Santa Barbara County Fire Department
Fire Prevention Division
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Development Standard - #6

DEFENSIBLE SPACE

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Please note that the SBCFD assumes no liability for any damages incurred directly or indirectly as a result of any errors, omissions, or discrepancies between this standard and any applicable law. It is the sole responsibility of the person or persons conducting any work pursuant to this standard to ensure their work complies with any and all applicable codes, ordinances, and regulations.

CHAPTER 1 ADMINISTRATION

1.1 Purpose. The purpose of this standard is to provide clarification of requirements and establish and assign an acceptable level of quality and minimum level of mandatory controls to provide and maintain required defensible space to buildings, projects, premises, or regions in the areas of the Santa Barbara County Fire District.

1.2 Scope. This standard provides a method of providing for and maintaining adequate defensible space, vegetation management, and weed abatement as may be required by the fire code official, the California Fire Code, Chapter 10 and Chapter 15 of the Santa Barbara County Code, and Public Resources Code (PRC) Section 4291.

1.3 Applicability. This standard shall apply to all parcels within the jurisdiction of Santa Barbara County Fire District. Specific provisions such as defensible space and fire protection plans are applicable in State Responsibility Areas (SRA) and Local Responsibility Areas (LRA) designated as Very High Fire Hazard Severity Zone. When provisions are not applicable to all parcels within the district, the applicability will be clarified in the relevant section.

1.4 Fees. A plan check fee is required for the installation of or modification to a fire protection as required by the current SBCFD fee schedule. Defensible Space inspection fees, weed abatement fines, and any other inspection related fees are detailed in the SBCFD fee schedule.

CHAPTER 2 DEFINITIONS

Combustible Fencing. Any fencing material or installation that is not IGNITION-RESITANT MATERIAL (as defined by CA WUIC Chapter 5 or CRC Section R337). Combustible fencing includes wood, plastic, and other petroleum based, fence materials.

Combustible Material. Includes seasonal and recurrent weeds, stubble, brush, dry leaves, mulch, tumbleweeds, rubbish, recyclable material, litter, or flammable materials of any kind.

Community 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 surrounding or adjacent to planned unit developments and/or subdivisions.

Deck. A flat surface capable of supporting weight, similar to a floor, constructed outdoors and attached to or located within five (5) feet of a Structure, including porches, balconies, and stairs. A Patio on grade constructed of concrete, stone or similar materials is not a deck.

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.

Fire Hazard Severity Zones (FHSZ). Geographical areas designated pursuant to California Public Resources Code, Sections 4201 through 4204, and classified as Very High, High, or Moderate in State Responsibility Areas (SRA) or as Local Responsibility Agency Very High, High or Moderate Fire Hazard Severity Zones designated pursuant to California Government Code, Sections 51175 through 51189.

Fire Protection Plan. A document prepared for a specific project or development proposed for a Wildland Urban Interface (WUI) area. It describes ways to minimize and mitigate potential for loss from wildfire exposure.

Fire-Resistant Vegetation. Plants, shrubs, trees and other vegetation that exhibit properties, such as high moisture content, little accumulation of dead vegetation, and low sap or resin content, that make them less likely to ignite or contribute heat or spread flame in a fire than native vegetation typically found in the region. The California Code of Regulations, Title 14, Section 1280, entitles the maps of these geographical areas as

"maps of the Fire Hazard Severity Zones in the State Responsibility Area of California"
[Note: The following sources contain examples of types of vegetation that can be considered fire resistant vegetation. (Fire-resistant Plants for Home Landscapes, A Pacific Northwest Extension publication; Home Landscaping for Fire, University of California Division of Agriculture and Natural Resources; Sunset Western Garden Book)]

Fuel. Any combustible material, including petroleum-based products, cultivated landscape plants, grasses, weeds, Ornamental Landscape, and wildland vegetation.

Fuel Break. An area, strategically located for fighting anticipated fires, where the native vegetation has been permanently modified or replaced so that fires burning into it can be more easily controlled. Fuel Breaks divide fire-prone areas into smaller areas for easier fire control and to provide access for firefighting.

Fuel Modification. A method of modifying fuel load by reducing the amount of non-fire-resistive vegetation or altering the type of vegetation to reduce the fuel load.

Hazard Reduction Program. A program administered by the Santa Barbara County Fire District to address combustible vegetation growing on parcels throughout the District's sphere of influence.

Ignition Resistant Material. A type of building material that complies with the requirements in Chapter 5 of the California Wildland Urban Interface Code (CA WUIC) or section R337.4.2 of the California Residential Code, see Appendix A.

Ladder Fuels. Vegetative fuels which provide vertical continuity, thereby allowing fire to carry from surface fuels into the crowns of trees or shrubs with relative ease.

Ornamental Landscape. All grasses, plants, trees, and other vegetation installed by a property owner. This is usually for aesthetic purposes or privacy screening.

Planned Unit Development or Subdivision. Are building developments, with designed groupings of both varied and compatible land uses—such as housing, recreation, commercial centers, and/or industrial parks—within one contained development or subdivision. Developed areas vary in size and by zoned uses, such as industrial, commercial, residential. recreational and/or open space.

Structural Hardening. Methods of improving a structure to prevent the effects of wildfire from impacting the survivability of the structure.

Vegetation. Means all plants, including trees, shrubs, grass, and perennial or annual plants.

Wildfire. As defined in Public Resources Code Section 4103 and 4104, a fire burning uncontrolled on lands covered wholly or in part by timber, brush, grass, grain, or other flammable vegetation.

Wildfire Exposure. One or a combination of radiant heat, convective heat, direct flame contact and burning embers being projected by vegetation fire to a structure and its immediate environment.

Wildland-Urban Interface (WUI). A geographical area identified by the state as a "Fire Hazard Severity Zone" in accordance with the Public Resources Code, Sections 4201 through 4204, and Government Code, Sections 51175 through 51189, or other areas designated by the enforcing agency to be at a significant risk from wildfires including Hazardous Fire Areas.

CHAPTER 3 GENERAL REQUIREMENTS

3.1 General. Defensible space, vegetation management, and weed abatement shall be provided and maintained in accordance with the presently adopted Santa Barbara County Fire Code and applicable standards.

3.2 Application. This standard will be applied as conditions of approval when land is developed or divided and will be applied to existing structures as designated herein.

3.3 Hazard Reduction Program. All property owners throughout the Santa Barbara County Fire Department jurisdiction are required to abate hazards on their property including weeds and flammable vegetation. The Hazard Reduction Program is administered by the Fire Department and applies to all parcels. All parcels are inspected for the requirements found in Section 3.4.

