

## Exhibit B

### WILDFIRE MITIGATION STANDARDS

#### General

**(a). Purpose.** The provisions of this standard are intended to promote public safety and welfare by reducing the risk of fire-induced damages to property and the environment.

**(b). Scope.** This standard applies to all property, buildings and structures located within wildfire hazard areas as determined by the Wildfire Overlay District Map, site-specific analysis, and wildfire hazard assessment. Buildings or conditions in existence at the time of the adoption of this standard are allowed to have their use or occupancy continued, if such condition, use, or occupancy was legal at the time of the adoption of this standard.

**(c). Design and Construction.** The design and construction of buildings and structures located within the boundaries of a Wildfire Hazard Area shall be in accordance with the standard set forth below.

#### Chapter 1 Introduction

**1-1 Scope.** This standard presents minimum planning criteria for the protection of life and property from wildfire. It includes information on safe procedures and best practices at the wildland-urban interface or intermix.

**1-2 Purpose.** The purpose of this standard is to provide criteria for fire agencies, land use planners, architects, developers, forestry consultants and local government for development in areas that may be threatened by wildfire.

**1-3 Definitions.** For the purpose of this standard, the following terms have the meanings shown below:

**Access Routes.** Principal vehicular ingress and egress to a structure or through a development, crossing more than one parcel, including public and private roads, streets, and lanes, that extend to and intersect with a publicly maintained road, street, or lane.

**Accessory Building or Structure.** Any building or structure used incidentally to another building or structure or other allowed use, and which is located on the same lot or parcel.

**Aerial Fuels.** Standing and supported live and dead combustibles not in direct contact with the ground and consisting mainly of foliage, twigs, branches, stems, cones, bark, and vines.

**Approved.** Acceptable to the “authority having jurisdiction.”

**Aspect.** Direction towards which the slope faces.

**Authority Having Jurisdiction.** The “authority having jurisdiction” shall be the Building Official. When matters of joint interest are involved, the Building Official may request referral comments from other organizations, offices, or individuals.

**Brush.** Shrubs and scrub vegetation or other vegetative growth heavier than grass but not full tree size.

**Building.** Any structure used or intended for supporting any use or occupancy.

**Classified Roof.** A roof constructed with a roof covering that is listed as meeting the requirements for Class A, B, or C roof covering materials (see NFPA 256, Standard Methods of Fire Tests of Roof Coverings).

**Combustible.** Any material that, in the form in which it is used and under the condition anticipated, will ignite and burn.

**Defensible Space.** An area either natural or man-made, where material capable of allowing a fire to spread unchecked has been treated, cleared, or modified to slow the rate and intensity of an advancing wildfire and to create an area for fire suppression operations to occur.

**Development.** Any human made change to improved or unimproved real estate, including but not limited to buildings, structures, grading, excavation or any alteration to land, buildings or structures which falls under the purview of Douglas County’s adopted regulations.

**Dwelling Unit.** Any building or structure or portion thereof that contains living facilities with provisions for sleeping, eating, cooking, and sanitation for not more than one family.

**Fire Hydrant.** A valved connection on a piped water supply system having one or more outlets and that is used to supply hose and fire department pumpers with water.

**Fuel Break.** An area, usually a long strip strategically located, wherein vegetative fuels are reduced in volume and maintained to cause a reduction of fire intensity if ignited by a wildland fire.

**Fuel Loading.** The volume of fuel in a given area, generally expressed in tons per acre.

**Fuel Modification.** The removal of fuels, increased spacing of individual plants, or reduction of fuel loading.

**Fuels.** All combustible materials within the wildland-urban Interface or wildland-urban intermix, including, but not limited to, vegetation and structures.

**Ground Fuels.** Any native or landscape vegetation not considered a tree and generally in contact with the ground, including, but not limited to, duff layer and loose surface litter.

**Home Ignition Zone.** The structure itself and everything around it up to a minimum of 100 feet unless limited by property boundaries.

