GUIDE TO SOUTHEASTERN FIRE ADAPTED COMMUNITIES

FIRE ADAPTED COMMUNITIES®

This reference guide was created through the collaboration of members of the Fire Adapted Communities (FAC) Coalition. The FAC Coalition is a group of organizations and federal agencies seeking to advance the message of Fire Adapted Communities and strengthening local wildfire preparedness at all levels. A list of contributors to this publication and their contact information is provided in Chapter 6.

The Guide to Southeastern Fire Adapted Communities was adapted from the original National Fire Protection Association's Guide to Fire Adapted Communities by the Southeastern Regional Cohesive Fire Strategy Coordinator, Southern Regional Extension Forestry, Southern Governor's Association, and the USDA Forest Service. The Southeastern version provides regional case studies in support of developing fire-adapted communities across the Southeastern US.

Thank you for embracing your preparedness role and empowering and motivating others in your community to implement actions that positively contribute to wildfire preparedness and resiliency. To learn more about Fire Adapted Communities and the work of the coalition members visit www.FireAdapted.org.

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www.FireAdapted.org

GUIDE TO FIRE ADAPTED COMMUNITIES

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CHAPTER 1 WHAT IS A FIRE ADAPTED COMMUNITY?

This guide is designed to help leaders, planners, emergency professionals, and citizens learn the best approaches and programs to help their community become more fire adapted.

WHAT IS A FIRE ADAPTED COMMUNITY?

Communities in wildfire prone areas are learning what it takes to be fully prepared for wildland fire. A fire adapted community incorporates people, buildings, businesses, infrastructure, cultural resources, and natural areas into the effort to prepare for the effects of wildland fire. Community leaders and residents accept responsibility for living in an area with wildfire hazards. They have the knowledge and skills and have adopted tools and behaviors to prepare in advance for their community's resilience in a wildfire prone environment.

DEVELOPMENT PRESSURES IN THE WILDLAND URBAN INTERFACE

Dramatic population increases in the wildland urban interface (WUI) exacerbate the wildfire problem by adding new residents who may have little or no experience with wildfire. In the past 50 years, the 220 million acres of identified WUI in the United States have become populated with over 120 million people living in 50 million housing units and working in several hundred thousand businesses. This is a growth rate of 300% in the WUI, which is faster than the general population growth rate for the same time period (IAWF 2013).

A Fire Adapted Community...

- Acknowledges and understands its wildfire risk
- Recognizes that it is in or near a fire prone ecosystem
- Has leaders and citizens with the knowledge, skills, willingness, and realistic expectations to properly prepare for and deal with wildland fire
- Communicates clearly with citizens about wildfire risks and specific methods for preparedness
- Has adequate local fire suppression training, equipment, and capacity to meet realistic community protection needs
- Creates and uses a Community Wildfire Protection Plan (CWPP)
- Reduces levels of flammable vegetation on lands near and inside the community
- Has local building, planning, zoning, and fire prevention policies and codes that require ignition resistant buildings, building materials, and landscapes
- Has buildings and landscaping that are designed, constructed, retrofitted, and maintained in a manner that is resistant to ignition
- Creates safety features such as buffers between fuels and neighborhoods, designated evacuation routes, and internal neighborhood safety zones
- Makes sure fire adapted community features, activities, and behaviors are maintained over time
- Has leaders and residents who coordinate, plan, and collaborate to leverage their resources to reduce wildfire risk while increasing community resiliency

WHAT IS THE WILDLAND URBAN INTERFACE?

Fire professionals call the situation where buildings are built near or among fire prone ecosystems the wildland urban interface (WUI) (pronounced woo-ee). It is more helpful to think of the WUI not as a place, but as a set of conditions that may exist in any community. The WUI is determined by the type and distribution of vegetation, combustibility of buildings and their proximity to vegetation and other structures, climate and weather patterns, fire history, topography and other landscape features, access, and other factors.

Depending on WUI conditions, the lands, communities, buildings, businesses, utilities, and infrastructure adjacent to or surrounded by fire prone wildlands may be at risk. There is an interplay in the WUI setting—not only can human developments become fuels for a wildfire, but fires may also move from human developments into natural areas.

Photo credit: Larry Korhnak

In addition to the estimated 50 million housing units located in the WUI nationwide, there are typically many other important community assets located in wildfire prone areas, including utilities, highways, bridges, watersheds, forests, natural areas, and parks (IAWF 2013).

WILDLAND FIRES TODAY

While lightning-caused wildland fires are natural events that aid in promoting forest, grassland, and rangeland health, human impacts have led to uncharacteristically severe and damaging wildfires in recent years. Wildfires are getting worse due to overgrown forests, accumulation of excess fuels, climatic changes leading to increases in severe weather and more frequent droughts, and fast growth and poorly planned development in WUI areas.

In the past several decades, wildfires in the United States have become increasingly large and destructive, costing up to 50 times more for suppression than for prevention. From 2004 to 2013, the United States had an average of 59,911 wildfires burning 6.6 million acres per year. Annual wildfire costs exceed $4.7 billion nationally for federal, state, and local response (Headwaters Economics 2013, IAWF 2013). This figure does not include the many indirect and lingering costs of wildfire, which range from two to 30 times more than the reported suppression costs (WFLC 2010). When energy and resources are focused on wildfire suppression, less attention and funding are dedicated to prevention and preparedness activities (Chu 2013, Healy 2013).

Development patterns and climatic changes are exposing communities to more frequent and more severe wildland fires. Uncharacteristically severe wildfires can have a wide range of adverse impacts on property and natural ecosystems, including flooding, erosion, loss of wildlife habitat, and impacts on social, ecological, and economic values.

EVERYONE IS RESPONSIBLE FOR WILDFIRE PREPAREDNESS

As wildland fires become more hazardous and increasingly expensive and difficult to fight, greater emphasis is being placed on community and individual responsibility and preparedness. The wildfire preparedness solution requires participation from everyone—residents, homeowners, business owners, land managers, utility companies, fire departments, community leaders, emergency managers, first responders, insurance providers, wildland fire specialists, government officials, and more. In short, everyone is encouraged to learn their role and take an active part in helping their community better adapt to wildland fire.

It takes multiple approaches for a community to prepare for wildland fire—many established programs can be employed during the process of adapting to wildfire. When implemented, local approaches strengthen a community's resilience and should provide a reduced level of need for suppression resources.

TOOLS FOR THE FIRE ADAPTED COMMUNITY

Specific fire adapted community tools and strategies address resident safety, building and neighborhood design, business preparedness, infrastructure and utility protection, wildland and park management, and other community assets. The more actions a community takes during this process, the more resilient and adapted the community becomes to the wildfire threat.

Graphic credit: USDA Forest Service

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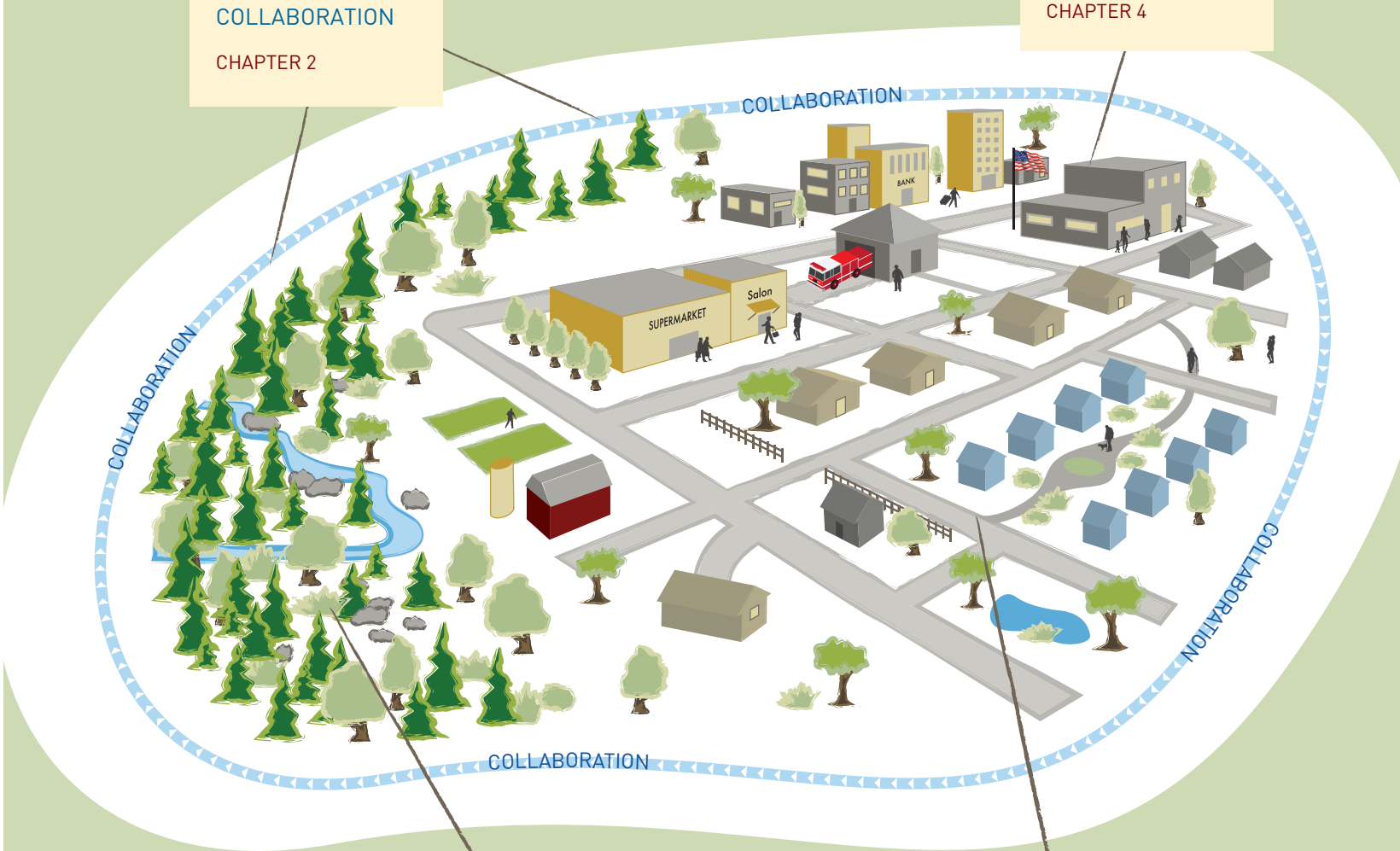

