

FIREWISE COMMUNITIES/USA® RECOGNITION PROGRAM

ORLEANS COMMUNITY ASSESSMENT



1) INTRODUCTION

The Firewise Communities/USA program is designed to provide an effective management approach for preserving wildland living aesthetics. The program can be tailored for adoption by any community and/or neighborhood association that is committed to ensuring its citizens maximum protection from wildland fire. The following community assessment is intended as a resource to be used by the residents of Orleans and the surrounding area for creating a wildfire safety action plan. The plan developed from the information in this assessment should be implemented in a collaborative manner, and updated and modified as needed.

The community assessment took place on October 19, and November 9, 2011, and involved representatives from the Orleans/Somes Bar Fire Safe Council (OSB FSC), the Orleans Volunteer Fire Department (OVFD), the County of Humboldt Community Development Services Department (CDS), and CALFIRE. The majority of the time was spent deciding the boundary of the Orleans Firewise community, discussing known local fire hazards, and collaborating on the most realistic and essential action items for the community. After these tasks were accomplished, the team toured important points around the community, including the Karuk Tribe Department of Natural Resources building and the associated medical clinic, the Orleans Volunteer Fire Department headquarters, the Orleans Cal Trans yard, the USFS Orleans Ranger District headquarters and engine bay, and the Mid Klamath Watershed Council.



2) DEFINITION OF THE HOME IGNITION ZONE

The community of Orleans is located in a wildfire environment. Wildfires will happen--exclusion is not a choice. The variables in a fire scenario are when the fire will occur, and where. This assessment addresses the wildfire-related characteristics of Orleans. It examines the area's exposure to wildfire as it relates to ignition potential.

The assessment does not focus on specific homes, but examines the community as a whole.

A house burns because of its interrelationship with everything in its surrounding home ignition zone---the house and its immediate surroundings. To avoid a home ignition, a homeowner must eliminate the wildfire's potential relationship with his/her house. This can be accomplished by interrupting the natural path a fire takes. Changing a fire's path by clearing a home ignition zone is an easy-to-accomplish task that can result in avoiding home loss. To accomplish this, flammable items such as dead vegetation must be removed from the area immediately around the structure to prevent flames from contacting it. Also, reducing the volume of live vegetation will affect the intensity of the wildfire as it enters the home ignition zone.

This assessment is based on observations of the Orleans community made by the CAL FIRE, OVFD, CDS, and OSB FSC representatives. The assessment addresses the ease with which home ignitions can occur under severe wildfire conditions and how these ignitions might be avoided within the home ignition zones of affected residents. Orleans residents can reduce their risk of destruction during a wildfire by taking actions within their home ignition zones. This zone principally determines the potential for home ignitions during a wildland fire; it includes a house and its immediate surroundings within 100 to 150 feet.

The result of the assessment is that wildfire behavior, within the wildland urban interface (WUI), will be dominated by the residential characteristics of this area. The good news is that by addressing community vulnerabilities, residents will be able to substantially reduce their exposure to loss. Relatively small investments of time and effort will reap great rewards in wildfire safety.

3) DESCRIPTION OF THE SEVERE CASE WILDLAND FIRE CHARACTERISTICS THAT COULD THREATEN THE AREA

Fire intensity and rate of spread depend on the fuel type and condition (live/dead), the weather conditions prior and during ignition, and topography. Generally, the following relationships hold between fire behavior, fuelbed characteristics, weather and topography:

- Fine fuels ignite more easily and spread faster with higher intensities than coarser fuels. For a given fuel, the more there is and the more continuous it is, the faster the fire spreads and the higher the intensities. Fine fuels take a shorter time to burn out than coarser fuels.
- The weather conditions affect the moisture content of the dead and live vegetative fuels. Dead fine fuel moisture content is highly dependent on the relative humidity and the degree of sun exposure. The lower the relative humidity and the greater the sun exposure, the lower will be the fuel moisture content. Lower fuel moistures produce higher rates of spread and fire intensities.
- Wind speed significantly influences the rate of fire spread and fire intensity. The higher the wind speed, the greater the rate of spread and intensity.

- Topography influences fire behavior principally by the steepness of the slope. However, the configuration of the terrain such as narrow draws, saddles and so forth can influence fire spread and intensity. In general, the steeper the slope, the higher the uphill fire spread and intensity.