3.4 Vegetation Management For All Properties. All properties shall comply with the following:

3.4.1 Remove all weeds from property or mow to a height of less than four (4) inches.
3.4.2 Provide a minimum of three (3) feet of horizontal clearance and eight (8) feet of vertical clearance around fire hydrants. Provide a clear pathway to fire hydrants and any appurtenances three (3) feet wide and eight (8) feet tall.
3.4.3 No new vegetation shall be planted under or adjacent to energized power lines that will grow within ten (10) feet of the energized conductors.

3.5 Defensible Space. Defensible Space shall be provided around all structures in State Responsibility Areas (SRA) and Local Responsibility Areas (LRA) designated as Very High Fire Hazard Severity Zone.

3.5.1 Minimum Defensible Space. The minimum amount of defensible space is one hundred (100) feet, but not beyond the property line. Additional defensible space may be required by the Fire Code Official depending upon terrain or fuel conditions (see figure 3.3).
3.5.2 Adjacent Property. Property owners are required to maintain only the portion of their own defensible space zone that falls upon their property.

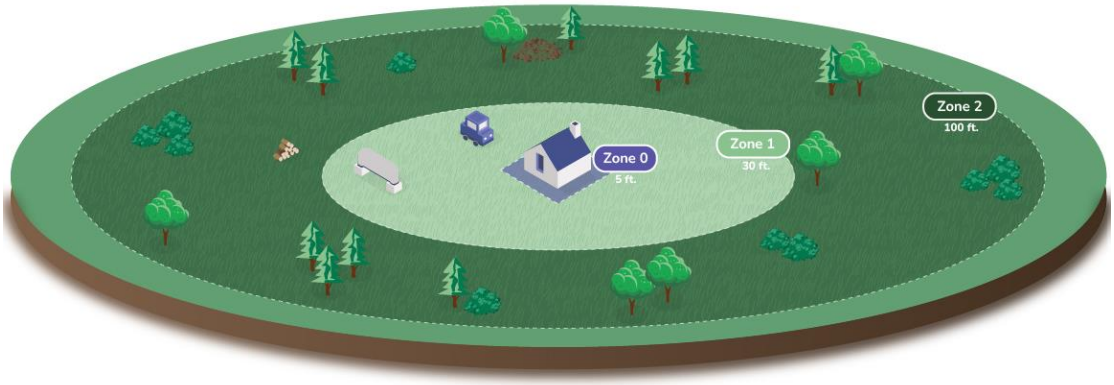


Figure 3.3: Defensible Space Zones

3.6 Community Defensible Space. When required by the Fire Code Official, planned unit developments or subdivisions shall have Community Defensible Space provided around these developments and subdivisions when they are adjacent to recreational or open space areas in applicable Fire Hazard Severity Zones. These shall be designed in alignment with this standard and detailed in Fire Protection Plans and Landscape Plans (Landscape Plans can be included in a community's Fire Protection Plan.)

3.6.1 Maintenance. When a development proposes the dedication or transfer of open space or recreational areas to the County, a community services district, or any other governmental, public, or private entity, the developer shall be responsible for creating and maintaining the improvements during development. Unless otherwise provided byagreement, ongoing maintenance shall be the responsibility of any resulting Homeowners' Association, as established through CC&Rs or other binding private community agreements.

3.7 Disposal. All trimmings generated as part of abatement in order to comply with this standard shall be disposed of in accordance with all Federal, State, and Local Laws and Regulations.

Exception: Grass clippings are allowed to remain as mulch.

3.7.1 Burning of trimmings/clipping is prohibited unless authorized with a valid SBCFD issued burn permit.

3.8 Existing Fuel Modification Zones. There is no "grandfathering" or exemptions for existing defensible space zones. When required by the Fire Department or State Law, existing defensible space/FMZs shall require retrofitting, including thinning and or removal of plants, trees, and vegetation, to meet this standard and or State Law. When new buildings or additions to existing building are constructed on the parcel with existing buildings, the full one hundred (100) foot FMZ (or to property line if less than 100 feet) shall be brought into full compliance with this standard prior to final approval of the building construction.

3.9 Fire Protection Plan (FPP). In accordance with the California Fire Code, a fire protection plan shall be prepared when required by the Fire Code Official to determine the acceptability of fire protection and life safety measures designed to mitigate wildfire hazards for properties under construction.

3.9.1 Contents. The FPP shall be based on a project-specific wildfire hazard assessment that includes consideration of location, topography, aspect, and climatic and fire history. The plan shall also identify conformance with the most restrictive wildfire protection regulation, statute and local ordinance. In addition, the following shall be included:

1. Total size of project.
2. Current land uses for adjoining parcels including structure densities, planned construction, natural vegetation, environmental restoration plans, roads, and parks.
3. A map with proposed project boundary lines, property lines, slope contour lines, proposed structure foundation footprints, proposed roadways and driveways, fuel modification zones (FMZs), and method for identifying fuel modification zone boundaries.

4. A map identifying all proposed plants in the FMZs with a legend that includes a symbol for each proposed plant species. The plan shall indicate the plant-life form, the specific and common name, and the expected height and width for the mature growth.
5. Identification of irrigated and non-irrigated zones.
6. Requirements for vegetation reduction around emergency access and evacuation routes (Zone 3).
7. Identification of points of access for maintenance personnel and equipment to maintain the FMZs.
8. Legally binding statements regarding community responsibility for maintenance of FMZs.
9. Legally binding statements to be included in covenants, conditions, and restrictions regarding property owner responsibilities for vegetation management.

3.9.2 Submittal. Plans shall be submitted digitally to the SBCFD Planning and Engineering Division by emailing digital copies of all documents to pe.submittals@countyofsb.org and shall be approved prior to the start of site construction. Site/Plot plans shall be drawn with care by a trained person. Plans shall be drawn to an indicated scale of not less than 1 inch = 10 feet.

CHAPTER 4 STRUCTURE HARDENING

4.1 General. Structure Hardening shall be provided in accordance with this chapter.

4.2 Applicability. Structure Hardening is required in all new structures built in the Hazardous Fire Area and Fire Hazard Severity Zones and shall be maintained for all structures which were built to comply with Chapter 5 of the CA WUIC or Section R337 of the California Residential Code. Existing non-conforming structures are encouraged to comply.

4.3 Ignition Resistant Construction. Where applicable, structures shall comply with the provisions of Appendix A titled Ignition Resistant Construction features.

