Brownfields
Success Story

From Brownfields to Green: In Praise of Open Spaces
EPA Region 9

For nearly two decades, the U.S. Environmental Protection Agency (EPA) has worked to change the way the nation perceives and manages contaminated properties. Through its Brownfields Program, EPA has empowered communities across the country to assess, safely clean up and sustainably reuse brownfields to promote economic development. But brownfields redevelopment can do more than just rev up a community's economic engine—it can provide an opportunity to repurpose underutilized properties as valuable open or greenspaces.

Benefits of Open Space

Parks, playgrounds, trails, community gardens, natural habitats and open land can provide aesthetic, recreational and quality-of-life advantages that complement or even surpass economic benefits. With effective planning, brownfields can be converted into open greenspaces that benefit human health and the environment.

EPA recognizes that establishing and restoring open spaces is an important and viable reuse for brownfields. That's why the Agency provides technical assistance and grants to help stakeholders transform brownfields into prized greenspaces. In Region 9, which represents Arizona, California, Hawaii, Nevada, the Pacific Islands and 148 tribal nations, EPA has helped dozens of communities create greenspaces on formerly polluted properties.

Successful projects serve as models for other communities interested in incorporating open spaces into their brownfields redevelopment plans. Once cleaned up, these areas are safe for kids, animals and adults, and they offer benefits such as promoting healthy communities through active recreation, restoring habitats and providing environmental education. Open spaces can also increase neighboring property values.

Here's a look at some successful projects—from habitat restoration to creation of trails and parks—that reveal just how beneficial it can be to redevelop properties for natural open space or recreational purposes.

New open space at Cooley Landing Park in East Palo Alto, California.

"EPA's Brownfields Program exemplifies how the Agency makes a difference in communities. The transformation of brownfields into open space is the creation of positive change with multiple benefits—to our neighborhoods, our health, our quality of life and the ecosystems where we live."

Enrique Manzanilla
Superfund Division Director
EPA Pacific Southwest Region

EPA
United States Environmental Protection Agency

> **The park is truly a jewel along the San Francisco Bay, with almost 360-degree views of nature preserves, marshes and the bay itself.**
>
> *Sharon Jones*
> *Deputy Director*
> *East Palo Alto Community and Economic Development*

Cooley Landing, a former burn dump, closed to the public due to safety concerns.

The Cooley Landing sign welcomes visitors to the park, reseeded with native plants and grasses.

Habitat Restoration and Environmental Education

Cooley Landing Park and Education Center, East Palo Alto, California

East Palo Alto is a disadvantaged community with a poverty rate twice that of the rest of the San Francisco Bay Area and a population consisting of 80% Hispanics and African Americans. The city also has a critical lack of open space, but from the ashes of an 80-year-old burn dump, a 9-acre nature park and education center rose, turning what was once a liability into a much-needed asset. After more than a decade of studies, research and community discussions, the Cooley Landing Park opened to the public in July 2012.

The Packard Foundation, EPA, Regional Water Quality Control Board, CalRecycle and others helped design and fund work to seal off soil contaminated with mercury, arsenic, polychlorinated biphenyls, lead and other toxic chemicals. Workers encapsulated the contamination using an engineered cap with clean imported fill, and the site was reseeded with native plants and grasses. Partners, including the Midpeninsula Regional Open Space District, contributed land and biological expertise to plant native vegetation that would enhance the habitat for the endangered California clapper rail, salt marsh harvest mouse and other wildlife. The new plantings are accompanied by trails, benches and picnic areas with tables and recycling bins.

Ownership of the Cooley Landing property was transferred to the city by Peninsula Open Space Trust, an organization that purchased the property to preserve it as open space. In accepting ownership, the city agreed to maintain the property as open space for educational and passive recreational uses. With the opening of Cooley Landing Park, the city increased its public parkland by 72%, from 0.5 acre per 1,000 people toward the state's goal of 3 acres per 1,000 people.

"Because the site had been a former burn dump and later closed to public access, the community was well aware that it was contaminated," says Sharon Jones, the city's deputy director of community and economic development. "Honest and direct communication with the community helped people understand that the site could be safe, and the benefits were obvious. Cooley Landing is the only park space within the immediate proximity. The site is accessible for automobiles, pedestrians and bicyclists. It is open to the public, dawn to dusk, daily and is free."

