

***Protecting Public and Environmental
Health from Legacy Mining Toxins***

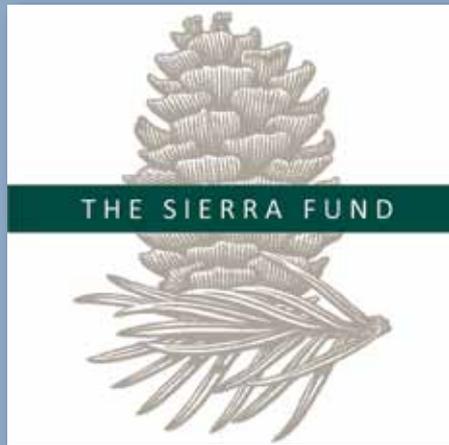


Nevada City, CA 1890's, 2010

A PRIMER for
LOCAL GOVERNMENT OFFICIALS
in the **SIERRA NEVADA**
by
The Sierra Fund
May 2010

The purpose of this document is to summarize the key issues that confront local government officials with legacy mining in their jurisdiction.

THE SIERRA FUND is the only nonprofit community foundation dedicated to the Sierra Nevada. Our mission is to increase and organize investment in the region's natural resources and communities.



We pursue this mission three ways: through **Advocacy** to bring public funding to the region, **Philanthropy** to provide a vehicle for private funding, and **Strategic Campaigns** that pursue critically needed programs in the Sierra.

Since 2006, the Mining's Toxic Legacy Initiative has been our primary strategic campaign. The goal of this Initiative is to assess and address the ongoing impacts of toxins left over from the Gold Rush and subsequent mining in the Sierra Nevada.

TABLE OF CONTENTS

SECTION	PAGE
What are the modern-day effects of historic mining in the Sierra Nevada?	3
Why do local leaders and officials need to be aware of these impacts?	4
What kinds of local government entities are affected and how?	5
Cities and Counties	6
<i>Planning</i>	6
<i>Public Health</i>	7
<i>Environmental Health</i>	8
<i>Parks and Recreation</i>	9
<i>Sanitation and Water Quality</i>	10
Tribal Governments	11
First Responders	12
Special Districts	13
<i>Water Agencies</i>	13
<i>Irrigation Districts</i>	13
<i>School Districts</i>	14
What can all local entities do to respond to legacy mining hazards?	15
Further information	20

WHAT ARE THE MODERN-DAY EFFECTS OF HISTORIC MINING IN THE SIERRA NEVADA?

The Gold Rush, while it contributed enormously to the prosperity of California and the nation, devastated the land and people of the Sierra Nevada, and left behind pollution and other hazards that still affect our Gold Country communities and environment:

- 1. Physical Hazards** include open mine shafts that people and animals can fall into, and underground tunnels that can collapse, causing damage to houses, trails and water systems.
- 2. Environmental Hazards (exposure to toxins)** can affect the health of people in the Gold Country and future generations.
 - **Arsenic, asbestos, chromium and lead** occur naturally in this region, and can be a health hazard when crushed and distributed in the mining process. People can be exposed to these toxins by breathing the dust where they live, work or recreate.
 - **Mercury**, on the other hand, was brought to the Sierra in the form of quicksilver to process gold, and is still laced through our creeks and rivers. People who eat local fish can be affected, and children and fetuses can suffer permanent damage.

WHY DO LOCAL LEADERS AND OFFICIALS NEED TO BE AWARE OF THESE IMPACTS?

Hazards from historic mining affect local officials because:

1. Many local governments own property contaminated with legacy mine wastes or physical hazards, making them responsible for potential exposures or accidents.
2. Some local governments may be considering acquiring land for economic development or recreation purposes that may be contaminated with legacy mine problems.
3. Local officials must recognize and address legacy mine waste or physical hazards within a community to protect the public and the environment. This requires being aware of and enforcing state and federal regulations when land is proposed for development.
4. Local land use regulations regarding legacy mine hazards must be clear and easy to enforce. General plans should recognize the concerns associated with building on or utilizing materials from legacy mining sites.
5. Local officials are responsible for certain public health functions, including issuing and publicizing advisories against eating certain fish caught in rivers or lakes known to be contaminated with mercury.

