WHAT'S BEING DONE to cope with the growing menace of wildfire.
By Allen Best

The Waldo Canyon fire ripped through Colorado Springs last summer, burning nearly 350 homes. The experience in the Mountain Shadows subdivision (above) illustrates the often unpredictable nature of wildfires. Some houses were destroyed while adjacent ones sat untouched.
First, crews dispatched to the rugged area of red canyons and piñon pine on the edge of Colorado Springs found nothing that evening in 2012, the first day of summer. The next day, though, the smoke suddenly mushroomed, revealing a menacing blaze—one that eventually killed two people, burned 345 homes, and damaged 47 others in the city.

The maelstrom occurred on day five. Winds of 65 mph hit Waldo Canyon, sending embers scudding across the crown of a hill and streaming across fire lines bulldozed into the red soil. Flames soared 200 feet high. “Oh dear God, this is terrifying,” one Twitter message said. Soon, homes began catching fire; within three hours, entire blocks were reduced to ashes and concrete foundations.

Altogether, 32,000 people were evacuated, some just ahead of the flames. They returned to scenes of night and day, some strips of houses untouched and others with only brick chimneys and steel patio chairs as testaments to what once had been the good life. Most blackened was a neighborhood serviced by Majestic Drive.

When finally mopped up in July, Waldo Canyon was hardly the largest fire in Colorado’s recorded history, but it was easily the most destructive to property. Never before had a wildfire roared down ordinary-looking suburban streets.

Given the intersection of hot and dry, the high winds could have been more devastating yet. About 24 percent of the 650,000 people in metropolitan Colorado Springs live in what is called the wildland-urban interface, or WUI. Recognizing the danger, city officials in 2001 began aggressively reaching out to home owners to coax them to remove vegetation from around houses, and in 2003 banned untreated shake shingles on new or replacement roofs.

City fire officials say the effort paid off, as 82 percent of homes in the fire zone were not burned. But there was also luck of the draw. Some slackers avoided any damage, while some of the most diligent were left with ashes. “Even if you do everything we tell you, you have a 50–50 chance,” said a local fire official afterward.

For the Front Range of Colorado, the Waldo Canyon fire was the third disastrous wildfire in as many months, following fires southwest of Denver and west of Fort Collins. As this magazine was going to press, yet another deadly fire was raging near Colorado Springs.

**Growing menace**

Wildfires have become larger and more destructive in the U.S. in recent years. In May 2012, a fire threatened 4,000 homes in California’s Ventura County, north of Los Angeles. In 1985, fires on federal lands consumed 2.9 million acres; in 2012, they destroyed 9.3 million acres. Suppression costs escalated from $240 million to $1.9 billion during that same period.

But fire experts warn that the most damaging and deadly wildfires are yet to come, given the wrong coincidence of circumstances.

“When you get these catastrophic wildfires, you just can’t throw enough resources at them until the weather changes, the terrain changes, or the vegetation changes,” says Pat Kidder, chairman of the California Fire Safe Council.

Experts blame intensifying drought, rising temperatures, and continued human settlement in fire-prone ecosystems. State forestry officials estimated that, in 2000, nearly a quarter of Colorado’s population of 4.3 million people lived in WUI areas. The state’s population is now 5.2 million.

An irony is that homes with greater risk actually tend to have higher property values. Patty Champ, an economist with the U.S. Forest Service who has studied human response to wildfire risks, points to a correlation between higher real estate values and proximity to dangerous terrain. “That isn’t how real estate agents put it, but that’s the reality,” she told a group at the Colorado Forest Summit last October.

Certainly, the homes burned and endangered by the Waldo Canyon fire fit that profile. They offer luscious views of Pikes Peak, a 14,000-foot mountain just a few miles away, and close at hand are the majestic sandstone spires of Garden of the Gods, which APA designated as a Great Place in America in 2011.

**Where are the legal tools?**

In Fort Collins, one lesson drawn from last summer’s 87,000-acre High Park fire is that local governments need more legal tools. Russell Legg, the now-retired planning director for Larimer County, says older subdivisions—those built starting in the early 20th century—had no requirements for reducing wildfire risk. State law also exempts subdivisions of 35 acres, enough land for a Boy Scout camp.

Newer subdivisions are required to have defensible space, but who monitors to ensure vegetation and other flammable

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**WUI development**

Across the West, 84 percent of the WUI is currently undeveloped. Counties shown in brown are places where better planning and policies can have the biggest impact to reduce future firefighting cost.

