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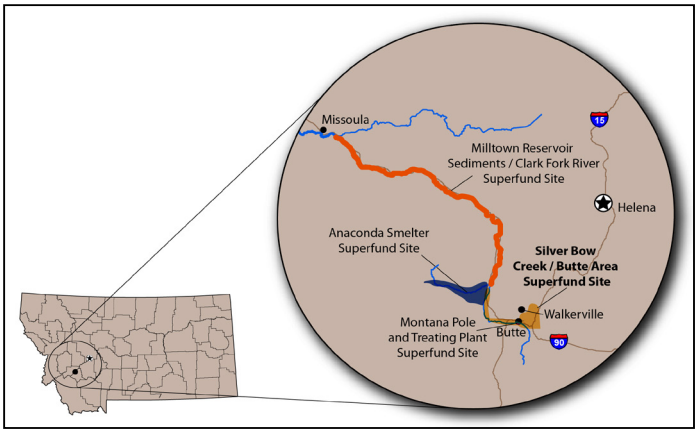
# **Building on Mining History:** Cleanup, Reuse and Community Resilience at the Silver Bow Creek/Butte Area Superfund Site in Butte, Montana

## Introduction

Dubbed the "the richest hill on earth," Butte, Montana, had over 450 mines by the early twentieth century. Underground mining in Butte began in the 1870s. The chance to work in the mines lured workers from across the United States and Europe. Butte's mines were known internationally for the technological innovations used to extract the ore from deep below the earth's surface and the high quality of its workforce. In the early 1900s, Butte's population soared to over 100,000. After 1918, copper production began to decline, triggering a population decrease that continued for decades. While adjusting to tough economic times, Butte residents also grappled with the challenge of living in a historical mining landscape contaminated with mine waste.

In 1983, EPA listed the original Silver Bow Creek site as a Superfund site on EPA's National Priorities List (NPL). This area stretched from the creek's headwaters in Butte to the Warm Springs Ponds near Anaconda, about 26 miles away. EPA soon recognized mine tailings in Butte as sources of the contamination in Silver Bow Creek. EPA then included the Butte area as part of the site and formally changed its name to Silver Bow Creek/Butte Area in 1987. Since the early 1990s, EPA and the Montana Department of Environmental Quality (MDEQ) have worked closely with local officials, Atlantic Richfield, the site's primary potentially responsible party (PRP), and residents of Butte and Walkerville to make sure the Superfund cleanup is effective and consistent with local redevelopment goals.




*The Silver Bow Creek/Butte Area Superfund site is located in western Montana. It is part of a larger regional cleanup effort addressing much of the Clark Fork River watershed. The Silver Bow Creek/Butte Area site includes a large portion of Butte and nearby Walkerville.*

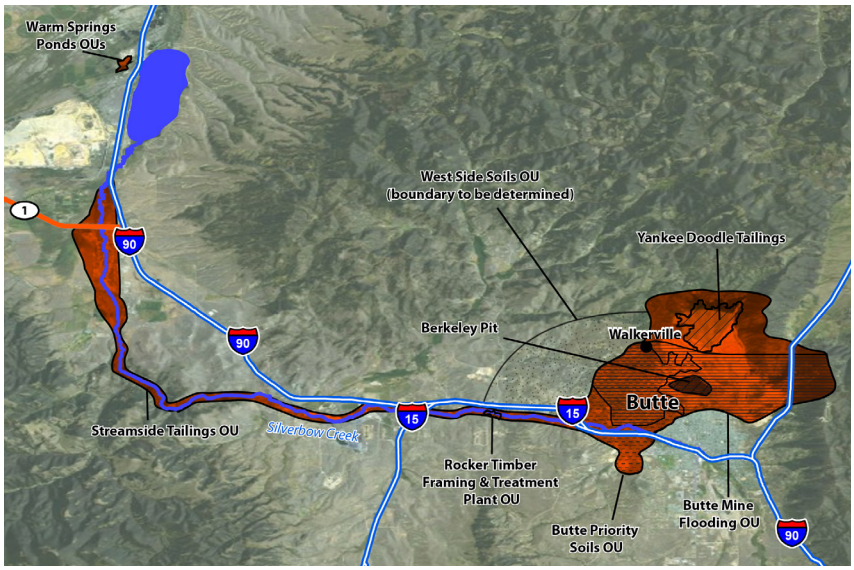
This case study explores key partnerships and collaborative tools that have led to successful remediation and reuse of large parts of Butte and Walkerville. In particular, the case study examines EPA's early commitment to reuse, tools EPA used to support reuse, and how EPA worked with the City and County of Butte-Silver Bow (Butte-Silver Bow), Atlantic Richfield, and community residents to support redevelopment goals as part of Superfund cleanup. This case study provides relevant information and lessons learned for parties interested in Superfund redevelopment, mine site restoration and preservation, and recreational reuse.

*Once heavily impacted by mining waste, large parts of Butte and Walkerville have been reclaimed under the Superfund program.*

# Site History, Contamination and Remediation

By the late 1800s, Butte, Montana, was the center of copper mining in North America. For more than a century, nearby Silver Bow Creek was a conduit for mining, smelting, industrial and municipal wastes. There were vast mine waste and mill tailings along the creek.

Following initial environmental investigations, EPA placed the site on the Superfund program's NPL in September 1983. The boundary of the site begins above Butte at the Continental Divide, and extends west along Silver Bow Creek to the Warm Springs Ponds (a treatment area) near Anaconda. The site covers about 26 miles of stream and streamside habitat. The site also includes large parts of Butte and Walkerville, as well as the Berkeley Pit and interconnected mine workings.




*The Butte Priority Soils OU includes large portions of Butte and Walkerville. It is one of several active OUs that EPA continues to address under the Superfund program.*

To clean up the site, EPA divided it into 13 areas, or operable units (OUs). Between 1998 and 2001, EPA completed a series of short-term cleanups, or removals, across several of these units. Efforts included stabilizing, capping or removing waste dumps and hundreds of thousands of cubic yards of contaminated soil, cleaning up residential yards and railroad beds, and putting in cement channels and earthen-bermed sedimentation ponds to address stormwater contamination.

