Protecting Plumas Communities: Phase one of Study

By Victoria Metcalf
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The first stage in a two-phase approach by the Fire Safe Council to study Plumas County's wildfire assessment and strategy background was approved last month by the Board of Supervisors.

This was done in an effort to meet the National Fire Plan, the federal Healthy, Forest Initiative and the U.S. Federal Emergency Management Agency requirements on pre-wildfire planning.

The second phase involves the community or county Wild Fire Plan. That will be presented at a later time,

"The project defines the Wildland Urban Interface around the 40-plus settlements and defines a system of proposed fuels treatments around and in the settlements that can be used to help guide future fuels reduction efforts," according to John Sheehan, Plumas County Fire Safe Council secretary.

The WUIs include those identified on the Federal Register's list as communities at risk, as well as new communities that the Fire Safe Council has determined are at risk but are not on the register.

It has taken three years to develop the studies, Sheehan explained about the Plumas Fire Safe Council's work. To expedite the study, the council used the services of Wildland RX, consultants paid for through a Bureau of Land Management grant.

A key project in this first phase was to photograph and document ground fuels conditions on public and private lands, specifically around communities. More than 100 sites were photographed around more than 40 communities in the county. This provides far greater detail of ground fuels conditions compared to satellite photographs, Sheehan explained. •

By documenting ground fuels conditions, Sheehan said the council has valid information on what really exists. The photographs also give them information to work with for future studies, and to determine changes.

By studying the photographs, Sheehan said they can determine if the fuels situation "gets better (or) gets worse," and lf .a wildland fire occurs, if it "did it all burn down?"

Fuels reduction around targeted communities is the council's primary focus. Funding from various sources has made it possible to not only implement the strategy and assessment study and the subsequent plan, but also initiate specific projects that fall within WUIs.

The council selected specific public and private land parcels within the WUIs where hazardous fuels reduction projects have been conducted.

While this is a necessary process, it is also a slow and sometimes expensive one. According to Sheehan, since grant funding has become available for such projects, 1,600 acres have been treated by hand or mechanical processes.

That is only one percent of the estimated total WUI acreage that needs to be addressed, according to Sheehan.

In reality, Plumas County has more than 300,000 acres that are subject to catastrophic wildfire within the WUIs.

To treat that total amount, Sheehan estimated that $1.5 billion to $3 billion would be required in Plumas County alone. "We don't expect those kinds of resources to be available ever," he added.

What the council has to do is to continue to seek funding and stretch that money as far as it will go. That means setting priorities and carefully selecting the best projects to work with first.

This has been an educational process, Sheehan said, not only for the council but the public.

What is known as a project prioritization decision matrix was developed by the council to assist in determining which projects should be approached first.

The matrix allows the council to determine if a community is considered at high, moderate or low risk. These decisions are based on an area's fire history, and behavior, landscape, and fuel characteristics, and the location of fire suppression resources.

Sheehan said that, realistically, the council looks to treat areas where it can be done on a "break-even basis". In many areas, it costs about $500 per acre for hazardous fuels reduction. Return funding is realized through the sale of logs (the size determined by federal guidelines) and chipping.

Even on private lands, the landowners must agree to allow the council to benefit from the process in order to reduce the costs.

In a few cases, the project will cost more than can be realized. Sheehan said that the Greenhorn fuels reduction project of two years ago cost an average of $2,000 per acre. There is no break-even point on that kind of project. What the council must determine is the value of hazardous fuels reduction in benefiting the community. It also must space these more expensive projects.

According to Sheehan, that's why it's critical that each proposed project be evaluated and discussed.

And that's where the ground mapping through photographs helps the process.

In the learning process, it has become increasingly cleat that changes in the way WUIs are now designed has a direct impact. According to Sheehan, older communities were built on valley bottoms. "New ones have a tendency to be built on side hills," he said. "Fire is a real issue" in these areas.

The council

Catastrophic wildfires throughout the United States drew national attention. Under the last two presidential administrations, hazard fuels reduction and the protection of communities, resources and life became a nationwide focus.

The Plumas County Fire Safe Council was formed in 1998, prior to a rash of major wildfires that struck Plumas County during the following three summers.