**Listed.** Equipment or materials included in a list published by an organization acceptable to the “authority having jurisdiction” and concerned with product evaluation, that maintains periodic inspection of production of listed equipment or materials and whose listing states either that the equipment or material meets appropriate standards or has been tested and found suitable for use in a specified manner.

**Noncombustible.** A material that, in the form in which it is used and under the conditions anticipated, will not aid combustion, or add appreciable heat to an ambient fire. Materials tested in accordance with Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750° C (1382° F), ASTM E 136, and conforming to the criteria contained in Section 7 of the referenced standard shall be considered non-combustible.

**Occupancy.** The purpose for which a building, or part thereof, is used or intended to be used.

**Residential Driveway.** A vehicular access for private use that serves one lot or parcel connecting a house, garage, or other allowed use, to the public or private road.

**Residential Shared Driveway.** A vehicular access for private use that may serve no more than three lots or parcels for the purpose(s) of ingress and egress to buildings, structures, or other allowed use.

**Roadway.** Any surface improved, designed, or ordinarily used for vehicular travel other than a private residential driveway or residential shared driveway as defined in this Standard.

**Slope.** Upward or downward incline or slant, usually calculated as a percent of slope [rise or fall per 100 feet of horizontal distance].

**Standard.** This Exhibit B, Douglas County Wildfire Mitigation Standards.

**Structure.** That which is built or constructed, an edifice or building of any kind, or any piece of work artificially built up or composed of parts joined together in some definite manner.

**Traveled Way.** The portion of a roadway that provides for vehicular travel in all permitted directions.

**Turnaround.** A portion of a roadway or driveway unobstructed by parking, that allows for a safe reversal of direction for emergency equipment.

**Turnouts.** A widening in a roadway or driveway of sufficient length and width to allow vehicles to pass one another.

**Wildland/Urban Interface.** An area where development and wildland fuels meet at a well-defined boundary.

**Wildland-Urban Intermix.** An area where development and wildland fuels meet with no clearly defined boundary.

**Wildfire.** An unplanned and unwanted fire requiring suppression action; an uncontrolled fire, usually spreading through vegetative fuels but often threatening structures.

## **Chapter 2 Wildland-Urban Interface and Wildland-Urban Intermix Analysis**

**2-1 General.** The analysis of the wildland-urban interface or wildland-urban intermix will help identify and document local problem areas and guide the application of standards and establishment of priorities relative to fire danger.

**2-1.1 Scope.** The provisions of this chapter establish general requirements for wildfire hazard assessment, inspection, and analysis for development, new and existing buildings, structures, and premises located within the wildfire hazard area, as determined by the Wildfire Hazard Overlay District Map.

**2-1.2 Objective.** The objective of this chapter is to establish minimum requirements to reduce the likelihood of life and property loss due to wildland fire, reduce exposures from adjacent structures and to prevent structure fires from spreading to wildland fuels. The wildfire hazard assessment, inspection and analysis shall assess all applicable wildfire hazards and risks as they relate to the natural and built environments. Results of the assessment will establish minimum requirements for project development as it relates to land use applications, including 35 acre and larger developments and building permits.

**2-2 Analysis.** The authority having jurisdiction shall perform a wildland fire hazard assessment of all developments, existing or planned, to determine the amount of wildfire mitigation necessary. The analysis developed under the authority of this section shall be the basis for the implementation of fire conscious design and construction criteria. The analysis shall be based on a project-specific wildfire hazard assessment that includes considerations of location, topography, aspect, and vegetative fuel loading, as well as any existing developments.

