



Report to
Hinsdale
County
Commissioners

October 2011



hardrock
revision 



Overview

In the summer of 2011 an international team of artists hosted by Colorado Art Ranch for the *Hardrock Revision* project stayed in Lake City for a full month. Colorado Art Ranch was invited to Hinsdale County to envision new uses for the Ute Ulay mine site, one of the most intact mine camps in the region. Meanwhile, the owner of the mine, LKA International, is in the process of donating the Ute Ulay town and mill site to Hinsdale County.

But why a team of artists, and why at this early point in the process?

The Hardrock Revision team represents a diverse collection of experience in the arts as well as public service and community involvement. Rather than have each artist work in his or her



exclusive medium or field, the team worked together to develop creative solutions. This project is collaborative and transdisciplinary not only in relation to the team of artists and the guest scientists who have visited throughout the month, but in the project's relationship to the community. In addition to learning about the site from a variety of specialists, the team interviewed a wide cross-section of the community in an effort to understand how the Ute Ulay site might best benefit those who live here. A smaller subset of Lake City residents served as an advisory group. For all the information and inspiration the Hardrock Revision team may offer, a sense of community ownership is most integral to this project's success. The team's hope is to leave the people of Lake City with a wealth of ideas, a fresh perspective, and the renewed energy needed to usher the Ute Ulay into its exciting next life.



*I am intrigued with the possibility
of a transdisciplinary community that
works collaboratively to i
magine the future.*

Linda Wysong, Hardrock Revision Team, Artist

Economic Impact



Over the course of setting up and conducting Hardrock Revision a wide variety of organizations and individuals contributed to the project. Colorado Art Ranch and the people who came for the Artposium spent \$17,509 in Lake City. Much of the time for the facilitation, and subject matter experts was donated. The total value of time and expenses for the *Hardrock Revision* project in Hinsdale County is \$110,500.

I feel that art as well as science has a responsibility to the wider community, and it is a deep privilege to be part of a project that is so actively about putting art and science to work, in partnership.

Hannah Fries, Poet

Methods

There is not a lot of literature on collaborations between art, science and community. While designing *Hardrock Revision* we borrowed some techniques from published studies and invented process. The goal was to use creative problem solving with input from experts and community. The term “artist” was used in the broadest sense and included any form of visual or literary arts. A team was selected from an international pool of applicants based on the quality of their work, and experience with collaboration. Scientists were selected to provide information on the many aspects of the physical landscape. Community members, the true experts, were selected to represent a cross-section of Hinsdale County citizens and visitors.

The Team spent the first two weeks gathering information from interviews and subject matter experts. They spent many at the mine and had lengthy conversations about what all the information meant to an eventual vision for the mine and town site.

The third week was dedicated to processing all the information and formulating guiding principles, goals, and ideas.

The final week was spent testing the ideas and creating a presentation for the public.

Of course it was not so neat and tidy as that sounds. Ideas started coming up immediately and new input changed those ideas. Much of the process was overlapping and is ongoing. It is expected that the ideas generated will change based on future community and expert information. Our hope was to create a vision that allowed for flexibility in execution.

Facilitation

The project was led by Grant Pound, executive director of Colorado Art Ranch. Grant founded the organization in 2005 and previously worked in graphic design and biology. Catherine Carella assisted in the project and is Masters candidate in Environmental Engineering at CU. Kristie Borchers provided Hinsdale County liaison and helped coordinate efforts.

Artists in Residence

A jury selected the following seven talented individuals to be members of *Hardrock Revision*'s collaboration team. These artists, writers, and practitioners donated their time to help envision solutions for the Ute Ule Silver Mine's mill and town site. The team was housed at Texan Resorts with room and board provided by Colorado Art Ranch. Throughout their month in Hinsdale County they met with community members and subject matter experts to learn as much as possible about hard rock mining and reclamation. Then they used their problem solving abilities to envision uses for the Ute Ulay Town and Mill Site.

Hannah Fries

Massachusetts poet and associate editor of Orion Magazine

Bland Hoke

Wyoming transdisciplinary artist and sculptor

Julia Lewandoski

Public historian, writer, and musician



Interpretive work to liberate a historic site from binary understandings could make room for community redefinition and economic revitalization.