In the past decade, there has been frequent wildland fire within and adjacent to the planning area. These fires reinforce the need for the community to be prepared for wildland fire. It is very likely that one or more wildfires, caused by either lightning, careless use of fire, or deliberate arson, will threaten the community again in the next decade. Because private properties are scattered across the landscape embedded in large tracts of National Forest, fire behavior on the National Forest will largely dictate fire behavior on private properties.

4) SITE DESCRIPTION

The Orleans Firewise community planning area is in northwestern California in Humboldt County. Specifically, this plan addresses the area in the Lower Mid Klamath Subbasin along the Klamath River from the boundary line of Siskiyou County to the north, Fish Lake Road to the south including the community of Orleans and the Cooper Ranch private property (See Map in Figure 5). Almost all of the planning area falls within the Karuk Ancestral Territory as defined by the Karuk Tribe. The majority of private land is at low- to mid- elevation along the Klamath River corridor. This private land is surrounded by public land managed by the Six Rivers and Klamath National Forests.

Some properties are clustered into small neighborhood groupings where areas of flat land exist, but many others are solitary and scattered linearly along the Klamath River. The 2010 Census of the Orleans community shows a total of 605 people, with 237, or 39 percent, reporting Native American heritage. The Native American population of Orleans is largely Karuk. There was never a reservation established for the Karuk Tribe, however, some families have managed to hold on to ancestral land holdings. Some non-Indian families in the area trace their roots to the 1850's or early 1900's, but many others have arrived within the last few decades. The main employers in Orleans are the USFS, the Karuk Tribe, CalTrans, small family run farms, one local school, the general store, and the Mid Klamath Watershed Council.

