



Planning Fire-Resilient Counties in the Wildland-Urban Interface

Guide to Wildfire Risk and Mitigation

Planning fire-adaptive communities and mitigating the impact of wildfire is crucial to protecting residents and reducing emergency management costs. County officials play an essential role in leading community initiatives to prevent and mitigate the risks associated with fire in the Wildland-Urban Interface.

Nearly 80,000 wildfires occurred in the United States in 2008, according to the National Interagency Fire Center (NIFC).

A poll taken during NACo's December 2009 webinar, "Wildfire 360 - Planning, Inspecting, and Insurance Costs," indicated that 76% of the webinar participants were from counties that had experienced wildfires that damaged property within the last five years, and 58% responded that such wildfires occurred in the past year. With the large number of wildfires occurring every year, what can be done?

It is important now more than ever that county and local planners work in collaboration with local fire agencies, emergency managers and other key stakeholders to incorporate prudent fire criteria into planning policy to adequately protect local residents from the risk and impacts of wildfire. Planners should be involved not only in the development and implementation phase, but also in the periodic review and evaluation.

Critical tools and resources are available to communities and counties to address the impacts of wildfire including Fire Adaptive Communities Guidelines, Firewise, Community Wildfire Protection Plans, Ready-Set-Go guidance on defensible space, etc.

As a result, counties have made great strides over the past several years in incorporating fire policy into their land use and development codes, but many are still struggling with these challenges. In

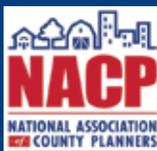
early 2009, NACo conducted a Needs Assessment to learn how counties and their communities were addressing issues within the WUI and about the type of innovative strategies and best practices being implemented to reduce wildfire risk. Respondents to the survey included County Emergency Management Coordinators, County and Community Planners, Fire Chiefs, Disaster Managers, and County Commissioners from 34 states.

Nearly 80,000 wildfires occurred in the United States in 2008 ...

The largest obstacle facing counties when trying to reduce risk against wildfire is lack of funding.

The assessment indicated that slightly more than half of the responding county agencies had incorporated fire policies and codes in their Master/Comprehensive plans, subdivision regulations, and development/building codes. Reasons for not doing so ranged from limited financial and technical resources to little public support. When counties were asked to rank the types of challenges they expect to face in the future when trying to reduce risk against wildfire, again the largest obstacle was a lack of funding. Another major issue was growth in the Wildland-Urban Interface.

NACo is publishing this Planners' Guide to Wildfire Risk and Mitigation with a particular focus on educating county elected officials, planners and emergency managers about issues within the WUI. The guide describes the tools and strategies a county or community can use to reduce the vulnerability of its residents to wildfire through developing and implementing effective local land use policies/codes and building and development codes.



Conditions Warrant Attention

Statistics show that in coming years, we may experience shorter, wetter winters and warmer, drier summers. This has the potential to exacerbate and extend the current drought cycle and fire season ¹. Within the last three years, the number of fires and the affected acreage have been growing. Recent reports from the National Interagency Fire Center (NIFC) indicate the average size of wildfires approached 100 acres, up from the ten-year average of 71 acres ². The number and size of large fires (100,000+ acres) is also increasing. Throughout 2009, the U.S. experienced 12 large fires ranging up to 631,194 acres. Comparatively, in 1998, there were only 6 such large fires with the largest being 288,220 acres ³.

Another concern is the increase of residential development in the WUI. Areas where homes are intermixed with forests and wildlands are defined as the Wildland-Urban Interface or WUI. Within the WUI, residents and homes are at increased fire risk, and fire suppression is more costly. In 2000, 104 million, or 37% of the nation's population lived in the WUI.