Julia Lewandoski, Historian



Anna Macleod

Irish sculptor, curator, and environmental artist

Lydia Moyer

Videographer, documentarian, and educator

Becky Sobell

Landscape architect from Manchester, England

Linda Wysong

Oregon public artist and community collaborator

Subject Matter Experts

Hardrock Revision was a complicated project. Team members were asked to consider rural economic development, tourism, aesthetics, education, recreation, environment and community. In order to fill in the team's knowledge gaps we brought in subject matter experts (SMEs) for one to five days. The SME's were not asked to be experts on the Ute Ulay, but were invited to tell us what they were seeing at the mine site through the filter of their disciplines. We also asked them what they would consider if they were making decisions about the property. Most of the experts also gave public talks at the theater.

Rob Blair, Ph.D.

Geologist, editor of *Western San Juan Mountains: their geology, ecology and human history*, co-founder and president of the Mountain Studies Institute in Silverton, Colorado.

Todd Bryan, Ph.D.

Senior associate with The Keystone Center and an environmental mediator

T. Allan Comp, Ph.D.

Historian, leads the OSM/VISTA Team and Brownfields Initiatives at the Office of Surface Mining in the U.S. Department of the Interior, founded AMD&ART, a non-profit that integrates the Arts and the Sciences in environmental remediation.

Obsolescence is an important issue in the 21st century. How we respond to superseded infrastructure is crucial to the future success of our communities.

Becky Sobell, Landscape Architect

Liz Francisco

BLM archaeologist who is active in the preservation of the historic mining sites along the Alpine Loop

Chris Ray, Ph.D.

Research Associate in Ecology and Evolutionary Biology at the University of Colorado and an expert on pikas

Joseph Ryan, Ph.D.

Professor of Environmental Engineering at the University of Colorado, co-author of *Cleaning Up Abandoned Hardrock Mines in the West*.

David Stiller, Ph.D.

Hydrologist, geologist, water resources consultant, educator, and former executive director of the North Fork River Improvement District, author of *Wounding the West: Montana, Mining, and the Environment*

Interviews

From the outset it was determined that the community would have to play a significant role in *Hardrock Revision*. Without the community's participation our efforts would be purely academic. We also knew that it would be up to the community to bring the vision to life. We sought input from the community in several different ways.

Formal Interviews

Prior to the month of exploration in Lake City, Grant Pound (director of Colorado Art Ranch) visited Hinsdale County several times over three years. In depth conversations were held with Kristie Borchers (Lake City DIRT) on the direction of the project. Meetings were also held with Stan Whinnery (Hinsdale County Commissioner), Mark Walker (Colorado Brownfields), Lyn Lampert and Camille Richard (Lake Fork Valley Conservancy), Grant Houston, Casey Carrigan (VISTA Volunteer). These meetings helped determine the community involvement and issues that might arise

Outside of Hinsdale County, Grant met with various subject matter experts to develop a plan for the project. These consultations stretched around the world and were beneficial in designing the facilitation process.

During the project we interviewed 20 individuals who represented a broad cross-section of the community. We began with a set of basic questions and then veered off to the areas of specialization that each person had. All but two of these were video-taped.

Informal Interviews

Not all information can come from formal interviews. Members of the team met a large variety of people in coffee shops, bars, restaurants, at the Ute Ulay Mine, and at the Texan Resort. We participated in community activities such as the Stick Horse Rodeo, community dinners, musical events, a knitting group, Sheep Days and Burro Days. We gave a public talk at the park and sought input from the audience. We traveled to Silverton to tour the Old 100 and the Mill, and give a talk in Silverton. We met with the Youth Corp and collected their ideas. We bought rounds of beer at the Depot to elicit input from the younger crowd. We put

Many observers are likely to characterize mining country as a ruined, hellish wasteland, but we must remember that such was not always the case: to Americans in the late nineteenth century, mining activities symbolized progress and man's domination over nature.

Richard Francaviglia, Historian



up a refrigerator door at the Artposium to collect ideas.

Survey

An online survey was developed to give community members a chance to express their opinions and ideas. The survey was linked from the DIRT site and the Chamber of Commerce site and was advertised in the Silver World Newspaper. However, the response was too low to be representative.