In addition, the new Cooley Landing Park supports infill economic development in the nearby Ravenswood Business District, built on a former industrial site. The park beautifies the neighborhood and shows the city's capacity to transform the district for the better, reusing existing brownfields and creating local jobs.

"This project is so important because we'll actually have a place right here in our backyards where our kids can connect to nature," says former East Palo Alto Mayor Carlos Romero. "Ultimately, if we want to save our planet, they need to have that connection."

Snow Creek, Lake Tahoe, California

An old concrete plant near Lake Tahoe is going back to nature as part of a grassroots effort to improve water quality and restore a roughly 3-acre parcel of land with native habitat.

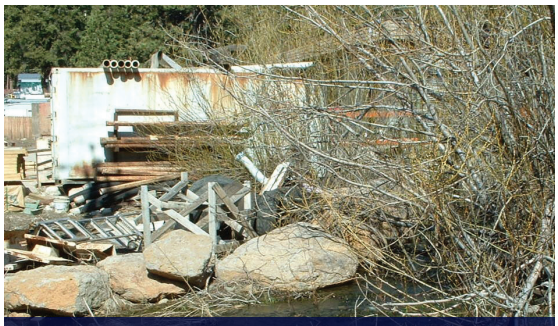
When Squaw Valley landed the 1960 Winter Olympics, the games spurred rapid development on Lake Tahoe's north shore. To support that growth, a concrete plant was constructed approximately a mile north of the lake on a site with pine forests, wetland meadows and an ephemeral stream channel draining to Snow Creek. Over time, the concrete plant's owners dumped large amounts of debris and byproducts on the property, affecting local soils and stormwater runoff into Snow Creek and Lake Tahoe.

By 2004, a communitywide project to improve water quality had implicated the concrete plant as a significant source of pollutants in the lake. Recognizing the site's potential for improving water quality, local aesthetics and public open space, Placer County officials used a grant from the Sierra Nevada Conservancy to purchase the property for restoration. A $600,000 grant from the EPA Brownfields Program, along with funding from California's Cleanup and Abatement Account, helped finance the cleanup of the fill material, and additional grants went toward constructing trails and other recreational elements on the property.

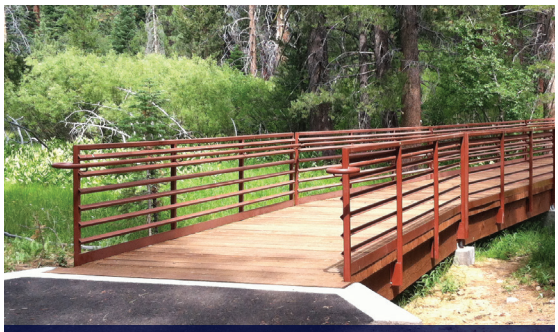
Through a cooperative agreement between EPA and Placer County, the Snow Creek Stream Environment Zone Restoration Project supported new stormwater treatment facilities and other water quality improvements, as well as efforts to increase biodiversity and native landscaping. Approximately 3.1 acres of riparian area were restored and approximately 0.25 acre of wetlands were reestablished to mitigate the disturbance caused by the concrete plant. A 1,800-foot multiuse trail, sidewalks and educational signage invite visitors to the new public open space and link to other nearby trails used for cross-country skiing, hiking and access to Kings Beach.

According to Kansas McGahan, a senior engineer with the Placer County Department of Public Works' Tahoe Engineering Division, the cleanup and the site's design integrate a variety of sustainable practices. Crews recycled the concrete and steel from the plant. Wetland sod and willow trees were salvaged and replanted, and an old railroad car was reused as a bridge.

As part of the community outreach associated with the grant, 83 fifth-graders from a local elementary school visited the project site to learn about wetlands restoration and water quality monitoring. Some of these students helped produce the interpretive signage displays installed along the boardwalk trail. The cleanup and restoration work was completed in 2014.



Debris piles from concrete production at Snow Creek before Placer County officials had it cleared away to restore the native wetlands.