Today, EPA, the state and Atlantic Richfield are working on the cleanup and long-term maintenance of seven active OUs. EPA has also worked with the State of Montana since 2000 to coordinate the site's cleanup with the state's restoration plan for Silver Bow Creek. The state's plan, developed by MDEQ, the Montana Department of Justice and an inter-local governing authority called Greenway Service District, focuses on restoring the creek and its floodplain to a stable, naturally functioning system.

| Operable Unit | Remedy | Status |
|---|---|---|
| Streamside Tailings | 1995 Record of Decision (ROD) addresses contaminated tailings and soils in 100-year floodplain. | Cleanup and restoration began in 1999. In 2012, Montana Fish, Wildlife & Parks issued fishing regulations on Silver Bow Creek for the first time. |
| Butte Mine Flooding | 1994 ROD addresses Berkeley Pit contamination and underground mine workings and aquifers. | Cleanup and monitoring underway. Treatment plant completed and operational in 2003. System treats inflow from active mine area west and northwest of Butte Priority Soils OU. Berkeley Pit water will be treated when water levels rise to critical level. |
| Butte Priority Soils | 2006 ROD addresses heavy metals and arsenic in soils, indoor dust, surface water and ground water. | Removal actions mostly completed between 1987 and 2001. Some are ongoing. Other remedies being put in place include the Residential Metals Abatement Program; non-residential soil contamination activities; ground water and surface water remediation; monitoring and compliance; institutional controls; operation and maintenance activities. |
| Rocker Timber Framing & Treatment Plant | 1995 ROD addresses contaminated soil and ground water from former wood treating operations. | Cleanup completed in 1997. Interim monitoring began in 1998. Supplemental ground water treatment began in 2001. |
| Warm Springs Ponds Active Area | 1990 ROD addresses Pond 2, Pond 3, Mill-Willow Bypass and associated structures. | Cleanup completed in 1995. Operation and maintenance will continue in perpetuity. |
| Warm Springs Ponds Inactive Area | 1992 ROD addresses Pond 1 and area downstream of Pond 1. | Cleanup completed in 1995. Operation and maintenance will continue in perpetuity. |
| West Side Soils | Remedy not yet selected. | Study planning underway. |

This coordination has also led to aquatic habitat enhancements, floodplain revegetation, tailings removal and trail construction. To date, two trailheads and almost five miles of paved trails have been built at the site, which will eventually connect to the 26-mile system along the creek.

Throughout all planning and cleanup activities, EPA and MDEQ meet regularly with community stakeholders to share information and updates and to incorporate community feedback into the Superfund process. For example, the agencies and Atlantic Richfield work closely with members of the community and local groups such as Butte's Citizens Technical Environmental Committee (CTEC). This commitment helps ensure that the communities most affected by the site have access to the best-available information.

In 2011, EPA completed the third five-year review of the site's remedy. The review noted "tremendous progress toward the protection of human health and the environment," with short- and long-term protectiveness achieved as remaining remedies are put in place.

## Timeline of Events

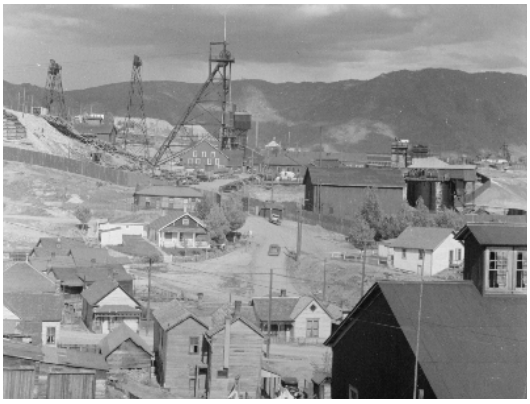
| | |
|---|---|
| **1864:** | Discovery of gold in Butte area |
| **1870s:** | Many underground mines open in Butte |
| **1880s:** | Anaconda Copper Mining Company (ACMC) created and begins mine consolidation on Butte Hill |
| **1890:** | Walkerville becomes highest silver producing mine camp in the world |
| **1910:** | Butte district becomes largest producer of copper in North America |
| **1918:** | Copper production falls after World War I, Butte's population begins to decline |
| **1920s:** | Underground mining continues |
| **1955:** | Open pit mining at Berkeley Pit begins in Butte |
| **1962:** | Butte named National Historic Landmark District |
| **1977:** | Atlantic Richfield acquires ACMC holdings |
| **1979:** | Discovery of mining-related contamination along Silver Bow Creek between Butte and Warm Springs |
| **1980:** | Mining at Continental Resources pit begins in Butte |
| **1983:** | Atlantic Richfield suspends all of its mining operations, environmental investigations begin |
| **Sept. 1983:** | EPA places original Silver Bow Creek site on NPL |
| **1986:** | Atlantic Richfield sells all Butte mining properties to Montana Resources (MR); MR starts Continental Pit |
| **1987:** | EPA updates existing Silver Bow Creek site to include Butte area, changes site name to Silver Bow Creek/Butte Area |
| **1988-2004:** | EPA authorizes short-term cleanups in Butte and Walkerville |
| **1989:** | CTEC formed with technical assistance grant (TAG) from EPA |
| **1993:** | Anaconda-Butte Heritage Corridor Regional Historic Preservation Plan is adopted |
| **1994:** | Butte-Silver Bow Lead Intervention and Abatement Program established, later changed to Residential Metals Abatement program in 2010 |
| **1996:** | Community receives start-up funds from EPA to construct Granite Mountain Memorial; construction begins |
| **2000:** | EPA completes initial five-year review of site remedy; MR suspends mining in Butte; BP acquires Atlantic Richfield |
| **2001:** | EPA provides Superfund Redevelopment Initiative pilot project funding |
| **2003:** | MR mining in Continental Resources pit resumes |
| **2005:** | EPA completes second five-year review |
| **2006:** | EPA issues ROD for Butte and Walkerville area; Butte-Silver Bow and Atlantic Richfield sign allocation agreement; Butte Historic Landmark District expanded |
| **2009:** | Cleanup and redevelopment construction at Mountain Con Mine Yard begins |
| **2010:** | Granite Mountain Memorial completed |
| **2011:** | EPA completes third five-year review of site's remedy |
| **2012:** | Foreman Park and recreation area open at Mountain Con Mine Yard |