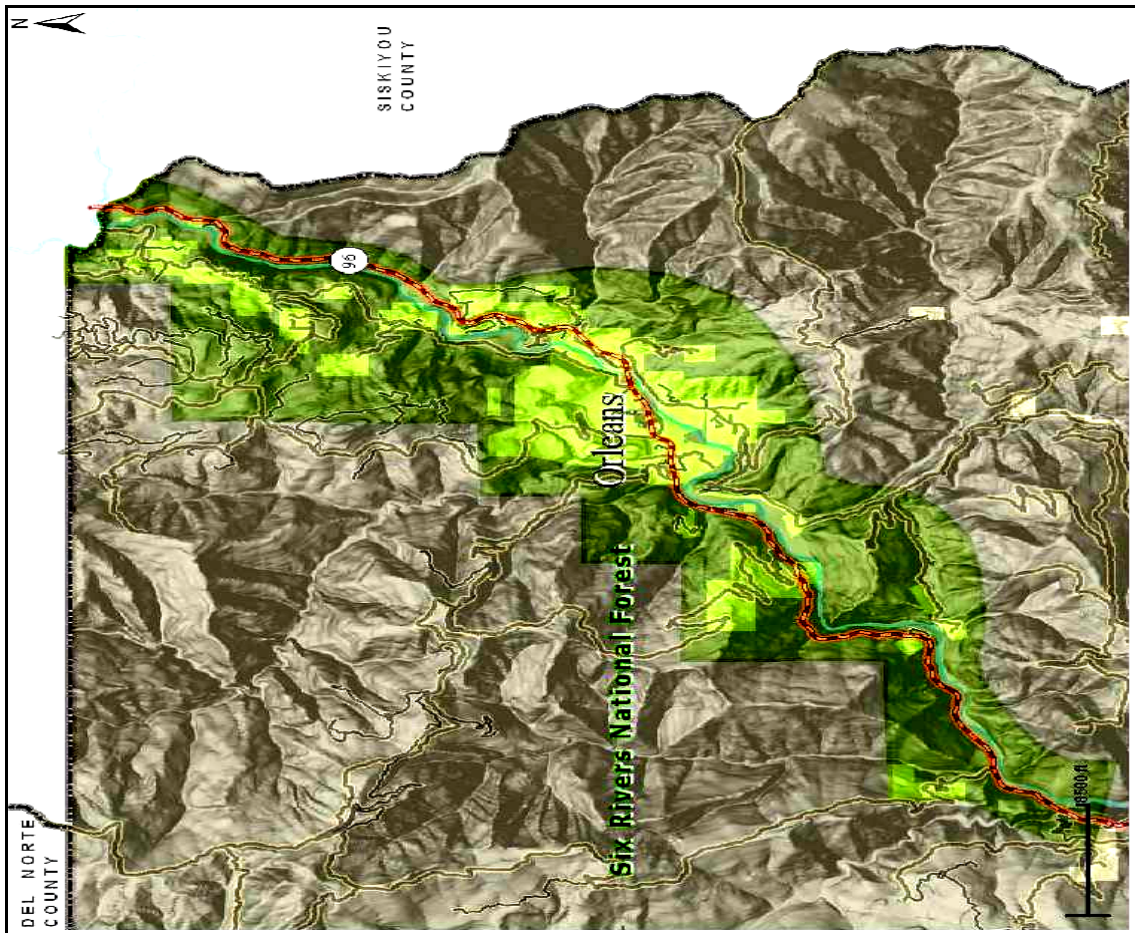


Figure 5: Orleans Firewise Boundary Map

The planning area is positioned in a rugged, mountainous setting near the Klamath Mountain range. Geographic elevations range from approximately 400 feet along the Klamath River corridor to over 6000 feet at Orleans Mountain. While private properties tend to include some of the gentlest terrain, adjacent National Forest lands are very steep, with much of the area in the 60 percent or greater slope class. Geographically diverse, steep, incised drainages have created a landscape with a multitude of various slope, aspect and elevation combinations.

Mixed evergreen forest dominates the National Forest within and surrounding the planning area, which consists mainly of Douglas-fir, tanoak, madrona, and black oak. Several other vegetation types exist where changes in soil type, solar exposure, proximity to water, and elevation occur, which break up the continuity of fuels and vegetation type in the landscape. Large patches and bands of serpentine soils create savannahs or brush fields composed of wedge leaf ceanothus, incense cedar, and Jeffrey Pine. On exposed and rocky sites, canyon live oak forms continuous forest stands. Waterways that are large enough to have a defined flood plain are dominated by willows, black cottonwood, big leaf maple, and red alder. Forests along springs and waterways without a defined floodplain are more similar to the surrounding forest type with a larger component of

maples and alders. At lower elevation, especially in flats along river corridors, California black oak and Oregon white oak form continuous stands or become more dominant in the mixed conifer forest. At higher elevations within the planning area, White and Red fir replace Douglas fir as the dominant conifer.

Vegetation on private lands varies widely. Many high river bars along the Klamath that were hydraulically mined in the 1890-1910 period now support local farms and private residences. Other private parcels may be largely forested or may contain residences, gardens, or pastures in small to medium openings in the forest.



Figure 6: Orleans Volunteer Fire Department engine bay. The Department maintains a 1985 Kenworth Type-1 Structure Engine, a 1985 Ford F800 Type-3 Wildland Engine, a 1973 Kenworth 3,500 gallon water tender, and a 1988 Ford F250 walk-in rescue rig.

Community fire protection and emergency services are provided by the OVFD. The OVFD is an all volunteer organization that was incorporated in 1968 to provide fire protection to the Orleans area. The OVFD currently provides fire and Advance Life Support/Basic Life Support (LS/BLS) medical service to the Lower Middle Klamath River community. Their response area extends from its southern end, from two miles north of Weitchpec, north along Highway 96 to the county line. They provide additional response when requested north to Ti Bar in Siskiyou County. Services are currently provided by 12 volunteer firefighters and 4 support volunteers. In 2010, this group logged 2,902 volunteer hours for training, responding to incidents, maintenance, and fundraising. During the same year, records show 79 responses including but not limited to: vegetation fires, structure fires, vehicle accidents, and medical responses.

The Orleans Ranger District maintains fire fighting resources which can be deployed to fires on private lands. However, the primary responsibility of the USFS is fire in the wildland. Under cooperative agreement with the state of California, the USFS can respond to fires on private property as long as there is consent from landowners, tribal representatives, and the OVFD. In practice, since Orleans is a small, rural

community with limited firefighting resources, the Orleans Ranger District fire personnel and the OVFD often work in cooperation with private property owners during wildfire situations. The USFS has a mutual aid agreement with the OVFD that allows the USFS to support the OVFD when additional resources are needed (for example, the USFS might supply an additional water tender to a structure fire that OVFD is suppressing). The OVFD, under this agreement, also provides firefighting resources to the USFS when requested for wildland fire response. The USFS and OVFD also share responsibilities when responding to vehicle accidents if there is any threat of vehicle fire spreading to the wildlands.

