# Fuel Modification Plan

Church of the Woods Site

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## Plan Context

The Church of the Woods (COTW) Project site is located in the San Bernardino Mountains, within San Bernardino County, and surrounded by San Bernardino National Forest Lands. The Project is proposed to be developed on an approximately 37 acre parcel of land, located in the community of Rim Forest within the San Bernardino National Forest just north of Highway 18 (Rim of the World Highway) between Bear Springs Road and Daley Canyon Road (See Figure 1).

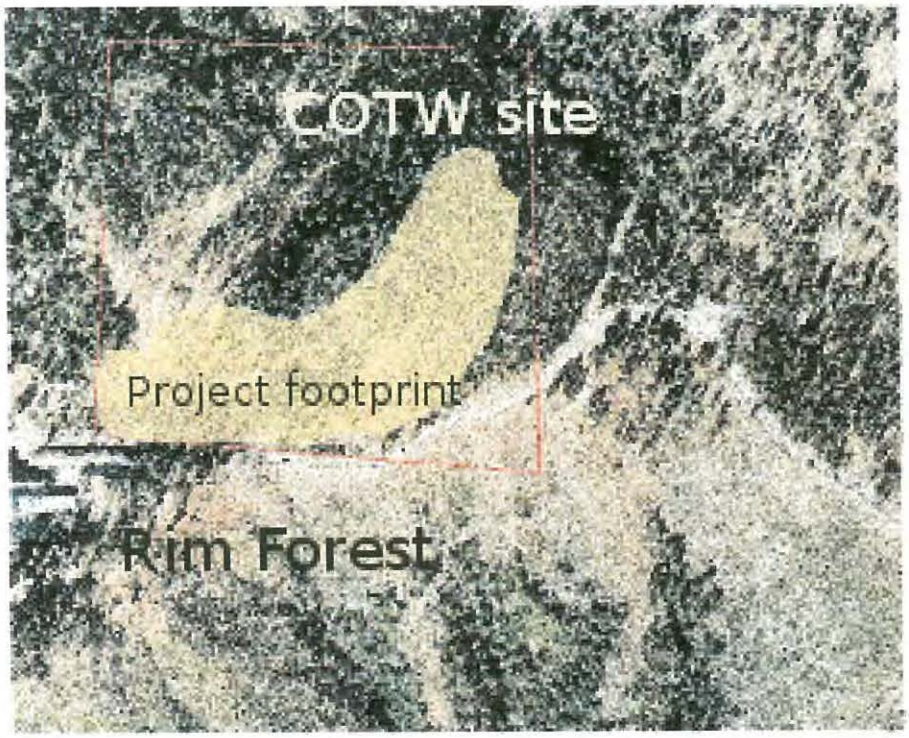


Figure 1: *The COTW site is located near the crest of a portion of the San Bernardino Mountains. It is adjacent to State Highway 18 at its entrance, and abuts Daley Canyon Road on its East. The approximate footprint of the proposed development is shown in yellow.*

The Church of the Woods project involves a proposal to create a development in two phases. Development would occur on approximatelv one-third of the site. The remaining two-thirds would be retained as open space. As described in more detail elsewhere, the project would include a Youth Center/Gymatorium, Assembly Building, Maintence Building, Caretaker's Residence, and parking. The structures would be located in the Southeast corner.

The Church of the Woods site is situated in a location that is subject to potential disasters–in particular fire–and requires attention to site preparation in the form of fuel modification. Technically, the site is subject to usual natural disasters, but its primary threat comes from fire.

Fuel modification for developments are mandated at the County level (*County of San Bernardino 2007 General Plan, March 2007-see References for information on this document*), and standards are specified by the State of California Code (*see Public Resources Code, 1291-1299, in the Appendix*). Locally, the Mountain Area Safety Task Force (MAST) has publications that do

a good job of specifying details of on-the-ground implementation of fuel modification activities. The MAST publications and handouts are a bit too general to comfortably apply to a specific site. Site-specific fuel modification plans should therefore be in place.

## The Objectives of Fuel Modification

Simply put, the objectives of fuel modification are to mitigate the effects of wildfire on people, their structures, and on environments that need protection.