# Cleanup and Reuse in Butte and Walkerville

## 1860s – 1983

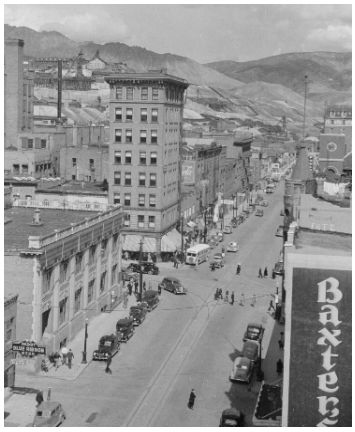
***Mining in Butte and Walkerville***

Prospectors first discovered gold in the area that became Butte in 1864. Discoveries of silver and copper ore soon followed. By the 1870s, mills and smelters were operating, refining arsenic-laden copper ores. Butte and Walkerville developed as the mining and milling industries grew. The Anaconda Copper Mining Company (ACMC) formed in the early 1880s and quickly acquired mining properties on the Butte Hill. Neighborhoods grew up next to the mining and milling centers as a matter of convenience. Walkerville was the largest producer of silver in the world in 1890 and by 1900 more than 30,000 people lived in Butte.



*Butte Hill, 1939.*

By 1910, the Butte district was the largest producer of copper in North America. Butte's population swelled to 100,000 and the once-small town had become a thriving metropolis. By 1927, ACMC had consolidated nearly all of the major mines, smelters and mills in Butte. The mines produced waste piles and the mills and smelters produced large quantities of tailings, which were disposed of in ponds or dumped in Silver Bow Creek, located along the southern edge of the Butte Hill. As the mines expanded, piles of mine waste encroached on people's homes.




*Butte central business district, 1939.*

At the end of World War I, copper production declined in North America and Chile became the world's primary copper supplier. This marked the beginning of hard times for Butte that would last for decades. People left, historic buildings fell into disrepair and were lost to fire or demolished, and tensions persisted between ACMC and organized labor.

In the 1920s, as copper smelting capacity at Anaconda grew, Butte became primarily a mining center. Mining in Butte remained underground until 1955, when ACMC began open-pit mining at the Berkeley Pit. Although open-pit mining provided an important source of jobs, gradual expansion of the Berkeley Pit resulted in the demolition of several neighborhoods in east Butte. In the early 1970s, ACMC expressed a need to expand the pit further, a move that would have significantly affected Butte's central business district. In 1976, Butte City Council even considered relocating the central business district to southern Butte, a more recently developed suburban area known as "the Flat." A few months later, after a community outcry, city council voted the relocation plan down.

In 1977, ACMC sold its holdings to Atlantic Richfield. Atlantic Richfield continued open pit mining operations in the Berkeley Pit until 1982 and in the adjacent Continental Pit until 1983. These closures idled about one third of Butte's work force. In 1982, Atlantic Richfield turned off the water pumps at the Kelley Pump Station and flooded most of the underground mine workings. Although mining had stopped, EPA's decision to include parts of Butte and Walkerville in the Superfund program in 1987 gave some residents hope that the area's mining-related waste would be addressed.

### Advocating for Historic Preservation and Revitalization in Butte

Butte's rich history is on display throughout its uptown area – historic buildings, towering mining headframes and old mine yards. Recognizing these resources, the National Park Service designated much of Butte a National Historic Landmark District in 1962.

In the 1970s, residents and local officials committed to revitalizing Butte's historic central business district and protecting its historic buildings and mining artifacts. In the late 1980s, local officials designated a large portion of uptown Butte as an urban revitalization district and used the tax increment to fund projects. Mainstream Uptown Butte, Imagine Butte and Butte Citizens for Preservation and Revitalization were among the groups that championed preservation and revitalization.

*Historic headframe at the Steward Mine Yard in uptown Butte.*

## 1987 – Early 1990s

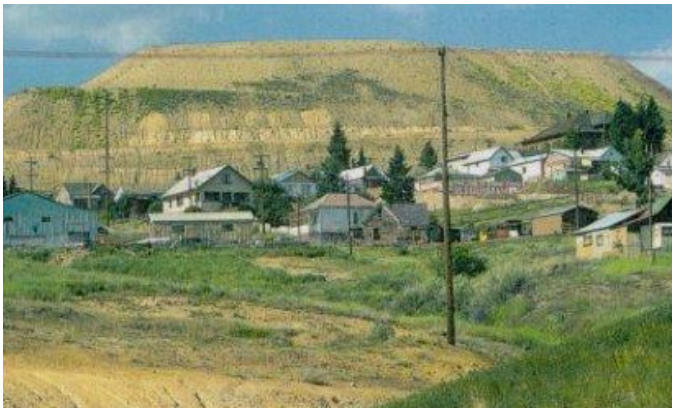
***Starting Superfund Cleanup, Focusing on Redevelopment***

EPA first authorized cleanup actions in Butte and Walkerville in the late 1980s. The cleanup focused primarily on mine-impacted lands on Butte Hill and included removal or capping of arsenic and lead source areas in and near neighborhoods. Source areas included waste rock dumps, railroad beds, residential yards and play areas. Dan Powers, Interim Director for the Butte-Silver Bow's Environmental/Health Department, grew up in Butte. He recalled that "mining waste dumps and overburden piles were everywhere. Children used them as playgrounds." Montana Tech University researcher and CTEC member Kriss Douglass added that "the dust in the town at this time was unbelievable."

After Atlantic Richfield and other PRPs completed initial cleanups, these areas were typically fenced and unusable. "Areas were reclaimed but left with no way for people to use them – not a trail, an interpretive area or a sign," recalled Powers.

Butte-Silver Bow Planning Director Jon Sesso said that "in those days, the focus of Superfund cleanup was entirely on protecting human health and the environment. We worked to widen the lens. Because Butte was so unique, with areas for cleanup abutting people's yards and play areas, we developed our position early. We didn't think the cleanup projects would be complete unless beneficial reuses were an integral part of the strategy."

*Mine yard in Butte prior to cleanup.*



*Mine waste area and homes in Walkerville prior to cleanup.*

### Superfund Cleanup and Section 106 of the National Historic Preservation Act*

Under Superfund, EPA must comply with the substantive portions of all applicable regulations, including those governing cultural resources. The National Environmental Policy Act (NEPA) states that it is the federal government's responsibility to use all practicable means to preserve historic, cultural and natural aspects of our national heritage.