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Photo credit: Firewise landscaping workshop, Austin FIre Department

In 2011, major wildfires led Austin, Texas, to overhaul its wildfire approach. The Austin Fire Department (AFD), with numerous partners, developed a Community Wildfire Protection Plan. This plan guided public education activities on Firewise Principles and Ready, Set, Go! and provided wildland fire training to firefighters. The AFD carries out fuel mitigation strategies within Firewise communities and on city property. The Jester Estates neighborhood removed 120 tons of vegetation from the "home ignition zone," and nearly 30% of Austin is designated as conservation areas, serving as a permanent Wildland Urban Interface. Austin continues to lead the state in the number of nationally recognized Firewise Communities.

For more information: www.facnetwork.org/participants

EXPECTATIONS AND RESPONSIBILITIES DURING AND AFTER A WILDFIRE

Some new WUI residents may expect the same level of fire protection service that they had in their former urban or suburban community. As part of wildfire preparedness efforts, WUI residents can be educated about the specific steps to take before and during a wildfire. This information is incorporated into several existing programs, including the Firewise Communities/USA® and Ready, Set, Go! programs. These programs provide information about the wildfire threat to neighborhoods, each resident's responsibility for preparing their property, and the importance of orderly evacuation should it become necessary. These programs also emphasize the responsibilities and limitations of fire fighters during a wildfire response.

Advance preparation is the reason why wildfire preparedness collaboration and outreach programs are such an important part of a community's overall approach to becoming more adapted to wildfire. The goal is always to maximize the protection of lives and property, while also enhancing emergency responder safety and fire fighter effectiveness during a wildfire event.

Effective Approaches for the Fire Adapted Community

Effective wildfire risk reduction programs include four major categories:

- Collaboration, outreach, and marketing for wildfire preparedness (Chapter 2)
- Assessment of risks in the surrounding environment (Chapter 3)
- Implementation of planning policies, standards, and regulations (Chapter 4)
- Encouragement and assistance for neighborhoods and property owners (Chapter 5)

EVOLUTION OF THE FIRE ADAPTED COMMUNITY CONCEPT

The *National Fire Plan* (USDA/USDI 2000a; 2000b) and *Ten-Year Comprehensive Strategy* (WGA 2001) placed a priority on working collaboratively within communities in the WUI to reduce their risk of large scale wildfire. The Healthy Forests Restoration Act of 2003, also known as the Healthy Forests Initiative (Pub. L. No. 108-148, 2003), encouraged communities to engage in comprehensive wildfire risk reduction planning. This legislation included statutory incentives for the USDA Forest Service and the Bureau of Land Management to give consideration to the priorities of local communities as they develop and implement forest management and hazardous fuels reduction projects.

The fire adapted community concept was given further prominence in the first *Quadrennial Fire and Fuel Review* (NWCG 2005), which suggests promoting "fire adapted human communities, rather than escalating protection of communities at risk in the wildland urban interface." The subsequent *Quadrennial Fire Review* (NWCG 2009) goes further, saying the notion that "government will always be there" needs to be changed to a model where property owners and local communities "take responsibility and become active participants" in addressing the effects of wildfire. The *National Cohesive Wildland Fire Management Strategy* (WFLC 2011, WFLC 2012) clearly encourages communities to develop adaptive approaches in planning for, responding to, and recovering from wildfires.

National Wildland Fire Planning Initiatives

- *National Cohesive Wildland Fire Management Strategy* (WFLC 2011, WFLC 2012)
- *Quadrennial Fire Review* (NWCG 2009)
- *A Collaborative Approach for Reducing Wildland Fire Risks to Communities and the Environment: Ten-Year Comprehensive Strategy* (WGA 2001)
- *Healthy Forests Restoration Act of 2003* (aka Healthy Forests Initiative, Pub. L. No. 108-148)
- *National Fire Plan* (USDA/USDI 2000a; 2000b)

The National Cohesive Wildland Fire Management Strategy

The *National Cohesive Wildland Fire Management Strategy* identifies three factors as offering the greatest opportunities for making a difference in addressing wildfire:

- Restoring and maintaining resilient landscapes at a regional and subregional scale, with recognition that many ecosystems currently lack health and vitality
- Creating fire adapted communities in areas of high wildfire risk, with options and opportunities to engage communities in becoming more resistant to the threat
- Responding to wildfires with the full capacity of interagency cooperation, providing collaborative methods to move forward while recognizing the different missions and capabilities of partner agencies and organizations

For more information:
www.forestsandrangelands.gov/strategy/index.shtml

CHAPTER 2 COLLABORATION AND OUTREACH

COLLABORATION IS CENTRAL TO THE FIRE ADAPTED COMMUNITY

Adapting a community to wildland fire need not be a complex process, but it does require deliberate and sustained collaboration among community and fire management leaders. A collaborative effort can yield more valuable program outcomes for resources invested, since ideas, energy, and activities can be shared among organizations and agencies. Collaboration can build partnerships, solve difficult problems, and resolve conflicts.

Effective collaboration and outreach raises awareness in the community. Basic outreach actions, such as publishing a brochure or creating a website, will not necessarily change attitudes and behaviors. When outreach efforts are wedded to marketing concepts, they become more effective by providing incentives for community members to change their behaviors. A balanced and creative mix of collaboration, outreach, and marketing will increase the success of a fire adapted community process.

CREATING THE COLLABORATIVE TEAM

The fire adapted community concept is more than an understanding of defensible space and vegetation types—it includes the creation of a collaborative team where a wide variety of community members and organizations are involved in adapting to the wildland fire challenge. The collaborative team may include homeowners, elected officials, community decision makers, fire services managers, emergency responders, land managers, natural resource agencies, business and industry representatives, utilities, and other stakeholders.

It is important to identify key players and strong leaders and to develop a consensus on formality and structure (see case study). The team may consider becoming a nonprofit agency, an advisory commission with appointed members, or an ad hoc coalition.

Photo credit: Frank Riley, Chestatee-Chattahoochee Resource Conservation and Development Council, Towns County, GA

CASE STUDY:

LOCAL LEADERSHIP FOR A FIRE ADAPTED COMMUNITY

Leadership for a fire adapted community can spring from a wide range of sources in a community. Strong leaders are often referred to as a sparkplug—they have enthusiasm, social connections, and the ability to coordinate the collaborative team. In Towns County, Georgia, the Fire Adapted Communities Learning Network (see Chapter 6) is supporting Frank Riley of the Chestatee-Chattahoochee Resource Conservation and Development Council. Frank coordinates a collaborative team that includes local fire districts and departments, elected officials, and leaders of the Chattahoochee/Oconee National Forest. The team is now working to leverage their collective resources to make progress on jointly developed objectives in the fire adapted community process.

For more information:
www.Chestchattrcd.org

ROLES IN THE COLLABORATIVE PROCESS

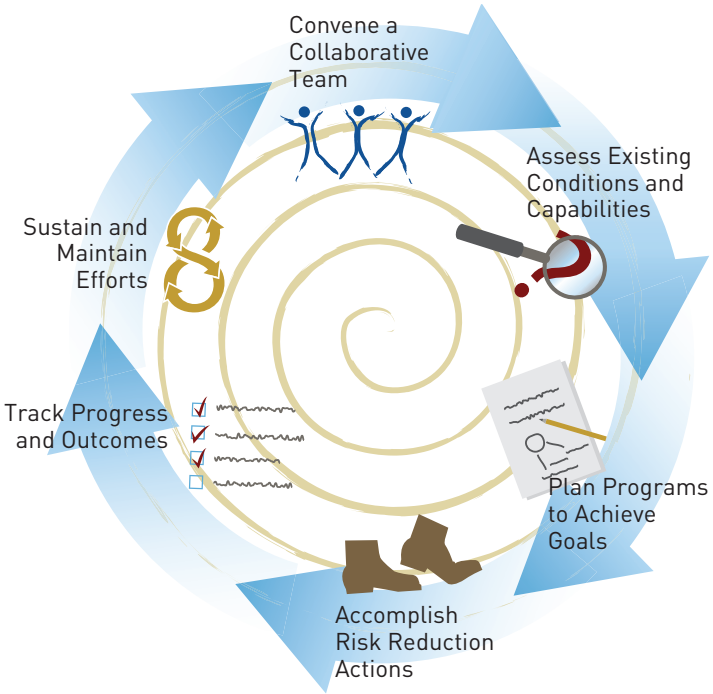
Well-defined roles encourage a shared, cohesive, and synergistic approach to the common threat of wildfire. It is particularly important to assign roles and responsibilities in the planning documents for all wildfire risk reduction actions by individuals, agencies, organizations, or governments.