A boardwalk trail above the wetlands that strategically meanders to eliminate impacts on water quality and existing trees.

> **"Community feedback has been overwhelmingly positive. Every time I am out at the project site, I see folks using the open space and trails—kids on bikes, moms pushing strollers, runners, day care groups and dog walkers."**
>
> *Kansas McGahan, P.E.*
> *Senior Engineer*
> *Placer County Department of Public Works*

An abandoned and contaminated railroad right-of-way cuts through the City of Brea.

> **"The Tracks at Brea trail will connect neighborhoods with shopping, places of employment, community centers and many other destinations, with a convenient and healthy means of transportation."**
>
> *Kathie DeRobbio*
> *Economic Development Manager*
> *City of Brea*

Soil remediation of a 1-mile corridor in Brea to convert the area into a linear park featuring bicycle and pedestrian trails.

Trails

The Tracks at Brea Trail, Brea, California

The City of Brea is hard at work on a rails-to-trails project that will transform an abandoned Union Pacific railroad corridor and other city properties into a multiuse trail. The Tracks at Brea will consist of a 4.5-mile, east-west route across the city, featuring a two-way paved bicycle trail and a separate pedestrian path.

Comprising approximately 50 acres of linear open space, the project will create a significant public amenity within an urban corridor previously lacking recreational and open spaces. With connections to downtown, six schools, senior and community centers, a Boys and Girls Club, city parks, shopping and numerous employers, the project will offer alternative means for transport between neighborhoods, as well as opportunities for fitness and recreation. The long-term goal is to connect the Tracks at Brea to pedestrian and bicycle infrastructure in neighboring cities.

Since 2010, EPA has awarded more than $1.5 million toward the project, including Brownfields Assessment and Cleanup Grants and revolving loan funds to address arsenic and hydrocarbon contamination on the former railroad properties. Funds also are supporting community outreach activities such as visioning workshops, a trails task force and a quarterly newsletter to solicit input from residents and businesses. The city also received more than $7.6 million in funds from various federal and state agencies for the project.

"The Tracks at Brea trail will transform a blighted nuisance property into an amenity that encourages walking, biking and outdoor recreation," says Kathie DeRobbio, economic development manager with the City of Brea. "The community's response has been extremely positive and every Tracks-related issue that has been brought to the City Council has received a 5-0 vote in support of the project."

Blue Greenway, San Francisco, California

The San Francisco Parks Alliance and the City of San Francisco are working in partnership with EPA, state and local government agencies, nonprofit groups and residents to spearhead an effort to create a 13-mile corridor of greenspace for recreation, public art installations and nature discovery along the southeastern shore of the city. Dubbed the Blue Greenway, the corridor will connect China Basin in the north to the Candlestick Point State Recreation Area in the south. The corridor weaves through historically underserved and economically disadvantaged neighborhoods and will provide much-needed recreational opportunities and open spaces for residents living along the city's southern waterfront.

The project began in 2003 with the goals of completing San Francisco's Bay Trail and increasing public access to the waterfront. A steering committee led the public outreach and education campaign, consisting of community events, conferences, waterfront tours and public meetings, to engage residents and civic leaders. The process resulted in a vision and roadmap to implementation.

This area was the industrial heart of the city from the 1850s to the 1950s and included heavy industrial uses, sewage treatment plants and power generation facilities. As a result, the project area spans at least 12 brownfields. In 2010, the San Francisco Parks Alliance received a grant from EPA's Brownfields Area-Wide Planning Program

to conduct a community outreach and planning process. That effort identified six brownfield sites that could be cleaned up and reused for open space and parks, helping connect gaps in the Blue Greenway.

In 2012, the city passed a park bond measure that included $16 million for the Port of San Francisco to create part of the bicycle and pedestrian path and make infrastructure improvements along the waterfront. Building on the work of the area-wide planning process, EPA later awarded a $400,000 Brownfields Assessment Grant to the San Francisco Department of the Environment to identify and evaluate brownfield sites in the southeast area along the Blue Greenway corridor. This award supplements EPA contract support and site investigations for a key segment along the corridor in an area known as India Basin.