The National Historic Preservation Act (NHPA) of 1966 established a process by which federal agencies must incorporate historic resource issues. Section 106 of the Act requires a federal agency with jurisdiction over a federal undertaking to take into account the effects of that undertaking on properties included in or eligible for the National Register of Historic Places. If adverse effects are anticipated, agreement is usually reached on measures that avoid or mitigate the effects.

**Adapted from the 1993 Regional Historic Preservation Plan for the Anaconda-Butte Heritage Corridor*

In response, EPA and MDEQ worked with site PRPs, including Atlantic Richfield, as well as Butte-Silver Bow and Walkerville local governments to return some of these areas to productive use, according to Butte native and EPA Site Manager Sara Sparks. According to Sparks, "the area designated for cleanup was so large. When you start talking about hundreds of acres designated for cleanup, you can't just fence it and walk away."

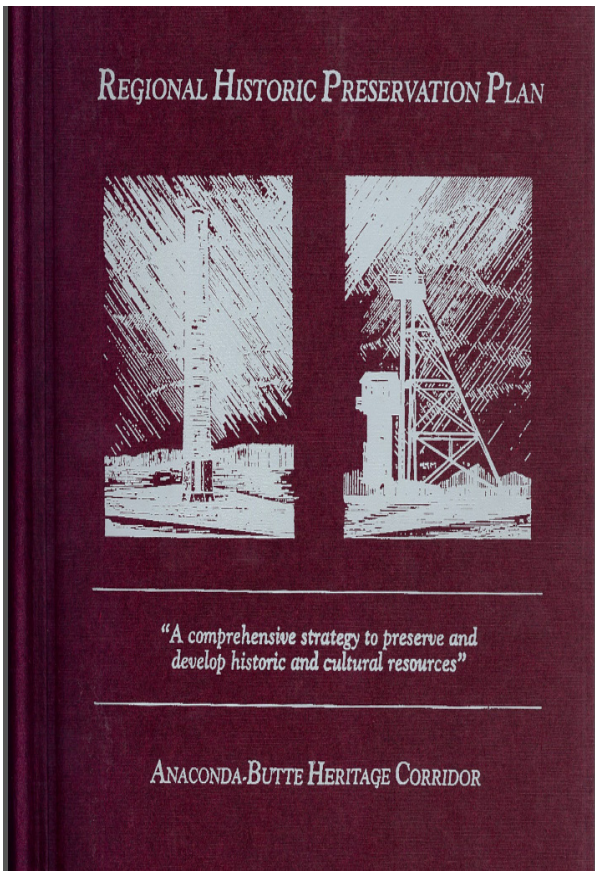
Around 1990, Atlantic Richfield collaborated with Butte-Silver Bow to sponsor a community planning process. The goal was to gather input from Butte residents on what they wanted the area to look like after cleanup. In late 1991, efforts to better align local reuse goals with Superfund cleanup plans got an unexpected boost when EPA named Butte-Silver Bow as a PRP. According to Sesso, being a PRP "was not welcome nor considered favorable, but it ultimately gave us a seat at the table in cleanup discussions and a better opportunity to share reuse ideas with the other PRPs."

Soon after the community planning process, another effort helped further shape the community's vision for the future of the mine waste areas. Under federal law, EPA was required to preserve historic and cultural resources during cleanup efforts. Project partners worked together to determine what this requirement would mean in Butte. In 1992, EPA, MDEQ, Atlantic Richfield, the State Historic Preservation Office, the federal Advisory Council on Historic Preservation, Butte-Silver Bow, Walkerville

and Anaconda-Deer Lodge County signed a "Programmatic Agreement." It addressed historic preservation goals, cleanup goals under Superfund and the community's goals for economic development. In 1993, the parties finalized the Regional Historic Preservation Plan. It outlined a vision for a large-scale heritage park made up of historic sites linked through tours, interpretive programs and educational outreach. The focus on historic preservation as part of the cleanup, according to Butte-Silver Bow Historic Preservation Officer Jim Jarvis, "set a new standard for how to clean up sites without relying on just a bulldozer."

Butte-Silver Bow affirmed the importance of integrating remedy and reuse during the local government's 1995 update of the community's growth policy (then known as the master plan). According to Sesso, "We had just adopted the Regional Historic Preservation Plan. During the update process, the concept of end land use and community benefit of Superfund cleanup was woven through our growth policy. They became fundamental goals and objectives of our policy."

As it evolved, the efforts of project partners to coordinate cleanup and redevelopment in Butte and Walkerville included working with residents on neighborhood ideas, coordinating redevelopment with cleanup where possible, evaluating land uses regulated by the local governments, addressing historic preservation issues, and complying with the Regional Historic Preservation Plan. EPA, MDEQ, and Atlantic Richfield incorporated Butte and Walkerville's historic preservation and economic development goals into the cleanup efforts on the Butte Hill and other areas. Where feasible, contaminated material would be removed and in other places, it would be capped in place, but in all instances, the cleanup design would allow for reuse.




*The 1993 Regional Historic Preservation Plan helped inform site cleanup plans.*

## Encouraging National Superfund Reforms to Facilitate Local Redevelopment

In the early 1990s, EPA addressed barriers to redevelopment inadvertently created by the Superfund law. In many cases, people and businesses interested in Superfund properties often stayed away, concerned about being named a PRP and having to pay for site cleanup.

In response, EPA made two national policy changes:

- Some landowners were exempted from liability as PRPs. Under certain circumstances, landowners could take title to Superfund property and limit their Superfund obligations.
- Bankers and lending institutions were largely taken off the list of liable parties, as long as the institutions followed EPA rules and guidance.

These changes made a significant difference, removing redevelopment obstacles and helping to ease lending restrictions in the Butte area. According to EPA Site Manager Sara Sparks, "these changes meant you could get a loan from a bank to buy a home in Butte."

## Mid-1990s – 2013

***Integrating Cleanup and Reuse***

Working together, the parties transformed mine waste dumps into sites for parks, playgrounds and athletic complexes. They cleaned up the Butte, Anaconda & Pacific (BA&P) railroad corridor and converted it into an extensive walking and biking trail that will ultimately connect to the Silver Bow Creek Greenway Corridor, which stretches nearly 26 miles to the Warm Springs Ponds. Integration of cleanup and redevelopment also resulted in construction of the Granite Mountain Memorial. The parties also began reclaiming former mine yards, preserving mining shafts and historic headframes. Known today as "Montana's Copperway," this work led to the continued development of a heritage park originally envisioned in the community's Regional Historic Preservation Plan. Superfund cleanup efforts during this time sparked other notable developments, including affordable housing in northern Butte and new commercial and civic amenities along the eastern edge of Butte's uptown area.