The amount of WUI land in the Western United States is growing rapidly as communities are expanding into these wildland areas. For every 100 additional housing units constructed nationwide in the 1990s, 53 housing units were added to the WUI. In the Western U.S. alone, the WUI increased in area by 61% during the 1990-2000 period and in total housing units by 68%. Despite the current economic recession, development pressure within the Wildland-Urban Interface has not ceased. Current housing growth rates in the WUI have been nearly triple the rates of increase outside the WUI. Projections indicate 111% growth in the West and 93% growth in the Southeast are anticipated⁴.

Larger wildfires and the increasing cost of fire suppression pose significant financial hardship for at-risk counties. Wildfires quickly overwhelm local, state, and even federal capabilities and capacities. All fire and emergency response agencies are facing current or potential reductions in personnel and/or funding. Long-lived (several weeks to months) fires require a large commitment of suppression resources.

Planning fire-adaptive communities and mitigating the impact of wildfire is crucial to protecting residents and reducing emergency management costs. Fires tend to make quick runs that cannot be stopped due to size/behavior. Many homes are lost in the first several hours of a fire, which indicates that during the early periods of a fire, the only protection a structure has is the mitigation approaches that were implemented beforehand.



Case Studies

Integrating Fire Protection Into Master/Comprehensive Plan

Boulder County, CO

Comprehensive Plan encourages the development of fire protection districts, the hiring of a fire coordinator, and the creation and implementation of a fire protection master plan. The Plan also establishes goals to survey and map wildfire hazard areas, engage the public in education and awareness projects, preserve forest ecosystem health, and reduce hazardous fuels through strategic management of both private and public lands.

To learn more, download the comprehensive plan at www.bouldercounty.org/lu/bccp/pdf/bccp_with_maps_bookmarks.pdf.*

Integrating Fire Protection Into Land Use Code

Lake County, CA

County General Plan requires wildland fire management plans for projects adjoining open spaces, utilization of fire resistant materials on the exterior of all residential structures, and defensible space of 30 feet around all structures. The general plan encourages cluster development as a means to provide more localized and effective fire protection.

To learn more, download the plan at www.co.lake.ca.us/Assets/CDD/2008+General+Plan+Final+Version/2008+General+Plan+Docs/CH7.pdf.*

Orange County, CA

New construction standards apply within the Fire Hazard Severity Zone (FHSZ)/WUI areas as defined in the 2007 California Fire and Building Codes. Provisions are included for noncombustible roof coverings and roof assemblies, ignition resistant eaves, non-combustible siding materials, dual pane windows, structure venting restrictions, decking, underfloor flame and ember barriers, and detached accessory structure requirements. Newly constructed fire access roads must be of a minimum width for high fire hazard severity zones to allow additional room for emergency response personnel to maneuver during evacuations. Certain changes to landscaping must be approved by Orange County's Fire Authority. Orange County boasts that, as a result of 10 years of enforcing strict building codes and fuel modification plans for new construction, recent wildfires in Orange County have destroyed no homes ⁷.

To learn more search the national database of state and local wildfire hazard mitigation programs or visit www.wildfireprograms.com/search.html?search=advanced&string=&state=&type%5b1%5d=7&displayId=348.

* Adobe Acrobat Reader required to view documents

Case Study

Development Codes Create Defensible Space Zones

Eagle County, CO

Plan established three zones of defensible space/vegetation management around all new structures. Zone 1, an area measured 15 feet from the edges of a structure, is the area of maximum modification and treatment and should be cleared for fire-fighting access. Within Zone 2, the transitional area between Zones 1 and 3, vegetation is modified to reduce the intensity of fire approaching the structure. Trees and shrubs are thinned to ensure a minimum of 10 feet between crowns. Zone 3 extends from the edge of Zone 2 to the property boundaries. In Zone 3, vegetation management is dictated by the property owner¹⁰.

To learn more, download the plan at www.eaglecounty.us/uploadedFiles/commDev/Planning/Wildfire_Regulation.pdf.*

What is Defensible Space?



