NEW INSIGHTS, NEW PARTNERS

Reducing Risk from the Front Door to the Forest

Submitted by the Community Mitigation Assistance Team

(9/8/2017)
INTRODUCTION

The Community

The Grandfather Ranger District is part of the Pisgah National Forest in the Blue Ridge Mountains on the western edge of North Carolina. This 500,000 plus acre National Forest contains the first tract of land purchased under the Weeks Act of 1911 which led to the creation of the national forests in the eastern U.S. The forest is made up of dense hardwood stands along with highly flammable mountain laurel, rhododendron, and (after a frost) kudzu situated in the mountains and “hollers” of the Blue Ridge.

McDowell County’s population is just under 45,000 -- 70% rural where forest fuels and homes mix (the wildland urban interface). A structure fire spread and destroyed Marion’s (the county seat) downtown in 1894. The town’s residents rebuilt and today Marion is listed in the National Register of Historic Places.

The town of Marion proper is not at high risk from wildfire but the surrounding forested areas of McDowell County where new, primarily seasonal, subdivisions are being built are. These subdivisions are characterized by heavily wooded lots, narrow, winding roads, no accessible water sources, and sometimes locked gates.

County-wide defensible space around homes, “hardened” homes, fuels treatments, and planning can help people and structures live safely with wildland fire on the landscape.

Challenges

The Pisgah National Forest and McDowell County are verdant; not the kind of territory that bespeaks wildfire. But like most of the Eastern United States, wildfires occur primarily in spring (before green-up) and in the fall (after frost) when summer fuels are cured and prime for fire.
The 2016 Chimney Tops 2 Fire in neighboring Tennessee heightened awareness when it burned more than 17,000 acres, destroyed 2,400 structures, and killed 14 people. In October 2016, 26 major wildfires burned over 62,000 acres. The area has had several other recent sizable fires: the Table Rock fire burned 7,600 acres, and the Dobson Knob fire burned 1,500 acres.

Wildfire professionals, community leaders, and residents are concerned these dry and dangerous periods will grow more prevalent for the Appalachian Mountains and the people who live there. The region faces many challenges:

- Residents don’t think there’s a fire risk so they aren’t inclined to reduce that risk until the danger is imminent.
- A few degrees change in seasonal temperatures resulted in drought and greatly increased fire activity in 2016. Is that a trend?
- The majority of local residents are not reducing wildfire risk on their private property.
- Wildfire risk reduction is not yet a priority for volunteer fire departments.
- The region has large tracts of standing and down fuels, difficult terrain and access, and many interspersed structures. Ignition during a dry period could be catastrophic.

However, the region is well positioned to take action to reduce risk and prepare:

- There are 12 volunteer fire departments
- Fire department volunteers are engaged members of this close-knit community.
- North Carolina Forest Service promotes, funds, and completes risk reduction on state and private lands.
- McDowell County Administrator and McDowell County Office of Emergency Management and its Director are engaged in helping form a risk reduction partnership.
- Both North Carolina Forest Service and the U.S. Forest Service are visible and engaged members of the local and regional community.
- The newly formed Southern Appalachian Resource and Conservation Districts (RC & D) Fire Adapted Communities Coalition has a designated representative working in McDowell County.
- The Nature Conservancy is a strong regional partner who shares information and resources.
- The Forest Service does fuel treatments on FS lands to reduce risk.
INTRODUCTION

What the CMAT team Did

The U.S. Forest Service Community Mitigation Assistance Team (CMAT) worked hand-in-hand with regional and local partners to identify strengths, weaknesses, opportunities and threats to wildfire risk reduction and together created a list of steps to increase awareness of risk and capacity to do risk reduction work, help partners work together, and share best practices to leverage funding, person-power, and opportunities.
INTRODUCTION

Guiding Principles

The Team’s cumulative experience shows that wildfire risk reduction doesn’t normally happen by engaging with a homeowner one time through an assessment, providing funding for a project, handing out brochures, sending postcards, or creating a website. In fact, each of those things alone is fairly unproductive and usually results in frustration. Engaging homeowners to the point that they will reduce risk is not easy. To be successful it takes planning, engagement, time, a strategy, and most importantly, patience and persistence.

Here are some best practices that seem to apply to every community.

1. **Work together.** A group of people who share the same goals can get more done together than separately. They share the work, plan together, and piggyback on strengths, resources, and staff. Many hands make light work.

2. **Use messaging** for awareness of wildfire risk. Target the general public.

3. **Use personal face-to-face engagement** to help create behavior change that leads to risk reduction actions. Target those people who will take action and help move others to reduce wildfire risk.