Beyond integrating the community's reuse goals with site cleanup plans, EPA, Atlantic Richfield and state agencies supported redevelopment in Butte and Walkerville in other ways as well. Through a partnership with the local government, Butte-Silver Bow public works made large-scale stormwater management improvements across much of Butte Hill and the health department started a residential area cleanup program that has matured into its 17th year. These programs along with a set of institutional controls on properties to manage waste left in place as part of cleanup efforts will be operated for decades to come. Project partners also worked together to make it possible to transfer properties owned by Atlantic Richfield and mining companies to Butte-Silver Bow for potential redevelopment in the future.

In 2001, EPA awarded Butte-Silver Bow a $100,000 grant through the Agency's Superfund Redevelopment Initiative. Combining this funding with resources from the state's Resource Indemnity Trust Fund, Butte-Silver Bow led a study to determine the structural integrity of vacant properties in uptown Butte and central Butte. The resulting 2001 Belmont Subsidence Report helped Butte-Silver Bow determine when subsidence could be an issue at vacant properties targeted for reuse on the Butte Hill.

The parties continued efforts to support alignment of Superfund cleanups with reuse goals in the mid-2000s. In 2005, Butte Silver-Bow updated its 1995 growth policy, reaffirming its commitment to incorporate reuse goals as part of the site's ongoing cleanup. In September 2006, EPA issued the Agency's long-term cleanup plan for Butte and Walkerville. The plan emphasized how the cleanup would be compatible with local reuse planning, and that EPA and the state would continue to work cooperatively with local governments and site PRPs on redevelopment efforts.

In December 2006, Butte-Silver Bow finalized a $49 million allocation agreement with Atlantic Richfield to perform certain Superfund-required cleanup actions and long-term maintenance in Butte and Walkerville. The deal also included the establishment of a $15 million redevelopment trust fund managed by Butte-Silver Bow. Some of these funds are available for historic preservation projects and to reimburse developers for extra costs incurred from developing on reclaimed sites in Butte and Walkerville.

*A sports complex built over a mine tailings site in southern Butte.*

*Knob Hill, a former mine waste dump in Walkerville, in reuse following cleanup as a public park.*

*Following cleanup of the Belmont Mine Yard, the Belmont Mine hoist house was converted into a senior activity center.*

*This high school activity center next to the Belmont Mine Yard was built after geophysical studies determined subsidence was not an issue.*

*Mountain Con Mine Yard and Foreman Park during and after reclamation.*

The full trust will be available once EPA, Atlantic Richfield and other site PRPs sign a long-term legal agreement, known as a consent decree, for remaining cleanup and site maintenance in Butte and Walkerville.

By the early 2010s, Butte-Silver Bow and Atlantic Richfield had completed cleanup and redevelopment work on the Granite Mountain Memorial Interpretive Area and Mountain Con Mine Yard and Foreman Park in coordination with EPA and MDEQ. Although most mining waste area cleanup is complete, the parties continue to coordinate cleanup and redevelopment goals. The parties are currently evaluating Butte-Silver Bow's goals for the Lexington Mine Yard west of the Mountain Con Mine Yard as well as Walkerville's goals for a playground where reclamation work is planned.

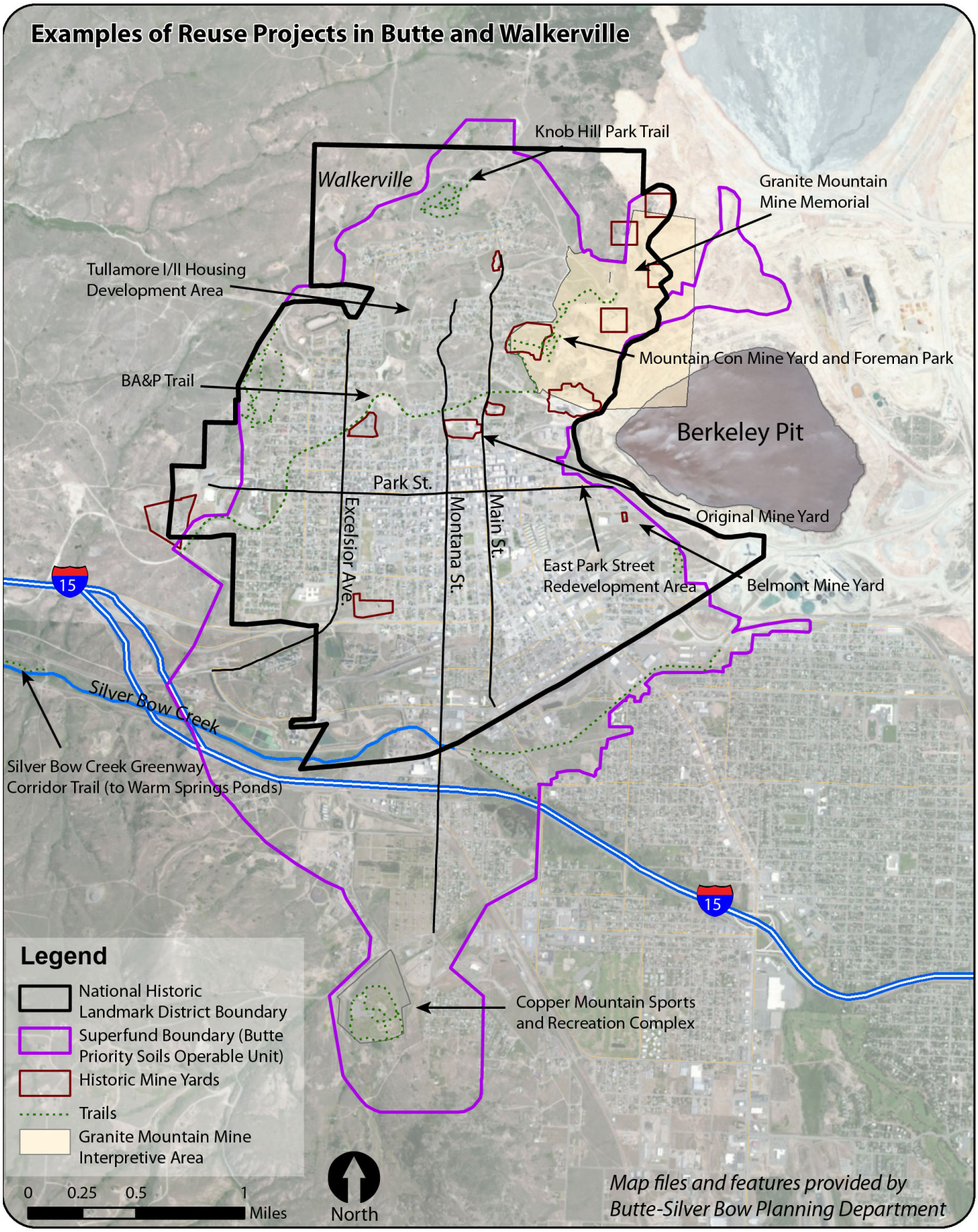
Integrating cleanup and reuse for these projects required a lot of meetings, planning and negotiation. There were early doubts about integrating reuse goals into cleanup plans. Difficult issues of paying for the project amenities, land transfer and placement of institutional controls on properties with residual contamination had to be addressed. Cord Harris, Atlantic Richfield's Strategy Manager for the Butte and Walkerville area, explained that integrating reuse goals and cleanup plans is "more effective than putting in a remedy that will only need to be taken out a few years later. We see a benefit in working with the community on this." Harris added that, "Butte-Silver Bow, EPA and Atlantic Richfield worked collaboratively to come up with solutions for these sites."