Collaboration makes sense as the initial direction for any community engaged in wildfire risk reduction. The goal is to cooperatively identify problems and develop a plan for mutual action that best fits local needs and priorities.

THE ONGOING COLLABORATIVE CYCLE

There are several commonly identified stages of collaboration (see graphic below). Movement from one stage to the next depends on the motivation and progress of the collaborative team. If the collaborative team gets stuck at one stage, working ahead on the next stage often creates the momentum to complete the process. This type of process allows communities to move forward with the best short term wildfire risk reduction actions, while existing within a larger context where the final outcomes are unknowns.

Because wildfire risk reduction is a long term process, community collaboration and outreach should also be long term projects. To address new problems and challenges, the collaborative process should also become what is called an adaptive or iterative process, involving repeated rounds of analysis and action, always assessing the outcomes to inform the next round of planning and action. Over time, the entire process is repeated to build new actions based on the lessons learned from past activities.



COLLABORATIVE TOOLS FOR THE FIRE ADAPTED COMMUNITY

As the collaborative team works through the process, they will determine which resources are needed for their unique situation. Tools available for this process include:

- Community Wildfire Protection Plan (CWPP)
- Ready, Set, Go! Program (RSG!)
- Firewise Communities/USA® Recognition Program (Firewise)
- Wildland Fire Assessment Program (WFAP)
- Cooperative Alliances or Mutual Aid Agreements

Factors to Consider When Selecting Collaborative Tools

- Level and nature of wildland fire risks
- Knowledge base of the community's residents
- Attitudes of community leaders
- Resources available to local, state, and federal agencies
- Status and types of fuels on surrounding lands
- Condition of landscaping and building materials
- Activity level of property or homeowner associations
- Existing landscaping regulations and building codes
- Likelihood for participation of community members
- Availability of outreach and communication resources

COMMUNITY WILDFIRE PROTECTION PLAN (CWPP)

A CWPP is designed in collaboration among a variety of community partners who form a working group to develop this formal plan. The CWPP can take a variety of forms, based on the needs of the community. It may address issues such as wildland fire response, hazard mitigation, community preparedness, building protection, or all of the above. The CWPP examines risk levels and identifies strategic sites and methods for risk reduction projects throughout the community. Of the 70,000 high risk communities, only 11% have completed CWPPs (IAWF 2013).

The process of developing a CWPP can help to clarify and refine a community's priorities for the protection of life, property, and critical infrastructure in the WUI. Through the CWPP process, a working group develops a roadmap to reduce wildfire risk. Workshops for community leaders and other stakeholders may be offered as part of the collaborative planning process. The CWPP is often a precursor to seeking funding for community wildfire risk reduction projects.

Community Wildfire Protection Plan

- Collaboration—Developed by local and state government representatives in consultation with federal agencies and a broad range of interested stakeholders
- Prioritized Fuels Reduction—Identifies and prioritizes areas for hazardous fuels reduction and recommends the types and methods of treatment that will prepare the community
- Treatment of Structural Ignitability—Recommends measures that homeowners, businesses, and other community members can take to reduce the ignitability of buildings and landscapes

For more information: www.stateforesters.org/files/cwpphandbook.pdf

CASE STUDY:

CWPP SUCCESS IN RURAL AREA

Taylor (population 1,062) is located in rural northeast Florida and surrounded by over 700,000 acres of wildfire prone national forest, state forest, and private timber land. In 2006, Baker County Fire and Emergency Services, Florida Forest Service, USDA Forest Service, and community members collaborated to develop a CWPP. A major component of the CWPP was a 30-foot wide and 11-mile long control line (firebreak) around the community. The control line was nearly complete when the 2007 Bugaboo Wildfire approached. Fire fighters were able to set backfires along the control line, thus guiding the fire around the community and preventing the loss of any buildings in Taylor.

Photo credit: Florida Forest Service

For more information:

https://www.forestsandrangelands.gov/success/stories/2007/nfp_2007_fl_fs_r8_wfaware_firefighting.shtml or www.iafc.org/associations/4685/files/downloads/CONFERENCES/WUI/WUI08/wui08ppt_103.pdf

READY, SET, GO! (RSG!)

RSG! is designed to stimulate an ongoing dialogue between local fire departments and the citizens they serve. RSG! provides fire departments with the tools and guidance necessary to deliver the wildfire preparedness message in high risk WUI areas, encouraging residents to take personal responsibility for the safety of their families and their property. The program also trains residents to have heightened situational awareness and to act early if evacuation becomes necessary, which supports both personal safety and fire fighter effectiveness during a wildfire event. The RSG! program works in complementary fashion with the messages of other wildland fire outreach programs and is managed by the International Association of Fire Chiefs in partnership with the USDA Forest Service, US Department of the Interior, and the US Fire Administration.

Ready, Set, Go!

- Ready (Preparedness)—Teaches homeowners to create their own preparedness plan and follow principles of ignition resistant design
- Set (Awareness)—Encourages citizens to have heightened situational awareness and evacuation preparedness when a wildfire starts
- Go! (Evacuation)—Urges citizens to follow their plan and leave early in the event of a wildfire, increasing the safety of both residents and fire fighters

For more information:
www.wildlandfirersg.org

FIREWISE COMMUNITIES/ USA® RECOGNITION PROGRAM (FIREWISE)

Firewise encourages local solutions by involving homeowners in taking individual responsibility for preparing their houses for the risk of wildfire. Firewise teaches people how to adapt to the risk of living with wildfire and encourages neighbors to work together and take action to prevent future losses. Firewise emphasizes that all members of a community have a role to play in protecting themselves and each other from the risk of wildfire. The program is cosponsored by the USDA Forest Service, the US Department of the Interior, and the National Association of State Foresters.

WILDLAND FIRE ASSESSMENT PROGRAM (WFAP)

The Wildland Fire Assessment Program provides volunteer fire fighters and nonoperational personnel, such as Fire Corps members, with training that specifically prepares them to conduct assessments on houses located in the WUI and provide recommendations to owners on protecting their properties. Through this program the National Volunteer Fire Council provides a training course, toolkit, and materials for conducting assessments to assist in the fire adapted community process. The training courses are available at fire departments, fire academies, and other locations. This program is a joint effort of the USDA Forest Service and the National Volunteer Fire Council.

Firewise Communities/USA® Recognition Program

Using the five step Firewise process, communities develop an action plan that guides their residential risk reduction activities, while engaging and encouraging their neighbors to become active participants in building a safer place to live.

- Wildfire Risk Assessment—Obtain a written assessment from your state forestry agency or local fire department
- Board or Committee—Form a board or committee and create an action plan based on the assessment
- Event—Conduct a Firewise Day event in your community
- Investment—Invest a minimum of $2 per capita in annual Firewise actions
- Application—Submit an application for recognition from your state Firewise liaison

For more information: www.firewise.org

COOPERATIVE ALLIANCES AND MUTUAL AID AGREEMENTS

A variety of alliances and agreements can be activated to address wildfire prevention, fuels reduction, and cooperative wildfire response. These alliances may be established by fire departments, landowners, or government land management agencies to facilitate cooperative activities and provide technical support and sharing of resources, training, and lessons learned.

Cooperative Alliances and Agreements

Several types of cooperative alliances and agreements are commonly used in wildfire mitigation and preparedness.

- Landowner Associations provide technical support and assistance to members, with or without the assistance of government agencies. The motivation for landowner associations is greatest in areas where the wildfire threat is high and where landowners stand to benefit from fuels reduction to improve forest or range health.
- Prescribed Fire Councils bring together fire managers, natural resource professionals, and landowners to provide a forum for sharing ideas and information and creating opportunities for on-the-ground collaboration. Prescribed Fire Councils promote the appropriate use of prescribed fire (controlled burning) and seek to inspire community assistance and support for wildfire risk reduction efforts.
- Mutual Aid Agreements are undertaken among wildland fire response agencies and fire services within a geographic area. These agreements define wildfire suppression responsibilities, use and reimbursement of resources, and provisions for joint projects in training or building capacity. These agreements provide important guidance for the order of actions and responsibilities in the event of a large wildfire.

Cooperative alliances and mutual aid agreements recognize that no single agency or landowner can do everything that is needed in preparing or responding to wildfires or other hazards.