Advisory Group

A group was developed of community members who represented as broad a cross-section as possible. We acknowledge that we may have missed some segments of the community, but we did have a diverse group of opinions. The Community Advisory Group was used to test ideas and direction. We met three times over the course of the project. The first time we learned as much as possible about each other and our points of view. The second time the team presented the priorities that we would work with and some ideas from other projects that were influencing our thinking. The third time we tested the team's ideas prior to creating final presentations for the Artposium.

Kristie Borchers

Part time County grant writer, executive director of DIRT

Russ Brown

Owner of downtown art gallery, former Town Trustee

Casey Carrigan

VISTA volunteer, has worked on historical information for the Ute

Marian Hollingsworth

DIRT chair & business owner, Lake Fork Community Foundation board member

Grant Houston

Editor and publisher of Silver World Newspaper- started the Historical Society thirty years ago, oversees the Museum, grew up in Lake City

Matt Ingram

Miner and board member of Wee Care, worked in mill at Ute Ulay in 1995

Leslie Nichols

Teacher, chair of childcare center board, parent

John Smith

Former attorney and President of Lake City Arts Council

Stan Whinnery

Hinsdale County Commissioner, experience in construction/excavation/ranching and mining

Danielle Worthen

Lodging Tax Board & business owner - Hall Realty & grew up in Lake City

Results

A great amount of information was gathered and digested in the project. Given the time frame of one month we needed to simplify and generalize. As intended, we did not come up with a plan, but a vision. A plan would require even more participation by the community and experts such as mine reclamation engineers, hydrologists, historians, geologists and Colorado State agencies. By creating a vision we set the framework for future planning at the Ute Ulay.

We began by establishing priorities. We looked at what was most important to address and defined what those priorities meant. We then created an over-arching vision statement that defines the project as simply as possible. A list of principles was also created to illuminate how we would approach various parts of the vision. Finally we came up with a phased approach to the vision. These ideas were roughly divided into immediate concerns, and the phases that Hinsdale County would be receiving the property from LKA International.

Priorities

Sustainability:

The Ute Ulay mine site should be both environmentally and economically sustainable. Construction materials should be reused from the site or locally sourced whenever possible, and power needs generated on site. Repurposed buildings should undergo deep energy retrofits. At least one part of the complex should generate revenue to finance the site's upkeep, and other areas should require minimal staffing and maintenance.

Community:

The Ute Ulay mine site should reflect the desires, values, and spirit of the local, seasonal, and wider communities. The site's function should fill community needs, such as expanding the tourist season, and will not replicate local amenities or other attractions on the Alpine Loop. Community ownership at every stage of development will ensure the project's success. The site should reflect Hinsdale County's pride of place and bridge cultural and environmental issues.

Balancing preservation and innovation:

Maintaining the Ute Ulay's historic character and creating new uses for the site are not necessarily in conflict. The spirit of the site's mining use – repurposing structures, exploration, and nearly constant change – should be followed. Putting buildings into use will discourage vandalism.

Feasibility and Flexibility:

The vision has multiple stages and multiple options. Ideas are on a spectrum from simple maintenance to much more ambitious projects. The community need not follow the plan in a linear fashion, and parts of the vision can be implemented immediately.

Public Education:

The mine site should be a public space with an educational mission, as a platform for mine remediation, experiments in phyto-remediation, and a model for low-impact resource use, as well as interpretation and access to a historic mining landscape.

The arts can facilitate a process of learning through the engaged senses, bypassing conditioned patterns of thinking and allowing other ways of knowing to come forward, at times subtly, at times overwhelmingly.

Beth Carruthers, Artist and Philosopher

Vision Statement

The Ute Ulay mine site will become an economically feasible, environmentally conscious, public space. It will be historically sensitive, innovative, educational, and experimental.

Guiding Principles

Transparency of Process:

Rather than trying to disguise remediation efforts or fix the mine at one point in the past, an approach that reveals work at the site will serve an educational purpose, offer the Ute Ulay as a model for other mining sites, and place new changes within a context of the mine's history of nearly constant change.

