

SUPERFUND FEDERAL FACILITIES PROGRAM

National Federal Facility Excellence in Site Reuse Awards 2024 Award Winners

Reuse Vision Guides Energy Hub, Historic Preservation and Nature Conservation at Former Nuclear Facility

Oak Ridge Reservation | Oak Ridge, Tennessee

This 2,200-acre area once hosted federal uranium enrichment operations as part of the U.S. nuclear weapons program from World War II to 1985. Today, after years of planning, cleanup and development, the former complex has been revitalized. Now known as the East Tennessee Technology Park, the project's innovative three-part vision includes a technology park and clean energy hub, a historic preservation center, and a conservation area.

- The U.S. Department of Energy and diverse parties started work on cleanup and redevelopment in the 1990s.
- The nonprofit Community Reuse Organization of East Tennessee administered grant funding for economic development and coordinated leases, building improvements, and property transfers from the U.S. Department of Energy to area businesses.
- Reuse planning efforts brought together local governments, utilities, economic development agencies, community organizations, and property owners.
- The EPA and the Tennessee Department of Environment and Conservation supported reuse efforts alongside their cleanup oversight responsibilities as part of the site's Federal Facility Agreement with the DOE. The site is one of the nation's largest environmental cleanup projects.

Today, the East Tennessee Technology Park is experiencing a nuclear renaissance – it is the nation's hub for safe, next-generation, carbon-free nuclear energy production. At full



Solar facilities help power businesses and infrastructure at the East Tennessee Technology Park. Source: the Department of Energy

buildout, the technology park will support an estimated 1,400 jobs and \$1.35 billion in economic investment.

The project also recognizes the area's remarkable history. As part of the Manhattan Project National Historic Park, the K-25 History Center opened in 2020 and hosts about 15,000 visitors annually. The center honors and preserves the stories of the workers at the K-25 uranium enrichment complex during World War II and the Cold War.

Stewardship of natural assets is the third part of the reuse vision. The 3,000-acre Black Oak Ridge Conservation Easement borders the technology park. The popular mountain biking and hiking area provides nearly 30 miles of trails.

Dollars and Cents: Economic Impacts of Reuse at the East Tennessee Technology Park at the Oak Ridge Reservation

- Number of Businesses: 6
- Annual Sales: \$27.4 million
- Jobs: 60
- Annual Employment Income: \$6.5 million

Data Source: FFRRO Economic Analysis

Project Innovations in Action

- The site's extensive infrastructure, including access roads and electric, water, sewer and gas utilities, were repaired and transferred to local utility providers.
- Remedy and reuse considerations have been closely linked. On-site borrow areas provided clean soil needed for the cleanup. The use of these areas as sources of clean fill and reuse of clean concrete from demolition reduced cleanup time by 11 months and avoided 62,000 trucking miles, resulting in an 80,000-kilogram reduction in greenhouse gas emissions. The borrow areas, now terraced and contoured, provide prime areas for future construction.
- Community outreach efforts included the development of an Environmental Justice Strategic Plan to ensure regular and meaningful engagement with the community, including exploring career opportunities at the technology park.

"By cleaning up and returning land to the people of Oak Ridge, the city can take this once unusable land and use it for a variety of purposes that will benefit the city of Oak Ridge, East Tennessee and our entire state."

- U.S. Representative Chuck Fleischmann

Public-Private Partnership Accelerates Cleanup and Redevelopment, Leads to Airport Expansion and Global Logistics Complex

Former Norton Air Force Base | San Bernadino, California

This 2,165-acre area was a major overhaul center for jet engines and aircraft repair from 1942 to 1995. Today, it is home to San Bernadino International Airport and a global logistics complex employing nearly 18,000 people. With more than \$2 billion in private investment, the 20-year venture has produced over 15.2 million square feet of new facilities.

Partnerships have been vital to the site's successful cleanup and redevelopment. The U.S. Air Force has led cleanup efforts, with oversight provided by the EPA, the California Department of Toxic Substances Control and the Santa Ana Regional Water Quality Board.

- In total, 99% of the property is cleaned up, with remedial objectives achieved and no further action necessary at 204 sites. Only nine sites remain with administrative controls such as land use restrictions.
- All property was cleaned up to unrestricted use standards whenever possible to allow for maximum flexibility for redevelopment. The cleanup has enabled faster and less complicated redevelopment.
- Early and consistent community involvement during the cleanup included a Restoration Advisory Board and public meetings to share updates and incorporate community input.



Airport operations include air cargo, maintenance repair and overhaul, general and corporate aviation, and air passenger services.
Source: San Bernadino International Airport Authority

The Inland Valley Development Agency led redevelopment efforts for the non-aviation part of the base. The San Bernadino International Airport Authority led redevelopment efforts for airport-related lands.