The community of Orleans also has an active Fire Safe Council. The Orleans/Somes Bar FSC (OSB FSC) has been working since 2001 to reduce fire hazard along the Klamath River from the mouth of Dillon Creek to Aikens Creek. Their service area also extends up the Salmon River just past Butler Flat to the mouth of Portuguese Creek. The OSB FSC is working to make its community resilient to the frequent catastrophic fires that occur in this area. Work already completed has resulted in the construction of over 1300 acres of shaded fuelbreaks with the assistance of federal, state, and private grant funds, as well as community volunteerism. Community volunteer brushing and burning workdays are also used to engage community members in clearing fuels on elderly and/or disabled homeowners' land. The OSB FSC has developed a community mow and chip program that provides mowing and chipping services to community members at discounted rates. The OSB FSC prescribed burning program has treated over 300 acres with low intensity prescribed fire since 2005. Red Zone surveys containing critical information for firefighters have been conducted for approximately 25 % of properties in the service area. The OSB FSC is nearing completion of a detailed Community Wildfire Protection Plan that also covers the nearby community of Somes Bar.

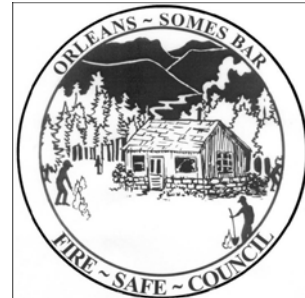


Figure 1: Orleans Volunteer Fire Department



Figure 2: Orleans Cal Trans Yard



Figure 3: Karuk DNR and Clinic



Figure 4: USFS Orleans Ranger Station

5) ASSESSMENT PROCESS



On October 19, 2011, members of the OVFD, OSB FSC, CAL FIRE, and CDS met at the Panamnik Building in Orleans. The first part of the meeting consisted of defining the Orleans and Somes Bar Firewise community boundary, and setting realistic action items for the coming year. The boundary of the Firewise community area reflects the jurisdictional area of the OVFD, and many of the proposed action items were a continuation

of long standing efforts by the OVFD and OSB FSC. The second half of the meeting consisted of a tour of important points within the community, including the OVFD engine bay, the USFS Orleans Ranger District engine bay, the Karuk Tribe Department of Natural Resources (DNR), and the associated medical clinic. Much of the technical information required by the assessment had previously been compiled in the Orleans/ Somes Bar Community Wildfire Protection Plan, and photographs of the existing fire danger in the Wildland Urban Interface from the Orleans/ Somes Bar Fire Safe Council. A follow-up community assessment meeting was held on November 9, 2011, to review and refine draft materials and discuss hazard mitigation strategies.

6) IMPORTANT CONSIDERATIONS

The Firewise Communities/USA program seeks to create a sustainable balance that will allow communities to live safely while maintaining environmental harmony in a WUI setting. Homeowners already balance their decisions about fire protection measures against their desire for certain flammable components on their properties. It is important for them to understand the implications of the choices they are making. These choices directly relate to the ignitability of their home ignition zones during a wildfire.

In the community of Orleans, the issues that contribute most to a potentially dangerous fire situation in the WUI are high fuel loads and thick vegetation around structures, inadequate or non-existent property signage, inadequate or insufficient water sources, and poor ingress and egress to properties. With the help of the OVFD, OSB FSC, and CAL FIRE, all of these issues can be tackled through small-scale, relatively inexpensive Firewise actions.



Figure 7: Examples of fuels conditions around properties in Orleans and Somes Bar

The vegetation in the middle Klamath grows very quickly because of abundant moisture, and many plants are adapted to burn with high intensity to clear the environment around them of competition. Another factor that makes maintaining defensible space in this fire environment difficult is that most broad leaf plants sprout from stored energy in their roots, and many brush species have hard coated seeds that persist in the soil until stimulated to sprout by fire or other disturbance. The key to creating a defensible space that will work to stop or moderate fire spread is maintenance; no single action will create a permanent defensible space.



Figure 8: Many road intersections and properties in the community of Orleans are poorly signed or do not have signage at all. This is especially true for the more remote residences away from town. Ingress and egress routes are often grown over with vegetation and many properties have inadequate vehicle turn around spaces.



