

# Teamwork Fuels a Modern Gold Strike

**IN THE MID-1800S**, Virginia City and Nevada City, Montana, were among countless western towns born from the rush for gold.

Exhaustive historic preservation efforts on more than 200 buildings and about one million artifacts have kept these two frontier mining towns on the map since then.

Today, it's all virtually priceless for many reasons. The area is rich with history of the Montana territory. Together, the towns represent the largest assemblage of remaining gold-rush era buildings in the country. This western Americana collection is second in size only to one at the Smithsonian Institution in Washington, D.C.

But these treasures also are at great risk from wildfire.

The buildings are wooden and old. The towns are clustered along the bottom of a canyon, with adjacent wildlands and sagebrush-dotted grassland. Prevailing winds could bring a fire to their doorsteps in a flash.

That's why state historic preservationists are mounting an aggressive defense to help keep wildfire from claiming the last of Montana's wild frontier.

To do that, they're parlaying ingenuity, partnerships, money and hard work into a wealth of opportunity.

## Revisiting the past

Protecting the past from the fires of the future began in 1998, just months after the state of Montana purchased the buildings, land

and artifacts in both towns for \$6.5 million. Collectively, they are now worth an estimated \$20 million.

A Montana family had owned the properties since the 1940s and done much of the restoration and collection of artifacts—some, like a rare French organ, are one-of-a-kind.

But in recent years, proper upkeep of the buildings and landscape had become increasingly difficult.

So the state bought 248 buildings in both towns, 160 acres of land and the artifacts—all with an eye toward preserving a valuable part of Montana's heritage. Simultaneously, the legislature established the Montana Heritage Preservation and Development Commission to acquire and manage these and other revenue-sustaining historic properties on the state's behalf.

To commission staff, the fire danger was immediately evident. Thick, overgrown vegetation was everywhere. Cedar-shingle roofs on many of the buildings were so dry that one spark could have lit them like a torch. In Nevada City, there was no effective water supply to fight a fire, leaving the town and its lone occupant virtually defenseless.

The priorities were clear, says Jeff Tiberi, Heritage Commission executive director. The fuel load had to be reduced, and fire-suppression capabilities had to be improved.

"The first thing we did was to go out and buy a [fire department] water tender that the City of Great Falls was surplus," Tiberi said. "That gave the Virginia City Volunteer Fire Department a way to haul a large amount of water, which is especially important for Nevada City."

The commission was able to purchase the 1973 truck, which holds 3,500 gallons of water, for \$10,000 in state funds. Then, it was able to purchase portable radios that can provide direct communications between the local fire department and key commission staff in the event of a fire.

But Tiberi knew that these first steps were only the beginning of the "needs" list.

Alder Gulch,  
Nevada City, 1899



*“We had already done some things [to guard against wildfires] but we didn’t work on it vigorously until the 2000 fires happened.”*

— Jeff Tiberi

Besides catching up with 20 years of deferred general maintenance, the wildfire threat was ever present. New ideas and resources were needed.

### Building a network

So Tiberi began weaving a network of experts, labor and funding that could help develop a game plan and take action to better protect the towns.

“Our initial approach was to work with the Virginia City fire department because we knew they were going to be the front-line people,” Tiberi said. “They recognized how critical the situation was and gave us suggestions on fire protection.”

Tiberi also organized a working group of fire experts that included firefighters and officers from the Virginia City, Helena and Great Falls fire departments, the State Fire Marshal’s Office and others.

“We went to these people and said ‘the state has invested a considerable amount of money in this and we need your help. What’s the best thing we can do to protect these things?’” Tiberi recalls.

The group, which continues to serve in an advisory capacity, did an overall assessment of the towns and prepared reports outlining recommended actions.

Tiberi then turned to his state agency counterparts for assessments and recommendations. The risk management division looked at potential safety and liability issues for a number of hazards. State electrical inspectors evaluated the wiring in the buildings with power to assess electrical condition and safety.

Federal resources, such as the Bureau of Land Management (BLM), the U.S. Forest Service and the National Park Service were tapped as well.

With the ideas flowing, the next critical issue was money. Again, through Tiberi’s network of experts, potential funding sources started popping up.

So did a virtual bombshell.



### Season of fire

It was the summer of 2000. Unprecedented wildfires had ravaged much of Montana for months. By October, when the smoke had cleared, nearly one million acres throughout the state had burned.

“We had some very significant fires that could have totally destroyed these towns if they had gotten closer,” Tiberi noted. “Some days, there was so much black smoke in the sky that it looked almost like a nuclear explosion. It was terrifying at times.”