**COUNTY VIEW**

- Largely undeveloped (<20% developed)
- Moderately developed (20-50% developed)
- Extensively developed (>50%)
- Little to no WUI (<10 square miles of WUI)

**SOURCE:** Headwaters Economics, 2013
Efforts to transfer development rights to less risky areas haven’t panned out, says Legg. But some analysts say that local governments might try harder to limit WUI development if they had to bear a more of the cost. Some 1,500 people battled the High Park fire, along with planes ferrying slurry, helicopters, and other tools of fire suppression. The bill reportedly ran to $38.4 million.

Cost accounting for that fire may not be completed for two years, local officials say, but cost typically is apportioned based on acreages of federal, state, and local government land involved, along with private lands. That would, in this case, leave the federal government with the biggest tab.

"We think it's expensive and dangerous now, and you add climate change to this and it will become a much, much bigger problem," says Ray Rasker, an economist and executive director of Headwaters Economics, a think tank in Bozeman, Montana.

Adjusted for inflation, Rasker says, federal wildfire costs ballooned from $1.5 billion to $3.1 billion between 1996 and 2007. An Office of the Inspector General study in 2006 found that protection of private property was identified as a major reason for firefighting efforts in 87 percent of large wildfires. In other words, WUI homes are the primary cause of escalating federal firefighting costs.

Rasker contends that local governments must be more accountable for land-use decisions. "The fundamental problem is that if we don't have that incentive at the local level, where land-use decisions are being made, then where is the accountability? How do you shift it from the federal taxpayer to the local level? That's what I'm trying to figure out."

A 2009 study authored by Rasker identified 10 strategies, including the idea of creating a federal fire insurance and mortgage program, modeled on the one in place covering floodplains.

Will Toor, a former commissioner in Colorado's Boulder County, also argues that priorities have been misplaced. "I think the response has been much more about resources for fighting fires and forest treatment, with the hope that it will reduce fire intensity, and some requirements about construction in these zones. Very little has been about what seems to me the most important: How much development are we going to allow in these areas that we know are at a very high risk of burning?"

To make his case, Toor cites two parallel fires in the foothills west of the county's namesake city of Boulder: A 2003 fire in Lefthand Canyon resulted in few burned homes, but a 2010 fire in Fourmile Canyon destroyed 169 homes. The difference? The first fire was almost exclusively on federal lands. The latter canyon had been mined in the 19th century, resulting in scattered parcels of private property, most with homes on them.

Yet another fire occurred west of Boulder last summer in an area not unlike Waldo Canyon, but development rights had been removed years ago. Had building been allowed there, says Toor, the outcome might have been like that at Waldo Canyon.

However, it's not easy to crimp development in risky areas, as Toor discovered after the 2010 fire. Even in Boulder County, among the most liberal counties in Colorado, the public had no appetite for restrictions. "You need to have this policy discussion, but not immediately after a major fire," he says. "You have all these people whose lives have been turned upside down, and politically, it's almost impossible to do anything other than to help them rebuild."

Fire experts warn of much worse to come. "I don't think Colorado has seen the worst fire yet. And I think that's true almost everywhere," says Mark A. Finney, a research forester with the U.S. Forest Service's Fire, Fuel, and Smoke Science Program in Missoula, Montana.

Finney argues that fires in fire-prone ecosystems can only be suppressed temporarily. Eventually, he says, there will be fire—and probably fire more massive in
scale. "We have created this experiment in attempting to remove fire in the landscape," he says. "We are just starting to figure out how this plays out. It doesn't play out well."

Prescribed (i.e., controlled) fires dent the buildup of fuels, and some have blocked the progress of giant fires. But smoke is objectionable to many, and sometimes prescribed fires get out of control. In 2002, a fire set by National Park Service employees in New Mexico spread into Los Alamos, endangering nuclear materials housed at the national laboratory and causing $1 billion in damages.

The potential for catastrophic fires has further been enabled by epidemics of mountain bark beetles. Some 41 million acres of lodgepole pine have died in the West in recent years, adding to the tinder. Summit County has been at the epicenter of Colorado's infestation. It's an hour west of Denver along I-70 and home to four of the busiest and largest U.S. ski areas. About four-fifths of the land in Summit County is administered by federal land agencies. Foresters estimate 155,000 trees have died in the county during the last decade as a result of beetles.

The sight of those dead and dying forests has provoked a dramatic change in policy. Before, trees were nearly sacred. Now dead and diseased trees are being cut down to create fuel breaks.

In Breckenridge, the largest town in Summit County, permits were required of anybody who wanted to cut down a tree; officials feared large trees would be removed to open up views, the better to maximize real estate values.