According to Sheehan, the council's influence and impact really began when federal funding became avail available. That funding through grants allowed for initial hazard fuels reduction projects public education and studies as required the federal government under FEMA.

The Study

The intended lifespan of the study is 10 years. During that time it is expected that environmental changes, fires, harvest and new homes will make changes within the WUIs.

The decision matrix is one of the key components of the study. Terms used are as follows:

Risk (wildfire risk) – Defined as the likelihood that an ignition will occur. In the matrix these values can be determined by referencing the Historic Fire Ignition Maps developed for the study. These show human versus lightning-caused fires in the area. Lightning or naturally caused fires are impossible to predict or eliminate, but human-caused fires can be dealt with by aggressive law enforcement or prevention education.

- Fire behavior -- The typical large fire behavior would be based on fire behavior modeling and historic fire records for the area.
- Hazards (fuel hazard) --These are defined as the amount of fuel available to burn at any given time in a given area. The quantity of the fuel and the moisture of that fuel represent the availability of the fuel to burn. In the matrix, fuels are represented by the surface and the canopy fuel loads.
- Topography -- Will the fire move into a community or away from it as determined by the slope?
- Values at risk -- Natural resources, manmade improvements, heritage resources, habitat, and anything considered of value by the community.
- Projects in collaboration—This concerns involvement with other agencies or communities and whether there's an opportunity to link a project with an adjoining landowner.

In the past 100 years (I900-2000), research shows that nearly half of the county's total size has been lost to wildfires, according to the study. Some of the fires have swept through areas previously consumed by wildfires.

Although many of the fires have historically hit unpopulated or relatively unpopulated areas, that is changing. With growth and the spread of housing locations, more recent fires have threatened some communities.

In looking at the region's past, trees traditionally survived low intensity fires. These occurred from lightning strikes, which were frequent enough to keep an accumulation of brush and debris to a minimum. It was when these factors were allowed to accumulate that high intensity blazes became more threatening and created more damage to the environment.

Logging also played a role in the buildup of forest fuels, according to the study. Poor slash treatments and unchecked regeneration of trees and brush during and after logging were considered to have played a role in the increased severity of large wildland fires in the past century.

According to the study, low intensity lightning fires are needed in the environment to help control hazard fuels buildup once an area is prepared.

There are a large number of lightning strikes on the east side of Plumas County. These are an uncontrollable enemy when an abundance of ground fuels are present, but they're helpful when the locations are finally prepared.

Fire behavior models have bee$_n$ compiled to help determine what could happen within specific areas.

Fire behavior includes such information as rate of spread, flame length, crown fire activity and other criteria.

Those who are interested in more information on the strategy and assessment report may go online to plumasfiresafe.org.

Table to be used for establishing Priorities for Treatment

	LOW	MODERATE	HIGH
RISK			
Human Cause*	*Less than 1*	*1 to 3*	*3 or more*
Lightning*	*Less than I*	*1 to 3*	*3 or more*
FIRE BEHAVIOR			
Surface Fire Rate of Spread	*< 400 feet/hour*	*400 to 1000 feet/hour*	*Greater then 1000 feet/hour*
Flame Length	*< 2 feet*	*2 - 6 feel*	*Greater than 6 feet*
Crown fire potential	*Surface fire under limber overstory*	*Passive*	*Active Crown fire or fire in Brush fuel model*
HAZARD			
Surface fuels loading	*< 10 Tons per acre*	*10-20 Tons per acre*	*Greater then 20 tons per acre*
Crown Base Height	*Greater then 50 feet*	*20-50 feel*	*Less than 20 feet*
TOPOGRAPHY	*Flat*	*<30%*	*>30%*
Slope into or away from the community	*Slope away from community*	*Flat wind driven fires*	*Slope into the community*
VALUES AT RISK**	*1 to 3*	*3 to 20*	*Greater then 20*
PROJECTS IN COLLABERATION	*None planned*	*Planned within /O years*	*Construction started or complete*

* Within 1 mile radius

** Number of lived-in structures, this also relates to the number of engines available for structure protection within 15 minutes of ignition.

There is more acreage in need of hazard fuels reduction than there is funding available, now or In the future. In order to get the most from the grant funding that is made available, the Fire Safe Council determined priorities to use for treatment consideration.