4. **Stretch project funds** go further by requiring a homeowner to cover (either in cash or sweat equity) half the cost of the project. A homeowner who invests in the project is more likely to maintain it over time. This also empowers homeowners to take responsibility for what’s theirs.

5. **Help** low income, elderly, and disabled get risk reduction done.

6. **Promote home hardening and defensible space.** These are the foundations for living safely with wildfire.

7. **Invest most of your time and resources** on risk reduction actions. For instance, Firewise risk reduction actions in a community are more important than Firewise Recognition.

8. **Engage the community** in Community Wildfire Protection Plan development and implementation.
RECOMMENDATIONS

The Team and the partners focused on the steps the community could take, realistically, to reduce wildfire risk. Opportunities materialize throughout the process. This synergy is what makes a local/regional partnership more effective than the simpler “one sparkplug” approach.

Form a Partnership
Wildfire mitigation is not a numbers game. It’s not about getting brochures to a large number of people; it’s about building strategic relationships and targeting people who are committed to doing the work on the ground, on their property, helping their neighbors and sharing their knowledge. You don’t need all the people, you need the right people.

A true partnership makes getting work done easier, more coordinated, and effective. A group of people or organizations with a common goal can share knowledge, resources, and staff. A partnership can work on projects that encompass homesites as well as state, and federal lands -- a more effective way to reduce risk.

Like a football team, a risk reduction team shares resources, matches talents to tasks, works together toward a goal, trains players, gets in the game and scores. The team approach requires commitment and succeeds because it has a variety of players who fulfill their roles.

- Engage a committed group of action-oriented people, such as public and private property owners, land managers, service groups, fire departments and especially residents.
- Formalize the partnership:
  - Convene the partnership to develop a Memorandum of Understanding (an MOU is a written handshake to work together).
  - As a group, set short and long term goals, objectives and attainable outcomes.
  - Create a meeting & project timeline (See ToolBox “A”)
  - Designate project leaders, members and tasks (focus on actions)
- Communicate
  a. Ensure partners and the public are aware of all strategies, projects, goals, progress.
  b. Share lessons learned
  c. Celebrate successes
- Be flexible, grow the effort, reduce risk.
RECOMMENDATIONS

- Focus on creating a track record of successful risk reduction projects on the ground for at least one year before seeking substantial funding. Many risk reduction projects do not require funding.
- Do not depend upon a coordinator to accomplish risk reduction. That is the role of active partners and committed volunteers.
- Leverage The Nature Conservancy access to a Job Corps crew to:
  - Assist elderly and disabled homeowners.
  - Assist homeowners willing to do 50% of the work.
- Use McDowell Police Department’s Community Emergency Response Teams (CERT) and Community Watch Organizations to increase awareness and implementation.
- Work with Appalachian State University and RC&Ds on the proposed risk awareness project.
- Work with the McDowell County High School Public Safety Academy to develop wildfire risk reduction curriculum.
- Use the BRIDGE (Building, Rehabilitating, Instructing, Developing, Growing, Employing) Program on identified projects.

http://ncforestservice.gov/fire_control/bridge.htm
RECOMMENDATIONS

Build Capacity

Fire Departments

Volunteer fire department members are a trusted local authority; as a result fire departments are an excellent resource for risk reduction awareness and implementation. There is some fire department awareness of the importance of risk reduction activities, but there is a desire for consistent language and methods.

- Use face to face contact to produce results.
- Build partnerships through education and create informed landowners.
- Use burn permit requests to engage residents.
- Use fire department paid staff to talk to homeowners on site about risk reduction (See Toolbox “B” for Homeowner Engagement Guide).
- Schedule homeowner site visits one to two days a week.
- Use fire department risk reduction projects to increase community support and by-in.
  - Generate a list of elderly or disabled residents and help them create defensible space.
  - Use department sawyers to do risk reduction work.
  - Conduct S-212 chainsaw trainings on sites to increase qualifications and reduce risk.
- Work with individual HOA’s to improve covenants, conditions and restrictions to include defensible space and home hardening concepts (See Toolbox “B”).
  - Limit combustible exterior building materials on new construction.
  - Follow IBHS or Firewise landscaping guides.
  - Require highly visible address and street signs.
  - Apply Firewise landscaping guidance to common area vegetation.
RECOMMENDATIONS

- Work with county leaders to establish standards for new construction (See ICC / WUI code and NFPA 1141 in Toolbox “B”)

**Do the work**
McDowell County residents are generally not aware of their fire risk. How can building awareness provide a quicker path to the most important goal... **action!**

**Message**
Let’s be clear. Messaging uses literature, news releases, articles, announcements, flyers and websites to educate the audience about wildfire risk and available technical assistance, funding, or meeting times and dates. Messaging is effective in educating people. It is not effective in moving people to action and that’s the ultimate goal.