Using the results of EPA-funded site assessments, the city secured several privately held brownfield parcels in the India Basin area for parks and open space. The city will remediate those parcels and link them with other nearby shoreline parklands. This area is an integral segment of the greenway and will help promote connectivity between the waterfront and the Hunters Point Shipyard. The efforts at India Basin will also support training and create local jobs during the cleanup work and trail and park development.

The San Francisco Recreation and Park Department received a grant from the Coastal Conservancy to develop, in conjunction with the Trust for Public Land, a single conceptual plan for open space between India Basin Shoreline Park and India Basin Open Space, which includes the city's newly acquired parcels.

Earth Day participants along the Blue Greenway discuss recreation ideas during the area-wide planning process.

Parks

Old Fort Lowell, Tucson, Arizona

The commanding officers' quarters at an old U.S. Army supply base in Tucson are being reimagined as a museum that will feature exhibits about military life on the Arizona frontier and tell the story of the site's long history.

Fort Lowell operated as an Army supply base between 1873 and 1891, and was the most important supply center for southern Arizona forts during the Apache campaigns. In 1878, Fort Lowell was designated the regimental headquarters for the 6th Cavalry. The fort is located within a prehistoric Hohokam village known as the Hardy Site, which dates between 650 and 750 AD and 1000 and 1300 AD.

Initially, the fort consisted of 30 adobe buildings, including three officers' quarters, kitchens, privies, offices, a bake house and a guard house. After the post was abandoned in 1891, the property was repurposed as a tuberculosis sanitarium and later housed a steel and tank manufacturing company. In 2006, the city acquired the 5-acre Fort Lowell building complex in a land swap with a developer to preserve the historic structures and Native American artifacts found on the property. The goal was to incorporate the site into the existing Fort Lowell Historic Park across the street.

Through an intergovernmental agreement, the city partnered with Pima County's Cultural Resources and Historic Preservation Division to implement the historic preservation efforts in a master planning process that included opportunities for public participation, interpretation of the existing cultural resources and recreational opportunities for the entire 78-acre park.

Debris and old equipment in front of the officers' quarters at Old Fort Lowell before remediation efforts began.

The officers' quarters after site cleanup.

Archaeological markings around an unearthed metate (millstone) and pestle during soil excavation activities.

> **When completed, the ball park will become a centralized community gathering location that can be utilized for regional and state baseball tournaments, craft fairs, farmers markets and community concerts.**
>
> *Amy Fanning*
> *Comptroller*
> *Nye County*

The grandstands at McGill Ball Park prior to abatement and renovation activities.

Nearly 70 years of manufacturing operations, including cutting, bending, welding and grinding of steel and storage of diesel and gasoline in above and underground tanks, resulted in contamination of approximately 3 acres on the property. Environmental site assessments revealed elevated levels of polynuclear aromatic hydrocarbons, arsenic and lead. During the assessment, crews removed two underground storage tanks and investigated a cesspool, two dry wells and an old septic system. A $200,000 Brownfields Cleanup Grant from EPA, along with funding from the city and county, helped to remediate the site and allow for redevelopment.

"An advisory board made up of local residents played a crucial role in oversight and public approval for this project," says Lisa Cuestas, brownfields coordinator with the City of Tucson's Environmental Services Department. "If your site is historic and/or prehistoric, you need to account for the archaeology monitoring, costs and extended time periods involved with reporting requirements and approvals from the State Historic Preservation Office and Advisory Council on Historic Preservation."

The restoration and preservation efforts in the officers' quarters are underway. Future funding through a bond election will support continued preservation and educational activities, including integrating historic interpretation of the fort's remains with other resources on both sides of Craycroft Boulevard.

McGill Ball Park, White Pine County, Nevada

Before one of the oldest ball parks in Nevada could receive a much-needed facelift, officials in the town of McGill had to address a few environmental safety concerns. The ball park had been constructed by mining company Nevada Consolidated Copper in the early 1900s to provide its employees with a place for recreational activities. Since then, the ball park has had a rich history of hosting state tournaments for town leagues and the local high school. In 1961, the ball park became the property of the White Pine County School District when the company ceased operations. Then, in 1994, the county's board of commissioners was granted the property via quitclaim.