**2-3 Analysis Components.** The analysis shall consider the following components:

- (a) Wildland-urban interface or wildland-urban intermix boundaries
- (b) Slope & Aspect
- (c) Climatic Conditions
- (d) Structure Building Materials
- (e) Vegetative Fuels
- (f) Neighborhood Scale Hazard Potential

**2-4 Assessing Fuel Hazards.** For purposes of this sub-paragraph, “fuel” means any combustible material, including petroleum-based products, cultivated landscape plants, grasses, weeds, and wildland vegetation. The amount of fuel modification necessary shall consider the flammability of the structure as affected by building material, building standards, location, and types of vegetation. Fuels shall be maintained and spaced in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure. Fuels modification will be supported by available science, risk models and best practices, and shall be at the discretion of the Douglas County wildfire mitigation specialist.

**2-4.1 Assessment Relating to the Land-Use Process.** Development determined to be subject to the provisions of the Wildfire Hazard Overlay District and identified by wildfire mitigation staff as a significant wildfire hazard, must provide a Wildfire Mitigation or Forest Management Plan to be submitted by a professional forester, reviewed, and approved by Douglas County staff, and executed prior to the issuance of building permits within the development.

**2-4.2 Assessment Relating to the Building Permitting Process.** Each construction project permitted through the Building Division is subject to review under the adopted regulations. Any property undergoing development within the wildfire hazard area, as identified by the boundaries of the Wildfire Hazard Overlay District Map, whether new construction or modification to existing development, will require a wildfire hazard assessment from a Douglas County Wildfire Mitigation Specialist. The assessment will examine the area within the first 100 feet from the edge of the built environment or to the property line, whichever comes first. The intensity of fuels management may vary within the 100-foot perimeter of the structure, with more intense fuel reductions being utilized between 5 and 30 feet around the structure, and an ember-resistant zone being required within 5 feet of the structure.

## **Chapter 3 Fuel Modification Planning**

**3-1 General.** This chapter will provide guidance in the mitigation measures associated with fuel hazards and special hazard conditions. Fuel modifications shall be the primary mitigation measure. New subdivisions or developments shall complete the hazardous fuel reduction and mitigation work outlined in the Douglas County approved forest management or wildfire mitigation plan submitted by the applicant, if required, prior to the issuance of building permits for structures within the development. The Douglas County Wildfire Mitigation Specialist shall determine whether a wildfire mitigation or forest management plan is required based on current forest conditions

**3-2 Evaluation Factors.** As prescribed in Chapter 2 of this standard, a comprehensive assessment of the fuel hazard shall be made. Factors that shall be considered in the assessment include:

- (a) Fuel-type identification

- (b) Fuel loading (volume)
- (c) Size of fuel bed (acres)
- (d) Slope and aspect

**3-2.1 Fuel-type Identification.** All fuel, natural vegetation, as well as other flammable materials existing within the area shall be identified and rated as its potential to increase the hazard. The ease of ignition and ability to assist in the spread of fire are important factors.

**3-2.2 Fuel Loading.** The volume of fuels, both presently existing and likely to be present under expected development, shall be estimated and included on maps.

**3-2.3 Slope.** Percent of slope and aspect shall be determined and indicated during the assessment process.

**3-2.4 Fuel Modification.** The purpose of the fuel modification effort shall be to reduce the volume of vegetative fuel to protect structures from approaching wildfire as well as to reduce the potential for a structure fire from spreading to the wildland. The fuel modification shall be initially provided by the developer prior to building permit issuance for buildings or structures, through the implementation of a Douglas County approved wildfire mitigation or forest management plan and shall be maintained by the property owner. Additional fuel modification may be required when buildings or structures are proposed through the building permit process to create defensible space management zones around buildings or structures. The permit process will require the applicant to create and maintain defensible space of 100 feet from each side and from the front and rear of the structure or to the property line, whichever comes first.