It is common to think of fire as something that invades a fuel complex from the outside–such as a wet mudslide. These invaders can be stopped by physical barriers (eg-piles of sandbags). Fire, in contrast, is a phenomenon that occurs within the fuel complex itself. Fire is what we see when a fuel complex is behaving badly. The behavior is initiated by an electromagnetic pulse that has been introduced to a fuel complex, and is of such intensity that the fuel complex can not handle it efficiently. The pulse is transmitted from fuel element to fuel element, just as electricity is transmitted from molecule to molecule in a transmission line, and the fuel array begins to self destruct. This process of self destruction emits tremendous heat and light (flame).

The introduction of the electromagnetic pulse can come from the outside (a firebrand, a bolt of lightning), or can be generated from the inside (spontaneous combustion, a piece of broken glass focusing sunlight onto a dry fuel element).

The objectives of fuel modification are not to erect physical barriers to a potential invader. Rather, they are to modify the nature of the transmiters and receivers inside of a grid that has an electromagnetic pulse running through it.

## Motivation

Over the years, wildland fire researchers and wildland fire agencies have studied wildfire behavior and ignition processes that involve dwellings and buildings in general. They have come up with concepts that address the circumstances illustrated in Figure 2.

Figure 2 is a scene from the Grass Valley fire that occured along the shore of Lake Arrowhead in 2007 (*Moore et al.,2008*). Things to note are the completely burned homes and their yards, and the unburned trees and other vegetation interspersed among the homes.

Ninety seven percent of the destruction seen in Figure 2 was attributed to, 1) fire spreading to the homes from surface fuels within the residential area; 2) firebrands (burning material traveling through the air) generated by burning vegetation; 3) flames and firebrands that were produced by burning residences.

If the concepts of Home Ignition Zone (HIZ) (*Finney and Cohen 2003, Cohen 2008*) and Defensible Space (*Cohen, 2000; MAST, www.calmast.org*) had been in place during the development of the community area, they may

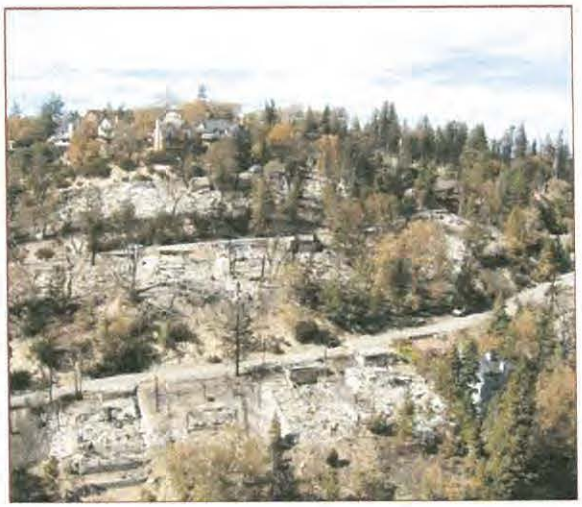

Figure 2: *Destruction of homes from the Grass Valley Fire in the San Bernardino Mtns. (Photo by USDA Forest Service)*

well have led to a different post-fire result.
HIZ is described as the area around a building
that can directly impose an ignition to the building in its center. It is a zone that includes the building and its surroundings within a distance of 100 to 200 feet. Actual required distance from the building depends upon its potential for ignition–a function of the building's construction materials, and the material available to serve as firebrands or sources of thermal radiation or convection during a wildfire.

Overlaying the HIZ is an area refered to as 'defensible space'. This is an area subdivided into three concentric zones. The innermost (*ignition zone*–10 feet from structures–does not contain fuel that could easily ignite from a firebrand nor be the source of firebrands or thermal transfer to the structures. The second zone (20 feet out from the inner zone) is free of fuel that could serve as a source of firebrands or thermal transfer to the ignition zone. The third zone (70 feet outward from the second zone) is a more natural zone that has potential firebrands removed, and continuity between fuel elements modified to mitigate fire spread. Figure 3 has illustrations of the defensible space concept taken from the MAST brochure, "Don't Fuel Fire-Create Defensible Space" (*www.calmast.org*).

Figure 3: *Illustration of the Defensible Space concept.*

## Fuel Elements to Think About

For simplicity wildland fuels are divided into categories for this report. They all intermingle, but are most easily addressed individually.

### Trees and their crowns

Figure 4: *Three major categories of ladder fuels. These can also be found in mixtures of all of the above.*

These can be considered as sources of heat and firebrands. Their role in fire spread can be mitigated with thoughtfully applied fuel modification activities.