Upgrades over the years to modernize the ball park included installing lights and a roof over the grandstands; however, these early renovations involved use of building materials now proven dangerous to human health and the environment. As a result, the county's plan to rehabilitate and preserve the field and its grandstands, which were constructed in the 1940s, had to begin with an environmental assessment.

White Pine County's board of commissioners exercised its relationship with the Rural Desert Southwest Brownfields Coalition to access approximately $18,000 in EPA brownfields funding for Phase I and Phase II Environmental Site Assessments in 2012. These studies confirmed the presence of asbestos, lead-based paint and polychlorinated biphenyls on the property, due to the types of building materials used at the McGill Ball Park. The county commission later received approximately $26,000 from Nevada's brownfields program to sample, analyze, remove and dispose of eight pole-mounted transformers that were no longer in use. Another grant, totaling approximately $26,000 from the Southern Nevada Public Land Management Act, will also help fund the renovations at the park.

Cleanup activities at the ball park were completed in 2014, with the removal of the transformers and asbestos- and lead-containing materials.

Keys to Success

These examples underscore a number of keys to success in advancing brownfield assessment, remediation and redevelopment projects.

Partnerships. Coordination among local, state and federal government agencies is key. Development of broad partnerships across multiple stakeholder groups, including property owners, EPA grant recipients, regulators, consultants, community groups, nonprofit organizations and other interested parties, helps expedite work toward common goals.

As evidenced at Cooley Landing Park in East Palo Alto, California, partners bring complementary support and skill sets to the table, from funding and cleanup logistics to native habitat restoration and long-term maintenance of the restored land. In general, the more participants involved in the upfront planning, the smoother the project will go.

Community Engagement. Reaching out to the community generates local interest and support for the project, and ultimately helps ensure that the redeveloped property meets community needs and expectations. Community groups and residents can serve as sources of valuable input in visioning and design charettes. Especially in economically disadvantaged areas, community involvement provides an opportunity for all interested residents and stakeholders to have a voice in their community's future.

As demonstrated by the habitat restoration project at Snow Creek in Lake Tahoe, California, involving schools and youth groups is a great way to promote environmental education and inspire young people to play a role in redevelopment activities.

Patience and persistence, too, are critical. "The process takes a while to make sure things are done right the first time," says Amy Fanning, comptroller with Nye County, Nevada. "Keeping the community informed at each milestone—and celebrating even small successes—helps maintain momentum and cooperation from your community partners."

Leveraging Resources. All the grantees reported that leveraging funding from a variety of sources makes these types of projects possible—and affordable. A combination of public and private sector funding can help finance assessment, remediation, purchase and redevelopment activities. These funding sources could include property owners, developers, investors and nonprofit organizations, as well as local, state and federal government programs that offer tax credits, tax abatements, tax increment financing, grants, subsidies, bonds or loans.

Combining federal and state brownfields money with funds generated through bond elections proved successful in the Old Fort Lowell and Blue Greenway projects. Both the Snow Creek and Blue Greenway projects leveraged grants from nonprofits to advance their efforts. Reach out to your state brownfields program or municipal economic development agency for more information on financing brownfield redevelopment.

Potential Benefits of Brownfields Redevelopment as Open Space

Health
- Removal or reduction of exposure to contamination
- Increased access to open space
- Active recreational opportunities

Environmental
- Habitat and ecosystem restoration
- Improved land and water quality
- Reduced heat island effects
- Reduced greenhouse gas emissions
- More sustainable environment

Social
- Improved aesthetics
- Creation of public space
- Provision of trails, art and amenities
- Environmental education opportunities
- Improved neighborhoods
- More vibrant, livable communities
- Enhanced quality of life
- Addressing of environmental justice issues

Economic
- Job creation
- Increased transportation options
- Improved property values
- Spurred economic development

EPA Brownfields Grant funds are not used for redevelopment of sites assessed or cleaned up with Brownfields funds, and projections for future reuse and redevelopment of sites and anticipated benefits are subject to change based on local conditions.

For more information:

Visit the EPA Brownfields website at www.epa.gov/brownfields or contact Region 9 Brownfields Coordinator Noemi Emeric-Ford at (213) 244-1821 or Emeric-Ford.Noemi@epa.gov.

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