4.4 Requirements for Existing Structures. Existing structures shall comply with the following structural hardening measures as defined in applicable codes and regulations:

4.4.1 Remove all needles, leaves, and other dead vegetative growth from roofs and gutters.
4.4.2 Remove combustible materials including furniture beneath porches, decks, stairways, or balconies.
4.4.3 Chimney and flue openings must be covered with ½ inch wire mesh spark arrester, visible from the ground.

4.5 Considerations. When structures are located within an FHSZ and, due to property boundaries, topography, or other site constraints, one hundred (100) feet of defensible space cannot be achieved, enhanced structural hardening measures should be considered. Examples include:

1. Providing non-combustible walls of sufficient height at the property line.
2. Repositioning openings away from the WUI.
3. Providing self-closing, rated, windows and doors.
4. Providing additional fire suppression system features.

CHAPTER 5 ZONE 0

5.1 General. Zone zero (0) shall be installed and maintained with the provisions of this chapter.

5.2 Applicability. Zone 0 is tied to legislation from the State. Any building constructed after July 1, 2024, or any landscapes modified after that date, shall comply with this Chapter. Where a discrepancy between this standard and the state law occurs, the more stringent shall apply.

5.3 Zone 0 Defined. Zone 0 is the five (5) feet immediately surrounding a structure, any outbuildings, attached decks, or stairs measured outward on a horizontal plane, sometimes referred to as the Ember Ignition Resistant Zone. This area also includes the space beneath attached decks, stairs, or any attached structural protrusion.

5.4 Zone 0 Requirements. Zone 0 shall be installed and maintained in accordance with this section:

5.4.1 Combustible mulch and combustible landscape materials including boards/timbers are prohibited in this zone.
5.4.2 No vegetation is allowed within this zone including ground cover, vines, desired landscaped plantings, and trees.
5.4.3 All leaves or leaf litter shall be removed from this zone.
5.4.4 Remove tree limbs which extend to within 10 (ten) feet of chimney openings.
5.4.5 Fences and gates within this zone shall be non-combustible.
5.4.6 Remove dead tree or shrub branches that overhang roofs, below or adjacent to windows, or which are adjacent to wall surfaces.
5.4.7 No window boxes shall be attached to the structure.
5.4.8 Firewood is prohibited in this zone.

CHAPTER 6 ZONE 1

6.1 General. Zone 1 shall be installed and maintained with the provisions of this chapter.

6.2 Applicability. Zone 1 requirements are applicable to all existing and new structures.

6.3 Conflict with Zone 0. State legislation was passed that introduced Zone 0 as the first 5 feet around a structure. Therefore, Zone 1 begins at the structure for all existing structures constructed before July 1, 2024 except for those who have modified landscaping since July 1, 2024. Zone 1 begins five (5) feet from the structure for all new structures constructed after July 1, 2024.

6.4 Definition. For properties constructed on or after July 1, 2024, Zone 1 is the five (5) to thirty (30) feet surrounding the structure measured at five (5) feet from the structure to thirty (30) feet from the structure on a horizontal plane. For properties constructed prior to July 1, 2024, Zone 1 starts immediately at the termination of the structure, any outbuildings, attached decks, or stairs.

6.5 Zone 1 Requirements. Zone 1 shall be maintained in accordance with this section:

6.5.1 Remove dead tree or shrub branches that overhang roofs, below or adjacent to windows, or which are adjacent to wall surfaces.
6.5.2 Remove tree limbs which extend to within 10-feet from chimney openings.
6.5.3 Maintain an effective fire break by removing all flammable vegetation within 30 feet immediately surrounding your home or other buildings.
6.5.4 Shrubs/trees in this zone shall be maintained free of including palm fronds.
6.5.5 Firewood must be stored a minimum of thirty (30) feet from any structure.
6.5.6 Fences in this zone shall not be installed back-to-back.
6.5.7 There shall be no mulch, combustible vegetation, or other combustible material along the base of the fence.
6.5.8 Prohibited plants shall not be installed in any zone.

CHAPTER 7 ZONE 2

7.1 General. Zone 2 shall be installed and maintained with the provisions of this chapter.

7.2 Applicability. Zone 2 requirements are applicable to all existing and new structures.

7.3 Definition. Zone 2 is thirty (30) to one hundred (100) feet surrounding the structure measured from thirty (30) feet from the structure to one hundred (100) feet from the structure on a horizontal plane.

7.4 Zone 2 Requirements. Zone 2 shall be maintained in accordance with this section:

7.4.1 Remove accumulation of hazardous rubbish and/or vegetation.
7.4.2 Shrubs/trees in this zone shall be maintained free of deadwood including palm fronds.
7.4.3 Accumulated leaf litter may not exceed 3 inches in depth.
7.4.4 Mature trees shall be trimmed so that there is a minimum vertical clearance of 6 feet or 1/3 the height of the tree, whichever is less.
7.4.5 Create Horizontal and Vertical Spacing among shrubs and trees (see figure 7.4.1 and 7.4.2)
7.4.6 Logs or stumps embedded in the soil must be removed or isolated from other vegetation.
7.4.7 All exposed wood piles must have a minimum of ten (10) feet of clearance, down to bare mineral soil, in all directions.
7.4.8 Liquid Propane Gas (LPG) storage tanks shall have the following minimum clearance: ten (10) feet of clearance to bare mineral soil and no flammable vegetation for an additional ten (10) feet around their exterior.
7.4.9 Prohibited plants shall not be installed in any zone.