- Use plain consistent language
- More pictures/illustrations, less text.
- Use existing facebook pages with well established followership rather than creating a new site. Keep information current but don’t let social media take time away from risk reduction actions.
- Get professional help. Use Forest Service and North Carolina Forest Service Public Affairs staff to write and layout content, issue joint press releases, and determine best delivery methods (weekly newspaper, radio, etc).
- Staff booths at community events (Livermush Festival, Mountain Glory Festival, etc). Always get personal contact information for follow-up discussions.
- Bracket the messaging (awareness) campaign around fire activity windows in spring and fall. Follow the SMART model - Simple, Measurable, Actionable, Results-oriented, and Time sensitive.

**Engage**
Remember, messaging is only the first step. When it comes to risk reduction, it is face-to-face engagement which leads to action. Build credibility and trust by sharing personal experiences and thoughts about fire risk and responsibility. It’s not the number of people you engage; its engaging the right people.

- Provide knowledge, not just information. Research shows that an understanding of wildfire’s impact on a home and why it burns is a factor in spurring people to reduce risk.
- Listen first and share information.
- Use staff with good people skills
RECOMMENDATIONS

- Form a cadre to work in high risk communities. Spread the workload. Carve out just an hour or two a week to talk to people about risk reduction.
- Prioritize; first, which places are at highest risk and which people are likely to take action.
- Be relentless. It will take many interactions before action is taken.
- Use standard, consistent language to avoid confusion. (See Toolbox “C”)

- Recognize homeowner concerns and be flexible. Some risk reduction is better than none.
- Use fire department personnel and neighbors who are trusted the most.
- Use a home assessment to raise awareness of a risk, but follow up every risk assessment with personal contact.
Home Hardening

The goal of home hardening is to create a home that will survive fire on its own, without fire department intervention. The primary objective is to make the home more resistive to both direct flame contact and burning embers. Essentially, if the home does not ignite, the home won’t burn.

Burning embers destroy more homes than big flames, so it is important to focus on areas where embers may cause the home to burn. Walk around your home, and notice the areas where leaves or snow tends to accumulate. Remember to look along the foundation, around porches and decks, and don’t forget to look up. Check your roof valley, along changes in your roofline, around dormers. These are the same places where fire brands will collect.

The roof is the most vulnerable part of the house, and one of the more expensive items to replace. If your roof is covered with wood shakes/shingles, consider replacing with a Class A rated roof. The least expensive Class A rated material is the standard 30 year laminated fiberglass shingle.

Home hardening techniques can range from very inexpensive weekend projects, to more costly and larger projects. Below are some low or no-cost recommendations that the homeowner can do themselves.

- **Roofs:** Install “bird-stops” along the roof edge if you have a metal roof. Embers can blow in under the metal roof and ignite debris and the decking beneath. The bird-stops will minimize the embers from landing on the roof decking.

- **Roof Valley and Dormers:** Install 6-8 inches of metal flashing to the transition area from the roof to a dormer, if the dormer has combustible siding. This is a potential area for debris to build up and must be kept clean, as burning embers can also accumulate in this area.

- **Vents:** Screen all vents with ¼” non-combustible metal mesh. This prevents burning embers from entering areas such as the attic or foundation. For proper ventilation, it is important to keep the screening clean.
RECOMMENDATIONS

areas such as the attic or foundation. For proper ventilation, it is important to keep the screening clean.

- Roof Edge: Install a metal drip edge where the gutter is attached to the roof edge. The drip edge will prevent wind-blown embers from entering the attic between the roof decking and the fascia board.

- Gutters: Keep gutters clean and free of leaves and pine needles. If you have vinyl gutters consider replacing them with aluminum. Vinyl gutters can melt and catch fire, dropping burning material along the base of a foundation or deck. A low-cost solution to gutter debris is to install metal gutter guards or covers. These covers help prevent debris from getting into the gutters, however these must be maintained and kept clean.

- Siding: If you have combustible siding, create 6-8 inches of clearance between the siding and the ground. Either remove some of the ground along the foundation, or replace a few rows of siding with a cement fiber product. Wind-blown embers can accumulate at the base of the wall and ignite it.

- Decks or Porches: Remove combustible items from beneath the deck, and do not store firewood on or under the deck. Firewood should be stored at least 30 feet from structures.