With trees, ladder fuels are often a matter of concern. These are arrays of fuel arranged in a manner that allows the transfer of fire from ground- level burning to the crowns of trees (See figure 4). Ladder fuels can be a succession of trees (or shrubs) of increasing size that are close enough that they will easily transfer fire to the crown of a larger tree–leading to a potential crown fire situation. An arrangement of overstory trees with an understory of young trees can also be considered a ladder fuel situation. A tree that has a deep layer of litter–dead branches, twigs, bark material–is also a ladder fuel arrangement.

Litter fuels are always a matter of concern in all fuel types. They can serve as a link in the progress of fire spread along the ground and into tree crowns, and can be the source of firebrands that spread the fire far beyond the current flaming front. In some cases, they can have a smoldering effect that is a double edged sword. Trees produce ground litter, and in some cases they produce it in abundance. Pine trees can fall into this category, and Ponderosa pine (*pinus ponderosae*) and Jeffery pine (*pinus jefferii*) are especially capable at this. Fire can spread to the individual trees by means of burning pine needles and organic material. If not completely extinguished after a fire is under control, the decomposing organic matter under the pine needles can smolder–often for many days–until stopped by mineral soil; in the process, the parent tree can be killed by the heat pulse into the soil from the smoldering organic matter see Figure 5). A new dead fuel element has been created–a tall, naked bole of wood with a large cone of dead bark surrounding it.

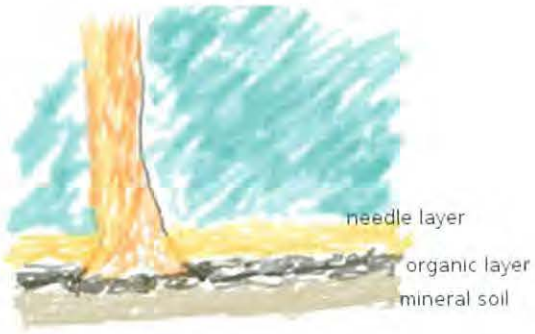


Figure 5: *Illustration of the litter layer that can accumulate under trees. Conifer trees are implied in the picture.*

### Shrubs and their crowns

Shrubs and their crowns generally mimic trees in their fuel character. Shrubs, however, can perpetuate fire spread without necessarily involving overhead trees. Often fire spread through shrubs can only occur if there is a dry leaf litter layer beneath them. The importance of the litter layer is often overlooked because the spectacle of, say a chaparrel fire, masks the role that the litter layer is playing in the process. The danger presented by a burning shrub fire is particularly acute with shrubs that have heavy, waxy leaves that, if ignited, can retain heat and be lofted into the air as a firebrand. The same chracteristics hold true for many of the live oak trees that exist in southern California.

### Understory plants

This section can include elements of the two described above, but it will concentrate on grasses and forbes (small flowering plants that are not grasses). These plants, when green and contain adequate moisture, do not spread fire easily–unless they inherently contain flammable oil (example: yerba santa–*Eriodictyon* spp.). Dead grasses and dead parts of bracken fern (*pteridium aquilinum*) can play a big role in the spread of fire. The foothills and valleys below the COTW

site have seen ferocious fires–many in stands of annual grass ( it grows each year) that exceed seven feet in height.

Generally, grasses and forbs, when green, will carry fire under windy and dry conditions. By and large, they are easily contained, and rarely pose a serious threat to properly constructed buildings.

### Ground fuels

Ground fuels, for this report, comprise the array of non-living material that can be found on a forest floor. Dead leaves and needles, dead branches, dead twigs, and fallen bark particles are the main constituents of this array of fuels. The finer elements, leaves, small twigs, and small particles of woody material, can spread a flamming fire front with little difficulty. All elements can contribute to a cache of burning embers that can ignite fuels beyond the flamming fire front.

One of the most easily ignited elements of forest fuels is the so-called "punkey iog". It is a log, or a piece of wood that has begun to decay to the point that a film of dry, powdery, tender-like wood is found on its surface– and often down into the mass of wood itseif. It is ubiquitous. Such fuel material can always be found on a forest floor.