Since the bark beetle epidemic, though, there has been "a 180-degree reversal in attitudes," says Peter Grosshuesch, AICP, director of community development.

Ironically, Breckenridge faced pushback when it tried to force home owners to cut trees. Better received by home owner groups has been a voluntary program, and the town now has nine Firewise-designated neighborhoods, the second most in the nation.

Now, Grosshuesch worries about the effects of a large-scale fire on the community's watershed. After hot fires southwest of Denver left some soils fused like a marble countertop, runoff from a summer storm rapidly filled a major reservoir with sediment. Its removal has been expensive.

Grosshuesch imagines an even worse scenario affecting Breckenridge's small reservoir. Could the town be forced to truck in water from elsewhere for several months? A plan now in the works suggests creation of check dams immediately after a fire in the drainages with the most vulnerable soils.

Dan Gibbs, a county commissioner, points to seminal thinking in 2002, a year of epic drought and catastrophic fires from Arizona to Colorado to Oregon. In response, Congress passed the Healthy Forests Restoration Act. A key provision provided the framework for creation of local community wildfire protection plans. The carrot offered by Congress was the promise of grants to local communities who got together to prepare risk mitigation in local forests.

Taking action

Some community wildfire protections plans have been little more than one-page lists, says Gibbs, a former congressional aide. The one developed in Summit County is 100 pages long and far more elaborate, with involvement of local towns, county government, Denver Water, the electrical utility, the Forest Service, and others. Locals also put up money for forest thinning and fuels removal. A county property tax approved in 2008 allocates $500,000 a year.

"We look for partnerships along the way," says Gibbs. "Not one entity—not the federal government, not the state agencies, not the county nor the towns—is big enough to deal with potentially catastrophic wildfires." Virtually all of Summit County, he notes, is in the WUI, certain to have a fire at some time.

Certainty of fire also was evident in 2001 when Colorado Springs began its aggressive outreach to the 36,485 homes in the city's WUI. "I started out in cul-de-sacs and in churches and living rooms, talking with people about their wildfire risks," explained Christina Randall, wildfire mitigation administrator for the Colorado Springs Fire Department in a presentation at the Rocky Mountain Land Use Institute. Many, she said, had to be persuaded that fire could occur.

The city began assessing wildfire risk for each property based on 25 weighted values involving vegetation, flammability of roofing materials, and so on. Many residents were apprehensive about having the information shared. "I don't want my neighbors to know," they said. City officials responded: "We want your neighbors to know." The message: We're all in this together.

That message was underscored by a postfire analysis of Waldo Canyon by the Insurance Institute for Business & Home Safety. "If you are in a community where home spacing is close, it does take a neighborhood effort. It's up to you, when you're close to your neighbor; it's also up to your neighbor," says Steve Quarles, a senior scientist with the institute.

Quarles, who holds a doctorate in wood science, explains that scores of the houses burned by the Waldo Canyon fire were in a more densely spaced portion of the Mountain Shadows neighborhood. The fire spread more rapidly from house to house, both by direct flame and radiant heat exposure. Some houses were only 15 feet apart.

As with many wildfires, the key ingredient for the destruction in Colorado Springs was wind—and wind is not confined to summer fires. Quarles points to January 2012 fires in Reno, Nevada, that caused dozens of homes to burn.

RESOURCES

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But the largest lesson of Waldo Canyon may be that advance work pays off. City officials in Colorado Springs concluded that $300,000 spent in fuels reduction at Cedar Heights, the most vulnerable neighborhood that somehow avoided any losses, had $77 million in benefits.

Too, the planning for evacuation conducted by city officials succeeded, despite some glitches in communications. “We evacuated more than 30,000 people in just a few hours, and we didn’t have any issues,” said Randall. “There were no reports of accidents and panics and fights.”

Molly Mowery, program manager for the Fire Adapted Communities Coalition (involving federal agencies and fire safety and insurance groups), says a major lesson from Colorado Springs is the value of a long and sustained effort. “Often we hear in the news about how many homes are being lost. We are trying to reframe the dialogue as to how many homes are being saved,” she says.

Mowery, a planner, says that planners can have a role in that by influencing how we develop buildings. “We are pretty good about hardening our homes and infrastructure to other hazards, such as hurricanes and earthquakes,” she says. “There’s no reason we can’t be thinking the same thing with wildfires. The resources are out there. It’s a matter of how we get people to take action.”

Allen Best is a Colorado-based writer who specializes in environmental issues. He is a frequent contributor to Planning.