The above list is a “short list” of home hardening items, and is not all inclusive. For additional information, refer to the Wildfire Home Assessment & Checklist from the Insurance Institute for Business & Home Safety (IBHS) at Disastersafety.org Also available in Toolbox “C”.

Ground to siding clearance example
RECOMMENDATIONS

Defensible Space
Along with hardening the home, creating defensible space is necessary to reduce the risk to a structure. Simple things like mowing the lawn, trimming branches, and removing dead vegetation and twigs are cheap, easy and fast ways to reduce risk. Defensible space, when completed in conjunction with home hardening and fuels management will increase a property’s survivability.

● The first five feet around the home should be a primary focal point. Ensure this area is free of flammable debris.

● Creating defensible space, or reducing risk in the area surrounding a home or a structure, can meet everyone’s objectives.
  ○ Defensible space can be done in a way that meets the owner’s preferences for privacy and aesthetics.
  ○ Often homeowners value trees and shrubs near the home for privacy and beauty. Defensible Space principles should be flexible and realistic.
  ○ Consider ways to create defensible space by removing trees in areas away from the home. This concept only works if fuels are removed to break up fuel continuity and separation from the structure. Make sure to explain the risks and rewards of this activity.

● Be diligent in removing dried leaves that accumulate around the home.

● Maintain and remove fuels, especially blowing leaves, frequently.

For additional defensible space information see Toolbox “C”
RECOMMENDATIONS

**Fuels Reduction**

Fuels reduction, in general terms, describes techniques to reduce fire risk in forests, surrounding communities, and near homes. Fuels reduction activities, such as prescribed burning and fuel breaks, are part of the wildfire risk reduction strategy. Well-designed fuel reduction projects reduce risk and improve habitat. Fuels programs should incorporate mechanical treatments, prescribed fire, and fuel breaks.

- Prioritize projects. The higher the risk, the higher the priority.
- Use fuel reduction projects to reduce risk and educate participants.
- Develop a maintenance plan for all fuels reduction projects.
- Use highly visible demonstration sites to increase awareness and participation.
- Engage a local partner as project lead or co-lead on projects.

**Forestry Contractors**

Forestry contractors play a critical role in wildfire risk reduction, however, there are a limited number of them in McDowell County.

- Consider developing a wildfire risk reduction training program for new forestry contractors to cover the bidding process, insurance requirements, project planning, forestry best management practices, cost controls, etc.
- Develop smaller projects, less than 5 acres, to allow small operators to grow their experience. As success is gained, contractors will feel more comfortable to bid on larger jobs.

**Mechanical Treatment or Mastication**

Mastication, or mechanical grinding, takes fuels from the canopy and leaves it on the forest floor. This reduces crown fire in tree tops, but may increase fire on the forest floor.

- Use mastication before a prescribed fire to reduce fuels and smoke when burning.
- Use mastication when prescribed fire is not an option.
RECOMMENDATIONS

Prescribed Fire
The Grandfather District of the Forest Service’s target for prescribed fire is 6,000 acres annually. The use of fire is not without controversy. Prescribed fire provides a cost effective means to treat large areas of land. The process to plan, approve, and complete a prescribed burn involves checks and balances, vetting and permitting, and input from subject matter experts. Land managers weigh these factors when considering prescribed fires: firefighter and resident safety and health, weather and fuel conditions, effectiveness, and cost.

- Involve the community in the prescribed fire discussion.
- Share information about the values and risks of prescribed fire. (See -U.S. Forest Service’s key messages document located in Toolbox “C”.)
- Monitor fire and smoke effects onsite and offsite.
- Minimize negative impacts by making an extra effort to reach out to smoke-sensitive residents, such as the elderly, children, and those with health conditions.
- Coordinate with partners to use “smoke in the air” as a teachable moment. When residents have a heightened awareness of risk, they will be more receptive to increasing risk reduction work on their own properties.
- See RXFIRE media alert in the Toolbox “C”.

Fuel Breaks
- Develop fuel breaks collaboratively.
- Use highly visible fuel breaks as demonstration sites.
- Create a maintenance schedule.

CWPPs
A Community Wildfire Protection Plan (CWPP) is a community assessment and action plan to reduce wildfire risk. The McDowell County Community Wildfire Protection Plans were created at the fire district level in 2010. For CWPP reference documents see Toolbox “D”.

- Update CWPPs every five years to reflect the current wildfire threat.
RECOMMENDATIONS

- Make CWPPs available publicly, with inclusion of all maps.
- Engage community partners in the process.
- Update Action Items.
  - Provide a detailed discussion of what and where risk exists and the measures to reduce risk.
  - Include a map that highlights community risk locations, fire occurrence, jurisdictions, structures, and infrastructure.
- Share findings and risk reduction actions widely.
- Track accomplishments on maps to display outcomes.
- Include evacuation planning.