Photo credit: North Carolina Wildlife Resources Commission

CASE STUDY:

BROAD COLLABORATION FOR COMMUNITY PROTECTION

Burning in South Mountains of North Carolina has historically posed problems with landscape-level management; lands are owned and managed by two different state agencies, the North Carolina Wildlife Resources Commission and North Carolina State Parks. In 2002, The Nature Conservancy's Southern Blue Ridge Fire Learning Network began working with both agencies to conduct burns across agency boundaries. This successful collaboration enabled burning of larger units, resource coordination, and inclusion of private lands in state prescribed burn units. As a result, fire-dependent forest communities are maintained, wildland fuels are minimized, and wildfire protection to surrounding communities is provided.

For more information: www.sbrfln2015.weebly.com/southern-blue-ridge-fire-learning-network-sbr-fln

PUBLIC OUTREACH PROGRAMS

In the wildfire preparedness context, public outreach can take the form of publications, news coverage, training programs, events, and many other formats. Whether performing a single round of homeowner notifications, a series of workshops, or a multi-year effort to raise awareness and participation, a set of logical steps (see inset) assures the greatest level of success for the outreach effort.

Because wildfire threatens entire communities, risk reduction is inherently connected to people and their attitudes and behaviors. Research has shown that public outreach is related to a reduction in preventable wildfires—in other words, more education results in fewer human-caused wildfires (Prestemon et al. 2010). The damage averted can be 35 times the amount invested in wildfire public outreach programs (Prestemon et al. 2010).

Public Fire Education Planning—A Five Step Process

1. Conduct a Community Risk Analysis—Identify fire and life safety problems and the characteristics of those at risk in the community.
2. Develop Community Partnerships—Join forces with groups or organizations to address the community's risk, involving the community in the planning and solution process.
3. Create an Outreach Strategy—Prepare a detailed plan for the wildfire risk reduction outreach process, involving a variety of interventions, such as education, engineering of solutions, and enforcement of safety rules.
4. Implement the Strategy—Test the interventions and put the plan into action in the community as scheduled in your plan.
5. Evaluate the Results—Demonstrate that the risk reduction efforts are reaching target populations, having the planned impact, and are reducing losses.

For more information: www.usfa.fema.gov/downloads/pdf/publications/fa-219.pdf

Public outreach programs are designed to raise awareness, improve audience knowledge and attitudes, and involve community members in skill building projects. Yet outreach information alone rarely changes behaviors—marketing techniques can go a step further to focus on identifying and removing barriers to risk reduction activities.

MESSAGES AND MESSENGERS

The perspective of residents must be understood to effectively design and deliver the wildfire risk reduction message (see inset). It is important to gather input and craft messages that will most effectively reach target audience members (McCaffrey 2006, Monroe et al. 2006).

When developing wildfire outreach programs, careful consideration must be given to how the messenger agency appears and how the message will be received by the target audiences. The outreach agency should be a trusted source and avoid exaggeration by providing reliable information. In particular, take advantage of the golden moment in the months after a wildfire to communicate the wildfire preparedness message (Sturtevant et al. 2005, Jakes and Barro 2004).

Keep information clear, consistent, and repetitive, while avoiding jargon and acronyms. The three most important topics to cover are (1) what can be lost, (2) the realistic odds of wildfire, and (3) what residents can do to prepare (Monroe et al. 2006).

MEDIA CHANNELS FOR WILDFIRE MESSAGES

The term media here refers to any means of communicating with the intended audiences. While mass media and print materials are traditional ways of providing public information, outreach professionals should be creative in selecting media for wildfire risk reduction programs.

Outreach programs and media channels will vary from community to community, depending on local needs. Research suggests that face-to-face outreach programs are the most effective way to share messages. Trusted personal messengers include neighbors, friends, fire department personnel, and first responders. Residents can be engaged through workshops, advisory boards, webinars, seminars, volunteer programs, workdays, and many other formats. In addition, electronic and social media are also a popular and important resource. In all cases, the outcome is a more informed citizen who is ready to tackle wildfire risk reduction issues in a collaborative manner.

Effective Wildfire Messages

Certain words and phrases are regularly chosen by focus groups as more acceptable for use in wildfire risk reduction messages.

- Safety is a very favorable message theme (SGSF 2011, PFE 2008).
- The term controlled burn is much more favorable than the term prescribed fire. Language was tested very carefully with focus groups and the best message about burning was "Allow fire managers to use controlled burns when and where doing so will safely reduce the amount of fuels for wildfire." The researchers note that while the public understands that no one can really control fire, they still want to know that someone is trying to control it (PFE 2008).
- "Healthy forests are important to the health of people" is a well-accepted message.
- Stories that demonstrate the benefits of prescribed fire or thinning for forest health will increase overall acceptability of these strategies (SGSF 2011, PFE 2008).
- Messages that focus on cost savings are personally relevant to residents (Monroe et al. 2006). Potential messages: "Wildfire risk reduction may save 20 times the costs of wildfire suppression" or "Every acre of land with reduced wildfire risk represents a public cost savings of $1,000 to $2,000 per acre" (Hinckley and Wallace 2012, Prestemon et al. 2010).

MARKETING THE WILDFIRE MESSAGES

Even with the best public outreach program, awareness of wildfire risk does not automatically lead to the adoption of risk reduction behaviors (Toman et al. 2013). Marketing techniques can be used to create the desired behavior changes for a fire adapted community (see table). As residents' knowledge, attitudes, and behaviors are better understood, it is likely that certain barriers to behavior change will be identified. This information can be gathered through observations, surveys, or interviews, followed by focus groups to gain further insight and test possible strategies. Marketing strategies can then be selected for implementation, and the outcomes can be monitored (evaluated) to demonstrate effectiveness or identify areas for improvement.

Marketing Techniques	Objectives	Examples
Removal of barriers	Make the desired behavior easier by removing barriers.	Provide technical or physical assistance to people unable to complete wildfire preparation. Bring in outside assistance to clear brush.
Prompts	Provide reminders in the general media and at the point of action, if possible.	Use advertising or signs to remind residents of scheduled workdays or debris pickups.
Pledges	Collect written commitments for desired behaviors.	Have residents sign agreements: "I will remove debris from my roof every March" or "I will assist with the community workday by helping to trim trees."
Norms	Provide a model or standard of behavior for residents to follow.	Demonstrate fire resistant landscaping at a prominent house or business. Have well-known members of the community participate and give public testimonials.
Incentives	Reward the desired behaviors.	Decrease homeowner association dues in return for compliance with fire resistant design principles. Have contests with prizes for the best examples of the desired behavior.
Awards and positive feedback	Publicly acknowledge positive actions and maintain attention to the issue.	Provide yard signs or window decals for program participants. Have an annual awards ceremony with a local official or celebrity as emcee.

CHAPTER 3 THE SURROUNDING ENVIRONMENT

CONSIDER THE SURROUNDING ENVIRONMENT

To become better adapted to wildfire, citizens must think beyond the boundaries of the neighborhood and community by considering the surrounding environment. Conditions in adjacent and surrounding areas must be assessed to determine the impact on the community's wildfire risk. The owners and managers of surrounding lands should therefore be involved in the process of creating a fire adapted community.

THE IMPORTANCE OF FUELS MANAGEMENT TO REDUCE WILDFIRE RISK

It is important for land managers to have a wildland fire response plan with adequate equipment, training, or cooperative agreements in place. It is even more important for land managers to employ regular fuels reduction treatments such as thinning, prescribed fire, mowing, chopping, or other techniques on properties with high wildfire risk. Fuels reduction is important because many of the ranches, forests, and wildlands surrounding high risk communities may have up to a century of fuels accumulation.

Cooperative alliances or agreements can assist in fuels reduction projects that cross ownership or jurisdictional boundaries (see Chapter 2). Local organizations, such as Conservation Districts and local Fire Safe Councils, often serve an important role that helps bridge land ownerships and align mitigation projects.

Photo credit: North Central Texas Prescribed Burn Association

CASE STUDY:

COLLABORATIVE VEGETATION MANAGEMENT ON PRIVATE LANDS

The North Central Texas Prescribed Burn Association represents 10 Texas counties. The association advocates for the safe and responsible use of prescribed burning as a part of range and scrub fuels management, which has risk reduction advantages for property owners as well as benefits for local wildlife, livestock, and native habitats. Association members receive burn school training, burn schedule calendar coordination, equipment inventory to coordinate support, an interactive map with a membership roster to help connect neighbors, links to relevant websites (such as weather services), and contact information for officials. This neighbor-helping-neighbor cooperative provides the resources, education, encouragement, and empowerment that property owners need to use prescribed fire on a sustained basis. Formed in 2008, the association became a member of the Texas Alliance of Prescribed Burn Associations in 2011.

For more information: www.tpwd.state.tx.us/landwater/land/technical_guidance/burn

The issue is not *if* an area will burn but *when* and *at what intensity*. The wildland fire preparation work of a community can be negated if land managers in the surrounding environment do not address their wildfire risk.

CASE STUDY:

ACCOMPLISHING CREATIVE FOREST RESTORATION

The Texas Parks and Wildlife Department, Arbor Day Foundation, and the Texas Forest Service are actively engaged in the collaborative, landscape-scale Lost Pines Forest Recovery Campaign. This multi-year, public-private partnership aims to restore pine trees lost in the devastating wildfires of 2011 that destroyed over 32,000 acres, 96% of Bastrop State Park and over 1,600 homes—making it the single most destructive wildfire in Texas history. With a diverse group of stakeholders, the partners are working to restore 16,000 acres of loblolly pine forests (about 2 million trees in the state park and more than 2 million on surrounding private land will be planted) lost to the fire in Texas.