### Human habitation fuels


Figure 6: *Maintaining a home in a relatively safe conditiion. This illustration is available from the MAST group.*

Some have accepted the 'urban housing' paradigm as a bona fide fuel type. It qualifies. It has its particular burning characteristics, and is capable of spreading fire mostly through the production of firebrands, but convection and, under some circumstances, radiation can come into play. For this report, human's structures as ignitable receptors will be the emphasis.

Fuel modification can be carried out in this fuel type. Simply put, minimize the amount of flammable material used in the structure of facilities. If such materials are used, maintain them

vigilantly; assure that material does not become dried and in a state of decomposition. Cover or screen all possible orifices in the structure. Do not store flammable material under overhangs, porches, or against structures. Minimize the presence of exposed nooks and crannies that can hold an airborne firebrand. A good brochure that covers the pertenent information is available from the MAST group, and is reproduced in Figure 6.

## Fuel Modification Requirements on the COTW Site

The first step will be to define the defensible space zones on the ground. For the COTW site, the HIZ should be extended out an additional 100 feet. Zones 1 and 2 can remain as prescribed in the initial discussion (0-10 feet, and 10-30 feet, sequentially). Zone 3, the more natural zone, should extend from 30 feet to 200 feet away from the buildings. The undeveloped zone that is generally to the North of the buildings has its share of potential firebrands, and will be the zone through which Santa Ana winds will pass. These winds will be strong, flowing close the the ground, and will be turbulent. If they are carrying fire, large firebrands will be present and extremely dangerous.

It should go without saying that the boundaries of these zones will stop at the boundaries of the COTW site.

Some planting can take place in prescribed areas, but species used for this activity should not add to the level of fuel hazard that is being managed. Small lists of 'firesafe' shrubs exist; they should be approached carefully. Some species that were thought to be low volume, slow growing, and fire resistant turned out to be quite the opposite over an extended length of time (four-wing saltbush is one example–it becomes quite flammable after a number of years pass). Rely on plants and bushes that will retain good levels of moisture, and will allow control of volume and height. Rose bushes can be pruned, and many decorative wildland shrubs can be pruned.

### Defensible Space Zone 1

The zone extending out 10 feet from the edge of the buildings should be cleared of hazardous flammable material.

1. Remove all dead logs and branches laying on the ground in this zone.
2. All litter should be removed, and maintenance in that state should be a constant activity. This zone should not be left as bare soil.
3. This zone can be treated as a decorative garden area, with low growing plants that will not produce firebrands nor burn with sufficient vigor to ignite other fuel elements.
4. Do not use plants or shrubs that are extremely flammable, such as juniper species often found in yards. Decorative rock is another alternative.
5. Do not allow tree branches to hang out over buildings. Such branches should not even be found within the zone.
6. Remove all glass, broken or otherwise, from this zone.

**Defensible Space Zone 2**


Figure 7: *A cross section of soil and ground fuels typicaly found under forest trees. Again, conifer trees are implied in the diagram. Found are new and old needle layers, undifferentiated organic material, and mineral soil.*

This zone extends to 30 feet from the edge of the buildings. It will be a highly modified natural area.

1. Remove all dead logs and branches laying on the ground in this zone.
2. Remove all litter and all recognizable dead leaf, needle, and decaying woody material (see Figure 7).
3. Thin trees (remove some of them) so that a 20 to 30 foot spacing exists between tree boles (stems). A safe measure would be to provide at least a 10 foot distance between tree crowns (the portion of a tree with foliage).
4. Thin shrubs so that a clearance of at least two times the crown width of the largest shrub exists between them. For tall shrubs, provide a spacing of at least 5 times the height of the shrubs. On moderate slopes, the distance should be doubled. On steep slopes, a shrub shouid not be in the path of a flame being emitted from a shrub below it on the slope.
5. Prune trees (remove branches) to a height of 15 feet above ground level. Pruning should not exceed one-third of the tree's total height. If a shrub exists below the drip line of the tree canopy, the tree should be pruned to a height of 3 times the height of the shrub (this circumstance can usually be avoided).

6. Prune shrub branches within the shrub crown to open it up and break up the fuel continuity.

7. Remove all glass, broken or otherwise, from this zone.

### Defensible Space Zone 3

This zone extends to 200 feet from the edge of the buildings.

1. Remove all dead logs and branches laying on the ground in this zone.

2. Remove twig and small branch litter, and all recognizable dead leaf, needle, and decaying woody material.

3. Remove clusters of standing dead material, stems and branches of woody vine-like material that is standing upright off of the ground.