Role of Art:

Colorado Art Ranch's decision to bring in a primarily artist-based team ensured that an artistic approach was used from the earliest conception of the project. The development of the vision reflects this sensibility in its creative problem solving, as well as the visual and interpretive design of the site.

Within the overall vision for the site, public art projects are included in each stage. These projects are not decorative afterthoughts or window-dressing, but serve key imaginative and community functions. For example, due to safety concerns at the site, visitors cannot explore shafts or adits, but an art project that sonically or visually inhabits underground mining space could create that experience powerfully.

We encourage the community to build on the momentum of the Colorado Art Ranch's month in Lake City by inviting other artists to create site-specific works at the Ute Ulay, or participate in grading, remediation, and renovation projects.

Discovery:

Some of the power and charm in the Ute Ulay site is in its huge, shambling, exploratory mining landscape. Decisions about signage should be made carefully in order to preserve and enhance the opportunity for visitors to discover the site at their own pace. Creation of permanent interpretive resources on site should continue to reflect that exploratory spirit, inherent in the first prospectors who found the Ute and Ulay veins.

Phases I



Structure Stabilization

Some of the buildings on the Ute Ulay mine site are in need of immediate protection and stabilization until funding can be secured. The team identified key buildings and structures in need of care. At the town site: the headframe, boarding-house, two log cabins, and water tank. At the mill site: the mill, assayer's office, and hydropower structure.

Ground Stabilization and Grading

Ground stabilization and grading is critical to preserving both the town site and the mill site. Grading should facilitate walkways to all elements of the site. The Ute Plaza and picnic area should be fully accessible. We strongly recommend that shoring be done with gabion walls

instead of concrete or engineered block. Gabions should use on-site waste rock material. The rock could be sorted for color and size and placed in layers that reference a geological time line. During planning stages, an artist could be engaged to design the stratified gabions.

Thoughtfully designed parking is a necessary part of a future vision for the Ute Ulay. There are a few possible parking sites that are minimally visible from the road and will not significantly change a visitor's first experience of the site. Relative invisibility, as well as safety and convenience, is a priority.

Bioremediation

Phytoremediation or green remediation looks to nature to help clean up



contaminated soils. It is cheaper and has a lower impact than more traditional remediation methods. In particular, phytoremediation uses plants to draw heavy metals out of the soil. Although this process has not been scientifically proven to treat lead contamination, there are scientists who think it might be possible. A cheap and quick-to-construct hoop house on top of a small area of

lead-heavy tailings could serve as a research center for phytoremediation techniques.

Roof Tarps

Many of the buildings on the town site and mill site are currently degrading due to inadequate roofing, and the community has considered installing tarps as a short-term solution. This presents an opportunity to embellish the site with creative tarps in lieu of plain blue ones. Protective vinyl tarps could be printed with images or information related to future creative enhancements of the site. For example, one tarp could showcase how the water storage tank will be transformed into a camera obscura. Alternatively, tarps could display historical imagery of miners who once worked at the Ute Ulay. This imagery could be provided by the historical society or created by an arts group or class. After the tarps are used, they can be transformed into tote bags as a fundraiser.



Structure Splinting

There are two frame structures on the Ute Ulay site in need of immediate repair, the head frame and the remains of the hydro-power structure at the former mill site. Both of these

historical fragments communicate how the mine worked at the height of its productive life. In medical parlance, bone fractures can be held together using internal and external orthopedic metal splints. If we consider the frame structures as skeletons of the industrial past, an aesthetic sculptural component of the remediation process could be making visible methods of repair.

Shaft & Adit Periscope and Diorama

The head shaft and lower adit next to the mill site are connected deep underground. Before shafts and adits are closed for safety, installation of a periscope or live video feed could draw visitors, generate revenue, and create a sense of the unseen connections underground.

Alternatively, adits could be closed several yards back so that visitors could enter the adit briefly and experience the space of the mine.

Another option might be to have an artist install a peephole tube from outside the adit or shaft into a diorama created just inside the mine. A visitor might see a tiny scene or collection of precious minerals inside.