Figure 9: Many properties have inadequate water resources, or have water sources which are not compatible with firefighting equipment. Water draw sites and water tanks need to be marked under the blue dot system.

7) OBSERVATIONS AND RECOMMENDATIONS

The following observations were made based on years of volunteer firefighter and fire safe council member experience as well as the more recent observations of the community assessment team. A very common and easily addressed issue is the accumulation of leaves and needles on rooftops and in gutters.



This problem is often associated with tree branches overhanging the home and flammable vegetation growing right up against the structure. Another hazardous situation observed was a great number of homes with flammable roofing and siding and without many of the construction techniques that would greatly reduce the risk of ignition during a nearby wildfire event.



Figure 10: These photographs illustrate a common situation in an area with high rainfall and a long growing season. Vegetation and dead plant matter quickly accumulate next to structures with wooden siding and create a fire hazard. Most houses in the community of Orleans have unscreened eaves, wooden siding, and many have single pane windows.



Figure 11: Fuel which accumulates on roofs and in gutters is a prime ignition point for embers, and a common cause of structure loss during a fire. The roof and cavities or openings underneath a house are the two most critical points to focus on when preparing a house for fire safety. People in the community of Orleans enjoy having trees around their houses, which is fine, but with the beauty comes more responsibility to keep roofs and gutters clean.

The following homeowner recommendations center on mitigating the hazards observed above by maintaining defensible space and using Firewise construction practices.

Defensible Space

Defensible space is a buffer zone, a minimum 100 foot fire resistant area around your house that reduces the risk of a wildland fire starting from, or spreading to, your home. It is important to limit the level of flammable vegetation and materials and increase the moisture content of the remaining vegetation within this area. This will not only provide you with the greatest chance for survival, it is also required by California law (Senate Bill 1369). If you live on a hill, you should extend this up to 200 feet or more, depending upon the steepness of the slope and the surrounding fuel. Defensible space not only helps protect your home in the critical minutes it takes a fire to pass, it also gives firefighters an area to effectively work in. During a large-scale wildland fire, when many homes are at risk, firefighters must focus on homes they can safely defend. This fuel reduction work may not keep a fire from starting, but in most cases it will change the dynamics of how a fire burns in an area. In addition to defensible space being important for your home's survival, it may also help you keep your house insured. Many insurance companies offer insurance-based incentives for defensible space around homes. The following guidelines are just the beginning:

- Provide a minimum of 100 feet of defensible space around your home.
- Landscape your defensible space zone with fire resistant plants. While these plants are not immune to fire, they can help slow the spread of fire.
- Maintain all plants with regular water and pruning.

- Remove the lower branches of trees within your defensible space at least six feet from the ground.
- Keep your gutters and roofs clean of any debris and/or vegetation.
- Move all flammable materials—especially firewood, propane tanks, etc.—at least 30 feet away from your home and any structures.
- Contact the Orleans/Somes Bar Fire Safe Council or go to www.firewise.org for fire safe guidelines and information on creating a defensible space.

Firewise Construction

While the creation of defensible space is key to the protection of your home from fire, house construction is equally important. State building codes and standards specifically designed for the State Responsibility Area (SRA) aim to reduce the risk of burning embers igniting buildings. These building codes require new construction to meet minimum fire safe standards for roofing, siding, exterior doors, decking, windows, vents, and enclosed overhanging decks to name a few. These exterior wildfire exposure protection measures decrease the chance of a home catching fire from burning embers. The new ignition resistant codes apply to all fire hazard zones in the state responsibility area (Orleans falls into this category) and in very high Fire Hazard Severity Zones in local responsibility areas. These Firewise building practices can't make your home fire proof but they can improve the chances that it will still be standing after the wildfire is out. Check with the Humboldt County Building Division for specific information by calling (707) 445-7245, or go to the Cal Fire website at www.fire.ca.gov. Specific information can be found at: www.fire.ca.gov/fire_prevention/fire_prevention_wildland_faqs.php.

The combined approach of both defensible space and Firewise home construction will increase the chances that your home will survive a fire. Following is a list of a few guidelines for Firewise home construction.