Development Codes for Property and Landscape Management

County planners have the opportunity and responsibility to work with key stakeholders and the local fire service agencies to help reduce a community's fire risk by incorporating fire preparedness goals into Master/Comprehensive plans, zoning ordinances, and subdivision ordinances, as well as revising building codes and compliance⁵.

Fire-prone counties are reducing their risk of wildfire by integrating fire safety priorities into their Master/Comprehensive Plan and adopting standards for both wildfire protection, which includes the work of prevention, detection, and suppression of wildfires. It also includes mitigation, the actions that moderate the severity of fire hazard or risk⁶. Counties, such as Boulder County, CO, have included fire safety priorities within their Comprehensive plans.

Building and development codes and land use policies/plans can guide development to reduce ignitability and encourage the designation of defensible spaces where the vegetation has been managed to reduce wildfire threat. Defensible space is the required space be-

tween a structure and the wildland area. Under normal conditions, this area creates a sufficient buffer to slow or halt the spread of wildfire to a structure. Adequate defensible space can protect the home from igniting due to direct flame or radiant heat. Many counties in California and elsewhere have incorporated defensible space guidance and/or requirements into their codes and ordinances.

Firescaping is landscape design that considers the design and choice of plants that offer the best defensible space and enhance the property and increase its value. The idea is to surround the home/building with vegetation that is less likely to burn⁸.

Guidelines developed by the Montana Department of Natural Resources state that property owners within the WUI should develop a Vegetation Management Plan (VMP). A VMP is a site-specific analysis of topographic and vegetative features and includes a time-table for reducing the hazardous fuel available for wildfires, including the removal of slash, snags, and dead trees and the thinning of live vegetation.

If a property sits on a slope, particular attention should be paid to the fuels on the downhill side of the house, since fire burns rapidly upslope. It is recommended that homeowners also consider prevailing wind directions during hot summer months. For example, if a hot summer wind pushes fire toward a house, fuel reduction efforts should focus on the upwind side of the house⁹.

Some local governments have included a provision requiring new developments to adopt covenants or deed restrictions for vegetation maintenance in their wildfire protection ordinances. These provisions require future homeowners and/or homeowners' associations to maintain defensible space. At the time of home purchase, owners are advised of the property's vulnerability to wildfire and their responsibility to protect themselves by maintaining defensible space around the home¹¹.

Counties at risk for wildfire need not struggle with the science and legal requirements of developing effective and enforceable wildfire risk reduction ordinances. It is clear from these examples that example codes and ordinances may serve as templates for locally-based regulations. Information on additional codes and ordinance is available through the National Database of State and Local Wildfire Mitigation Programs at www.wildfireprograms.usda.gov.

Check Out These Resources!

There are programs available for counties to share effective fire mitigation ideas and policy models.

- Fire managers face new and increasingly complex fire mitigation challenges. In 22 states across the United States, Prescribed Fire Councils offer a network for fire managers to share ideas and information on wildfires and related public safety, resource management, and environmental quality issues.
www.prescribedfire.net/about-us

- The national Firewise Communities program is a multi-agency effort to involve homeowners, community leaders, planners, and others in wildfire planning efforts.
www.firewise.org

Adopting Wildfire Regulations

Several factors may affect the feasibility of adopting wildfire requirements.

- Cash-strapped counties may be unable to dedicate financial resources and personnel for the administration and enforcement of certain regulations.
- The risk of wildfire exposure can be underestimated by some residents.
- Requiring defensible space may be unpopular with residents for several reasons.
 - › Removing vegetation can be costly.
 - › Some residents value the privacy and aesthetics of unaltered natural areas.
 - › Residents may view defensible space standards as an infringement on private property rights.

The NACo Needs Assessment revealed that, in some cases, county government lacked the authority to establish and enforce ordinances. In these cases, counties may establish programs that are advisory only and lack residential code enforcement. In other cases, wildfire programs may be implemented at the community level, rather than county-wide.