Adit Closure: Aeolian Harps

In the immediate future, adits at the Ute Ulay site will need to be closed off. Usually this is done by placing grills or gates at the entrance of the adit. The gate structure could be modified to include aeolian harps that take advantage of the natural movement of air through the mine. In winter, the warmer air inside the adit rushes upward through the mineshaft; in summer, when the air inside is cooler than the outside air, the flow is reversed. Aeolian wind harps are sensitive to the movement of air and produce different sounds depending on the force of the wind. Different tonal ranges are created through the use of differing tensions in the metal construction of the harp.

Phase II

Hostel & Cabins

The miner's boardinghouse and the two cabins will be a revenue-generating hostel, reflecting the buildings' original use. Structures will undergo a deep energy retrofit to preserve historic character while becoming energy efficient.



Thoughtful interior decoration could interpret the site's history.

Winterization will be self-contained in the boardinghouse, with cabins for summer use. The main structure will include private and group bedrooms, hot showers, plumbing, gathering space, and a communal kitchen. Other amenities could include interpretive resources, educational

programming, and a small-scale farming endeavor with chickens or alpacas. A live-in site caretaker could handle online reservations, light housekeeping, and greeting duties.

Marketing could target ice climbers, backpackers, corporate retreats, family reunions, and student groups. A price spectrum could be implemented to include a special rate for locals and work-trades for low-income visitors; one or both cabins may be renovated into more private, rustic luxury accommodations.

Creative interior and exterior wallpapering, drawing on the structure's original wallpaper and Victorian patterns, could emphasize the hidden history of domesticity within the mining landscape.

Additional Housing

Recycled materials from the site and environs could be used to construct additional low-impact housing on the site. Dutch designer and architect Piet Hein Eek is known for his use of scrap-wood furniture and



There is a process to reading the landscape, and it begins with observation. This first step, seeing the landscape, is often followed by an appreciation of its content. Only after putting what we see in context can we make effective decisions about what-if anything-is worth saving.

Richard Francaviglia, Historian

recycled building materials. Pictured here is a log cabin he designed for the entertainer Hans Liberg. The structural elements consist of a salvaged steel frame, log exterior, sheep's wool for insulation, and painted plywood interiors. Set on wheels, the cabin can be easily relocated.

Ute Plaza and Picnic Area

The flat area between the headframe and the water tank is an ideal place to establish an accessible overlook, community space, and picnic area. Since it is also adjacent to the education building, the space is perfect for nature and history talks, poetry readings, and to give an overview of the mining and milling process.

Design elements of the plaza and picnic area should have symbolic value and create an inviting place. Circular forms made of rock, brick, or steel may refer to the many layers of time and human history at the site. Circles also evoke the Ute Indian baskets and tepees, historic kilns, as well as gears and other mining equipment. A fire ring would encourage storytelling and a sense of community.



The overlook needs a fence for safety. This should be considered an opportunity for engaging an artist to make this utilitarian object an integrated part of the character of the Ute Ulay site.

Spring and Aspen Grove

Just up the hill from the headframe there is a small grove of aspen. Among the trees, at the top of what is currently a dry streambed, is a natural spring where water flows out of the earth into a concrete cistern. It could easily be made into a more natural pool. This area is a small gem. By formalizing the path and adding stones or other natural seating, it could become a quiet place for connecting with the landscape of the Rocky Mountains.

Water Tank as Camera Obscura

The term camera obscura comes from the Latin for “dark vaulted chamber.” Popular in Victorian times, the camera obscura is an optical device that projects an image of its surroundings onto a screen. Also referred to as The Mirror of Life, camera obscuras were seen in many U.S. parks and public spaces from the 1870s to 1950s. The proposal to use the water tank at the Ute Ulay as a periscope camera obscura combines two methods of viewing the surroundings in one experience. Light is tunneled down a shaft (not unlike light filtering down a mine shaft) to project a moving image onto a concave dish. Inside the tower, viewers may manipulate the periscope themselves or with the help of a guide.

The quality of the environment is the very foundation of the local economy. Issues related to environmental protection are community priorities.

Transportation

Motorized transport including ATVs, jeeps, and dirt bikes dominate the Alpine Loop. To encourage a slightly different kind of visitor to the hostel, the Hardrock Revision team wanted to consider options for those without a motor to propel them up to the site. Shuttle pick-ups scheduled from Lake City, in the form of car or burro, are two possibilities that would have the additional benefit of cutting down on the need for parking space.