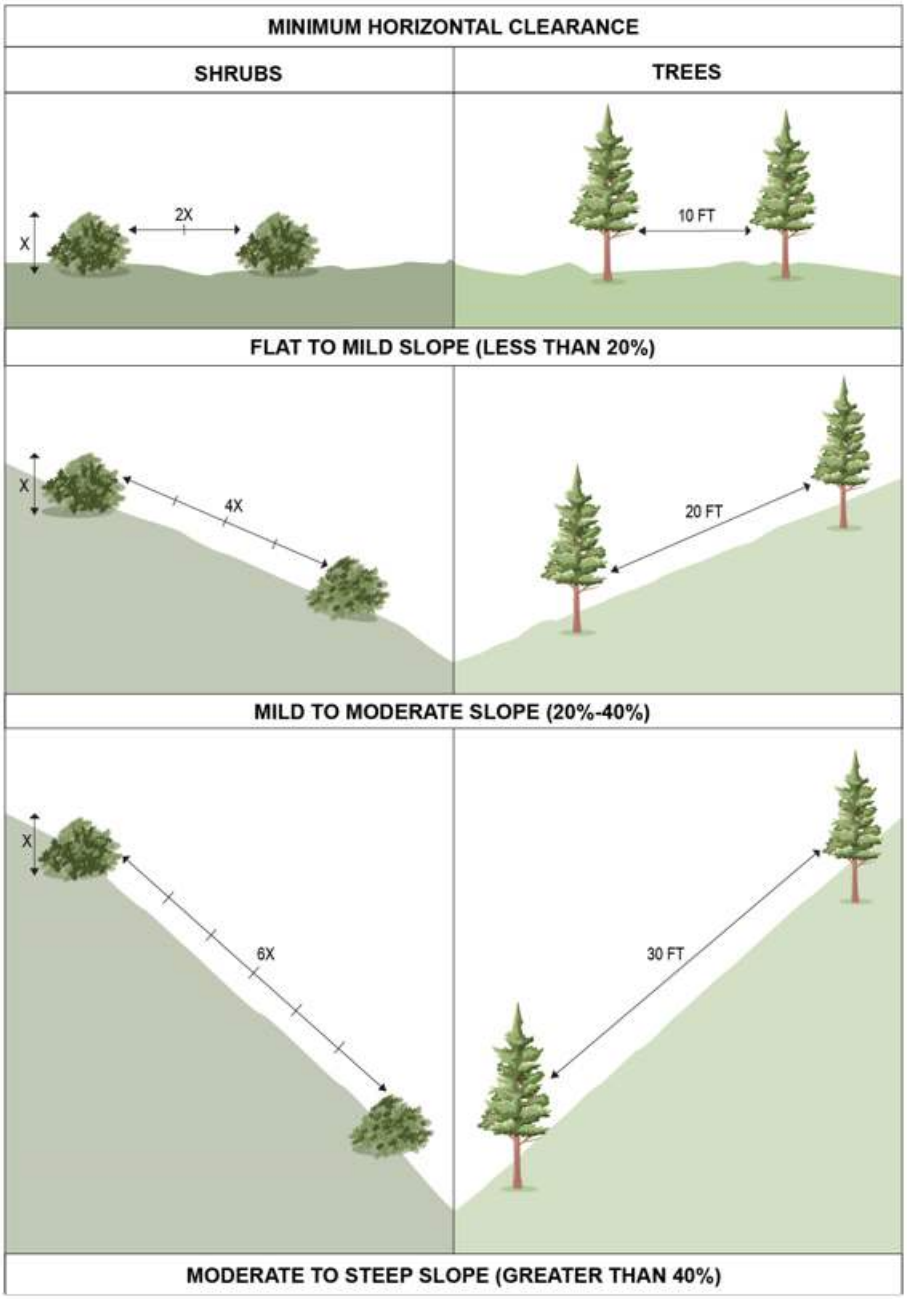


Figure 7.4.1: Horizontal Spacing

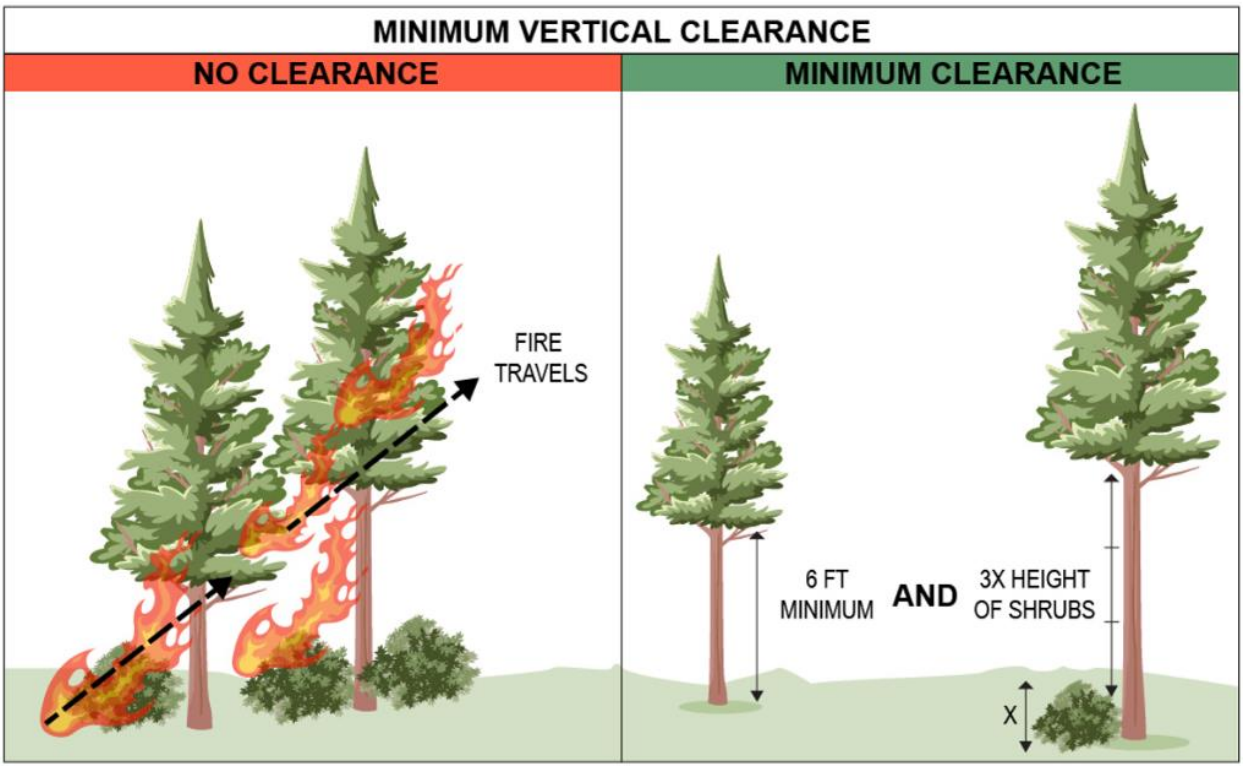


Figure 7.4.2: Vertical Spacing

CHAPTER 8 ZONE 3 "ACCESS ZONE"

8.1 General. Zone 3 shall be installed and maintained with the provisions of this chapter.

8.2 Applicability. Zone 3 requirements are applicable to roadways and driveways leading to/from structures and is required for all existing and new structures and premises.

8.3 Definition. Zone three (3) is the Access Zone which is intended to protect roadways. The parameters of Zone three (3) are measured ten (10) feet from both sides of the roadway on a horizontal plane and up to thirteen feet six inches (13.5 feet) above the road surface.

8.4 Vegetation. All flammable vegetation shall be trimmed to a maximum height of four (4) inches or completely removed for a distance not less than ten (10) feet on either side of the roadway.