4. Remove vines, even if they are alive, that reach up into tree and shrub canopies.

5. Remove trees that are overtoped by dominant trees, and appear to be non-productive (eg- with thin stems, minimal crown material).

6. In zones that have overcrowding in tree thickets ('dog-hair' appearance), thin the trees to a level that would provide more productive growth, and not present a fire hazard due to crown packing density that is ideal for fire propegation. A clue to the preserce of such a condition will be whether it is difficult for an adult to walk through the thicket without bending or turning sideways, A registered forester will have to make judgement on which trees to thin.

7. Prune dead branches off of trees and shrubs.

An adult person should be able to walk among all trees, shrubs, and other plants in this zone without being impeded by vegetation–alive or dead. This zone should appear to be natural, but should not easily provide firebrands to the COTW structures.

## References and Suggested Reading


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Finney, Mark A. and Jack D. Cohen. 2003. **Expectation and Evaluation of Fuel Management Objectives**. *In: Omi, Philip N.; Joyce, Linda A., technical editors. 2003. Fire, fuel treatments, and ecological restoration: Conference proceedings; 2002 16-18 April; Fort Collins, CO. Proceedings RMRS-P-29. Fort Collins, CO: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 475 p.* (http://www.fs.fed.us/rm/pubs/rmrs_p029.html)

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Moore, Randy, Jack D.Cohen, Richard D. Stratton. 2008. **Home Destruction Examination Grass Valley Fire**. USDA Dept. of Agric., R5-TP-026b. June 2008 (http://www.fs.usda.gov/Internet/FSE_DOCUMENTS/fsbdev3_046340.pdf)

Mountain Area Safety Task Force–MAST. Available at: http://www.sbcounty.gov/calmast/, and at http://www.calmast.org
*This site provides a series of documents and brochures pertinant to the subject of this report.*

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Chapter 6. Gen. Tech. Rep. RMRS-GTR-42-vol. 2. Ogden, UT: U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station. 257 p. (available at: http://www.fs.fed.us/rm/pubs/rmrs_gtr042_2.pdf)

## Appencix

**Exhibit 1**. Section from State of California Public Resources Code

**Exhibit 2**. MAST—Protect Your Homes from Fire

**Exhibit 1**

PUBLIC RESOURCES CODE SECTION 4291-4299

4291. (a) A person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining a mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or land that is covered with flammable material, shall at all times do all of the following:

(1) Maintain defensible space of 100 feet from each side and from the front and rear of the structure, but not beyond the property line except as provided in paragraph (2). The amount of fuel modification necessary shall take into account the flammability of the structure as affected by building material, building standards, location, and type of vegetation. Fuels shall be maintained in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure. This paragraph does not apply to single specimens of trees or other vegetation that are well-pruned and maintained so as to effectively manage fuels and not form a means of rapidly transmitting fire from other nearby vegetation to a structure or from a structure to other nearby vegetation. The intensity of fuels management may vary within the 100-foot perimeter of the structure, the most intense being within the first 30 feet around the structure. Consistent with fuels management objectives, steps should be taken to minimize erosion. For the purposes of this paragraph, "fuel" means any combustible material, including petroleum-based products and wildland fuels.

(2) A greater distance than that required under paragraph (1) may be required by state law, local ordinance, rule, or regulation. Clearance beyond the property line may only be required if the state law, local ordinance, rule, or regulation includes findings that the clearing is necessary to significantly reduce the risk of transmission of flame or heat sufficient to ignite the structure, and there is no other feasible mitigation measure possible to reduce the risk of ignition or spread of wildfire to the structure. Clearance on adjacent property shall only be conducted following written consent by the adjacent landowner.