WHAT KINDS OF LOCAL ENTITIES ARE AFFECTED AND HOW?

Nearly every form of government in the historic mining regions of California experiences some sort of impact from legacy mining.

CITIES AND COUNTIES: Cities and counties must regularly deal with legacy mining issues in Land Use Planning documentation, permit processing and authority, and in General Plan updates. Additionally, there are staffing and budget impacts from compliance with or enforcement of state and local laws regarding legacy mining hazards. Cities and counties also must consider legacy mining in the purchase and management of locally owned lands such as public parks.

TRIBAL GOVERNMENTS: Mine waste can contaminate sacred sites, and affect cultural practices such as basketweaving. Tribes may be considering acquiring sites with legacy mine contamination.

FIRST RESPONDERS: Firefighters and emergency responders need information when encountering either hazardous mining materials such as toxins in dust, chemicals and explosives, or physical hazards.

SPECIAL DISTRICTS: Any special government districts that own land or water assets including irrigation districts, recreation districts, cemeteries and schools will need to consider legacy mining in their facilities planning, land management and when acquiring land.

CITY AND COUNTY AGENCIES

PLANNING

Impacts: Development of residential housing, schools, or parks where there are legacy mine tailings exposes the community to toxins during their everyday activities.

Actions: Legacy mining impacts need to be a consideration when amending general plans, and also when approving new development.

- General plans must reflect an understanding of the hazards associated with legacy mine lands.
- Mine tailings and mine scarred lands should be mapped and these areas evaluated to help guide development.
- Prior to issuing a building permit, site evaluations should be conducted to evaluate potential mine hazards in areas near historic mines, and also foundries and other industrial sites.



The historic Idaho-Maryland Mine in Grass Valley, CA presents a significant planning challenge for business development and a new freeway interchange.

PUBLIC HEALTH

Impacts: Limited awareness of environmental health issues such as legacy mining toxins can result in long-term exposure of community members.

Actions: Public health officials need to communicate and coordinate with local environmental health and planning officers, be informed of state regulations and advisories regarding legacy mining toxins, and take an active role in educating the public about these hazards.

- Health officials need to be aware of known legacy mining hazards in their jurisdiction.
- Public health officials need to be involved in development of plans and programs aimed at protecting the public from mining hazards.
- Public health officials need to participate in development of appropriate general plan and environmental health guidelines.
- Due to the high level of mercury in fish in the Gold Country, officials need to stay informed about OEHHA fish consumption advisories and other public health advisories in their jurisdiction.

Fish consumption advisories are common in the Sacramento Delta, but are rarely seen in the Sierra even though many fish are just as contaminated.



ENVIRONMENTAL HEALTH

Impacts: Legacy mining toxins and physical safety hazards are a key environmental health issue in the Sierra Nevada and clearly under the jurisdiction of county environmental health officers.

Actions: Environmental health officers need the training, tools and staff to ensure that mining hazards under their jurisdiction are identified and mitigated.

- Environmental health officials need appropriate training on applicable state and federal regulations and procedures around legacy mining toxins.
- Existing regulations need to be enforced.
- Environmental hazards from mining toxins need to be identified.
- Environmental health officials need to communicate with public health officials about known legacy mining toxins in their jurisdiction.
- Adequate budget and staff need to be allocated to address legacy mining toxins.
- A model protocol for ensuring basic observance of the rules regarding appropriate cleanup by county environmental health officers is available by request.