8.5 Trees. Trees in Zone 3 shall be maintained in accordance with this section.

8.5.1. Trees shall be well maintained and sufficiently irrigated when necessary.

8.5.2. Limbs shall be trimmed up thirteen feet and six inches (13.5 feet) above the roadway.

8.5.3 Trees shall have vertical and horizontal separation meeting the requirements on Zone 1 and 2 as demonstrated in figures 7.4.1 and 7.4.2 to reduce ladder fuels and tree to tree ignition.

CHAPTER 9 ALTERNATE MEANS AND METHODS (AM&M)

9.1 Applicability. When the Defensible Space or Community Defensible Space cannot be provided per this standard and all applicable codes and ordinances, the applicant shall demonstrate sufficient alternate means and methods of achieving the same practical effect. Acceptance of AM&M is at the discretion of the Fire Code Official. Examples of acceptable AM&M are described in section 9.3, but are not limited to these measures.

9.1.1 Trees shall have vertical and horizontal separation meeting the requirements on Zone 1 and 2 as demonstrated in figures 7.4.1 and 7.4.2 to reduce ladder fuels and tree to tree ignition.

9.2 Non-Combustible Walls. When a structure is located within proximity to combustible fuels on an adjacent property, open space or forested area and defensible space cannot be obtained, a non-combustible wall measuring at least eight (8) feet high may be allowed as AM&M.

APPENDIX A

IGNITION RESISTANT CONSTRUCTION REQUIRMENTS

The following are the requirements for ignition resistant construction under Chapter 5 of the California Wildland Urban Interface Code (CA WUIC) and Section R337 of the California Residential Code. In addition, exterior building construction including roofs, eaves, exterior walls, doors, windows, decks, and other attachments must meet the most current CAWUIC Chapter 5 ignition resistance requirements at the time of building permit application.

1. All structures to be built with a Class A roof assembly, including a Class A roof covering. Roofs shall have a roofing assembly installed in accordance with its listing and the manufacturer's installation instructions.
2. Where the roof profile allows a space between the roof covering and roof decking, the spaces shall be constructed to prevent the intrusion of flames and embers, be fire stopped with approved materials or have one layer of minimum 72 pound mineral-surfaced non-perforated cap sheet complying with ASTM D 3909 installed over the combustible decking. However, openings on barrel tiles or similar roof coverings, must be fire stopped (bird stopped) with approved materials to prevent the accumulation of debris, bird nests, etc. between the tiles and decking material.
3. When provided, exposed valley flashings shall be not less than 0.019-inch (No. 26 galvanized sheet gage) corrosion-resistant metal installed over a minimum 36-inch-wide underlayment consisting of one layer of minimum 72 pound mineral-surfaced non-perforated cap sheet complying with ASTM D 3909 running the full length of the valley.
4. All rain gutters, down spouts and gutter hardware shall be constructed from metal or other noncombustible material to prevent wildfire ignition along eave assemblies.
5. All chimney, flue or stovepipe openings attached to a fireplace, stove, or other solid or liquid fuel burning equipment or device shall be equipped with an approved spark arrester. An approved spark arrester is defined as a device intended to prevent sparks from escaping into the atmosphere and constructed of nonflammable materials, having a 12-gauge minimum thicknesses with openings no greater than ½ inch, or other alternative material the AHJ determines to provide equal or better protection. It shall be installed to be visible for the purposes of inspection and maintenance.
6. The exterior surface materials shall be non-combustible, including hard or ignition resistant, such as stucco. In all construction, exterior walls shall extend from the top of the foundation to the roof and terminate at 2-inch nominal solid blocking between rafters at all roof overhangs, or in the case of enclosed eaves, terminate at the enclosure.
7. All eaves, fascias, and soffits to be enclosed (boxed) with non-combustible materials. This shall apply to the entire perimeter of each structure. Eaves of heavy timber construction are not required to be enclosed as long as attic venting is not installed in the eaves. For the purposes of this section, heavy timber construction shall consist of a minimum of 4"x 6" rafter tails.
8. Paper-faced insulation shall be prohibited in attics or ventilated spaces.
9. Automatic interior fire sprinklers for commercial buildings shall be installed according to the National Fire Protection Association (NFPA) 13 requirements.
10. Roof vents, dormer vents, gable vents, foundation ventilation openings, ventilation openings in vertical walls, or other similar ventilation openings shall be louvered and

covered with 1/16-inch, noncombustible, corrosion-resistant metal mesh or other approved material that offers equivalent protection.

11. Attic or foundation ventilation louvers or ventilation openings in vertical walls shall not exceed 144 square inches per opening and shall be covered with 1/16" inch mesh corrosion-resistant metal screen or other approved material that offers equivalent protection. Ventilation louvers and openings may be incorporated as part of access assemblies.
12. No attic ventilation openings or ventilation louvers shall be permitted in soffits, in eave overhangs, between rafters at eaves, or in other overhanging areas.
13. All fences and gate assemblies (fences, gates, and fence posts) attached or within five feet of a structure shall be of non-combustible material or pressure-treated exterior fire-retardant wood.
14. All projections (exterior balconies, decks, patio covers, unenclosed roofs and floors, and similar architectural appendages and projections) or structures less than five feet from a building shall be of noncombustible material, one-hour fire resistive construction on the underside, heavy timber construction, pressure-treated exterior fire- retardant wood or ignition resistant construction. When such appendages and projections are attached to exterior fire- resistive walls, they shall be constructed to maintain same fire-resistant standards as the exterior walls of the structure.
15. Accessory structures attached to buildings with habitable spaces and projections shall be in accordance with Chapter 5 of the CA WUIC.
16. Detached accessory structures located less than 50 feet from a building containing habitable space shall be constructed in accordance with Chapter 5 of the CA WUIC.

    Exception: Accessory structures less than 120 square feet in floor area located at least 30 feet from a building containing a habitable space.
17. Exterior doors shall be approved non-combustible construction, solid core wood and shall conform to the performance requirements of standard SFM 12-7A-1 or shall be of approved noncombustible construction, or solid core wood having stiles and rails not less than 1⅜ inches thick with interior field panel thickness no less than 1¼ inches thick, or shall have a fire-resistance rating of not less than 20 minutes when tested according to National Fire Protection Association (NFPA) 252.
18. All glass or other transparent, translucent or opaque glazing materials, that is used in exterior windows, including skylights, or exterior glazed door assemblies shall be constructed of multipane glazing with one tempered pane meeting the requirements of Section 2406 (2016 CBC) Safety Glazing.
19. Vinyl window assemblies are deemed acceptable if the windows have the following characteristics:
    a. Frame and sash are comprised of vinyl material with welded corners
    b. Metal reinforcements in the interlock area
    c. Glazed with insulating glass, annealed or tempered (one layer of which must be tempered glass).
    d. Frame and sash profiles are certified in AAMA Lineal Certification Program.
    e. Certified and labeled to ANSI/AAMA/NWWDA 101/LS2-97 for Structural Requirements.