(3) An insurance company that insures an occupied dwelling or occupied structure may require a greater distance than that required under paragraph (1) if a fire expert, designated by the director, provides findings that the clearing is necessary to significantly reduce the risk of transmission of flame or heat sufficient to ignite the structure, and there is no other feasible mitigation measure possible to reduce the risk of ignition or spread of wildfire to the structure. The greater distance may not be beyond the property

line unless allowed by state law, local ordinance, rule, or regulation.
(4) Remove that portion of a tree that extends within 10 feet of the outlet of a chimney or stovepipe.
(5) Maintain a tree, shrub, or other plant adjacent to or overhanging a building free of dead or dying wood.
(6) Maintain the roof of a structure free of leaves, needles, or other vegetative materials.
(7) Prior to constructing a new building or structure or rebuilding a building or structure damaged by a fire in an area subject to this section, the construction or rebuilding of which requires a building permit, the owner shall obtain a certification from the local building official that the dwelling or structure, as proposed to be built, complies with all applicable state and local building standards, including those described in subdivision (b) of Section 51189 of the Government Code, and shall provide a copy of the certification, upon request, to the insurer providing course of construction insurance coverage for the building or structure. Upon completion of the construction or rebuilding, the owner shall obtain from the local building official, a copy of the final inspection report that demonstrates that the dwelling or structure was constructed in compliance with all applicable state and local building standards, including those described in subdivision (b) of Section 51189 of the Government Code, and shall provide a copy of the report, upon request, to the property insurance carrier that insures the dwelling or structure.
(b) A person is not required under this section to manage fuels on land if that person does not have the legal right to manage fuels, nor is a person required to enter upon or to alter property that is owned by any other person without the consent of the owner of the property.
(c) (1) Except as provided in Section 18930 of the Health and Safety Code, the director may adopt regulations exempting a structure with an exterior constructed entirely of nonflammable materials, or, conditioned upon the contents and composition of the structure, the director may vary the requirements respecting the removing or clearing away of flammable vegetation or other combustible growth with respect to the area surrounding those structures.
(2) An exemption or variance under paragraph (1) shall not apply unless and until the occupant of the structure, or if there is not an occupant, the owner of the structure, files with the department, in a form as the director shall prescribe, a written consent to the inspection of the interior and contents of the structure to ascertain whether this section and the regulations adopted under this section are complied with at all times.
(d) The director may authorize the removal of vegetation that is not con-

sistent with the standards of this section. The director may prescribe a procedure for the removal of that vegetation and make the expense a lien upon the building, structure, or grounds, in the same manner that is applicable to a legislative body under Section 51186 of the Government Code.
(e) The Department of Forestry and Fire Protection shall develop, periodically update, and post on its Internet Web site a guidance document on fuels management pursuant to this chapter. Guidance shall include, but not be limited to, regionally appropriate vegetation management suggestions that preserve and restore native species, minimize erosion, minimize water consumption, and permit trees near homes for shade, aesthetics, and habitat; and suggestions to minimize or eliminate the risk of flammability of nonvegetative sources of combustion such as woodpiles, propane tanks, decks, and outdoor lawn furniture.
(f) As used in this section, "person" means a private individual, organization, partnership, limited liability company, or corporation.

4291.1. (a) Notwithstanding Section 4021, a violation of Section 4291 is an infraction punishable by a fine of not less than one hundred dollars ($100), nor more than five hundred dollars ($500). If a person is convicted of a second violation of Section 4291 within five years, that person shall be punished by a fine of not less than two hundred fifty dollars ($250), nor more than five hundred dollars ($500). If a person is convicted of a third violation of Section 4291 within five years, that person is guilty of a misdemeanor and shall be punished by a fine of not less than five hundred dollars ($500). If a person is convicted of a third violation of Section 4291 within five years, the department may perform or contract for the performance of work necessary to comply with Section 4291 and may bill the person convicted for the costs incurred, in which case the person convicted, upon payment of those costs, shall not be required to pay the fine. If a person convicted of a violation of Section 4291 is granted probation, the court shall impose as a term or condition of probation, in addition to any other term or condition of probation, that the person pay at least the minimum fine prescribed in this section.
(b) If a person convicted of a violation of Section 4291 produces in court verification prior to imposition of a fine by the court, that the condition resulting in the citation no longer exists, the court may reduce the fine imposed for the violation of Section 4291 to fifty dollars ($50).

4291.3. Subject to any other applicable provision of law, a state or local fire official, at his or her discretion, may authorize an owner of property, or his or her agent, to construct a firebreak, or implement appropriate vege-

tation management techniques, to ensure that defensible space is adequate for the protection of a hospital, adult residential care facility, school, aboveground storage tank, hazardous materials facility, or similar facility on the property. The firebreak may be for a radius of up to 300 feet from the facility, or to the property line, whichever distance is shorter.