- The roof is the most vulnerable part of your home to wildland fires. Once your roof covering ignites, the rest of the home may soon follow. The best roofing material is metal or tile (with the tile ends capped). The second best is a composition roof covering. All new construction and re-roofing projects in the SRA require Class B roof assembly. Class A roof assembly is required in Very High Fire Hazard Severity zones.
- Shake siding on your house is much more prone to ignite than stucco siding or ferrous cement.
- Decks sticking out from your house act as kindling for fires. If you have a deck, make sure that you enclose the underside of it. The same is true for the perimeter of your house if it's a post-and-pier foundation. Do this either with solid building materials or with lattice and tight screen. This will give you much more storage space as well, since it is unsafe to store anything (especially firewood or cardboard boxes) under your house if it's open to the outside.

- Make sure you have spark arresters on all chimneys with three-eighths (3/8) to one-half (1/2) inch mesh screen.
- Use double-paned glass windows on all windows with a minimum of one tempered pane.



Figure 12: Many residents in Orleans maintain defensible space around their properties. There are many examples of homes which are fire safe and adapted to their fire environment.

8) SUCCESSFUL FIREWISE MODIFICATIONS

When adequately prepared, a house can likely withstand a wildfire without the intervention of the fire service. Further, a house and its surrounding community can be both Firewise and compatible with the area's ecosystem. The Firewise Communities/USA program is designed to enable communities to achieve a high level of protection against WUI fire loss even as a sustainable ecosystem balance is maintained. A homeowner/community must focus attention on the home ignition zone and eliminate the fire's potential relationship with the house. This can be accomplished by disconnecting the house from high and/or low-intensity fire that could occur around it.

The community of Orleans is blessed with several resources that other rural communities of the same size lack. The Orleans Volunteer Fire Department maintains wild and structure fire engines, and is the main responder to medical calls in the area. The Karuk Tribe Department of Natural Resources, the USFS Orleans Ranger District, the Cal Trans yard, the Orleans/Somes Bar Fire Safe Council, and the Mid Klamath Watershed Council are all located in Orleans. There are incentive programs funded by the California Fire Safe Council's Grants Clearinghouse Program, such as FLASH (Fire-adapted Landscapes and Safe Homes), which offer financial assistance, advice and encouragement to landowners taking on their own fuels reduction projects. When these resources are combined with programs like Firewise or FLASH, the community of Orleans makes real progress towards adapting to the local fire environment.

The following photographs were taken in Orleans and Some Bar and are examples of good Firewise practices:



Figure 13: A landowner in Orleans contracts a local burn boss through the FLASH program. Controlled burns reduce surface fuels and kill sprouting vegetation, creating an excellent barrier to intense fire around residences.



Figure 14: Landowners in the Orleans and Some Bar communities are being reimbursed through the FLASH program for mowing around their properties. Removing fine fuels from around a house reduces risk of a fire escape and reduces the intensity of incoming fire from a neighboring property.



Figure 15: Landowners are reducing surface and ladder fuels around their properties through FLASH. Clearing fuels from access routes and from around houses is the most important action landowners can take to protect their properties from fire damage.



Figure 16: 2011 Klamath Fire Ecology Symposium, organized by the Mid Klamath Watershed Council. Several days of lectures and workshops, open to the public, with the goal of sharing information on fire.

9) NEXT STEPS

After reviewing the contents of this assessment and its recommendations, the Orleans/Somes Bar Firewise Board in cooperation with the Orleans Volunteer Fire Department will determine whether or not it wishes to continue seeking Firewise Communities/USA recognition. The Firewise Communities/USA representative will contact the Firewise Board representative to receive its decision.

If the site assessment and recommendations are accepted and recognition will be sought, the Orleans/Somes Bar Firewise Board will create agreed-upon, area-specific solutions to the Firewise recommendations and create an action plan in cooperation with the Orleans Volunteer Fire Department.

Assuming the assessment area seeks to achieve national Firewise Communities/USA recognition status, it will integrate the following standards into its plan of action:

- Sponsor a local Firewise board, task force, committee, commission or department that maintains the Firewise Community program and status.
- Enlist a WUI specialist to complete an assessment and create a plan from which it identifies agreed-upon, achievable local solutions.
- Invest a minimum of \$2.00 annually per capita in its Firewise Communities/USA program. (Work done by municipal employees or volunteers, using municipal or other equipment, can be included, as can state/federal grants dedicated to that purpose.)
- Observe a Firewise Communities/USA Day each spring that is dedicated to a local Firewise project.
- Submit an annual report to Firewise Communities/USA. This report documents continuing participation in the program.

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