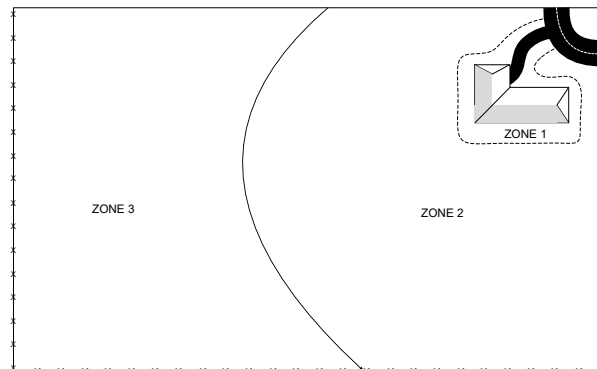
### **3-2.5 Maintenance of Defensible Space.**

**Responsibility.** Persons owning, leasing, controlling, operating, or maintaining buildings or structures are responsible for maintenance of defensible space. Fuels shall be maintained and spaced in a condition so that a wildfire burning under average weather conditions would be unlikely to ignite the structure including, but not limited to removing non-fire resistive vegetation and keeping leaves, needles and other dead vegetative material regularly removed from roofs of buildings and the area immediately adjacent to structures.

**Trees.** Prune tree branches extending to within 10 feet of any structure to maintain a minimum horizontal clearance of 10 feet. Prune tree branches within the defensible space to remove limbs located less than 10 feet above the ground surface adjacent to trees. Prune portions of tree branches that extend within 10 feet of the outlet of a chimney to maintain a minimum horizontal clearance of 10 feet.

### **3-3 Defensible Space Management Zones.**

**Zone 1** is the area of maximum modification and treatment. It consists of an area of 5 feet around the structure in which all flammable native vegetation is removed. These 5 feet are generally measured from the outside edge of the building or structure's eaves and any attached structures, such as decks.



**Figure 3-3:** Forested property showing the three fire-defensible zones around a home or other structure.

**Zone 2** is an area of fuel reduction. It is a transitional area between zones 1 and 3. The defensible zone, or home ignition zone (HIZ) consisting of the home or structure itself, zone 1 and zone 2, shall extend at least 100 feet from the structure unless limited by property boundaries. Within this zone, the continuity and arrangement of vegetation is modified. The intensity of fuels management may vary within the 100-foot perimeter of the structure, with more intense fuel reductions being utilized between 5 and 30 feet around the structure. Examples of fuel modifications include but are not limited to removal of stressed, diseased, dead, or dying trees and shrubs; thinning and pruning the remaining larger trees and shrubs; extending thinning along either side of the driveway all the way to the main access road. These actions help eliminate the continuous fuel surrounding a structure while enhancing safety and the aesthetics of the property.

**Zone 3** is an area of traditional forest management and is of no particular size. It extends from the edge of the defensible space zone to the property boundaries.

**3-3.1 Modification of Fuel Types.** Where consistent with ecological factors, less fire-prone, native vegetation shall be encouraged.

**3-3.2 Reduction of Fuel Loading.** Trees and brush shall be cleared away from structures for a distance that is in accordance with section 3-3 to prevent ignition of either the structure or the vegetation, should the other burn. Vegetation existing away from the immediate area of the structure shall be thinned and pruned to prevent a fire from being carried toward or away from the structure. Annual grasses shall be mowed to 6 inches or less in accordance with Figure 6. Ground litter shall be removed annually. Over-mature, dead, and dying trees shall be evaluated as to their potential to ignite and to carry fire. All trees determined to contain such potential shall be removed.

**3-3.3 Mitigation of Slope and Aspect Impact.** Slope and aspect greatly affect the potential for carrying fire, and very little opportunity exists to modify them directly. Where the degree of slope or aspect is determined to affect the hazards, fuels will require a greater degree of modification or fuel breaks shall be required.

**3-3.4 Building Envelope Siting.** Building envelope siting shall comply with Chapter 3 of this standard. If proper building envelope siting cannot be or is not met as required by Chapter 3, the Building Official, in his or her sole discretion, may approve alternative mitigation methods to include, but not be limited to, private fire protection systems, classified siding, Class “A” roofing, or triple pane windows.