**Funding Opportunities**

NC Community Firewise Mitigation Grant Program – Contact Hannah Thompson-Welch, NC Forest Service: [http://ncfirewise.org/Grant/2017FirewiseGrantRFP.pdf](http://ncfirewise.org/Grant/2017FirewiseGrantRFP.pdf)

Community Protection Plan (CPP) grants – contact McDowell County Forest Ranger [http://ncforestsSERVICE.gov/fire_control/fc_cpp.htm](http://ncforestsSERVICE.gov/fire_control/fc_cpp.htm)

- Prescribed fire and mechanical thinning projects are eligible. No grant application needed. Invite County Forest Ranger to first meeting and discuss options.


FEMA Pre-Disaster Mitigation Grant - [https://www.fema.gov/pre-disaster-mitigation-grant-program](https://www.fema.gov/pre-disaster-mitigation-grant-program)

Hazard Mitigation Assistance [https://www.fema.gov/hazard-mitigation-assistance](https://www.fema.gov/hazard-mitigation-assistance)

- Develop a single transparent process for awarding funding to property owners, regardless of the source.
- Provide a list of local grant opportunities on-line (website or facebook page)
- Pursue non-conventional funding mechanisms such as private business support, foundations, utility companies, and local fundraiser.
THE TEAM

The Community Mitigation Assistance Team (CMAT) is sponsored by the U.S. Forest Service to assist communities impacted by wildfire. CMATs are comprised of public and private wildland-urban interface (WUI) mitigation professionals from across the country. The Team provides technical and strategic mitigation support to build and strengthen sustainable mitigation programs. The team mentors organizations, helps to identify and provide tools, advises on the highest priorities for risk reduction, and shares best management practices for mitigation.

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Reducing Risk from the Front Door to the Forest
RISK REDUCTION TOOLBOX

McDowell County Risk Reduction Toolbox Resources available @
https://www.dropbox.com/sh/x4denwg7ujtni3w/AACRSConpairGmvcouHWraCUa?dl=0

Toolbox A
Best Practices for Effective Meetings
Meetings can be useful but they are not the best way to engage people for action. Meetings are valuable to plan, organize and share information. True engagement for risk reduction action on the ground results from face-to-face communication and relationship building over time. Keep these best practices in mind.

- Plan a tight agenda and provide it in advance. Include time for each agenda item and stay on track to focus on items that lead to risk reduction actions, not just talk.
- Start on time, end on time.
- Use sign-in sheets
- Make sure that the community is part of the partnership.
- Meetings should be public, open and transparent.
- Make meetings a shared responsibility among partners.
- Focus on tasks that lead to risk reduction, not just discussion.
- Don’t talk at people, instead facilitate group interactions.
- Allow opinions and concerns to be heard.
- Be respectful. Look for solutions and common ground.
- Assign tasks and responsibilities with deadlines.
- Post meeting information publicly.

Toolbox B
- Homeowner Engagement Guide available @https://www.dropbox.com/s/vbut09yy7dwxw21/Homeowner%20Engagement%20Guide.pdf?dl=0
- See Rapid City Survivable Space Initiative Wildland Urban Interface Standard located on the CMAT McDowell County Risk Reduction Toolbox available @https://www.dropbox.com/s/ri9qzsp6q4gb2v%20Wildland%20Urban%20Interface%20Zone%20Standard%205-22-14.docx?dl=0
**RISK REDUCTION TOOLBOX**

**WUI Codes and Standards**

**Toolbox C**
- Insurance Institute for Business & Home Safety (IBHS) Wildfire Resources: [https://disastersafety.org/wildfire/](https://disastersafety.org/wildfire/)

**Toolbox D**
- Smoke Communication Plan - National Interagency Fire Center [https://www.nifc.gov/PIO_bb/Agencies/USFS/FinalSmokeComPlan060217.docx](https://www.nifc.gov/PIO_bb/Agencies/USFS/FinalSmokeComPlan060217.docx)
- See RXFire_Mediaalert_example - McDowell County Toolbox

RISK REDUCTION TOOLBOX


**Funding Resources**

- NC Community Firewise Mitigation Grant Program – Contact Hannah Thompson-Welch, NC State Forest Service: http://ncfirewise.org/Grant/2017FirewiseGrantRFP.pdf

- Community Protection Plan grants – contact McDowell County Forest Ranger http://ncforestservice.gov/fire_control/fc_cpp.htm

Reducing Risk from the Front Door to the Forest

FOR MORE INFORMATION

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