Photo credit: Arbor Day Foundation

For more information: http://texasforestservice.tamu.edu/main/popup.aspx?id=16330

THE ULTIMATE OBJECTIVES ARE SAFETY AND FOREST HEALTH

The objectives of fuels reduction are to return forests and wildlands to a more natural, fire resilient condition and to ensure that the community's risk has been reduced. Fuels reduction contributes to a situation where forests, wildlife, and residents all benefit, and wildfire season is met with less apprehension.

Objectives of a fuels management program:

- Reduce wildfire risk
- Create buffer zones around communities
- Restore forest health and resilience
- Protect and enhance water resources
- Protect and enhance wildlife habitat
- Generate revenue from biomass sales
- Generate revenue from carbon offsets
- Improve ingress and egress
- Enhance aesthetics and recreation opportunities

OVERCOMING BARRIERS TO FUELS REDUCTION

The public generally supports the need for fuels reduction and is at least cautiously supportive of the use of both prescribed fire and mechanized thinning. Yet a review of public concerns about fuels management approaches reveals that the main factors influencing citizen support are program cost, confidence in the program to accomplish its objectives, comfort with the risks of the program, and perceptions of the effects of the program (Toman et al. 2013).

To accomplish fuels management objectives, it is important to increase public understanding of forest health and the contribution of prescribed fire and other fuels management approaches. Ongoing public outreach campaigns can result in increased acceptance and support for wildfire risk reduction. As discussed in Chapter 2, messages about prescribed fire are better framed in a forest health context in addition to the wildfire prevention context. Public outreach programs should continue to work to generate a deeper understanding of fuels management options.

CHAPTER 4 PLANNING AND REGULATORY CONSIDERATIONS

ENCOURAGING FIRE ADAPTATION IN THE WILDLAND URBAN INTERFACE

As development expands in fire prone ecosystems, the number of at risk buildings also increases. Expanding WUI development threatens public safety, jeopardizes community resources, and requires added fire protection services, ultimately impacting budgets and community well-being. In addition to collaborative and fuels management approaches, community leaders may address this challenge by using planning and regulatory tools.

Many states have adopted legislation and mapping systems to encourage wildfire mitigation in high risk areas either by education and planning or by regulatory measures. Most states also have partnership agreements with federal agencies for participation in federally sponsored mitigation programs, such as the development of CWPPs. In some cases, state agencies may take the lead, but in many cases, the option falls to local governments to carry out wildfire mitigation programs.

LOCAL LAND USE PLANNING APPROACHES

Proactive land use planning is one of the best ways to address wildland fire concerns and to decrease the number of residents at risk of damage from future wildfires. The term land use planning refers to the formal process of designing population centers, including transportation networks and the orderly development of settlements. Integrating wildfire risk reduction into the land use planning process helps a community provide for resident safety while addressing wildland fires in a cost-effective manner.

Wildfire risk reduction can be addressed through specific voluntary plans, such as the Community Wildfire Protection Plan (CWPP, see Chapter 2), and through broader policies, such as the Comprehensive Plan (Comp Plan), which dictates long term community policy for transportation, utilities, land use, recreation, and housing. Wildfire risk reduction may also be integrated with other hazard planning in the Local Mitigation Strategy (LMS). These planning mechanisms provide the opportunity to manage wildfire risk through policy driven approaches and regular review.

Local Planning Horizons

Local planning and regulatory mechanisms can augment the collaborative actions of residents and the fuels management actions of surrounding land managers to create a genuine level of community resilience.

LOCAL REGULATORY APPROACHES

In addition to planning, communities may want to pursue regulatory approaches to wildfire risk reduction. Regulations are a mechanism for enacting the land use and development policies in a Comprehensive Plan. Regulations may govern building characteristics, development design, and other community features. For the fire adapted community, regulations may include mechanisms as diverse as land development rules, development review requirements, zoning restrictions, special overlay districts, vegetation management ordinances, community protection zones, building codes or standards, and neighborhood deed restrictions.

Regulatory approaches are especially helpful in areas where public safety and community values are impacted by wildfire risk or where there is public or cultural reluctance to voluntarily address the wildfire hazard. This may include, for example, areas with many new residents unfamiliar with the dangers that wildland fire may bring. It is estimated that less than 10% of at risk WUI communities have adopted a WUI code or other regulatory mechanism (IAWF 2013).

Model Ordinances for Wildfire Mitigation

Communities looking at potential risk reduction codes, ordinances, and standards have resources to help them navigate the process. A number of state ordinances and standards can be referenced along with national and international codes.

- California: Model Ordinance for the Defensibility of Space and Structures; Model Ordinance for Very High Fire Hazard Zone Adoption
- Florida: Model Wildfire Mitigation Ordinance
- Oregon: Forestland Urban Interface Fire Protection Act
- Utah: Wildland Urban Interface Code
- National: NFPA 1144 Standard for Protection of Life and Property from Wildfire and NFPA 1141 Standard for Fire Protection Infrastructure for Land Development in Suburban and Rural Areas
- International Code Council: International Urban Wildland Interface Code

CASE STUDY:

WILDLAND URBAN INTERFACE, ALABAMA

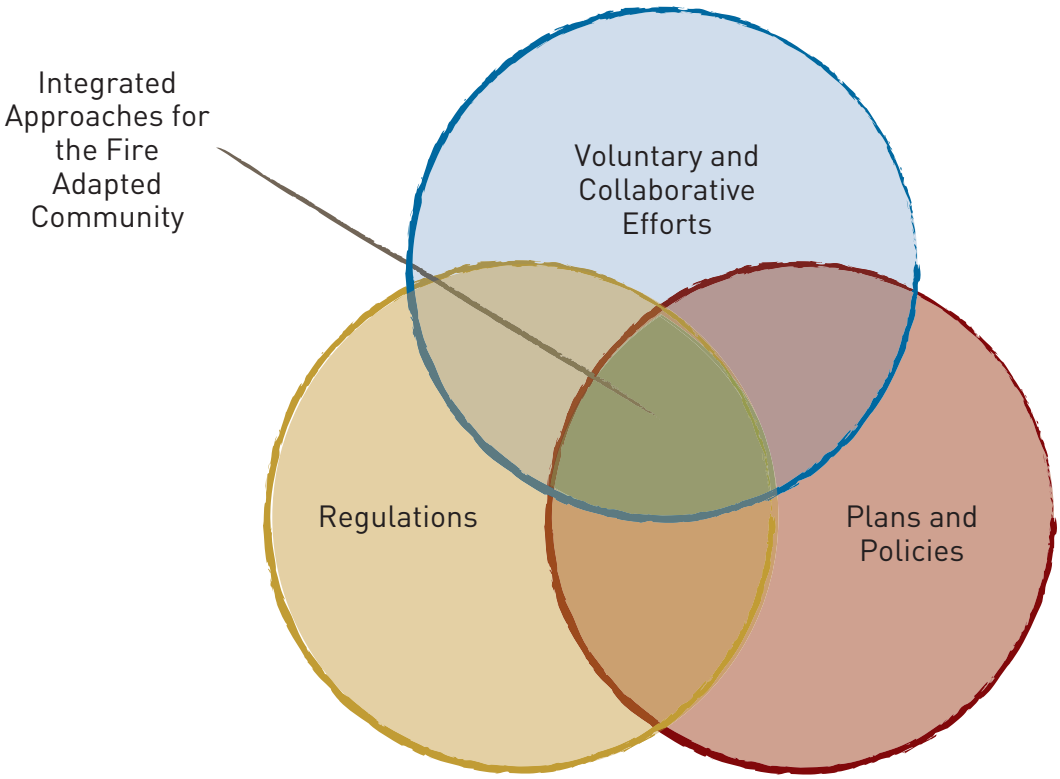
During 2012, the city of Orange Beach, Alabama adopted the Wildland Urban Interface (WUI) Code from the International Code Council. This code contains provisions that address fire spread, accessibility, defensible space, water supply, and more for buildings constructed near wildland areas. By identifying WUI areas in Orange Beach (from the 2012 WUI Zone Map), the city can use this information to educate residents and stakeholders on the benefits and safety of code compliance. As development continues in WUI areas in and around Orange Beach, the code can help prevent loss of life and property during a wildfire.

Photo credit: Larry Kohrnak-Interface South

For more information: www.cityoforangebeach.com/pages_2011/fire_prevention_and_codes.php

INTEGRATION OF PLANNING AND REGULATORY STRATEGIES

Like other natural hazards, wildland fires do not respect political or jurisdictional boundaries. Plan integration means that local plans are coordinated with existing local, state, regional, or federal planning efforts and standards. For example, an interlocking set of wildfire plans and regulations can provide a framework for fuels management actions, outreach programs, development regulations, and the Firewise Communities/USA® Recognition Program.



OVERCOMING BARRIERS TO PLANNING AND REGULATION

While lack of funding is a significant barrier to implementing wildfire risk reduction projects, local governments often find that lack of information and antagonistic attitudes may also be barriers to regulatory approaches. Community members may hold differing perceptions of level of risk, private property rights, economic development pressures, and other factors that may be perceived as contradictory with wildfire risk reduction activities. For example, some property owners may believe that risk reduction does not make a difference, while others may place a higher value on keeping nature as is rather than reducing fuels. Partner agencies may feel threatened by increased responsibilities or a perception of having to compete for limited funding dollars.