Though wildfires never got close enough to either town to pose an imminent threat, Tiberi says the smoke from those fires did, virtually shutting them both down for a month at the height of tourist season. Economic losses were estimated at \$50,000.

A steam-powered train that ferries visitors between Virginia City and Nevada City, located a little more than a mile apart, had to be temporarily suspended because of the dry conditions and high fire danger.

“Those wildfires were a wake-up call for us,” Tiberi says. “Walking around that town, almost like a ghost town with all that smoke in there, you think, ‘boy, we could lose everything here.’ It was a pretty sobering thought. And when you think about your responsibility, not only to the past 140 years but to the future 140 years, you know you have to do something.”

Jackson Street, Virginia City, in the 1860s

A member of AmeriCorps' Montana Conservation Corps pulls up knapweed in Virginia City



As a result, work priorities shifted.

“We had already done some things [to guard against wildfires] but we didn’t work on it vigorously until the 2000 fires happened,” he added. “It quickly moved our wildfire mitigation projects to the front burner.”

The issue of funding jumped to the forefront as well.

The commission stepped up its efforts to secure grants from a number of sources—most of which were discovered by Tiberi’s growing network of experts, which now included state and federal emergency management agencies.

The result resembles a modern-day gold strike.

Since 2000, the commission has been able to secure a \$59,000 grant from BLM, a \$300,000 “Save America’s Treasure” (SAT) grant for Virginia City from the National Park Service, and a \$60,735 hazard mitigation grant from the Montana Division of Disaster and Emergency Services. Mitigation grant money is made available to the state by the Federal Emergency Management Agency (FEMA).

Virginia City, the current county seat, was eligible for a SAT grant because it is a designated National Historic Landmark District.

All grants, which fund a variety of fire and wildfire mitigation actions, have cost-share matches that the commission is meeting with state dollars, donations and in-kind services.

### Safety solutions

Getting the most effective fire protection for both Virginia City and Nevada City, involves more than one swift, decisive action, Tiberi has learned. It takes a combination of solutions.

By spring 2003, a lot of work had been accomplished and still more was planned. These efforts include:

#### **Managing flammable fuels**

To keep a wildfire from spreading both into the towns and to the buildings, vegetation and other flammable fuels need to be managed.

To do that, the thick, overgrown vegetation near or around structures in both towns has been carefully thinned or completely removed, according to Randy Kleindorfer, commission operations chief and Virginia City volunteer fire chief.

Surrounding lands, replete with sagebrush and knapweed—both considered dangerous, “flashy” (highly flammable) fuels—have been aggressively treated. Acres of sagebrush have been thinned or removed with an eye toward reducing fire spread and preserving the landscape in a more manageable state.

In outlying areas, aerial and ground-level chemical spraying has been used to eliminate the prolific knapweed, which Kleindorfer describes “like a wildfire itself.” In Virginia City—home to 140 year-round residents—the weeds have been pulled by hand to avoid the chemical exposure.

The commission also has purchased a chipper to recycle the removed brush and is actively encouraging Virginia City residents to thin vegetation around their homes as well, offering the use of the chipper to help with brush disposal, Tiberi says.

In the heart of Virginia City near the historic district, loads of downed, storm-damaged trees and branches have been removed to keep from feeding a ground-level fire.

In both towns, large piles of old lumber that had been left lying up against buildings have now been re-stacked some distance away to eliminate a secondary fuel load.

The majority of the fuels work has been done over two seasons by crews from the Montana Conservation Corps, an organization that enables young adults to build life skills, while improving the environment and local communities.

Funding for the projects came from part of the BLM grant, from part of the SAT grant and from the Montana Noxious Weed Trust Fund. Additional work was slated for spring/summer of 2003.

#### **Improving water capabilities**

Without question, one of the greatest shortcomings of the wildfire protection

efforts was the lack of water to fight a fire. So the commission embarked on a multi-phase project to establish a reliable and effective water supply.

In Nevada City, there was only one possible water source that was close enough to effectively protect 100 buildings—a huge, creek-fed pond, left over from a decades-old gold-dredging operation. But a state highway separates the water from the town, with no way to bridge the two.

So the commission hired contractors to horizontally bore deep underneath the highway and lay 2,000 feet of 6-inch water main. They added a 1,000-gpm, diesel-powered irrigation pump that can be fired up, as needed, to move water through the line and feed four hydrants that were installed at key locations within Nevada City. A fifth hydrant was installed between the pump and the water main to direct the water into the hydrant system.

In the summer of 2003, two more hydrants were scheduled for installation to complete the system. Plans also include drilling a well to provide a secondary water source. A new, three-phase electric pump will be installed and used to move water from that well.