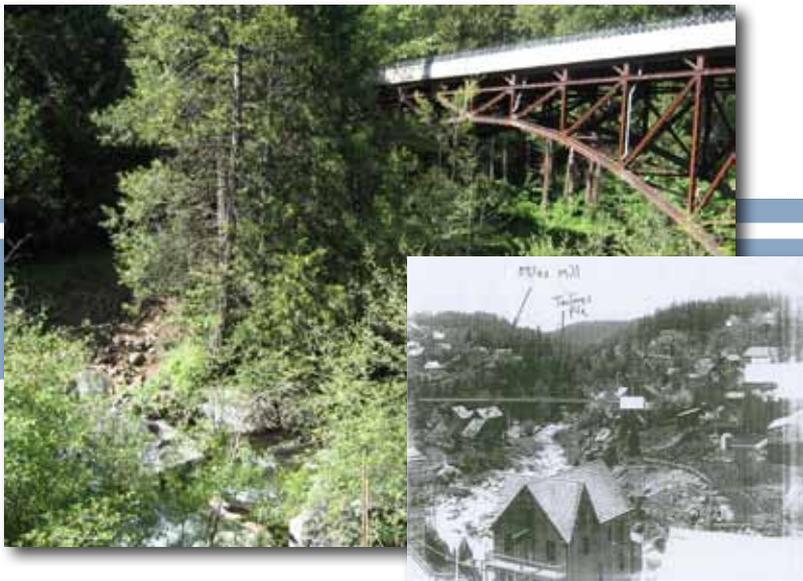
PARKS AND RECREATION

Impacts: In some cases, properties with legacy mining impacts have been given to or purchased by local government and turned into parks. These lands may be compromised by either physical hazards such as hidden shafts, or have mine tailings piles contaminated with arsenic, lead or other heavy metals. If the public fishes in the lakes or rivers in these areas, they may be catching fish contaminated by mercury.

Actions: Public landowners should take action to protect themselves from liability, and to protect public and environmental health.

- Current parks and other recreation areas such as trails and ball fields should be tested for toxins.
- If there are local fish advisories, they should be clearly posted where people are fishing.
- Lands should be evaluated for toxins and hazards before development of trails or other recreational access.
- For prospective properties, an all appropriate inquiries assessment that is consistent with CERCLA protection should be conducted.

The site of historic Stiles Mill is now a park on Deer Creek in downtown Nevada City, CA. Through the EPA Brownfields program, the City recently assessed mine tailings at the site, and now has funding for cleanup.



SANITATION AND WATER QUALITY

Impacts: Acid mine drainage can compromise public water works systems, and also the safety of water in creeks and streams used for public recreation and wildlife habitat.

Actions:

- Water quality should be monitored to help identify sources of contamination.
- Remediation programs need to respond to all water quality threats in a comprehensive and affordable fashion.

TRIBAL GOVERNMENTS

Impacts: Native peoples of the Sierra were decimated by the Gold Rush and subsequent mining. Sacred sites are still contaminated, and native materials for cultural practices such as fish and plants for basketweaving are poisoned.

Actions: Tribal peoples are in a unique position to promote the healing of the lands and peoples of the Sierra. Tribal leaders should inform members of the ongoing impacts of mercury and legacy mining pollution. Safe ways of continuing native practices need to be identified. Tribe-owned lands with legacy mining contamination should be assessed. Tribal peoples need to be involved in assessment and cleanup of mining contamination on historic tribal lands, to ensure that sacred sites and historic resources are preserved.



The annual Calling Back the Salmon Ceremony is led by the Tsi-Akim Maidu Tribe, in order to involve all community members in healing the ongoing impacts of the Gold Rush.

FIRST RESPONDERS

Impacts: Unmapped physical hazards such as mine shafts or chemicals and explosives threaten the safety of firefighters, search and rescue, and law enforcement officers, and can impede their response time. Wildfire fighters should not work at night in areas that are not mapped for mining hazards.

Actions: Clearer mapping of areas prone to wildfires will help firefighters avoid physical, chemical and toxic hazards, and these maps should be included in local Area Plans. First responder agencies such as game wardens, law enforcement, fire departments, CUPA, and search and rescue should be in contact with the local planning department to obtain appropriate maps, or to request that unmapped areas be mapped. Abandoned mine lands hazards should be included in first responder training.