APPENDIX B BOARD OF FORESTRY GUIDELINES

General Guidelines for Creating Defensible Space

State Board of Forestry and Fire Protection (BOF)
California Department of Forestry and Fire Protection

Adopted by BOF on February 8, 2006
Approved by Office of Administrative Law on May 8, 2006

Contents

A. Purpose of Guidelines

Effective defensible space

Recent changes to Public Resources Code (PRC) 4291 expand the defensible space clearance requirement maintained around buildings and structures from 30 feet to a distance of 100 feet. These guidelines are intended to provide property owners with examples of fuel modification measures that can be used to create an area around buildings or structures to create defensible space. A defensible space perimeter around buildings and structures provide firefighters a working environment that allows them to protect buildings and structures from encroaching wildfires as well as minimizing the chance that a structure fire will escape to the surrounding wildland. These guidelines apply to any person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining any mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material, and located within a State Responsibility Area.

The vegetation surrounding a building or structure is fuel for a fire. Even the building or structure itself is considered fuel. Research and experience have shown that fuel reduction around a building or structure increases the probability of it surviving a wildfire. Good defensible space allows firefighters to protect and save buildings or structures safely without facing unacceptable risk to their lives. Fuel reduction through vegetation management is the key to creating good defensible space.

Terrain, climate conditions and vegetation interact to affect fire behavior and fuel reduction standards. The diversity of California's geography also influences fire behavior and fuel reduction standards as well. While fuel reduction standards will vary throughout the State, there are some common practices that guide fuel modification treatments to ensure creation of adequate defensible space:

- Properties with greater fire hazards will require more clearing. Clearing requirements will be greater for those lands with steeper terrain, larger and denser fuels, fuels that are highly volatile, and in locations subject to frequent fires.

- Creation of defensible space through vegetation management usually means reducing the amount of fuel around the building or structure, providing separation between fuels, and or reshaping retained fuels by trimming. Defensible space can be created removing dead vegetation, separating fuels, and pruning lower limbs.

- In all cases, fuel reduction means arranging the tree, shrubs and other fuels sources in a way that makes it difficult for fire to transfer from one fuel source to another. It does not mean cutting down all trees and shrubs, or creating a bare ring of earth across the property.

- A homeowner's clearing responsibility is limited to 100 feet away from his or her building or structure or to the property line, which ever is less, and limited to their land. While individual property owners are not required to clear beyond 100 feet, groups of property owners are encouraged to extend clearances beyond the 100 foot requirement in order to create community-wide defensible spaces.

- Homeowners who do fuel reduction activities that remove or dispose of vegetation are required to comply with all federal, state or local environmental protection laws and obtain permits when necessary. Environmental protection laws include, but are not limited to, threatened and endangered species, water quality, air quality, and cultural/archeological resources. For example, trees removed for fuel reduction that are used for commercial purposes require permits from the

California Department of Forestry and Fire Protection. Also, many counties and towns require tree removal permits when cutting trees over a specified size. Contact your local resource or planning agency officials to ensure compliance.

The methods used to manage fuel can be important in the safe creation of defensible space. Care should be taken with the use of equipment when creating your defensible space zone. Internal combustion engines must have an approved spark arresters and metal cutting blades (lawn mowers or weed trimmers) should be used with caution to prevent starting fires during periods of high fire danger. A metal blade striking a rock can create a spark and start a fire, a common cause of fires during summertime.

Vegetation removal can also cause soil disturbance, soil erosion, regrowth of new vegetation, and introduce non-native invasive plants. Always keep soil disturbance to a minimum, especially on steep slopes. Erosion control techniques such as minimizing use of heavy equipment, avoiding stream or gully crossings, using mobile equipment during dry conditions, and covering exposed disturbed soil areas will help reduce soil erosion and plant regrowth.

Areas near water (riparian areas), such as streams or ponds, are a particular concern for protection of water quality. To help protect water quality in riparian areas, avoid removing vegetation associated with water, avoid using heavy equipment, and do not clear vegetation to bare mineral soil.

B. Definitions

Defensible space: The area within the perimeter of a parcel where basic wildfire protection practices are implemented, providing the key point of defense from an approaching wildfire or escaping structure fire. The area is characterized by the establishment and maintenance of emergency vehicle access, emergency water reserves, street names and building identification, and fuel modification measures.

Aerial fuels: All live and dead vegetation in the forest canopy or above surface fuels, including tree branches, twigs and cones, snags, moss, and high brush. Examples include trees and large bushes.

Building or structure: Any structure used for support or shelter of any use or occupancy.

Flammable and combustible vegetation: Fuel as defined in these guidelines.

Fuel Vegetative material, live or dead, which is combustible during normal summer weather. For the purposes of these guidelines, it does not include fences, decks, woodpiles, trash, etc.

Homeowner: Any person who owns, leases, controls, operates, or maintains a building or structure in, upon, or adjoining any mountainous area, forest-covered lands, brush-covered lands, grass-covered lands, or any land that is covered with flammable material, and located within a State Responsibility Area.

Ladder Fuels: Fuels that can carry a fire vertically between or within a fuel type.

Reduced Fuel Zone: The area that extends out from 30 to 100 feet away from the building or structure (or to the property line, whichever is nearer to the building or structure).

Surface fuels: Loose surface litter on the soil surface, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches that have not yet decayed enough to lose their identity; also grasses, forbs, low and medium shrubs, tree seedlings, heavier branches and downed logs.