### Long-Term Cleanup and Maintenance Plans for Butte and Walkerville

- Comprehensive evaluation and maintenance program for reclaimed sites to make sure mining waste caps continue to be effective.
- Ground water treatment and institutional controls to prevent ground water use in certain areas.
- More cleanup to remove contaminated source areas, mine waste capping and reclamation of contaminated land.
- Residential Metals Abatement Program (RMAP) to address residential contamination in yards and attics.
- Phased stormwater management program.
- Institutional controls for areas with waste left in place and stormwater management areas.
- Removal of contaminated sediments in and near Silver Bow Creek.

*"Well, as residents of Butte and Walkerville will tell you, just look around the area officially known as 'Butte Priority Soils' and you'll see impressive progress. Here, there's been a transformation. In the process of remediating the land in a fashion that meets the unwavering objectives of protecting human health and the environment, larger pieces of urban land have been renewed to again be useful and aesthetically pleasing."*

from the *Atlantic Richfield Clark Fork River Basin Environmental Action Plan*


Examples of Reuse Projects in Butte and Walkerville
Knob Hill Park Trail
Walkerville
Granite Mountain Mine Memorial
Tullamore I/II Housing Development Area
Mountain Con Mine Yard and Foreman Park
BA&P Trail
Berkeley Pit
Park St.
Excelsior Ave.
Montana St.
Main St.
Original Mine Yard
East Park Street Redevelopment Area
Belmont Mine Yard
15
Silver Bow Creek
Silver Bow Creek Greenway Corridor Trail (to Warm Springs Ponds)
15
Copper Mountain Sports and Recreation Complex
Legend
National Historic Landmark District Boundary
Superfund Boundary (Butte Priority Soils Operable Unit)
Historic Mine Yards
Trails
Granite Mountain Mine Interpretive Area
0 0.25 0.5 1
Miles
North
Map files and features provided by Butte-Silver Bow Planning Department

# Reuse in Focus: Land Revitalization Outcomes in Butte

### Affordable and Energy-Efficient Housing

EPA, MDEQ, Atlantic Richfield and Butte-Silver Bow coordinated on two affordable housing projects in uptown Butte. The Tullamore I and II/Ravin addition developments included 26 single-family, energy-efficient homes built in cooperation with other partners, including the National Affordable Housing Network, Habitat for Humanity and banks. Site PRPs capped the lots with clean fill and resodded the yards. Priced between $70,000 and $90,000, the homes have been popular with buyers, according to Butte-Silver Bow Planning Director Jon Sesso. Butte-Silver Bow and partners are continuing with new affordable housing projects in northern Butte.

*"We worked with the community to make sure that residential areas were safe. That meant making sure land was reclaimed in a way so that affordable housing could be built there."*

*-Sara Sparks, EPA Site Manager and Butte resident*

*Affordable housing built in mid-1990s in northern Butte.*

*New affordable housing under construction in northern Butte.*

### Thriving Businesses Park near the Belmont Mine Yard

New businesses and development is occurring at East Park and East Mercury streets, the main gateway to Butte's uptown area. Located near the Belmont Mine Yard, historic mining activities heavily impacted this area. EPA, MDEQ, Atlantic Richfield and Butte-Silver Bow worked with the Montana Economic Revitalization & Development Institute (MERDI) to clean up the area and spur its revitalization. The properties' previous owner put them into a land trust established by MERDI, with the goal of redeveloping them for their highest and best use. Development began in 2000; the area now includes dozens of businesses, a multi-million dollar activity center for Butte Central Catholic High School, and a senior citizen center in a repurposed Belmont Engine Room. Numerous additional projects are underway, including a microbrewery and multi-tenant office building.

*"If not for the partnerships with people like ARCO [Atlantic Richfield] in blending in the remediation with redevelopment, these things [East Park Street business park development projects] aren't possible."*

*-Jim Kambich, President, Montana Economic Revitalization & Development Institute*
(from 2005 *Mining Camp Makeover* documentary)

*Views of redevelopment projects near East Park Street.*

## Reclaimed and Repurposed Original Mine Yard

Butte-Silver Bow led a redevelopment project to make the Original Mine Yard safe for reuse, in coordination with EPA and MDEQ, while also protecting important historical features, including the mine yard's headframe and hoist house. For many years after environmental cleanup was completed in the 1980s, the mine yard did not have a dedicated use. In 2007, when Butte was selected to host the National Folk Festival, that changed. Butte-Silver Bow converted the base of the historic headframe into the festival's center stage. The repurposed mine yard hosted the festival for three consecutive years beginning in 2008. The festival was a major success. By the festival's third year, more than 165,000 people attended. Butte is now the annual host for the Montana Folk Festival. When the mine yard is not hosting music events in the summer, it is a favorite spot for weddings and outdoor movie nights.