2006 Community Plan

Art and Educational Programming

A wide variety of educational opportunities could be offered at the Ute Ulay. A central building for staff, storage, and small group meetings could be located in a new structure behind the headframe. The Ute Ulay holds the potential for educational programming for all ages and could include opportunities for school groups, workshops, and university research, as well as the casual tourist. Educational tools include creative signage, historically sensitive design, and tours. Text and images can be embedded throughout the site and sourced from an interdisciplinary array of poetry, diaries, maps, history, and science.



Trails

Interpretive trails are found in many parks, historical sites, and open-air museums. Designs range from simple signage to highly integrated benches, pavers, and design elements that display or provide information. At the Ute Ulay, a variety of options exist for self-guided tours. One area that particularly stands out is the path of the old flume that transported tailings from the mill to a field west of the site. Cut into the hillside at a gentle slope, this is an ideal spot to situate an interpretive trail,

leading casual walkers away from the Ute Ulay to a Bureau of Land Management reclamation site. The educational content found around the trails should employ natural materials as well as local poetry and stories.

Tramway, Zipline, Waterslide

Productive mines are often discovered in inaccessible terrain. For many mining operations like the Ute Ulay, it was not cost-effective to build and maintain roads for several burros or pack horses to transport ore down the mountain. Aerial tramways developed in the 1860s transformed the mining industry. This creative solution inspired us to imagine reinstating the Ute Ulay tramway. In our vision, a low-energy, small tramcar would carry two people up the slope. At the top, visitors would have the choice to ride the tram down or take a zipline to the inoperative Ute Ulay dam. If the flume were also reinstated, one could waterslide back to the mill site, completing the Ute Ulay loop adventure.



Phase III

Mill and Assayer's Cabin



The unique and remarkably intact mill building could become the central historic attraction of the Ute Ulay site, as well as another source of revenue. There may be potential for a partnership with the Hard Tack Mine, and with miner Matt Ingram, who could give tours or record an audio guide. Building walkways around and through the mill would solve the problem of a costly indoor restoration, allowing visitors to view the complex machinery and imagine the milling process. A sound artist could be invited to repurpose

some of the machinery as kinetic sculptures, giving visitors a sense of the industrial cacophony inside a working ore mill. The assayer's office next to the mill might be reused as a workspace for a resident artist or writer or building administrator.

Audio Tours

Visitors to the Ute Ulay site may have the choice of various audio tours featuring the voices and knowledge of local residents. For example, one could choose to take the poetry audio tour and listen to regional poets reading work evocative of the landscape or mining. Someone else might choose the ghost tour, and listen to the voice of local miner George Hurd or historian Grant Houston telling stories about the mine and Lake City. Yet another visitor might choose to listen to the voice of Matt Ingram describe what it was like to work at the mill.

Underground Passage

Though the mountains appear to be solid, miners have carved out veins of metals, leaving voids deep in the earth. Because the mines, and the creek—far below the level of the mine site—are inaccessible, a new route to reach the creek could be carved through the hillside in the spirit of the mine.

Tailings Pile

The largest mine tailings pile at the Ute-Ulay mill site has been estimated at 4,000 cubic yards in volume. The pile was considerably larger in the past. The pile may contain metals and other poisons that are lifting into the air, creating dust, and entering storm-water runoff. Sealing the tailings is the only practical way to reduce leaching and the threat of respiratory illness in visitors. We suggest using a powerful polymer emulsion that will retain the form of the pile. The sealant will bond the surface dust and aggregate together and “cement” it to the base to create a hard, dust-free, water resistant, and resilient surface. This remediation technique will essentially freeze the tailings pile in time, establishing a memorial-like feature, a tribute to the work that took place at the site.

Old Mill Ruins/Gathering Space

The site of the original mill (no longer present) could become an outdoor gathering space, with the foundation creating natural walls around the concrete platform. A screen could be hung from the hydropower structure, facilitating films, talks, and other events.

Ice Rink and Expanded Ice Climbing

There are several opportunities for winter recreation on the site of the Ute Ulay. Capitalizing on the ice climb that is already in use just below the dam on Henson Creek could make it a site of particular interest to experienced climbers. Another possibility is the installation of a low maintenance ice-skating rink in the tailings pond after remediation. Winter sports could help to expand the season of the hostel, drawing both locals and non-locals alike.