C. Fuel Treatment Guidelines

The following fuel treatment guidelines comply with the requirements of 14 CCR 1299 and PRC 4291. **All persons using these guidelines to comply with CCR 1299 and PRC 4291 shall implement General Guidelines 1., 2., 3., and either 4a or 4b., as described below.**

General Guidelines:

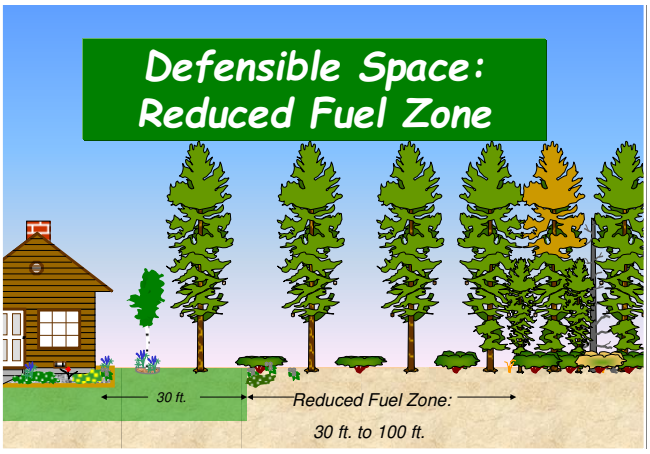
1. Maintain a firebreak by removing and clearing away all flammable vegetation and other combustible growth within 30 feet of each building or structure, with certain exceptions pursuant to PRC §4291(a). Single specimens of trees or other vegetation may be retained provided they are well-spaced, well-pruned, and create a condition that avoids spread of fire to other vegetation or to a building or structure.

2. Dead and dying woody surface fuels and aerial fuels within the Reduced Fuel Zone shall be removed. Loose surface litter, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches, shall be permitted to a depth of 3 inches. This guideline is primarily intended to eliminate trees, bushes, shrubs and surface debris that are completely dead or with substantial amounts of dead branches or leaves/needles that would readily burn.

3. Down logs or stumps anywhere within 100 feet from the building or structure, when embedded in the soil, may be retained when isolated from other vegetation. Occasional (approximately one per acre) standing dead trees (snags) that are well-space from other vegetation and which will not fall on buildings or structures or on roadways/driveways may be retained.

4. Within the Reduced Fuel Zone, one of the following fuel treatments (4a. or 4b.) shall be implemented. Properties with greater fire hazards will require greater clearing treatments. Combinations of the methods may be acceptable under §1299(c) as long as the intent of these guidelines is met.

4a. Reduced Fuel Zone: Fuel Separation

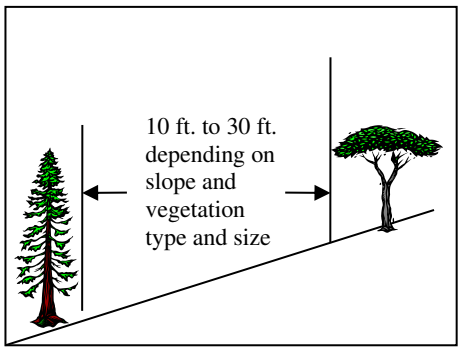


In conjunction with General Guidelines 1., 2., and 3., above, minimum clearance between fuels surrounding each building or structure will range from 4 feet to 40 feet in all directions, both horizontally and vertically.

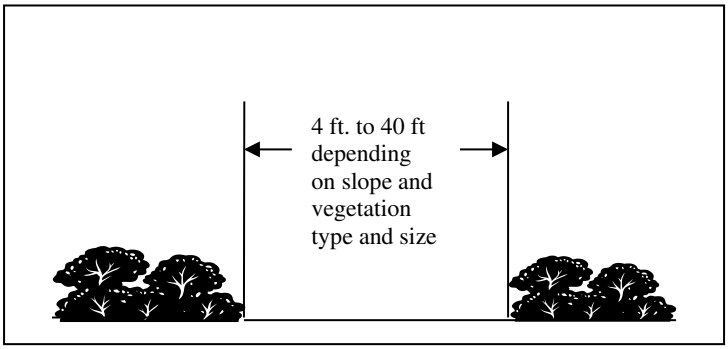
Clearance distances between vegetation will depend on the slope, vegetation size, vegetation type (brush, grass, trees), and other fuel characteristics (fuel compaction, chemical content etc.). Properties with greater fire hazards will require greater separation between fuels. For example, properties on steep slopes having large sized vegetation will require greater spacing between individual trees and bushes (see Plant Spacing Guidelines and Case Examples below). Groups of vegetation (numerous plants growing together less than 10 feet in total foliage width) may be treated as a single plant. For example, three individual manzanita plants growing together with a total foliage width of eight feet can be “grouped” and considered as one plant and spaced according to the Plant Spacing Guidelines in this document.

Grass generally should not exceed 4 inches in height. However, homeowners may keep grass and other forbs less than 18 inches in height above the ground when these grasses are isolated from other fuels or where necessary to stabilize the soil and prevent erosion.
Clearance requirements include:

- Horizontal clearance between aerial fuels, such as the outside edge of the tree crowns or high brush. Horizontal clearance helps stop the spread of fire from one fuel to the next.



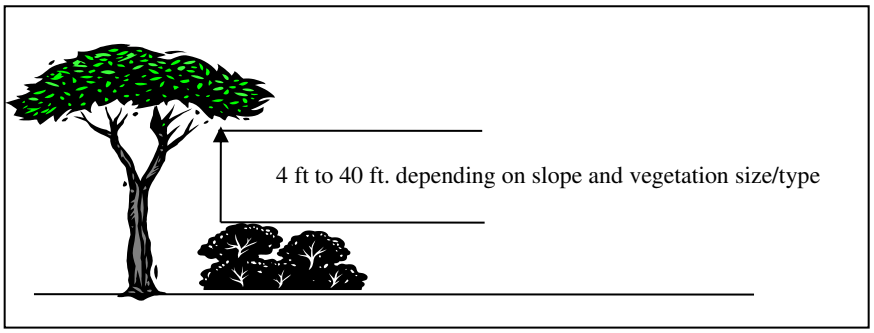
Trees



Shrubs

Horizontal clearance between aerial fuels

- Vertical clearance between lower limbs of aerial fuels and the nearest surface fuels and grass/weeds. Vertical clearance removes *ladder fuels* and helps prevent a fire from moving from the shorter fuels to the taller fuels.



Vertical clearance between aerial fuels

Effective vertical and horizontal fuel separation
Photo Courtesy Plumas Fire Safe Council.

Plant Spacing Guidelines Guidelines are designed to break the continuity of fuels and be used as a “rule of thumb” for achieving compliance with Regulation 14 CCR 1299.		
Trees	**Minimum horizontal space from edge of one tree canopy to the edge of the next**	
	Slope	Spacing
	0% to 20 %	10 feet
	20% to 40%	20 feet
	Greater than 40%	30 feet
Shrubs	**Minimum horizontal space between edges of shrub**	
	Slope	Spacing
	0% to 20 %	2 times the height of the shrub
	20% to 40%	4 times the height of the shrub
	Greater than 40%	6 times the height of the shrub
Vertical Space	**Minimum vertical space between top of shrub and bottom of lower tree branches:** 3 times the height of the shrub	

Adapted from: Gilmer, M. 1994. California Wildfire Landscaping

Case Example of Fuel Separation: Sierra Nevada conifer forests

Conifer forests intermixed with rural housing present a hazardous fire situation. Dense vegetation, long fire seasons, and ample ignition sources related to human access and lightning, makes this home vulnerable to wildfires. This home is located on gentle slopes (less than 20%), and is surrounded by large mature tree overstory and intermixed small to medium size brush (three to four feet in height).