SPECIAL DISTRICTS

IRRIGATION DISTRICTS AND WATER AGENCIES

Impacts: Potential contamination of impoundments by legacy mining toxins, including mercury, can impact the ability to dredge sediments to maintain water capacity or create wetlands for habitat and water quality improvement. Additionally, many water agencies own lands with either physical hazards such as mine shafts, or contamination from mine tailings, both of which could present liability problems.

Actions:

- Learn about and implement best practices for management of waterways and impoundments impacted by mercury.
- If there are fish advisories for the water bodies, they should be clearly posted in appropriate languages at popular fishing areas.
- Assess lands for physical hazards and mine tailings.
- Limit exposure of employees and the public to dust from legacy mine tailings.
- Limit access to physical hazards.

SCHOOL DISTRICTS

Impacts: In some areas old mine lands were donated to local school districts as building sites, or materials such as gravel from mining sites were used in construction of schools and their grounds. Dust contaminated with lead or asbestos fibers has been found at Sierra Foothills baseball fields.

Actions:

- Current school grounds should be tested for toxins if the school was built on, near, or with mine tailings.
- Lands should be evaluated for toxins and hazards before development of school properties.



At a school yard built on naturally occurring asbestos in El Dorado Hills, CA, EPA officials play baseball to simulate asbestos exposure in dust.

WHAT CAN ALL LOCAL ENTITIES DO TO RESPOND TO LEGACY MINING HAZARDS?

Improve communication among affected agencies:

The problems of legacy mining are broad and can affect several departments. A county can greatly improve overall response to legacy toxins by calling together key personnel from each entity that is affected. Regular meetings of the Public Health Officer, Environmental Health staff, facilities managers, building and land use staff, recreation or park personnel, and safety personnel provides a place to discuss their current understanding of mining toxins, impacts on their activities, and problems that need to be addressed.

Support public dialogue and participation in policies or programs to address mining impacts:

The public needs to be involved in any mine remediation projects planned for the community. Tiny legal notices in the newspaper's classified section announcing meetings about proposed remediation projects or policies are not adequate and do not result in community involvement. Local government officials need to work with local media and community leaders to ensure good, ongoing dialogue about these issues. Community organizations and residents near known mining hazards should also be informed of and involved in remediation and public health plans.

MINING TOXINS WORKING GROUP

The Mining Toxins Working Group is a new coalition working to increase funding, collaboration, research, innovation and community involvement around the many aspects of mining's toxic legacy in the Sierra Nevada.

The Working Group is organized into four committees:

HUMAN HEALTH
SCIENCE AND TECHNOLOGY
OUTREACH
POLICY

Contact The Sierra Fund for information,
or to join a committee.





Historic Mine Access in an area citizens and organizations are working hard to preserve for its spectacular beauty and recreation opportunities

Inventory lands and facilities for legacy mining

problems prior to purchase: Local government should conduct an *ALL APPROPRIATE INQUIRIES ASSESSMENT* on lands that they are planning to acquire with a special eye towards mining hazards. This assessment is the only one that will shield the landowner from liability for prior contamination from mining toxins. In conducting this assessment, employ contractors with the expertise necessary to identify all potential mining hazards.

An *ALL APPROPRIATE INQUIRIES ASSESSMENT* will protect the buyer from legal liability under Comprehensive Environmental Response and Compensation and Liability Act (CERCLA) for cleanup of mine contamination already present on the property. Other assessments such as state assessments do NOT necessarily provide this protection.

Seek funding or other resources to clean up hazards and improve programs: State and federal programs have funds available to assist in assessing, planning, and implementation of remediation programs for legacy mining hazards. One such program is the federal EPA Brownfields program, which provides funding for community assessment for toxins, training, and cleanup. Some programs also provide opportunities for staff training and technical assistance that will improve the agency's overall ability to understand and respond to mining issues.

Include legacy mining issues in planning documents: Ensure that any new County General Plans or other plans affecting land or facilities include clear and specific policies to protect the public and environment from exposure to mining toxins. For example, areas with known mine tailings or other mining features should be indicated in planning documents. To protect citizens from liability, an *ALL APPROPRIATE INQUIRIES ASSESSMENT* could be recommended or required for purchases of property in areas impacted by legacy mining.