*"The Original Mine Yard is now a crown jewel of the city."*

*-Jon Sesso, Butte-Silver Bow Planning Director*

*Views of the Original Mine Yard.*

## Granite Mountain Memorial Interpretive Area and Foreman Park

The Granite Mountain Memorial Interpretive Area and the adjacent Mountain Con Mine Yard are located on the Butte Hill, near the eastern edge of Butte. In 1996, city residents joined with EPA, MDEQ, Atlantic Richfield and Butte-Silver Bow to begin the Granite Mountain Memorial. This landmark honors the 168 miners killed in the Granite Mountain-Speculator Mine fire in 1917. Covering a few thousand square feet, the memorial was formally dedicated in 2011. Its surrounding interpretive area covers hundreds of acres that include reclaimed and unreclaimed mining land. The reclaimed Mountain Con Mine Yard is next to the interpretive area in Butte's Centerville neighborhood. The mine yard includes its historic headframe, which marks a mine shaft at a depth of one mile. The reclaimed mine yard includes Foreman Park, a public park with restrooms, a covered gazebo for picnics and a garden area. Trails from the park connect to the interpretive area. Most of the reclamation work in the mine yard was completed in 2010. Foreman Park opened in 2012. Butte-Silver Bow Historic Preservation Officer Jim Jarvis describes it as an "awesome public park."

*"When we started, there was absolutely nothing up there. Now we have a memorial that connects the generations. Grandparents take their children up there and share their stories about being in the mines."*

*-Gerry Walter, Butte resident and memorial project champion*

*Views of the Granite Mountain Mine Memorial Interpretive Area.*

# Lessons Learned

A combination of significant factors have contributed to the successful effort to integrate remediation and redevelopment in the Butte and Walkerville areas. These lessons can help guide similar processes in hard rock mining landscapes throughout the United States.

**Community-led development of big-picture reuse plans can shape the Superfund cleanup process.**

In Butte, using planning processes to generate plans such as the Regional Historic Preservation Plan helped guide and inform cleanups pursued by EPA, MDEQ and Atlantic Richfield. According to Butte-Silver Bow Planning Director Jon Sesso, "when the Regional Historic Preservation Plan was approved, we adopted it as our long-term plan for historic preservation. That became the guiding document for a lot of improvements that have been implemented on the Hill." The document offered a big-picture vision of the community's preservation goals and its long-term land use priorities for mine waste areas, and encouraged investment in formerly contaminated areas.

**As the organizations responsible for their communities' general welfare, local governments are well-positioned to bring together diverse stakeholders to discuss site reuse opportunities, host reuse projects, and use planning tools and resources to foster positive site outcomes.**

Butte Silver Bow's participation helped ensure that the remedy would be sustainable over the long term. Redevelopment projects in Butte are a direct outcome of the local government's sustained engagement, community outreach efforts, and coordination with EPA, MDEQ and Atlantic Richfield. For example, Butte-Silver Bow Planning Director Jon Sesso referenced the old railroad corridors running through Butte. "If Butte-Silver Bow and local residents were not committed to redevelopment," he noted, "we would have been left with an empty railroad corridor after the cleanup."

## Superfund and Natural Resource Damages in Butte and Walkerville

In addition to remediation, at Superfund sites damages are recoverable where injuries to natural resources have occurred. The injuries can occur as a result of releases of hazardous substances or oil or as a result of natural resource injury related to implementation of a response action. State Trustees act on behalf of the public as Trustees for the natural resources within a state's boundaries or for resources belonging to, controlled by, or relating to the state.

Mining impacted areas in Butte and Walkerville have received considerable attention from the state's Natural Resource Trustees. The State of Montana has undertaken efforts to develop restoration plans and secure restoration money from site PRPs to restore these areas of Butte and Walkerville. EPA's cleanup plans are designed to protect human health and the environment and do not always restore natural resources in Butte and Walkerville to baseline conditions. However, the state's Natural Resource Trustees may select restoration actions. When this happens, EPA works with the Trustees to coordinate cleanup plans and implementation with restoration activities.

Through the years, the state has allocated substantial natural resource damage funding to Butte-Silver Bow and community organizations to support natural enhancements to redevelopment projects and drinking water infrastructure. Thompson Park's recent improvements, acquisition of the Big Butte Open Space Park and the establishment of the Fish Pond are examples of large-scale park projects. In addition to these efforts, restoration of sites is enhanced by plantings of native flora. Recently, Butte-Silver Bow received funding for tree planting on the Butte Hill. In addition, Montana Tech University recently received $1 million for an eight-year project to incorporate native vegetation into reclaimed areas in Butte and Walkerville. Native vegetation areas have been established in the Mountain Con Mineyard and the Granite Mountain Memorial Interpretative Area. The Butte Natural Resource Damage Restoration Council advises local restoration planning in coordination with the state's Natural Resource Damage Program.

*Native vegetation dispersal island in the Granite Mountain Memorial Interpretive Area.*

**Responsible parties and site owners are important stakeholders who can contribute to restoration and reuse planning activities as well as site cleanup discussions.**

Alignment of cleanup and reuse goals in Butte and Walkerville would not have been possible without the willingness of Atlantic Richfield and other site owners to work in concert with Butte-Silver Bow, EPA, the state and the community. Atlantic Richfield enabled property transfers to Butte-Silver Bow by transferring long-term maintenance responsibility to Butte-Silver Bow and enabling local officials to advance specific redevelopment goals.

**Integrating historic preservation and recreational reuse provides an economic development opportunity as well as social and ecological benefits.**

The Regional Historic Preservation Plan discussed the value of aligning Superfund cleanup with historic preservation goals. Balancing preservation of Butte's hard rock mining landscape for historic interpretation with cleanup protective of human health and the environment contributed to Butte's innovative and unique approach to economic development. Historic preservation is a cornerstone of Butte-Silver Bow's goal to create a heritage tourism destination. The community added a recreational dimension to this goal by linking historic mining artifacts together through an extensive trail system. These trails make Butte an important stopping point for visitors and outdoor enthusiasts and contribute to a high quality of life sought by families, employers and those looking to relocate. In recent years, these investments in preservation have given way to restoration projects that continue to enhance the reclaimed environment through the addition of trees, native flora and interpretive signage.