Helping residents understand the documented benefits of action for both community resilience and forest health will go a long way toward engendering support for risk reduction regulations. Productive strategies for overcoming incompatible attitudes include outreach programs, diverse stakeholder involvement in collaborative teams, and marketing programs to encourage behavior change (Chapter 2). The beauty of a truly collaborative process is that it serves to bring people closer together and to build a better understanding of and ownership in the issues, rather than enhancing conflict. Shared responsibility and creative funding for risk reduction will enhance community acceptance (Chapter 6 has information about funding sources).

Finally, planning for multiple natural and man-made hazards has numerous benefits for the community. For example, a fuels buffer can become a community park, a fire resistant building may also be more resilient to storms, a subdivision evacuation route can be used during many different types of disasters, and the enhanced capabilities of local fire and emergency services can serve the community well into the future.

CASE STUDY:

OPPORTUNITIES TO REDUCE WILDFIRE RISK ACROSS LANDSCAPES

The National Science and Analysis Team conducted a large-scale study analyzing relationships between the natural environment, humans, and wildfire (cohesivefire.nemac.org/). The Southeastern Regional Risk Analysis used these data to assist southern wildland fire managers and stakeholders in effective, southern wildfire management strategies. These data, displayed as national maps, provide information on total forested area, prescribed fire activity, urban density, and more. Additionally, the Southern Wildfire Risk Assessment Portal (www.southernwildfirerisk.com) facilitates access to wildfire risk information for public and professional planners to help increase awareness, communication, and visualization of wildfire risks. It provides the baseline information needed to support mitigation and prevention efforts across the South, from community level wildfire assessments to a seamless statewide picture or a defined project area. Both tools allow for local fire service agencies to identify risk and opportunities for planning and action on the ground.

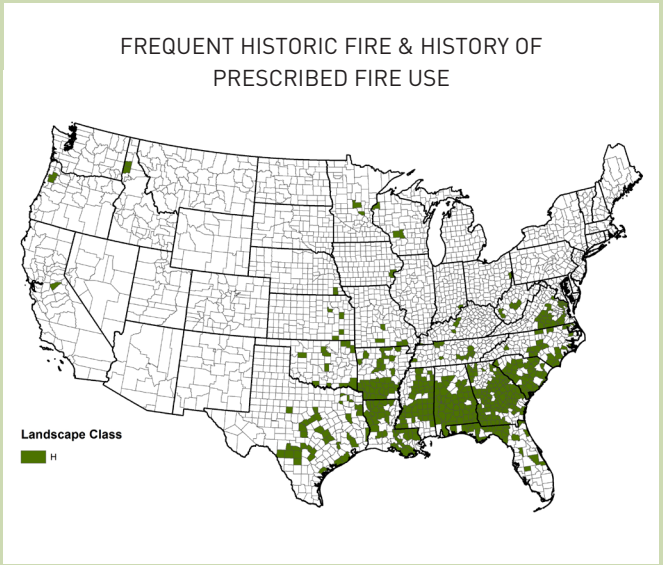


Photo credit: The Science Analysis of The National Cohesive Wildland Fire Management Strategy

PREPARING NEIGHBORHOODS AND DEVELOPMENTS FOR WILDFIRE

For each building or neighborhood that is inadequately prepared for wildfire, the risk level to the entire community increases. Success comes from the involvement of neighbors, adjacent landowners, small farms, local fire departments, and other partners in transforming neighborhoods—and thereby the entire community—into a place that is prepared for wildfire. Achieving these objectives requires active engagement and preparation by homeowners *before* a wildfire threatens. Preparation protects property and lives, but it also contributes to emergency responder safety and fire fighter effectiveness *during* a wildfire event.

Outreach and education programs have successfully encouraged neighborhood wildfire preparation and risk reduction actions. In the past several decades, residents living in fire prone areas in the United States have become much more aware of their wildfire risk and the fact that wildfire preparation actions on their properties are their own responsibility (Toman et al. 2013). Residents are now more likely to adopt many wildfire risk reduction actions.

Residents of WUI neighborhoods share their level of wildfire risk. If one house is inadequately prepared for wildfire, the risk to the entire neighborhood increases.

CASE STUDY:

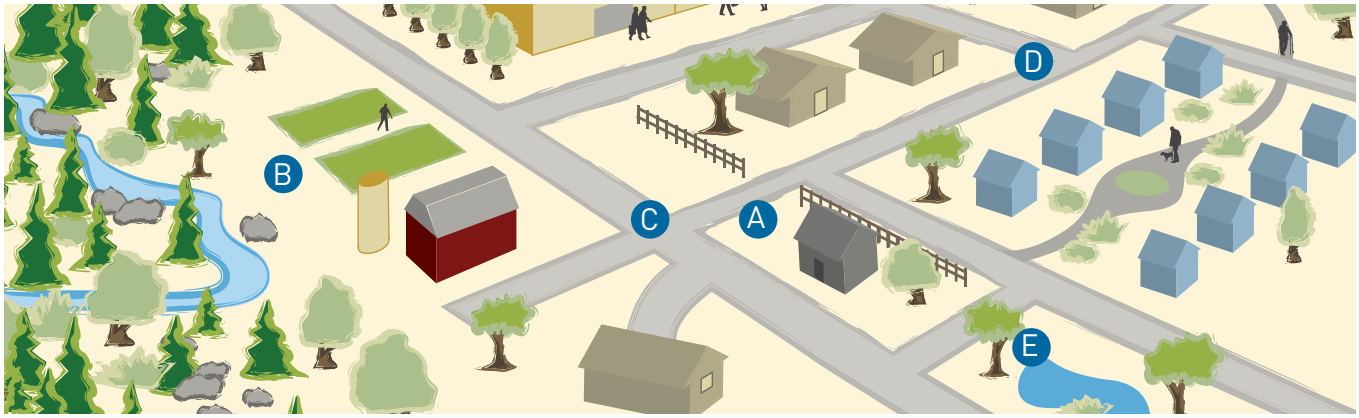
WORKING WITH NEIGHBORHOOD ORGANIZATIONS FOR WILDFIRE RISK REDUCTION

A home destroyed by a debris fire in the Keowee Fire District (KFD) of South Carolina in 2005 became a catalyst for community wildfire preparedness. Following the fire, the Keowee Fire Chief noted other problems within the community: Limited access, narrow driveways, dense fuels, poor signage, and a general lack of defensible space. The KFD and South Carolina Forestry Commission partnered to promote a Firewise Communities/USA program for educating and motivating residents to become "fire-safe." Several neighborhoods created Firewise Councils and hosted Firewise workshops, developed Community Wildfire Protection Plans, and held fuel reduction workdays. The Wynward Pointe neighborhood is modifying its architectural guidelines to include Firewise construction and landscaping guidelines while the Keowee Key neighborhood developed a leaf recycling program to reduce fuels. Lake Keowee currently has five recognized Firewise communities.

Photo credit: Used by permission, NFPA Firewise

For more information:
www.firewise.org/wildfire-preparedness/be-firewise/success-stories/south-carolina/keowee-key-sc.aspx?sso=0

Actions for Ignition Resistant Neighborhoods and Developments



A Encourage individual preparation for each structure: Follow guidelines in the following sections for ignition resistant landscapes and buildings.

B Prevent wildfire incursion: Provide fuels buffers between neighborhoods and fire prone wildlands.

C Facilitate emergency response: Make sure roads are wide enough for emergency vehicle access and turnaround; provide metal road signs.

D Facilitate evacuation: Provide more than one entrance and exit to the neighborhood and avoid dead end streets.

E Create a safe zone: Provide an internal safety zone in case evacuation routes are obstructed.

Firewise Communities/USA® Recognition Program (Firewise)

Recognition by Firewise empowers neighbors to work together to reduce their risk by taking individual responsibility to prepare their houses for wildfire. As a result of the five step Firewise process, neighborhoods can apply for status as a nationally recognized community. To maintain recognition, communities conduct and document annual wildfire safety activities. This component creates a sustainable program of local action. Only 1,039 of the 70,000 high risk communities in the United States (<1.5%) have achieved Firewise Communities/USA®recognition, thus continued emphasis is needed on this neighborhood program (IAWF 2013).

For more information: www.firewise.org

HOW BUILDINGS ARE IGNITED BY WILDFIRE

Although wildfire can threaten a building in three different ways (burning embers, direct flame contact, and radiant heat), ember exposure is the most significant cause of ignition. For example, windblown embers (firebrands) can directly ignite easily ignited materials such as a wood shake roof covering, lawn chairs, wood piles, mulch, pine needles, or debris that has accumulated in gutters, roof valleys, or around dormers. Other combustible building components, such as siding or a deck, would be vulnerable to the flames or radiant heat from these more easily ignited materials. Gable ends and open eave vents are also vulnerable to the entry of embers, which can then ignite combustible items in attic spaces. Because embers can travel a long distance when carried up by convection currents, a wildfire is still a threat even if it is miles away (IBHS 2011).