## **Chapter 4 Roads, Streets, and Ways**

**Delete Section 4-1 through 4-4.10 in their entirety.** All new roads, whether public or private, shall be designed and constructed in accordance with the most current edition of the Douglas County Roadway Design and Construction Standards manual as amended and adopted by the Board of County Commissioners.

**4-4.11 Driveways and shared driveways.** Driveways and shared driveways serving new structures shall be designed and installed in accordance with this section. Additions that increase the area of an existing structure by greater than 50% or result in an aggregate area greater than 5,000 square feet may be required by Douglas County to meet the following criteria to the maximum extent practicable.

- (a) All driveways serving a single lot or parcel shall provide a minimum unobstructed all-weather driving surface width of twelve (12) feet and a minimum unobstructed vertical and horizontal clearance of fifteen (15) feet. A shared driveway as defined in this standard shall provide a minimum unobstructed all-weather driving surface width of sixteen (16) feet.
- (b) No driveway shall be constructed with a curvature radius of less than thirty-six (36) feet measured at the centerline of the driveway.
- (c) Grades shall not be steeper than ten (10) percent, except that the Building Official shall be permitted to allow steeper grades where alternative mitigation measures have been submitted and approved by the Building Official.
- (d) Driveways shall be maintained and shall have an all-weather driving surface to support the heaviest fire apparatus likely to be driven upon it. The driveway shall be accessible anytime of the year, day, or night. For the purpose of this section, an all-weather driving surface shall be class six (6) road base or equivalent.
- (e) A vehicular turnaround shall be provided at all building or structure sites when the driveway that provides access to the building or structure exceeds one hundred fifty (150) feet in developed length and shall be within fifty (50) feet of the building or structure served.



#### **4-4.12 Gated Entrances to Private Driveways.**

- (a) The clear opening provided through the gate shall be 3 feet wider than the traveled way and provide a minimum unobstructed vertical clearance of 15 feet.
- (b) All gates shall be located at least 30 feet from the public right-of-way or private road. Swinging gates shall open inward, allowing a vehicle to stop at the gate without obstructing traffic on the public or private road.

Gated vehicular entrances not shown on the submitted site plan shall be subject to the following criteria:

1. Application for an individual permit for construction of the proposed gate, including construction plans and foundation or footing engineering if applicable.
2. Electrical permit if applicable.
3. Site plan submittal to Douglas County Planning and Zoning for review of easements, setbacks, or other applicable criteria.

**Delete Chapter 5 in its entirety.**

#### **Chapter 6 Emergency Water Supplies**

Where, in any specific case, the amount of water storage for rural fire fighting conflicts with International Fire Code, the Standard for Water Supplies for Rural Firefighting, attached hereto as Exhibit "C" shall govern.

**6-1 General.** This chapter describes the process by which provisions for emergency water supplies shall be evaluated, designed, constructed, and maintained.

**6-2 Notification.** The authority having jurisdiction shall be notified in writing before any water system is constructed, altered, or removed and before site development or construction of any structure commences so that fire protection can be evaluated and ample water supply capabilities pertinent to such construction can be established.

#### **6-3 Evaluation of Water Supply Needs.**

**6-3.1 Authority.** The fire protection agency having jurisdiction shall evaluate all buildings, proposed and existing, to obtain information required for computing minimum water supply. Information obtained from plans or on-site surveys and determinations made and recorded shall reflect the water supply category required. The computation of minimum water supplies for other than municipal, domestic, or fixed fire protection systems shall be in accordance with NFPA 1142 or other approved method.

**6-3.2 Design, Construction, and Maintenance.** Based upon the water supply evaluation, the authority having jurisdiction shall approve the design, construction, and maintenance of water supplies and distribution systems to ensure that the fire protection concerns have been addressed and adequate water supplies and access thereto have been provided.