**Aligning reuse goals with cleanup plans effectively requires strong community-agency relationships.**

Butte-Silver Bow, EPA, MDEQ and Atlantic Richfield partnered to host regular meetings with community residents to provide site updates and incorporate their feedback into decision making processes. According to EPA Site Manager Sara Sparks, "For any of the land that we had to reclaim under Superfund, we would have public meetings to gather input from citizens nearby." The outcomes of these efforts are site and community plans backed by broad local support.

**A comprehensive system for the protection of human health is the foundation for successful redevelopment.**

*Unreclaimed part of the Granite Mountain Memorial Interpretive Area.*

*Reclaimed railroad corridor that is now part of the BA&P walk-and-bike trail.*

*"The trails, the memorial, the festivals – all those recreation opportunities help us to bring in new employees. Those kinds of opportunities help us recruit people."*

*-Elizabeth Erickson, Principal Hydrogeologist with an environmental consulting company located on East Park Street in Butte*

The long-term cleanup plan for Butte and Walkerville permits cleanup of non-residential areas and also includes a robust program for testing and cleaning contaminated residential yards and attics. EPA and MDEQ work closely with Butte-Silver Bow and Atlantic Richfield to make sure institutional controls are in place to protect residents from any residual contamination in reclaimed areas. EPA and the state have a comprehensive evaluation system in place to make sure that reclaimed areas remain protective of human health and the environment. Together, these efforts reassure residents and businesses that Butte is a safe place to live, work and play.

**State agencies and intergovernmental entities can play important roles in supporting cleanup and redevelopment at contaminated lands and provide critical resources and expertise.**

The State of Montana has been an engaged partner in Butte's cleanup, supporting trail development and other projects and enabling site restoration activities. In addition, a broad consortium of stakeholders formulated an intergovernmental agency, the Greenway Service District, to provide expertise and other resources to promote cleanup and redevelopment through the corridor from Butte to the Warm Springs Ponds near Anaconda. This effort has helped tell the area's entire story of mining and smelting.

**Both creativity and pragmatism are important when considering how to align reuse goals with cleanup plans.**

Butte-Silver Bow officials worked with EPA, MDEQ and Atlantic Richfield to creatively implement key parts of the community's Regional Historic Preservation Plan. Historic Preservation Officer Jim Jarvis explained, "it is important to consider how a community can create or restore assets when it doesn't have uncommitted sources of revenue." He added that Butte-Silver Bow officials also "made it a practice to be pragmatic and strategic in their requests to coordinate Superfund cleanup with redevelopment plans."

**Partnerships are important ingredients for carrying out redevelopment goals.**

Redevelopment projects in Butte and Walkerville benefited from a wide variety of partnerships. For instance, Butte-Silver Bow collaborated with organizations such as Habitat for Humanity and the National Affordable Housing Network to facilitate the productive reuse of remediated land by encouraging development of affordable housing projects. Similarly, Butte-Silver Bow worked with the Montana Economic Revitalization & Development Institute to spur redevelopment along the East Park Street corridor, resulting in substantial economic investment and growth in an area formerly degraded by environmental contamination.

**Build on past experience.**

Parties at the Silver Bow Creek/Butte Area site were breaking new ground in integrating cleanup plans with reuse goals. Today, building on the work of Superfund communities nationwide, there are tools, reports and other resources available. Please see the case study's Sources and Resources section for more information.

*Uptown Butte, 2013.*

# Conclusions

As large-scale Superfund cleanup work in the Butte area winds down, there is a sense of optimism in the community regarding its future. According to Dan Powers, Interim Director for the Butte-Silver Bow's Environmental/Health Department, "when you compare Butte now to what it looked like 25 to 30 years ago, it is a night and day difference. There has been a significant amount of reclamation and cleanup work done here and significant improvements for the community, including reclaimed mine yards now being put into use." The community's economic base has diversified; it now includes tourism, technical services, government, retail sales and recreation as well as mining. According to Butte-Silver Bow's Community Development Director Karen Byrnes, over 40 new businesses opened in Butte in the past eight years and investors poured over $12 million into uptown residential development.

The University of Montana recently identified Butte as one of Montana's fastest growing cities. The community has continued its commitment to heritage tourism, and is bolstering its commitment to economic investment and development through partnerships. Local groups like Main Street Uptown Butte, Imagine Butte, and Butte Citizens for Preservation and Revitalization continue to seek out new preservation and development opportunities.

According to Butte-Silver Bow Historic Preservation Officer Jim Jarvis, "Uptown Butte still has a stigma as a former industrialized mining town. I hear it routinely – 'the place is not safe' – but the reclamation has done a lot. It is still a negative, but it is better. The place appears more attractive and feels healthier." Events such as the Montana Folk Festival, according to Jarvis, "have made a big difference in changing public perception." Kriss Douglass, a researcher with Montana Tech and member of CTEC, is also upbeat. "Uptown Butte is so different now, it's unrecognizable. I run into some groups who have no idea what it was like 30 years ago," she said. "Butte is a beautiful city now and we will continue to make it better."

*"I think that Superfund has rejuvenated an old mining community. We've been able to save our historic structures, our history. But we have also changed our community to one that invites redevelopment, invites new people to come and live here; and we've made it safe and it has given us a new start for a new history."*

*-Sara Sparks, EPA Site Manager and Butte resident*
(from 2005 *Mining Camp Makeover* documentary)

*Uptown Butte, 2013.*

## Sources and Resources

**Sources**

Images and maps for this case study were obtained from EPA Region 8 and Butte-Silver Bow City and County Government.

**Resources**

*Site-Specific*

EPA site progress profile:
www.cumulis.epa.gov/supercpad/cursites/csitinfo.cfm?id=0800416

EPA Region 8 Superfund Program:
www2.epa.gov/region8/silver-bow-creekbutte-area

*Community*

City and County of Butte-Silver Bow:
www.co.silverbow.mt.us

Montana Economic Revitalization & Development Institute:
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Montana Folk Festival:
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*Other Resources*


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# **Building on Mining History:** Cleanup, Reuse and Community Resilience at the Silver Bow Creek/Butte Area Superfund Site in Butte, Montana

United States
Environmental Protection
Agency

Office of Superfund Remediation and Technology Innovation (OSRTI)
Abandoned Mine Lands Team
www.epa.gov/aml

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