County decision-makers and planners can work with their fire managers and use a mix of regulatory, educational, and incentive/assistance programs in order to motivate homeowners to mitigate wildfire risk on their property. The general public is often generally more receptive when ordinances have been adopted as part of a comprehensive approach to reduce wildfire risk. It also can be effective to offer educational programs and homeowner assistance to motivate homeowners to reduce fuels around their homes.

Respondents to NACo's Needs Assessment indicated that counties that passed ordinances for WUI standards generally faced little opposition from the public. Often times, such ordinances were required by the state and early buy-in from planning, fire, and building officials contributed to a relatively smooth process.

Community Wildfire Protection Plans

Counties at-risk for wildfire are encouraged to develop a Community Wildfire Protection Plan (CWPP). CWPPs allow communities to prepare for wildfire by collectively assessing risk and developing community priorities and an action plan. (CWPPs are authorized and defined in Title 1 of the Healthy Forest Restoration Act, signed into law by President George W. Bush on December 3, 2003.)

Objectives of a Community Wildfire Protection Plan:

- Open community involvement regarding land management;
- Improved coordination and communication between all response agencies regardless of event;
- Mechanism for federal agencies to give meaningful considerations to community priorities for land management and hazardous fuels reduction;
- Merge landowner goals and objectives with the needs and expectations of the community regarding fire risk education;
- Comprehensive forest planning and prioritization of human and financial resources;
- Coordinate fire protection strategies across property boundaries;
- Coordinate grant funding and federal program budgets to achieve the most effective results.

Elements of Successful Collaboration in Wildfire Planning

Diverse Stakeholders

The processes to establish a CWPP and WUI Code should be a collaborative and involve representatives from all communities and capacities within the planning area. Local government entities, fire protection agencies, developers, planners, and landowners must work together to improve fire protection in the WUI. Wildfire risk is

Case Study

Drafting County WUI Code

Washoe County, NV

Washoe County convened a multi-agency working group to review, amend, and implement the International Wildland Urban Interface Code. The working group included representatives from the local fire agencies with Wildland Urban Interface and the Building, Community Development, and Public Works Departments. Each representative actively participated as the group reviewed WUI Code and crafted edits.

The County's WUI Code requires site-specific assessments for subdivisions and building permits. The assessment examines:

- Location
- Topography
- Flammable vegetation
- Fire history
- Water supply
- Access
- Building Initiation, and
- Fire Protection Systems.

The new Code also will establish new construction fire safety code focused on access, water supplies, and safety standards.

The working group split the administrative/implementation responsibility of the WUI Code. The Building Construction Chapter will be administered by the Building Official, whereas all other sections will remain the responsibility of the appropriate fire agency.

Example is based on the International Code Council's International Wildland Urban Interface Code found at www.iccsafe.org.





more effectively addressed through master/comprehensive planning that includes housing development design, fuels management, and public education ¹².

Decision-makers should represent and consider the variety of communities and capacities within the planning area. Potential participants include:

- property owners;
- local and state governments;
- tribes;
- fire and emergency services departments;
- public land management agencies;
- forest industry groups;
- forestry contractors and workers;
- insurance companies;
- environmental organizations;
- community-based forestry groups;
- watershed councils; and
- other non-governmental organizations, academics, scientists, and interested persons ¹³

By partnering with other governmental agencies and community groups, county fire managers can increase emergency response capacity. Seek out and take advantage of data analysis, risk assessment, and mapping capabilities available from governmental partners ¹⁴.

Federal management agencies may seek to participate in your county's planning wildfire process, especially if a large percentage of your county is federally-owned lands. Appropriate federal roles in collaboration may include:

- Maintaining adequate staff capacity to enable land and emergency management agencies to participate in the collaborative process;
- Providing financial resources (grants, cooperative agreements, other funding), technical assistance, training and collaborative learning opportunities to build support planning, implementation, and monitoring; and

For More Information ...