4292. Except as otherwise provided in Section 4296, any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or forest-covered land, brush-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for fire protection of such areas, maintain around and adjacent to any pole or tower which supports a switch, fuse, transformer, lightning arrester, line junction, or dead end or corner pole, a firebreak which consists of a clearing of not less than 10 feet in each direction from the outer circumference of such pole or tower. This section does not, however, apply to any line which is used exclusively as telephone, telegraph, telephone or telegraph messenger call, fire or alarm line, or other line which is classed as a communication circuit by the Public Utilities Commission. The director or the agency which has primary fire protection responsibility for the protection of such areas may permit exceptions from the requirements of this section which are based upon the specific circumstances involved.

4293. Except as otherwise provided in Sections 4294 to 4296, inclusive, any person that owns, controls, operates, or maintains any electrical transmission or distribution line upon any mountainous land, or in forest-covered land, brush-covered land, or grass-covered land shall, during such times and in such areas as are determined to be necessary by the director or the agency which has primary responsibility for the fire protection of such areas, maintain a clearance of the respective distances which are specified in this section in all directions between all vegetation and all conductors which are carrying electric current:
(a) For any line which is operating at 2,400 or more volts, but less than 72,000 volts, four feet.
(b) For any line which is operating at 72,000 or more volts, but less than 110,000 volts, six feet.
(c) For any line which is operating at 110,000 or more volts, 10 feet.
In every case, such distance shall be sufficiently great to furnish the required clearance at any position of the wire, or conductor when the adjacent air temperature is 120 degrees Fahrenheit, or less. Dead trees, old decadent or

rotten trees, trees weakened by decay or disease and trees or portions thereof that are leaning toward the line which may contact the line from the side or may fall on the line shall be felled, cut, or trimmed so as to remove such hazard. The director or the agency which has primary responsibility for the fire protection of such areas may permit exceptions from the requirements of this section which are based upon the specific circumstances involved.

4294. A clearing to obtain line clearance is not required if self-supporting aerial cable is used. Forked trees, leaning trees, and any other growth which may fall across the line and break it shall, however, be removed.

4295. A person is not required by Section 4292 or 4293 to maintain any clearing on any land if such person does not have the legal right to maintain such clearing, nor do such sections require any person to enter upon or to damage property which is owned by any other person without the consent of the owner of the property.

4296. Sections 4292 and 4293 do not apply if the transmission or distribution line voltage is 750 volts or less.

4296.5. (a) Any person or corporation operating a railroad on forest, brush, or grass-covered land shall, if ordered by the director or the agency having primary responsibility for fire protection of the area, destroy, remove, or modify so as not to be flammable any vegetation or other flammable material defined by regulation of the director to be a fire hazard on the railroad right-of-way. The director shall adopt regulations establishing fire prevention hazard reduction standards for broad geographic areas by fuel type, slope, and potential for ignition from hot or flaming exhaust, carbon particles, hot metal, burning signal devices, burning tobacco, and other similar potential sources of ignition.
(b) The order to destroy, remove, or modify vegetation or other flammable material shall specify the location of the hazard to be destroyed, removed, or modified within the right-of-way, the width of the hazard which shall not exceed the width of the right-of-way, and the time within which compliance with the order is required.
(c) The director or the agency having primary responsibility for fire protection of the area shall allow a reasonable period of time for compliance with an order to destroy, remove, or modify vegetation or other flammable material.

4297. Upon the showing of the director that the unrestricted use of any grass-covered land, grain-covered land, brush-covered land, or forest-covered land is, in the judgment of the director, a menace to life or property due to conditions tending to cause or allow the rapid spread of fires which may occur on such lands or because of the inaccessible character of such lands, the Governor through the director, may, by a proclamation, which declares such condition and designates the area to which, and the period during which the proclamation shall apply, require that such area be closed to hunting and fishing and to entry by any person except a person that is within one of the following classes:

(a) Owners and lessees of land in the area.

(b) Bona fide residents in the area.

(c) Persons engaged in some bona fide business, trade, occupation, or calling in the area and persons employed by them in connection with such business, trade, occupation, or calling.

(d) Authorized agents or employees of a public utility entering such area for the purpose of operating or maintaining public utility works or equipment within the area.

(e) Members of any organized firefighting force.

(f) Any federal, state or local officer in the performance of his duties.

(g) Persons traveling on public roads or highways through the area.