**6-4 Minimum Water Supply Requirements.** Water shall be available to provide a minimum fire flow of two hundred fifty (250) gallons per minute for a two (2) hour duration in accordance with Exhibit C of this Resolution.

**6-5 Static Water Supplies.** The design and construction of and access to static water supplies shall be in accordance with NFPA 1142 or other approved method.

**6-6 Signage of Water Supplies.** When required by the authority having jurisdiction, each fire hydrant or access to water shall be identified as follows:

- (a) A reflectorized marker, with a minimum dimension of three (3) inches, shall be located on the driveway address sign signifying the hydrant location and on a fire-retardant post located near the fire hydrant, and;
- (b) A fire-retardant reflectorized sign with the words “DRAFT WATER” or “PRESSURE WATER” having letters a minimum of four (4) inches in height, with ½-inch stroke, reflectorized and contrasting to the background color, shall be located near the hydrant or access to water.
- (c) The signpost shall be within three (3) feet of said fire hydrant or access to water, with the sign no less than three (3) feet nor greater than five (5) feet above the ground and visible from the driveway.

## **Chapter 7 Structural Design and Construction**

**7-1 General.** All proposed buildings or structures in the wildland-urban interface or the wildland-urban intermix shall be designed and constructed to comply with the requirements of this chapter and with this standard. All buildings and structures located in the National Forest shall be required to comply with the requirements of this chapter and with this standard. Agricultural properties, not located in a subdivision, shall have the applicability of this standard determined upon application for a building permit.

**7-1.1 Minimum Requirements.** Structures and developments in or adjacent to wildland fire hazard areas shall be located, designed, and constructed in a manner to minimize the possibility of ignition from a wildfire and to minimize the spread of a structural fire to the wildland.

**7-2 Roofing.** Only listed roof covering tested and rated in accordance with UL 790, NFPA 256, Standard Methods of Fire Tests of Roof Coverings; ASTM E 108, Standard Test Methods for Fire Tests of Roof Coverings; or equivalent, shall be used. Subdivision covenants, conditions, and restrictions shall not require the use of roof covering materials that do not meet this Standard.

**7-2.1 Wood Shakes and Wood Shingles.** Wood shakes and wood shingles are prohibited within the boundaries of the Wildfire Hazard Overlay District.

**7-2.2 Replacement or Repair of Roof Coverings.** The roof covering on buildings or structures in existence prior to the adoption of this standard that are replaced or have 100 square feet or more replaced in a 12-month period shall be replaced entirely with a roof covering required for new construction in accordance with Chapter 7 of this Standard.

**7-3 Vents.** Vents for attic and subfloor ventilation shall be screened with a corrosion-resistant, noncombustible wire mesh with the mesh not to exceed nominal  $\frac{1}{4}$  inches in size.

**7-4 Exterior Vertical Walls.** Exterior vertical walls shall be constructed of at least  $\frac{1}{2}$ -inch nominal sheathing or equivalent material and shall extend from the top of the foundation to the roof line.

**7-5 Chimneys and Flues.**

**7-5.1 Outlet Screen.** Every chimney, flue, or vent shall be provided with an approved spark arrester consisting of 12-gauge welded or woven wire mesh not exceeding  $\frac{1}{2}$  inch.

**7-5.2 Construction.** Chimney or flue outlets shall be constructed with 10-foot clearance from all vegetation and obstructions.

**7-6 Manufactured Homes.** Manufactured homes shall meet all applicable construction and safety standards. Permanently located mobile and manufactured homes with an open space beneath shall be provided with full skirting constructed of noncombustible material or a fire resistive assembly having a minimum fire resistive rating of 20 minutes.

**7-6.1 Enclosed space beneath the mobile or manufactured homes.** Any enclosed space beneath the mobile or manufactured home shall be vented according to 7-3.

**7-7 Location of LP Fuel Storage Tanks.** Location of LP fuel storage tanks shall be in accordance with the International Fire Code.