Research confirms that certain key characteristics determine which buildings burn and which buildings survive. Keeping property free of debris and maintaining fire resistant landscaping reduces the likelihood of building ignition. Everyday preparedness actions are important, such as creating a fuels free (mulch free) zone within five feet of the building's foundation, moving firewood piles and propane tanks away from buildings, keeping roofs clean, keeping combustible landscape plants away from buildings, and disposing of landscape trimmings (IBHS 2011). These preparatory actions must be regularly performed *before* a wildfire occurs to improve the survivability of people and property.

FOR DESIGNERS AND DEVELOPERS:

SAFER FROM THE START

By creating developments with wildfire in mind, communities of the future have a better chance of surviving and thriving in fire prone environments. The *Safer From the Start* guide from NFPA's Firewise program addresses the interests of developers, builders, contractors, building supply warehouses, and homeowners in communities at risk from wildfire. The guide provides information on how to integrate ignition resistant concepts into development design, architectural specifications, and neighborhood covenants or deed restrictions.

Photo credit: North Carolina home in a Firewise Community, Gary Wood

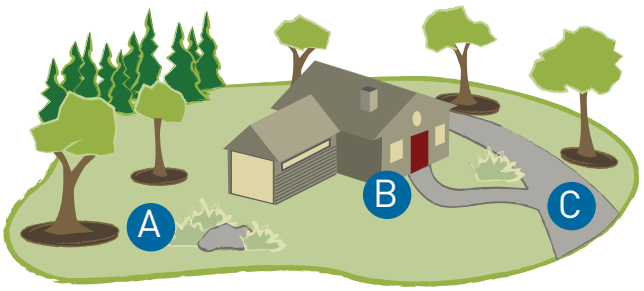
Since relatively small construction details can make a house vulnerable to wildfire, it is difficult to identify an ignition-resistant house. The house in the photograph has many good features, including noncombustible roofing and siding, dual-pane windows, a prepared and maintained defensible space, and a near-house noncombustible (gravel) zone that continues under an attached deck. Yet this house is potentially vulnerable to ember exposure at the edges of the flat cement-based roof.

For more information:
www.firewise.org/wildfire-preparedness/video/for-builders-and-developers.aspx

PREPARING LANDSCAPES AND BUILDINGS FOR WILDFIRE

The wildfire survival rate of individual houses, businesses, and other buildings can be increased by advance preparation. Once the risk is understood, homeowners can collaborate with their local fire department and state forestry personnel for more specific information about techniques, materials, and preparation procedures. Community organizations or homeowner associations can develop partnerships, promote events, and encourage resident participation. Making this positive impact does not require a lot of money or time—just the effort and commitment of the property owners and neighborhood.

Actions for Fire Resistant Landscapes



A Prevent wildfire and ember incursion: Provide defensible space, install fire resistant landscaping and noncombustible mulches (e.g., rock or crushed brick), group landscaping vegetation in separate islands, and avoid use of ladder fuels that could allow fire to move into taller trees. Do not use wood and other combustible fencing within five feet of buildings.

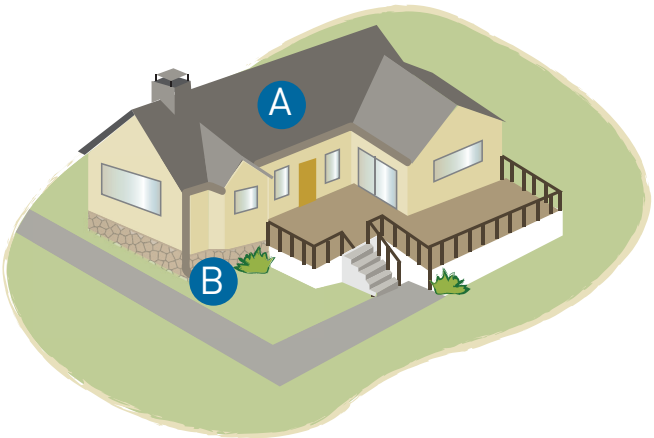
B Keep buildings free of fuels: Clear vegetative debris off the roof and out of the gutters. Keep debris, wood piles, and gas cylinders away from buildings.

C Facilitate emergency response: Provide defensible space and keep driveways wide and clear of overhanging branches.

Actions for Ignition Resistant Buildings, Houses, and Businesses

A Maintain ignition resistant buildings: Use fire rated roof coverings (tile, metal, asphalt, or fiberglass composition shingles), and install noncombustible soffits and siding (brick, stone, stucco, or other fire rated systems). Use noncombustible (metal) gutters.

B Resist intrusion of embers and flames: Use noncombustible materials for soffits, install 1/8-inch or smaller mesh screening on openings in the building enclosure (e.g., attic and crawl space vents), add spark arrestors on chimneys, and have multipane windows with tempered glass.



CASE STUDY:

HOUSES SAVED BY FIRE-RESISTANT LANDSCAPING

Photo credit: Florida Forest Service

Human and lightening-induced fires have shaped the southeastern U.S. landscape for millennia. Today, many residents live in or near the Wildland Urban Interface (WUI), an area where fire activities are suppressed yet wildfire remains a threat. Incorporating fire management and safety into landscaping decisions requires forethought by residents. Since the type, size, and density of plants in the landscape determine wildfire risk, using a guide to assist in landscape plant selection and location will affect wildfire behavior on the property. Placing the right plant in the right location can save lives and property. The Georgia Forestry Commission, with other partners, developed the informative Fire Adaptive Landscaping for Native Habitats and Wildlife in the Southern Coastal Plain for planning a "fire wise" landscape in the South.

For more information:
www.sref.info/resources/publications/fire-adaptive-landscaping-for-native-habitats-southern-coastal-plain

The Role of Insurance in Encouraging Wildfire Preparedness

Insurers can play an important role in encouraging residents and businesses in the WUI to embrace ignition resistant design and construction principles. Because of the increasing number of wildfires and associated losses during the past 10 years, many insurers recognize the need for effective property mitigation for houses in wildfire prone areas. As the number of people living in the WUI continues to grow, the wildfire risk on insurers' books also continues to increase.

The Insurance Institute for Business & Home Safety (IBHS), funded solely by the property insurance industry, is conducting research to study and understand the vulnerabilities of buildings subjected to wildfire exposures at its research center in South Carolina. The primary objective of this research is to reduce the likelihood of wildfire caused building ignitions in communities located in the WUI. IBHS research explores each of the three main hazards and exposures for building ignition: burning embers (firebrands), direct flame contact, and radiant heat. Findings are translated into actionable information for consumers to use in making their houses more ignition resistant.

In some areas, insurance availability and affordability has become a topic of concern. Insurers know that having a Class A roof and creating (and effectively maintaining) defensible space are two critical ways to make houses more ignition resistant. It is likely that property inspections for insurers in the WUI will increase to ensure that homeowners take appropriate mitigation actions. Many insurers also are conducting education campaigns aimed at policyholders in the WUI to inform them of effective wildfire preparedness measures that can reduce the risk of property damage or destruction.

For more information: www.ibhs.org

CHALLENGES TO NEIGHBORHOOD WILDFIRE RISK REDUCTION

Despite growing public awareness, barriers to risk reduction remain, including situational and psychological factors. Actions can be deterred by situational factors such as local weather conditions, financial hardship, physical disability, lack of time, status or seasonality of residence, or conditions of adjacent properties. Psychological factors such as perceived ineffectiveness of actions or beliefs about others' attitudes may also discourage actions (Toman et al. 2013). Residents will often seek to balance risk reduction behaviors against their personal need for privacy, naturalness, or a certain aesthetic. Marketing techniques can be particularly effective in overcoming barriers to individual actions (see Chapter 2).

MAINTAINING THE FIRE ADAPTED COMMUNITY

An important component of wildfire risk reduction is maintaining the preparation measures in a continuous process. Accountability for the long term maintenance of wildfire risk reduction measures will vary from community to community. Potential options include property and homeowner associations, business alliances, community coalitions, conservation districts, or other groups with a vested interest.

FOR RENOVATORS:

COSTS AND BENEFITS OF IGNITION RESISTANT RETROFITS FOR EXISTING BUILDINGS

Much can be done to prepare *existing* buildings for wildfire in neighborhoods that have already been built in fire prone WUI areas. Easier and more cost-effective actions include creating a five foot noncombustible zone around the building and under the entire footprint of any attached deck, timely roof maintenance, vent modifications, boxing in eaves, landscaping modification and maintenance, installation of chimney spark arrestors, and enclosure of spaces under raised (pier or post-and-beam) buildings.

Photo credit: Home in southeastern North Carolina, Gary Wood

For detailed information on wildfire retrofits: www.disastersafety.org or www.fireadapted.org

CHAPTER 6 CONCLUSIONS AND RESOURCES

EFFECTIVE APPROACHES FOR THE FIRE ADAPTED COMMUNITY

Effective wildfire risk reduction programs include four major categories:

- Collaboration, outreach, and marketing for wildfire preparedness (Chapter 2)
- Assessment of risks in the surrounding environment (Chapter 3)
- Implementation of planning policies, standards, and regulations (Chapter 4)
- Encouragement and assistance for neighborhoods and property owners (Chapter 5)

These categories directly relate to the programs discussed throughout this guide, with more information about how to select the best approaches for each community's particular situation. Because the conditions and needs of each place will be unique, there is no one-size-fits-all checklist or approach. Each community must use the collaborative process to determine which aspects of wildfire preparation are included in their action plans.