In addition, a sprinkler system will be installed along Nevada City's perimeter. The sprinklers will be used to water adjacent ground-level vegetation, creating a 40-foot green area between the grasslands and the town that can serve as a defensible space.

If a wildfire threatens, the sprinklers can be activated to produce a water curtain to help keep flames from advancing into the town. To avoid potential archeological issues, the sprinkler system will lie on top of the ground during spring, summer and fall months. The piping will be drained, removed, and stored during the winter to avoid freezing.

The 2003 water projects are being funded with the state/FEMA hazard mitigation grant.

Virginia City's water supply is well-established. However, there are some hard-to-reach



A worker connects the water feeder line to one of the pressure fire hydrants installed in Virginia City

areas, primarily in two narrow alleyways behind more than a block of side-by-side buildings, where mounting a fire defense has not been possible.

To fix the problem, a total of five additional hydrants are being installed in the alleyways. In addition, three portable “water cannons” are being purchased. Both projects will be funded by the SAT grant.

The “cannons,” one for each alleyway, can be put on the ground, hooked to a hydrant, and shoot large streams of water to protect the buildings and fight oncoming fire. The third cannon will be housed at the fire department and used where needed.

### **Reducing roof vulnerability**

In a wildland/urban interface, a structure's roof can be among the most vulnerable areas. Wildfires easily produce flaming embers that can travel airborne for more than a mile. Often, they land on, and ignite, roofs.

In both towns, most of the roofs are covered with cedar shingles, a virtual hotbed for embers. Over the years, many of the shingles had blown off, dried out or decayed.

So 70 buildings have been re-roofed, using cedar shingles treated with a fire retardant. That combination both preserves the historic integrity and offers a degree of fire resistance.

For even more protection, 1/2-inch dry-wall was added above the sheeting so that if a roof did catch fire, it would help hold back the flames for a period of time. That gives firefighters a better chance of keeping the fire from spreading inside, damaging the structure and its artifacts.

More work was planned for the summer of 2003. A fire-retardant chemical was scheduled



A completed pressure hydrant at the end of a newly filled water line ditch in Virginia City

to be applied to cedar shingles on existing roofs of a number of other historically significant buildings in both towns to afford better fire protection.

#### **‘Fire Awareness Day’**

The Virginia City Volunteer Fire Department hosts an annual “Fire Awareness Day.” The event is open to the public. A variety of experts provide wildfire prevention and noxious weed control information to residents. Area fire departments are invited to tour the town, enabling firefighters to become familiar with the town’s physical layout and the specialized strategies needed to fight a fire there in the event they are called upon to help in the future.

#### **Reducing additional fire threats**

Though wildfire remains a major risk, so does the possibility of a fire starting from other sources.

To address those risks, the commission has had electrical wiring in several key buildings — such as an Opera House, two hotels, a large restaurant and a historic home — upgraded to meet current safety codes.

The commission has aggressively posted “No Smoking” signage throughout both towns to help educate the more than 70,000 annual visitors. Smoking in Virginia City’s historic public areas is prohibited by local ordinance.

As a backup to the signage, pea gravel has been added between the slats of the town’s boardwalks to prevent a discarded cigarette from dropping into a crack and starting the wood walkways along the buildings on fire.

In addition, fire detection and alarm systems for the buildings are being installed,

as funding becomes available, to give the fire department better defense capabilities through early notification.

#### **Lessons learned**

Tiberi credits the fire-protection improvements largely to the network of resources the commission has been able to establish.

“The success of these things is finding and building bridges among all these different entities,” Tiberi says. “It’s also important to maintain these bridges, which takes a considerable amount of effort but it’s certainly worth it in the long run.”

The same formula for success holds true in securing project funding, Tiberi adds, which has been “a godsend” for the historic towns.

“We learned about a lot of these grants through e-mail notifications from many of our partners,” Tiberi explains. “You have to become aware of these grant programs and deadlines, and make time for your staff to follow up on them. The grant world is very competitive but if you have a good product and a good need, you will rise to the top.”

Though current and future mitigation efforts will greatly improve the towns’ chances of surviving a wildfire, both Tiberi and Kleindorfer say their work will never be done.

“We’re a whole lot better off now than when we started,” Kleindorfer says. “We have reduced the fuel loads. We’ve got way more equipment now to help fight a fire. We’ve treated shingles on these buildings. We’ve created defensible spaces. And there’s a lot more public awareness. But we’re not going to stop. We have to keep going.”

Says Tiberi, “The lesson we are learning now is that this [mitigation] is a process. It is not a destination. Fire will always be a danger. You always have to look at new technology and experiment a little. You can’t let mitigation move to the back burner. The future of any historical site can change in a matter of moments.” ■