4298. The proclamation by the Governor shall be released to the wire news services in the state, and shall be published at least once in a newspaper of general circulation in each county which contains any lands covered by the proclamation. Notice of closure shall also be posted on trails or roads entering the area covered by the proclamation. The closure shall be effective upon issuance of the proclamation by the Governor. Each notice shall clearly set forth the area to be subject to closure and the effective date of such closure. The closure shall remain in full force and effect until the Governor shall by order terminate it. The notice of such termination shall follow the same procedure by which such closure was effected. The order of termination shall be effected upon issuance.

4299. A person who violates Section 4297 or 4298 is guilty of a misdemeanor and shall be punished by a fine of not less than one hundred dollars ($100) nor more than two thousand dollars ($2,000) or by imprisonment in the county jail for not less than 10 days nor more than 90 days or both the fine and imprisonment. All state and county law enforcement officers shall enforce orders of closure.

# TAKE STEPS TO PROTECT YOUR HOME FROM FIRE

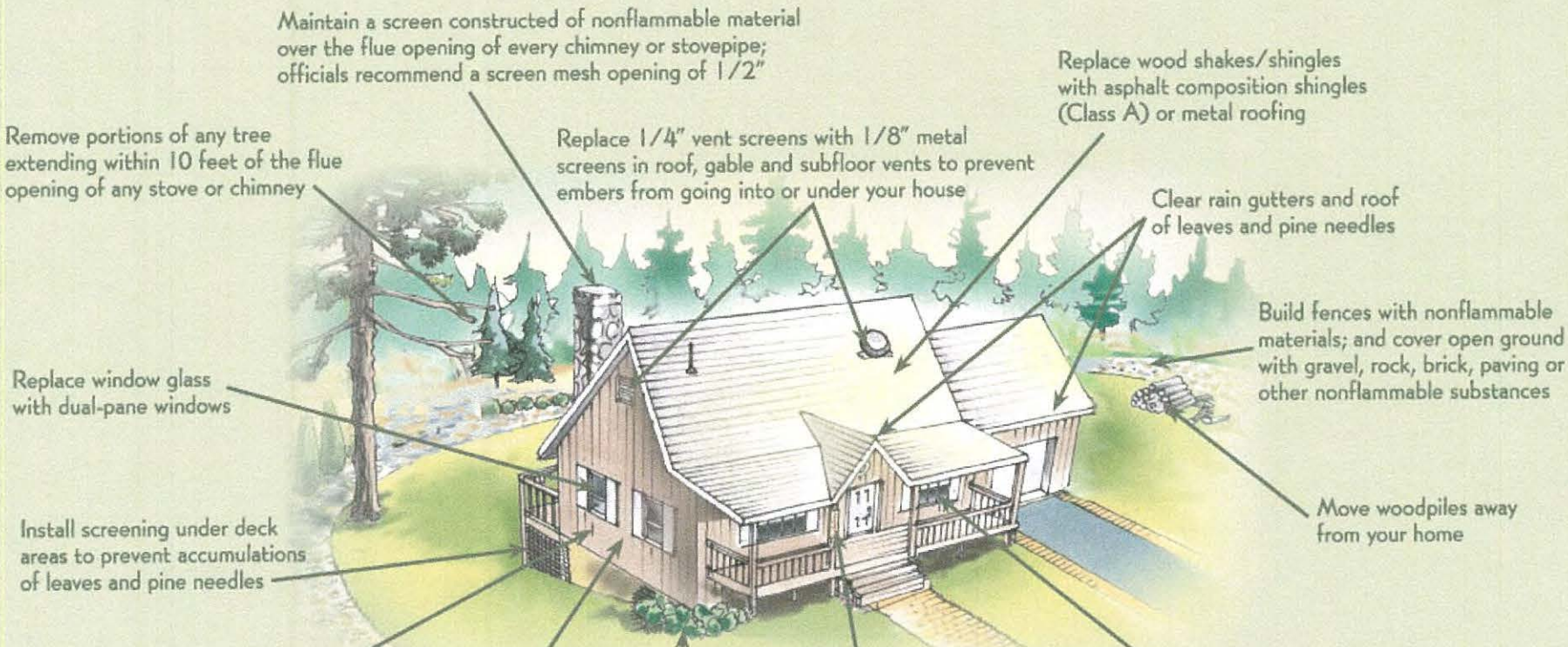


Exhibit 2