- A public-private partnership – Alliance California – helped SBD International Airport blossom as an air cargo hub. Companies on-site include Amazon, Kohl's, Mattel, UPS, FedEx, State Brothers and Pep Boys.
- A partnership with The San Manuel Band of Mission Indians resulted in the San Manuel Landing project, a supply and logistics center that will generate an estimated \$6 million annually for the region through impact fees and permits, as well as \$1 million a year in property taxes. It includes a greenway park with extensive landscaping.
- In addition to jobs and tax revenues, community benefits from the site's redevelopment include educational alliances with local schools and universities.
- Site redevelopment has also spurred growth in surrounding areas, with new residential, commercial and industrial projects covering about 14,000 acres and 22,000 parcels.



Solar facilities on-site provide power for electric trucks and other vehicles, reducing fuel consumption. Source: San Bernadino International Airport Authority

Dollars and Cents: Economic Impacts of Reuse at the Former Norton Air Force Base

- Number of Businesses: 53
- Annual Sales: \$1.2 billion
- Jobs: 6,000
- Annual Employment Income: \$317 million

Data Source: FFRRO Economic Analysis

"San Bernadino International Airport is rapidly expanding operations and creating a sustainable, vibrant economic foundation that will benefit our city for decades to come."

- John Valdivia, former San Bernadino Mayor

Federal, Tribal and Community Efforts Result in Comprehensive Cleanup and Renewable Energy Facility that Powers Groundwater Cleanup, Feeds into the Electrical Grid

Tuba City Disposal Site | Tuba City, Arizona

This high desert area, leased from the Navajo Nation and located close to the Hopi Reservation, hosted a uranium mill from 1956 to 1966. Its operations ultimately led to the contamination of about 283 acres of the Arizona desert. The DOE cleaned up the site as part of the Uranium Mill Tailings Remedial Action Project. Soil and facilities cleanup finished in 1990; cleanup of nearby groundwater is ongoing.

Today, thanks to strong partnerships and sustained community engagement efforts, the area hosts a solar photovoltaic system that powers the site's groundwater cleanup using about 50 kilowatts of solar electricity. The additional 285 kilowatts generated by the solar array contributes to the Arizona Public Service electrical grid, which connects to the community and the U.S. electrical grid, diversifying local energy resources.

The DOE, the Navajo Nation and the Hopi Reservation signed cooperative agreements to strengthen the site's cleanup and renewable energy-based reuse through collaboration, understanding and information sharing. These agreements provide support for technical reviews, public and community outreach, site visits, STEM events, public meeting participation and other activities.



The site's solar photovoltaic system at the disposal cell in Tuba City, Arizona. Source: the DOE's Office of Legacy Management

- Representatives from the Navajo Abandoned Mine Lands agency assist with site inspections, keeping the Navajo Nation up to date on site conditions.
- During the COVID-19 public health emergency, Tribal representatives served as on-site monitors, providing key site security and operational information when the Navajo Nation was closed to the public.
- Native Hopi speakers conduct door-to-door outreach in the Moenkopi villages in Tuba City, while much site outreach is conducted by Navajo Nation public affairs staff, many of whom are bilingual in Navajo and English.

- Leaders from the DOE, the Navajo Nation and the Hopi Tribe meet regularly to build and maintain the site's cross-governmental partnerships.
- Recent major repairs to the solar system from a potential lightning strike honored and respected Tribal cultural concerns regarding damage caused by mother nature. The close coordination with the Tribes helped inform community outreach and the repair approach, while respecting cultural sensitivities and traditions associated with the damaged site.
- Other community engagement efforts include email notifications, advertisements in local media, attendance at community fairs and markets, and public meetings at chapter houses, with information shared in English, Navajo and Hopi, depending on the location.

Solar System Features: A Closer Look

- The system benefits from the site's optimal high desert location, with plentiful sun (263 sunny days a year) and abundant exposure.
- To date, the system has generated 5,217.4 megawatts of renewable energy, enough to power 606 homes annually.
- The system has offset about 2.8 million pounds of carbon dioxide from reaching the atmosphere.
- When an enhanced water treatment unit is installed in coming years, the system will continue to power it.
- When repairs are required, Navajo Nation-preferred companies do the work, bolstering the local economy and supporting green jobs.

"This award is a true testament for what can be achieved when there are committed partners, ongoing communication, and having top agency management meeting with Hopi leadership and other partners. The result led [to] creating jobs and protection of human health and the environment."

- Melinda Downing, Department of Energy



Another view of the site's photovoltaic system. Source: the DOE's Office of Legacy Management

The EPA's National Federal Facility Excellence in Site Reuse Awards

These awards recognize the innovative thinking and cooperation among Tribes, federal agencies, states, territories, local partners and developers that have led to noteworthy restoration and reuse of federal facility sites. To learn more about the awards and to explore nominating a site for a future award, please visit www.epa.gov/fedfac.