Work with The Sierra Fund: Since 2006, The Sierra Fund has been working to assess, address, and increase public awareness of historic mining impacts in the Sierra Nevada, through our “Mining’s Toxic Legacy” Initiative.

The Sierra Fund has a team of experts and a toolbox of resources available to provide assistance on all of the above activities. Contact our staff to learn more about these services:

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FURTHER INFORMATION

This document is intended to provide a brief overview of the issues that nonprofit organizations encounter in areas of legacy mining. For more detailed information on liability, regulations, protocols, and funding opportunities, contact The Sierra Fund or consult these resources:

PRINT RESOURCES

Abandoned Mine Lands Preliminary Assessment Handbook

This 75-page handbook provides basic information for conducting an initial investigation of AML sites. Published in 1998 by California EPA Department of Toxic Substances Control, a printed copy can be obtained from DTSC, or it can be found online at: www.dtsc.ca.gov/SiteCleanup/Brownfields/upload/aml_handbook.pdf

Mining's Toxic Legacy: An Initiative to Address Mining Toxins in the Sierra Nevada

Published in 2008 by The Sierra Fund, this 85-page report was the first comprehensive look at the ongoing cultural, health and environmental impacts of historic mining in the Sierra Nevada.

Protecting Public Health and the Environment: A Primer for Nonprofit Organizations in the Sierra

This document summarizes key issues confronting land and water conservation organizations working in the Sierra Nevada.

WEB RESOURCES

Reclaiming the Sierra: a website managed by The Sierra Fund that includes information and resources for addressing mining impacts in the Sierra Nevada. www.reclaimingthesierra.org

Sierra Environmental Services Directory: a networking resource designed to connect landowners who have environmental restoration needs with scientific, legal and financial expertise. www.reclaimingthesierra.org/services-directory

CA Department of Conservation Abandoned Mine Lands Forum: a venue for discussion and coordination on water quality, safety and environmental hazard issues that agencies and other groups face with their abandoned mine land remediation projects in California. www.consrv.ca.gov/omr/abandoned_mine_lands/Pages/amlu_forum.aspx

Abandoned Mine Lands Portal: a website with information on AMLs, national partners, and what is being done. <http://www.abandonedmines.gov/>

My Water Quality Web Portal: a website with information on current CA advisories for water quality or fish consumption. <http://www.waterboards.ca.gov/mywaterquality/>

CA Environmental Protection Agency Office of Environmental Health Hazard Assessment (OEHHA): www.oehha.ca.gov

CA Environmental Protection Agency Department of Toxic Substances Control (DTSC): <http://www.dtsc.ca.gov/>

CA Department of Public Health: www.cdph.ca.gov

US Environmental Protection Agency Brownfields cleanup program: www.epa.gov/brownfields

DEER CREEK TRIBUTE TRAIL

In Nevada City, CA, partners ranging from local restoration and land trust nonprofits to, the local tribe and city government had a vision for a cultural and ecological greenway through town, along Deer Creek. Nevada City, like most towns in the Sierra Nevada, was founded around and on top of the most productive gold mines. In the course of planning the trail, which runs through legacy mining areas, it was routed to avoid exposing volunteers and users to mining toxins.



*Deer Creek,
Nevada County*

EPA BROWNFIELDS ASSESSMENT AND CLEANUP

The US Environmental Protection Agency Brownfields Program provides funding to local agencies to assess, clean up, and redevelop polluted properties. Abandoned mine lands, especially those within historic gold mining communities, are eligible for assessment and cleanup through this program. Nevada City, CA used a Brownfields assessment grant to identify contamination and clean up parks and trail areas within city limits and has now received funding for cleanup.

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Sierra Nevada communities are rich with heritage. While we appreciate our Gold Rush history, local leaders must also take steps to address the lasting impacts on our lands and people.