard Park is one of the city's most popular recreational spots, offering grassy open space and a view across Bellingham Bay.

The City of Bellingham, Washington, from the Bay.

The Bay itself is cleaner and safer because of Superfund's involvement in another Bellingham property, an industrial site used to treat and store wooden poles used by utility companies. Treatment of these poles involved creosote—which contains semi-volatile organic compounds—as well as oil containing pentachlorophenol. These contaminants were found to be migrating from the property into Little Squalicum Creek, just downhill from the 23-acre site; the creek, in turn, flows directly into Bellingham Bay. A Superfund-led cleanup in 1998 removed more than 8,000 tons of contaminated soil and 27,000 gallons of liquid waste from the site, and capped selected areas. The company still operating on the property has contributed to an ongoing cleanup and monitoring effort. While still listed on the Superfund Program's National Priorities List (NPL), monitoring results indicate that contaminant migration has been controlled, protecting wildlife and water quality in both the creek and Bellingham Bay.

To help address the city's less contaminated, idle and underused properties, Bellingham received an EPA Brownfields Assessment grant in 1999—as well as a supplemental grant in 2001 and a second Assessment grant in 2003. This funding helped to assess a 13-acre, former landfill site in the city's Old Town district. City officials had identified the property's cleanup and reuse as a key, early step in the revitalization of Old Town itself; the property is one of several targeted by the city's Bellingham Bay Comprehensive Strategy. EPA-funded assessments of the landfill site led to a more than $1 million cleanup effort, funded by the state Department of Ecology and the City of Bellingham. More than 12,000 tons of solid waste were removed, and protective caps were installed on selected areas. Native plants were re-introduced to the property, the banks of Whatcom Creek (which bisects the site) were stabilized to prevent erosion and protect natural

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habitat, and a new boardwalk was built to improve public access to the adjacent shoreline. Now complete, cleanup of this site has restored Maritime Heritage Park (located on the southern end of the property), provided new and safe fish habitat, and served as a catalyst for Old Town's continued revitalization. A property just adjacent to this former brownfield is now targeted to become a mixed-use, residential and commercial center that will further enhance the area's appeal.

Bellingham was also home to an innovative environmental technology study conducted by the National Risk Management Research Laboratory (NRMRL), which falls under EPA's Office of Research and Development. NRMRL acts as EPA's center for investigation of technological and management approaches for preventing and reducing pollution risks, using public- and private-sector collaboration to develop technologies that reduce compliance costs while anticipating potential environmental problems. In this study, NRMRL partnered with the Washington State Department of Ecology—and with a number of private-sector scientific and environmental firms—to test the feasibility of using electric currents to remove heavy metal contaminants from water.

The body of water in this case was a former paper mill log storage and handling pond that had also received wastewater from the adjacent facility. Earlier environmental studies of the pond revealed elevated levels of polycyclic aromatic hydrocarbons (PAH), phenolic compounds, and heavy metals, particularly mercury. Between August 2002 and March 2003, the study involved placing parallel rows of steel and graphite plates into pond sediments, and passing electric currents through them in an attempt to mineralize contamination through a process called electrochemical geooxidation—or ECGO, for short. Though the study was hampered by technical problems, initial results suggest that this new technology has promise for treating similarly contaminated bodies of water.

Finally, Bellingham has been one of only three cities to receive a designation for assistance under one of EPA's special land revitalization initiatives: Portfields. An extension of the Brownfields Program, Portfields represents a partnership agreement among federal agencies including EPA, the National Oceanic and Atmospheric Administration (NOAA), the U.S. Army Corps of Engineers, the Economic Development Administration, the Department of Housing and Economic Development, the Department of Interior, and the Maritime Administration. Together, these partners collaborate with local communities to address brownfields associated with port facilities—with the goal of promoting economic development while protecting human health and the environment. In 2003, the Initiative selected three ports as pilot projects, based on area needs, existing community revitalization approaches, and likelihood for success. Those pilots were Tampa, Florida; New Bedford, Massachusetts; and Bellingham.