Becoming a fire adapted community is an ongoing process. The wildfire risk has taken many decades to build up, and so risk reduction is also a long term process. Collaboration, outreach, planning, and neighborhood engagement should be repeated in cycles over time (see Chapter 2). Each time the process is repeated, new features can be incorporated based on the lessons learned from past activities.

There is something for everyone to contribute in the ongoing fire adapted community process. The conditions must be created and maintained over time to reap the benefits of wildfire risk reduction.

FUNDING FOR THE FIRE ADAPTED COMMUNITY

Lack of financial resources is one of the biggest barriers to wildfire risk reduction actions. The availability of funding and resources becomes an important factor in bringing the fire adapted community to fruition. Visit the Fire Adapted Communities website (www.fireadapted.org) for more information on potential funding resources. Communities may be able to access funding for specific projects though hazard mitigation planning processes of state forestry and emergency management agencies. A very valid argument for funding preventive actions exists based on the documented potential for cost savings compared to the expense of wildfire suppression (see Chapter 1).

THE FIRE ADAPTED COMMUNITY PROCESS IN CONTEXT

Planning for multiple natural and man-made hazards has numerous benefits for the community. For example, a fuels buffer can become a community park, a fire resistant building may also be more resilient to storms, a subdivision evacuation route can be used during many different types of disasters, and the enhanced capabilities of local fire and emergency services can serve the community well into the future.

ENSURING THE FIRE ADAPTED COMMUNITY IS SUSTAINABLE

Long term maintenance of wildfire risk reduction projects in a fire adapted community is of special concern. Some risk reduction programs address the wildfire threat only at the time of heightened attention—after a wildfire or during a required review process for a new development. For the fire adapted community to be successfully maintained over time, the motivation for a sustainable program must come from within the community and must be repetitively promoted, both *before* and *after* wildfire events.

Effective and long term maintenance of the fire adapted community requires the ongoing cooperation and participation of the community partners, as well as integration of the various planning, outreach, and marketing programs. Actions outlined in the CWPP or other community plan must be undertaken by community partners to keep the long term wildfire risk reduction strategy working for the fire adapted community. It is particularly important for the community to assign responsibility and accountability for long term wildfire risk reduction activities. Long term maintenance of wildfire risk reduction actions can be written into plans and agreements, handled by third party managers and monitors, or otherwise incorporated into the community's culture by being regularly discussed at meetings and events.

The Fire Adapted Communities Learning Network

The Fire Adapted Communities Learning Network is a community of professionals and practitioners formed around the common issue of the fire adapted community process. The network promotes learning and the spread of best practices and emerging concepts among stakeholders and across geographic boundaries. Activities include collaborative planning, implementation, adaptive management, and the sharing of lessons learned. Workshops, online workspace, webinars, peer learning, and educational exchanges are just a few of the mechanisms the network uses.

For more information: www.fireadapted.org/region/fac-learning-network.aspx

PARTNERS FOR FIRE ADAPTED COMMUNITIES

Insurance Institute for Business & Home Safety
4775 East Fowler Ave
Tampa, FL 33617
813-286-3400
www.disastersafety.org

International Association of Fire Chiefs
Ready, Set, Go!
4025 Fair Ridge Drive
Fairfax, VA 22033
703-273-0911
http://iafc.org
www.wildlandfirersg.org

National Fire Protection Association
Firewise Communities/USA®
1 Batterymarch Park
Quincy, MA 02169
617-770-3000
www.nfpa.org
www.firewise.org
www.fireadapted.org

National Volunteer Fire Council
Wildland Fire Assessment Program
7852 Walker Drive, Suite 375
Greenbelt, MD 20770
202-887-5700
www.nvfc.org
www.nvfc.org/programs/wild-land-fire-assessment-program

National Wildfire Coordinating Group
Wildland Urban Interface Mitigation Committee
3833 South Development Ave
Boise, ID 83705
www.nwcg.gov
www.nwcg.gov/var/sections/policy-planning-and-management/wildland-urban-interface-mitigation-committee

The Nature Conservancy
Fire Learning Network
4245 North Fairfax Drive, Suite 100
Arlington, VA 22203
703-841-5300
www.nature.org
www.conservationgateway.org/fln

US Department of the Interior
1849 C Street NW
Washington, DC 20240
202-208-3100
www.doi.gov/index.cfm

US Fire Administration
Federal Emergency Management Agency
US Department of Homeland Security
16825 South Seton Avenue
Emmitsburg, MD 21727
301-447-1000
www.usfa.fema.gov

USDA Forest Service
1400 Independence Ave SW
Washington, DC 20250
800-832-1355
www.fs.fed.us
www.fireadapted.org

The Watershed Research and Training Center
98-B Clinic Ave
Hayfork, CA 96041
530-628-4206
www.thewatershedcenter.com

GLOSSARY OF TERMS

Community Protection Zone: Also called buffer zone or fuels management zone. A zone of reduced and managed fuels that surrounds a community in a high risk area and is designed to help protect the community from wildfire.

Controlled Burn: See prescribed fire.

Defensible Space: The area around a structure where flammable vegetation and objects are managed to increase the chance that a structure will survive a wildfire with or without active protection. This space is wide enough to prevent direct flame impingement and reduce the amount of radiant heat reaching the structure. The defensible space for each structure varies depending on the type of vegetation and topography.

Ecosystem: An interacting natural system, including all the component organisms together with the abiotic environment and processes affecting them.

Embers: Also called firebrands. Burning pieces of vegetation (trees, brush, chaparral) and/or parts of buildings that float up into the air on the convection currents created by a fire. Embers are usually carried ahead of a large wildfire on the wind and may fall back to the ground to cause spot fires or ignite buildings beyond the wildfire perimeter.

Fire Adapted Community (FAC): A human community consisting of informed and prepared residents collaboratively planning and taking action to safely co-exist with wildland fire.

Fire Adapted Ecosystem: See fire prone ecosystem.

Fire History: The chronological record of the occurrence of fire in an ecosystem or at a specific site. The fire history of an area may inform planners and residents about the level of wildfire hazard in that area.

Fire Prone Ecosystem: An area where periodic fire maintains the natural structure and function of the ecosystem, often inhabited by plants and animals that have special adaptations that help them survive fire. Many of the ecosystems of North America fall into this category.

Fire Season: The time of year when wildfires are most likely to occur in a given area, such as during warmer or drier months. Wildfires can occur during any month of the year, but each area will have its own particular time of high wildfire activity.

Fire Suppression: Also called wildfire response. The work of containing or fighting a wildfire, beginning with its discovery and continuing until the fire is extinguished and mop-up is completed.

Firebrands: See embers.

Fuels Management Zone: See community protection zone.

Fuels: Also called wildland fuels. The dead and living materials in the natural environment that will burn. This includes dead pine needles, grasses, twigs, branches, and trees, as well as living grasses, shrubs, and trees. At the wildland urban interface, fuels may also include structures, woodpiles, propane tanks, brush piles, and other parts of the built environment.

Fuels Management: Also called fuels reduction. Act or practice of controlling flammability and reducing resistance to control of wildland fuels through mechanical, chemical, biological, or manual means, or by fire, in support of land management objectives.

Fuels Reduction: See fuels management.

Ladder Fuels: Fuels that allow a fire to spread from the ground level up to the forest canopy, leading to a crown fire. Ladder fuels include vines, hanging branches, shrubs, or an understory layer of small or medium sized flammable trees, such as young pines. Ladder fuels may also allow fire to spread from the ground up to the eaves of a building. Fuels reduction strategies often focus on reducing ladder fuels first.

Mechanical Treatment: See mechanized fuels treatment.

Mechanized Fuels Treatment: Also called mechanical treatment. Biomass reduction including mechanical and hand techniques such as thinning, chipping, mastication, mowing, crushing, hand and machine piling, and lop and scatter.

Prescribed Fire: Also called controlled burn. Any fire ignited by management actions to meet specific objectives. A written, approved prescribed fire plan must exist, and National Environmental Policy Act requirements (where applicable) must be met, prior to ignition.

Spark Arrestor: An approved device installed atop a chimney, flue, or exhaust pipe to prevent the emission or entrance of sparks and embers.

Wildfire: An unplanned, unwanted wildland fire including unauthorized human-caused fires, escaped wildland fire use events, escaped prescribed fire projects, and all other wildland fires where the objective is to put the fire out.

Wildfire Mitigation: Also called WUI mitigation actions. Activities or projects that address fuels build-up, structure flammability, and similar issues to reduce wildfire impacts to lives, structures, and communities. Examples include Firewise principles, defensible space, hardening structures, and fuels management treatments.

Wildfire Response: See fire suppression.

Wildland Fuels: See fuels.

Wildlands: An area in which development is essentially non-existent, except for roads, railroads, power lines, and similar transportation facilities. Structures, if any, are widely scattered.

Wildland Urban Interface (WUI): The line, area, or zone where structures and other human development meet or intermingle with undeveloped wildlands or vegetative fuels.

WUI Mitigation Actions: See wildfire mitigation.

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