Application of the guideline under 4a. would result in horizontal spacing between large tree branches of 10 feet; removal of many of the smaller trees to create vertical space between large trees and smaller trees and horizontal spacing between brush of six to eight feet (calculated by using 2 times the height of brush).

Case Example of Fuel Separation: Southern California chaparral

Mature, dense and continuous chaparral brush fields on steep slopes found in Southern California represents one of the most hazardous fuel situations in the United States. Chaparral grows in an unbroken sea of dense vegetation creating a fuel-rich path which spreads fire rapidly. Chaparral shrubs burn hot and produce tall flames. From the flames come burning embers which can ignite homes and plants. (Gilmer, 1994). All these factors results in a setting where aggressive defensible space clearing requirements are necessary.

Steep slopes (greater than 40%) and tall, old brush (greater than 7 feet tall), need significant modification. These settings require aggressive clearing to create defensible space, and would require maximum spacing. Application of the guidelines would result in 42 feet horizontal spacing (calculated as 6 times the height of the brush) between retained groups of chaparral.

4b. Reduced Fuel Zone: Defensible Space with Continuous Tree Canopy

To achieve defensible space while retaining a stand of larger trees with a continuous tree canopy apply the following treatments:

- Generally, remove all surface fuels greater than 4 inches in height. Single specimens of trees or other vegetation may be retained provided they are well-spaced, well-pruned, and create a condition that avoids spread of fire to other vegetation or to a building or structure.

- Remove lower limbs of trees ("prune") to at least 6 feet up to 15 feet (or the lower 1/3 branches for small trees). Properties with greater fire hazards, such as steeper slopes or more severe fire danger, will require pruning heights in the upper end of this range.

Defensible Space retaining continuous trees

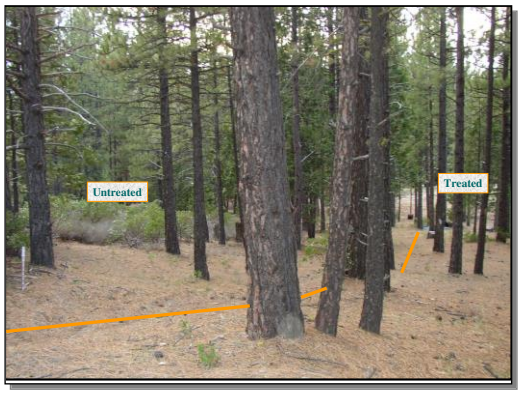


Photo Courtesy Plumas Fire Safe Council.

Defensible space with continuous tree canopy by clearing understory and pruning

Authority cited: Section 4102, 4291, 4125-4128.5, Public Resource Code. Reference: 4291, Public Resource Code; 14 CCR 1299 (d).

APPENDIX C

FIRE PROTECTION PLAN GUIDELINE

DEFINED: A document prepared for a specific project or development proposed for a Wildland Urban Interface (WUI) Fire Area that describes ways to minimize and mitigate potential for loss from wildfire exposure.

PROCESS: The FPP shall be reviewed and approved prior to the start of construction and maintained throughout the life of the project. As such, a preliminary fire protection plan may be prepared and then updated prior to project completion. The preliminary FPP shall include the first three items listed in CONTENTS.

CONTENTS: The FPP shall be based on a project-specific wildfire hazard assessment that includes consideration of location, topography, aspect, and climatic and fire history. The plan shall also identify conformance with the most restrictive wildfire protection regulation, statute and local ordinance. In addition, the following shall be included:

1. Total size of project.
2. Current land uses for adjoining parcels including structure densities, planned construction, natural vegetation, environmental restoration plans, roads, and parks.
3. A map with proposed project boundary lines, property lines, slope contour lines, proposed structure foundation footprints, proposed roadways and driveways, fuel modification zones (FMZs), and method for identifying fuel modification zone boundaries.
4. A map identifying all proposed plants in the FMZs with a legend that includes a symbol for each proposed plant species. The plan shall indicate the plant-life form, the specific and common name, and the expected height and width for the mature growth.
5. Identification of irrigated and non-irrigated zones.
6. Requirements for vegetation reduction around emergency access and evacuation routes (Zone 3).
7. Identification of points of access for maintenance personnel and equipment to maintain the FMZs.
8. Legally binding statements regarding community responsibility for maintenance of FMZs.
9. Legally binding statements to be included in covenants, conditions, and restrictions regarding property owner responsibilities for vegetation management.

FUEL MODIFICATION PLAN REQUIREMENTS:

1. Project Information: Assessor Parcel Number(s), Site Address, Owner and Applicant Information.
2. Landscape Designer Information
3. Site Plan with a Site Vicinity map.
4. A scale of 1” = 20, 30 or 40-feet shall be used. Provide actual scale and North arrow.
5. Location of all structures on the property and any structures on adjacent properties within 100feet. Indicate square feet, construction type and use.
6. Plant List including both Botanical Name and Common Name. Group by trees, shrubs, ground cover. List in alphabetical order by botanical name. Use symbols for each plant being used. Show width and height of plants and trees at full maturity. Plant Selection Notes:
    - Be aware of height limits for ground cover and shrubs in standard #6. Shrubs shall not exceed 6-feet in height.

    - Any seed mix shall show percentage by plant type.
    - New invasive or prohibit plants shall not be used. Existing invasive and prohibited plants may require removal.
    - Plants identified as “Undesirable” in Appendix B and C shall not be used within the zones specified. Indicate by “*” any target hazard plant proposed within allowable zones.
    - Ground cover and shrubs underneath trees shall have the proper vertical spacing.
7. Planting layout plan. Indicate spacing between plants and mature crown width where applicable.
8. Hardscape plan (can show on planting layout plans)
9. Areas of mulch application. Indicate depth of coverage. (Mulch prohibited within 5 feet of any building).
10. Show grade breaks between zones: 0-20%, 20+-40%, over 40%
11. Show 5-foot, 30-foot & 100-foot zone lines from all building, including off-site buildings less than 100 feet from the project property lines.
12. Indicate existing landscape to remain by type, size, area.