Bellingham's Portfields efforts feature a team of 15 state, tribal, federal, and local stakeholders working together to address and guide the cleanup, restoration, and sustainable reuse of targeted sites within a designated Central Waterfront Redevelopment Area (CWRA). One of those sites is a wastewater treatment lagoon on a dormant industrial site, which the team plans to restore into natural wetlands and fish habitat. Each partner in the Portfields team provides their own specialized expertise and resources. NOAA, for example, used one of its ships to conduct high-resolution multi-beam and sonar surveys of the entire bay—to improve local nautical charts and assist the Port of Bellingham in revitalization planning. Federal and state agencies that make up the team are collaborating to streamline permitting requirements, to help expedite cleanup and shore stabilization activities. Ultimately, the collaborations enabled through Portfields will help to transform Bellingham's CWRA into a mixed-use development that includes parks, multifamily housing, office space, and commercial establishments—all while remaining protective of natural habitat.

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Houston, Texas

Few cities have gotten as much out of their local revitalization programs, and the EPA grants that assisted them, as Houston. The city's most recent inventories indicate 16 active Superfund sites and thousands of known brownfields, including more than 2,700 leaking underground storage tank sites. Houston's Brownfields Redevelopment Program has been responsible for some of the city's most high-profile land transformations, including a new, major-league ballpark; an aquarium and entertainment complex; and more than 1,000 residential units—all built on former brownfields. An E Brownfields Assessment grant awarded in 1997 and two awarded in 200 (one specifically to address petroleum-contaminated properties) have assisted with these and other efforts, including a citywide initiative to improve Houston's recreational parks. The Houston Parks Board, a nonprofit organization committed to creating, improving, and protecting the city's park land, has used EPA Brownfields grant funds to perform assessments on properties targeted for park redevelopment.

Redevelopment in progress on one of Houston's many former brownfields.

In 2003, EPA awarded a $200,000 Brownfields Cleanup grant to a Houston development company, to address contamination concerns on the site of a forme hospital. Cleanup of the property allowed the development of an affordable, loft-style apartment complex to proceed. Fully leased within a month of its opening, the complex features a "green" roof system that uses natural vegetation to provide insulation and reduce heating/cooling costs. To date, Houston's Brownfields Redevelopment Program has brought about the reuse of 550 acres of brownfields and leveraged more than 2,500 new jobs, as well as more than $720 million in private-sector investment.

To build on Houston's already thriving brownfields revitalization efforts, EPA awarded the city a $100,000 USTField Pilot in 2002, through the Agency's Office of Underground Storage Tanks (OUST). EPA created the USTfields Initiative to encourage the reuse of "USTfields"—abandoned or underused properties contaminated with petroleum from underground storage tanks. The Pilot grant was used on a former construction equipment yard, an abandoned property that had four of its original nine USTs remaining; EPA funding allowed for the removal of these tanks. The City of Houston has partnered with the Texas Natural Resource Conservation Commission to fully clean up the property, which will eventually be redeveloped into a recreational facility and soccer field as part of the city's park revitalization effort.

Along with providing assistance for Houston's less contaminated properties, EPA is addressing a number of sites through Superfund. A Superfund Redevelopment Initiative (SRI) grant is helping the city to conduct assessments and public outreach associated with the Many Diversified Interests (MDI) site, a 36-acre, former metal casting foundry that has been abandoned since 1992. The SRI grant was used to inform a citizen's advisory group that recommended mixed residential, recreational, and commercial reuses for the property. In May 2006, a prospective purchaser of the property signed an "Agreed Order on Consent and Covenant Not to Sue," representing the first-ever agreement in the nation by a non-liable party to clean up a Superfund site, and the first such arrangement between EPA and a private developer. Under the agreement, the buyer guaranteed sufficient funds to cover cleanup, and agreed to pay for EPA's oversight costs to make sure cleanup was sufficient. In return, EPA provided protections for both the buyer performing the cleanup and any future buyers of the property. Cleanup will be performed to residential standards, at an estimated cost of $6.6 million.

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