Micro-hydro

About a hundred years ago, the Ute Ulay mining operations began to generate electricity by hydropower. Given *Hardrock Revision's* focus on sustainability, the team recommends installing a modern hydropower system. Used on many farms, ranches, and homes in remote locations, micro-hydropower systems can generate up to 100 kilowatts of electricity. Current systems respond to varying water flow

rates and seasonal changes to ensure reliable power. For the Ute Ulay, a sensitive eye for history and innovation will be needed to implement a micro-hydropower system that compliments the historical precedent.

Workshops

The blacksmith's shop and three attached sheds on the mill site could be designated as multi-functional workshop spaces. These workshops could support artist residencies or local artist commissions, and could serve as breakout educational spaces for school groups, youth groups, summer camps, and temporary research facilities for visiting university programs. Refitted to include workshop benches, lighting, and metal-working equipment, the workshop would be spacious and adaptable to a variety of uses.



Pika Research

Research being done in the Great Basin of California and Nevada indicates that mine tailings are an ideal environment for pikas, sustaining these small creatures when other habitats at similar altitudes and climates cannot. The opportunity to study this phenomenon in a controlled environment could be a valuable function for the piles of waste rock at the Ute Ulay and an opportunity to better understand an indicator species.

Next Steps

The Hardrock Revision Team worked with subject matter experts, community, community advisors, and others to develop a vision for future uses of the Ute Ulay mine site. This vision provides a framework for future work at the mine. The ideas are just ideas and need to be tested within the community and with experts in the field. It is not our intention to have the ideas taken literally in all cases. We do not, for example, really think there should be a giant pika on the site.

First Step

One of the next steps is to conduct an assessment of the environmental concerns on the lower half of the site—including the mill, assayers cabin, and tailings pile. This is a job for Colorado Department of Public Health and environment and does not require an creative oversight.

Immediate Concerns

As pointed out in the idea section previously, there are some buildings and structures that need to be stabilized right away or there will be nothing left of them to work with later. This part is relatively inexpensive. Money may be able to be raised from individuals for this portion. Agreements would have to be made between the county and LKA as some of the buildings in

danger are on portions that will be donated at a future date.

Closing Adits

The DRMS will likely close the adits in 2012 and they know how to close an adit as they have all over the state. They generally install a grate that allows bat egress and keeps humans out. In the case of the lower adit by the mill they would fill in the section that goes under the road to prevent any future cave-in. Their concern is safety and cost effectiveness, but this would be an opportunity lost. The lower adit has air rushing out of it in the summer and the team had advised placing aeolian harps to create musical notes from the air movement. This may be a later development, but if the adit is backfilled, the air will no longer escape. Even without the harps the rush of air is novel and provides a learning opportunity about air movement. It would be quite simple to install pipes and fill under the road instead. However, if the backfill is done it would be cost prohibitive to recreate the experience of that adit.

Tarps

We suggested putting tarps over fragile buildings to prevent further degradation from the weather. It would be simple enough to cover these buildings with standard blue tarps, but again an opportunity would be missed to engage the public and possibly raise money. The tarps may remain in place for several years as funds are collected to rehabilitate the structures. Four years of blue tarps would do little to stimulate discussion or envision the future construction. Tarps could be installed by volunteers.

Structure Stabilization

The stabilization of the framehead and possibly the water power structure needs to happen in 2011 if possible. The framehead in particular is in danger of falling toward the west. A structural engineer should be consulted and a couple of cables anchored to the ground could probably keep the framehead from falling over. This may be a project that county workers could take on.

Master Plan

A master plan involves all future phases. This is a necessary part of fixing up the Ute Ulay in any case. This process involves fleshing out the vision with realistic phases and priorities for projects. A plan would include the identification of experts, timelines, materials, costs, and funding sources. It would establish, with input from historians and archaeologists, which buildings get saved and how. There are some organizations that may be willing fund such a plan such as the Orton Family Foundation and El Pomar. Kristie Borchers would need to be involved as the proposal would have to come from the county or city. The role and cost of the creative oversight coordinator would be included in any such proposal.

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