## **Chapter 8 Public Fire Prevention and Fire Safety Information and Education**

**8-1 Information and Education Plan.** The authority having jurisdiction shall prepare a year-round fire prevention and fire safety public information/education plan. The plan, at a minimum, shall identify and analyze:

- (a) Specific hazards
- (b) Risks

- (c) Fire causes
- (d) Applicable prevention and safety programs
- (e) Target audiences
- (f) Activities.

The plan shall utilize a variety of communication techniques to achieve desired objectives.

## **Chapter 9 Referenced Publications**

**9-1** The following documents or portions thereof are referenced within this standard and shall be considered part of the requirements of this document.

### **9-1.1 NFPA Publications.**

National Fire Protection Association, 1 Batterymarch Park, P.O. Box 9101, Quincy, MA 02269-9101.

NFPA 1144, Standard for Reducing Structure Ignition Hazards from Wildland Fire 2018 edition

NFPA 256, Standard Methods of Fire Tests of Roof Coverings, 2003 edition

NFPA 1141, Standard for Fire Protection in Planned Building Groups, 2017 edition

NFPA 1142, Standard on Water Supplies for Suburban and Rural Fire Fighting, 2022 edition

### **9-1.2 International Code Council**

International Wildland-Urban Interface Code 2012 edition

### **9-1.3 Colorado State Forest Service**

Standard for Creating and Maintaining the Home Ignition Zone - 2021

## Commentary on Defensible Space Zone Prescriptions

### Descriptions

#### Zone 1

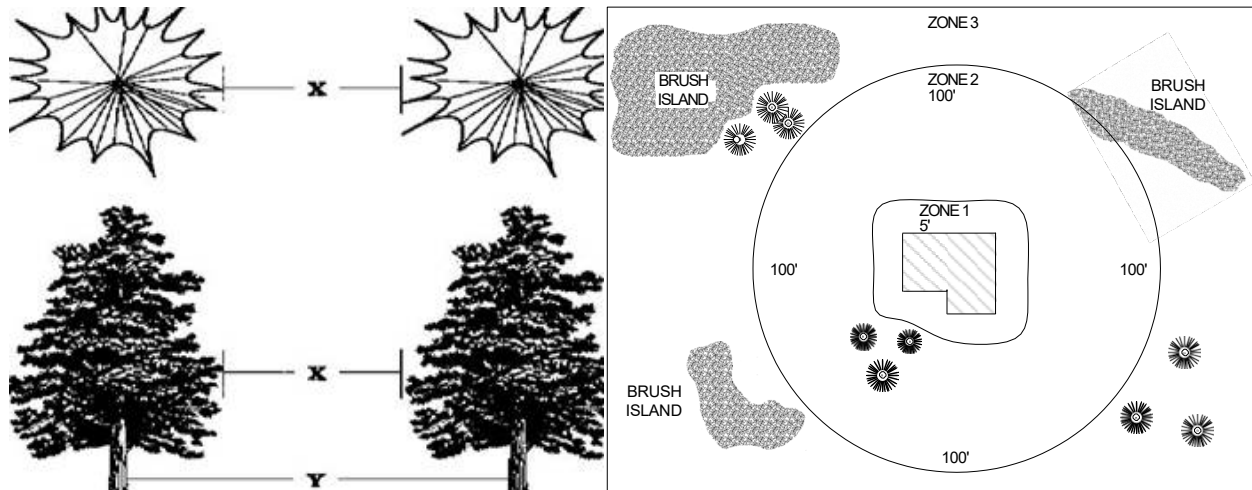
The size of Zone 1 is 5 feet, measured from the edges of the structure.

