The Risk of Wildfire

by Ilene Watson

In the Firestorm

On a hot August night in 2003, the City of Kelowna was illuminated in the eerie light of a raging forest wildfire stretched along the city's eastern flank. Anxious residents watched through the smoke as the intense heat sent flames spiraling up into the darkness. Burning embers carried on the wind fell from the sky over a mile from the fire. Houses were etched in the glow of the advancing inferno, then engulfed in flames, and then gone.

The Kelowna Fire Chief called it a war zone. Exhausted and choking back tears, he described how dedicated fire fighters fought to save other people's homes as their own burned.

A steady stream of 30,000 evacuated residents flowed away from the eastern and southern sections of the city. Convoys of fire trucks, some coming from hundreds of miles away, roared through the abandoned streets. Water bombers and helicopters thundered continuously overhead.

There was an underlying sense of disbelief. "This just can't happen!" It did. About 250 families lost their homes to the flames.

Kelowna, British Columbia (population 100,000) is just one on the list of many towns in North America that have fought wildfires in recent years. At the peak of Southern California's 2003 wildfires (affecting dozens of communities), more than 15,600 firefighters, 1,900 fire engines, 203 water trucks, 43 air tankers, and 105 helicopters battled the flames.

The August 2003 Kelowna wildfire descended over a ridge, and moved toward the town. Flying "water bombers" made numerous runs. The cost and devastation of the fire was enormous.

The outcome: well over 3,500 structures lost, 800,000 acres burned, and, tragically, 22 people dead.

The Increasing Threat of Wildfire

The threat of wildfire is increasing in North America. More people are living in wooded areas or in developments constructed next to forestlands. According to a report prepared by a panel of the U.S. National Academy of Public Administration, communities are continuing to build into their nearby wildlands faster than defensible spaces are being created around them — and faster than local governments are adopting and enforcing essential zoning and subdivision regulations.[1]

Compounding the problem, forests in western North America have been abnormally dry. Environment Canada, for example, indicates that southern British Columbia went through its driest three-year period on record between 2000 and 2002. Last summer, the U.S. National Weather Service reported that most parts of the western U.S. (about one third of the entire continental U.S.) were experien-cing from abnormally dry to extreme drought conditions.

Further exacerbating the threat of major wildfires has been the increasing amount of "fuel" building up in forestlands, in the form of dead brush, dried grass, and fallen tree limbs. This fuel build up has occurred, in large part, because of the practice of suppressing natural fires — that is, interfering with the natural cycle by which fires periodically

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1 *Containing Wildland Fire Costs: Enhancing Hazard Mitigation Capacity* (National Academy of Public Administration, January 2004). See also Resources sidebar on page 6.

Wildfire Hazard Reduction & Environmental Values

In drier areas, including much of the western U.S., many ecosystems have been shaped by a frequent natural fire cycle. Ponderosa pines, for example, have evolved cones that open and scatter seeds after a low intensity fire. The aggressive suppression of natural fires over many decades has altered the ecology of numerous areas. This ecological change is the result of a chain of events, starting with the accumulation of dead tree limbs and the continued build up of underbrush which would otherwise have been thinned out by the natural fire cycle. The resulting high fuel loads often result in devastating fires, much more intense than would have naturally occurred.

The hazard reduction strategies described in this article essentially involve the reintroduction of the effects of fire into the environment through practices such as thinning trees and removing accumulated branches and dead brush. Some would argue that these practices are inconsistent with valuing the natural environment. More persuasive is the view that well-planned wildfire hazard reduction simulates many of the effects of naturally occurring, frequent, low intensity fires.

Wildfire hazard abatement is most effective when combined with other planning strategies, such as locating new development away from forested areas and avoiding rural lots that sprawl across the landscape. The intention of wildfire hazard abatement is not to create a barren and empty environment. Reducing wildfire hazard can be carried out in a sensitive and environmentally responsible way.

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clear away underbrush. Overly aggressive fire suppression means that when fires do occur, they are often hotter, more difficult to control, and more catastrophic.

The combination of decades of fire suppression, a dry climatic pattern, and increasing numbers of homes being built in or adjacent to forests, has made the threat of wildfires a real prospect for a growing number of communities.

Choice & Responsibility

Is the choice of an individual to live in a naturally hazardous situation anybody else's business? Where the consequences of such a choice are borne only by the individual making that choice, few would dispute that the responsibility for the outcome is solely that of the individual. But can the same be said when an individual's choice of where to live imposes financial costs — and physical risks — on others?

When housing developments are constructed in known, fire-prone areas, many homeowners still expect that firefighters, police, and rescue workers will risk their lives and use expensive equipment attempting to save their homes. And, in fact, that is what typically happens. Moreover, when houses in high fire risk areas catch fire, their embers can easily spread the fire, ultimately threatening neighboring homes that are well outside forested areas.

Recognizing that wildfires can often pose a community-wide risk, more towns, cities, and counties are addressing the threat in their planning and development approval processes. The goal is to reduce the hazards (and community costs) posed by wildfires by considering a range of policies, from preventing sprawling rural developments to developing criteria for new housing construction, such as fire resistant roofing and siding materials.

Community Plans and Development Approvals

1. Community Plans

As most *Planning Commissioners Journal* readers understand, the purpose of a community (or comprehensive) plan is to outline goals, policies, and strategies for dealing with a wide variety of land use and community development issues.

It is certainly appropriate for a plan to address natural hazards — indeed one of the primary justifications for planning and zoning is to promote public health and safety. Many local plans, for example, deal with the threat of flooding. Similarly, in communities with forested areas, local plans can and should deal with the threat of wildfires.

Among the key questions that can be addressed:

- What wildfire hazard reduction methods does the community currently use?
- What methods are available, but not being used?
- How are fire hazards dealt with in the development review process?

An important fringe benefit: the very process of focusing on wildfires through a community planning process can serve as an important educational foundation and help build public awareness and commitment to reducing fire hazards.

Components of the community planning process for wildfires might include:

- *Undertaking a community-wide wildfire hazard assessment.* An assessment can identify areas that are at high, medium, or low risk in terms of wildfire hazard. This provides the community with vital baseline information to use in decision-making.

There are some programs, such as "Landfire," which use remote sensing to help map wildfire hazard areas. Landfire is a federal initiative to generate comprehensive maps and data describing vegetation, fire, and fuel characteristics across the United States. This information can supplement other locally developed data.

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- *Developing goals and strategies for*