Please visit www.naco.org/wildfire to access a searchable database of model county programs, policies, plans, and ordinances available to assist counties in reducing the risk of wildfire and mitigating its impacts.

For additional information or to provide examples to be included in NACO's Wildfire Clearinghouse, please contact James Davenport at jdavenport@naco.org or 202.661.8807.

www.naco.org • www.fs.fed.us • www.blm.gov

- Committing to the implementation of a particular project or long-term work identified during the collaborative process;

Multiple Avenues for Participation

While the work of the broadly representative collaborative group is key to the process, there should be additional ways to involve the public—getting their input, increasing their knowledge of wildfire protection needs, and encouraging them to take mitigative action on their own property.

A Fair, Equitable Process

A good collaborative process is open and transparent. All participants' ideas and values are respected.

A Tailored Process

Consensus-building efforts should be custom-designed for the community and its participants. Process designs that work for one community may not be easily applied to another. Involving participants in the design of the process itself can contribute to increased trust and buy-in ¹⁵.

Defined Roles

When collaborating, clearly define roles and responsibilities of the developer, planner, and landowner in mitigation. Clearly state upfront which agency is responsible for adopting and enforcing local and state fire regulations based on legal jurisdiction ¹⁶.

Shared Expectations

Identifying and nurturing shared ideas is the basis of consensus-building. Shared expectations of process outcomes should be periodically reviewed to ensure that the process is on track.

Commitment to the Process

Participants need to stay actively engaged throughout the collaborative process and understand how much weight the group's recommendations will carry with decision-makers. Developing a charter or informal agreement may be useful.

Planners should avoid being seen as manipulating or shaping the collaborative process so that the process maintains its credibility and fairness.

Engaged Public and Media

The community should receive regular updates on the group's activities. Demonstrate to local media sources how important the wildfire planning process is to the community's long-term future and encourage them to feature print and video pieces. Webpages, listservs, and social media (Facebook, Twitter, etc.) also provide ways to inform and motivate the community ¹⁷.

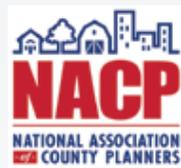
Acknowledgements

In early 2008 NACo, with support from the Bureau of Land Management and U.S. Forest Service, kicked-off a new project (Building County Capacity to Reduce Wildfire Risk in the Wildland Urban Interface). The purpose of the project is to provide county officials, planners and emergency managers with technical assistance, training, and the tools to proactively work with fire agencies and other key stakeholder groups in reducing wildland fire risk and addressing issues pertinent to the wildland urban interface (WUI).

This guide, made possible through the partnership with USFS and BLM, was published in April 2010. It was written by Cindy Wasser, NACo Community Services Assistant, and James Davenport, NACo Community Services Program Manager. Jack Hernandez performed the graphic design and layout. Defensible Space diagram was provided by Ventura County (CA) Fire Department. Any opinions in this publication are those of the contributors and do not necessarily reflect the views of the U.S. Forest Service, BLM, or NACo.

The authors would also like to acknowledge the following people for their help in reviewing this guide:

- NACo's Wildfire Advisory Group, especially:
 - › Ann Walker, Forest & Rangeland Health Program Director at the Western Governors' Association;
 - › Cheryl Renner, Planning Consultant at Renner Associates;
 - › Kurt Latipow, International Association of Fire Chiefs (IAFC) WUI Policy Representative to NACo's Wildfire Advisory Group & Fire Services Coordinator for Washoe County, NV;
 - › Keith Cubic, National Association of County Planners (NACP) President 2001-2003 and current Board member & Planning Director for Douglas County, OR; and
 - › Phil Stenbeck, Senior Planner for Douglas County, OR.
- Ryan Yates, NACo Associate Legislative Director,
- Charles Taylor, NACo Senior Staff Writer, and
- Stephanie Osborn, NACo Deputy Director County Services.



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