Remove all native vegetation from Zone 1 to reduce fire hazards. If you do keep a tree, consider it part of the structure, and extend the distance of the entire defensible space accordingly. Isolate the tree from any other surrounding trees. Prune it to at least 10 feet above the ground. Remove any branches that interfere with the roof or are within 10 feet of the chimney. Remove all “ladder fuels” from beneath the tree. Ladder fuels are vegetation with vertical continuity that allows fire to burn from ground level up into the branches and crowns of trees. Ladder fuels are potentially very hazardous but are easy to mitigate. No ladder fuels can be allowed under tree canopies. In all other areas, prune all branches of shrubs or trees up to a height of 10 feet above ground (or 1/2 the height, whichever is the least).

#### Zone 2

Zone 2 is an area of fuel reduction designed to reduce the intensity of any fire approaching a building or structure. Follow these management steps.

Thin trees and large shrubs so there are at least 10 feet between crowns. Crown separation is measured from the furthest branch of one tree to the nearest branch on the next tree (Figure 3). On steep slopes, allow more space between tree crowns. (See Figure 4 for minimum required spacing for trees on steep slopes.) Remove all ladder fuels from under these remaining trees. Carefully prune trees to a height of at least 10 feet.



**Figure 1:** X = crown spacing; Y = stem spacing. Do not measure between stems for crown spacing, measure between the edges of tree crowns.

Small clumps of 2 to 3 trees may be occasionally left in Zone 2. Leave more space between the crowns of these clumps and surrounding trees.

Because Zone 2 forms an aesthetic buffer and provides a transition between zones, it is necessary to blend the requirements for Zones 1 and 3. Thin the portions of Zone 3 adjacent to Zone 2 more heavily than the outer portions.

### **Zone 3**

This zone is of no specified size. It extends from the edge of the defensible space to the property lines.

Forest management in Zone 3 is an opportunity to increase the health and growth rate of the forest in this zone. Keep in mind that root competition for available moisture limits tree growth and ultimately the health of the forest.

A greater number of wildlife trees can remain in Zone 3. Make sure that dead trees pose no threat to power lines or vehicular access.

Mowing is not necessary in Zone 3.

Any approved method of slash treatment is acceptable for this zone, including chipping or lop-and-scatter.

### **Grasses**

Keep dead, dry or curing grasses mowed to less than 6 inches. Defensible space size where grass is the predominant fuel can be reduced. Use Figure 4 when applying this practice.

**Figure 2:** Minimum tree crown and shrub clump spacing

| <b>% Slope</b> | <b>Tree Crown Spacing</b> | <b>Brush and Shrub Clump Spacing</b> |
|----------------|---------------------------|--------------------------------------|
| 0 -10 %        | 10'                       | 2 1/2 x shrub height                 |
| 11 - 20%       | 15'                       | 3 x shrub height                     |
| 21 - 40%       | 20'                       | 4 x shrub height                     |
| > 40%          | 30'                       | 6 x shrub height                     |

**Figure 3:** Minimum tree spacing for Zone 3.

**Tree Diameter Average Stem Spacing Between Trees**

| <b>(In inches)</b> | <b>(In feet)</b> |
|--------------------|------------------|
| 3                  | 10               |
| 4                  | 11               |
| 5                  | 12               |
| 6                  | 13               |
| 7                  | 14               |
| 8                  | 15               |
| 9                  | 16               |
| 10                 | 17               |
| 11                 | 19               |
| 12                 | 21               |
| 13                 | 23               |
| 14                 | 24               |
| 15                 | 26               |
| 16                 | 28               |
| 17                 | 29               |
| 18                 | 31               |
| 19                 | 33               |
| 20                 | 35               |
| 21                 | 36               |
| 22                 | 38               |
| 23                 | 40               |
| 24                 | 42               |

**Figure 4:** Minimum defensible space size for grass fuels.

| <b>% Slope</b> | <b>Defensible space size<br/>(uphill, downhill, sidehill)</b> |
|----------------|---|
| 0 - 20 %       | 30' Feet  |
| 21 - 40%       | 50' Feet  |
| > 40%          | 70' Feet  |