

California State Board of Forestry and Fire Protection

Guidance for establishing and maintaining defensible space for Zones 0-2



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(This document will be officially published on the future effective date of the Zone 0 regulations.)

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Purpose of the guidance document

This document provides guidance to homeowners, residents, business owners, and fire protection inspectors in interpreting and meeting defensible space regulations on land zoned as a State Responsibility Area (SRA) or a “very high” fire severity zone in a Local Responsibility Area (LRA). This document augments the Board of Forestry and Fire Protection’s prior guidance document, developed in 2006 when Zone 2 was added. The reader is encouraged to review the full Defensible Space Rule Text on the Board of Forestry and Fire Protection [website](#).

The guidance provided aims to characterize different building conditions and environments, and to help individuals prioritize and budget for actions that help buildings survive, provide safe areas for fire personnel to defend a property, and save lives. **Given the depth of these topics, it is recommended that the table of contents be used to help find the sections most relevant to the reader.**

Defensible space background and where it applies in California

What is defensible space?

Defensible space is the area around a structure where fuels are removed or reduced, providing a buffer between the structure and the surrounding area and helping protect people, homes, and communities from wildfire and wind-blown embers. Defensible space acts as a barrier, slowing or halting the progress of fire that would otherwise engulf a home or structure. It also helps keep firefighters safe while defending a structure. Defensible space is the first line of defense for homes and buildings against wildfire. It can also minimize the spread of a structure fire to surrounding areas.

California regulations provide for a three-zone defensible space system (*Figure 1*). Zone 0 is between the building perimeter and 5 feet. Zone 1 is within 5 to 30 feet of the home or building and was established in 1965. Zone 2 was added in 2006 and extends outward from 30-100 feet of the home or building, or to the edge of the property if there is less than 100 feet.

Zones 1 and 2 are important for reducing home ignition from direct flame contact and providing a safe place for fire crews to locate. Zone 0 is designed to protect structures from ignition by embers and radiant heat (*Figure 2*).

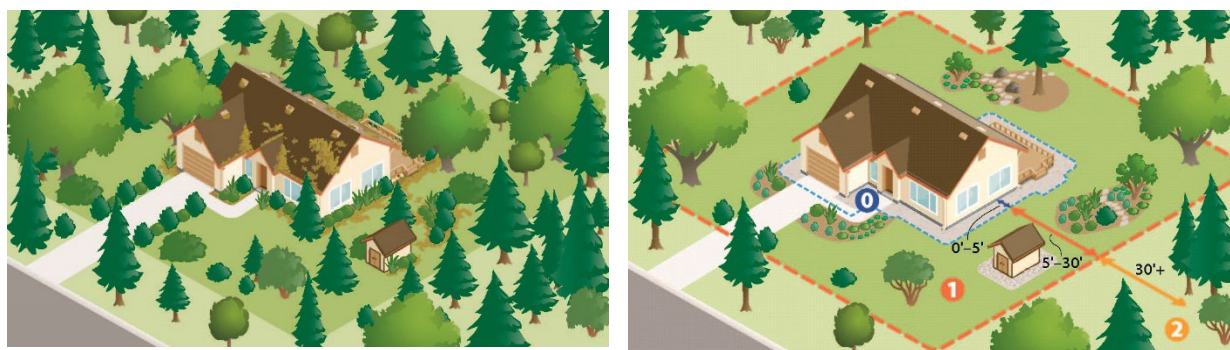


Figure 1: This is an illustrative example of the defensible space actions taken before and after using the three defensible space zones. Zone 0 applies to all structures. In the after instance (on the right), the pathways for fire to travel have been disconnected between planting groups or islands of landscaping. Additionally, the lower branches of trees have been removed to reduce the chance of fire traveling through the treetops. Zone 0 actions reduce the potential for embers to ignite combustibles adjacent to the structure. Graphics courtesy of UC ANR publication #8695.

What is fuel?

Fuel for wildfire comes in many forms, including woody vegetation, wood products, and synthetic-based products. For Zone 0, fuel can be wood-based mulch, shredded rubber, woody plants, dry grass, synthetic lawns, stored lumber or wood piles, storage sheds, wooden gates and fences attached to the structure, small trees, dead branches and leaves, and other landscape materials. For Zones 1 and 2, the focus is on both small and large trees, shrubs, grass height, and the connectivity between groups of trees and/or shrubs and other combustible materials or objects. This document also offers guidance on other items that can be fuel, such as garbage and recycling receptacles, vehicles, pet structures, HVAC and heat pumps, BBQs, built-in outdoor kitchens, and outbuildings.

Where does defensible space apply in California?

Wildfire can happen anywhere in California. The guidance in this document is applicable to every resident and every style of construction in California. While compliance is required in certain areas, as described below, the best management practice is to evaluate every structure and the connected and surrounding fuels.

The Office of the State Fire Marshal has identified areas of the state with wildfire hazards through the creation of the “fire hazard severity zones,” as directed by the Public Resources Code (PRC) sections 4201-4204, California Code of Regulations Title 14, Section 1280, and California Government Code section 51175-51189. However, history shows that no area is immune to wildfire, and fires can burn deep into towns and cities, and into areas not always perceived as having a fire hazard, when critical fire weather conditions exist (see [glossary](#)).

A look at historical wildfires shows that no area in California is immune to wildfire, and fires can burn deep into towns and cities, and into areas not always perceived as having a fire hazard, when critical fire weather conditions exist.

California’s defensible space requirements, including Zone 0, apply to all areas identified as State Responsibility Areas where CAL FIRE is the primary emergency response agency responsible for fire suppression and prevention, and to the “very high” fire hazard severity zone in a Local Responsibility Area where a city, county, or special district is the primary emergency response agency (see section below). California’s defensible space requirements, as described in this document, are considered the state’s minimum standards, and some cities and counties have adopted a higher standard. Local agencies may also develop local alternative practices (see [pages 28-29](#)) that meet or exceed the state’s standards. Please consult your local fire agency and/or city or county to confirm their requirements. At the time of development of this document, local ordinances around defensible space Zone 0 were known to exist in the City of Los Angeles, the City of San Diego, the City of Berkeley, Shasta County, Ventura County, and South Lake Tahoe.

Fire Hazard Severity Zones (FHSZ)

The Office of the State Fire Marshal maps and updates areas with fire hazards. The maps are developed using a science-based, field-tested model that assigns a hazard score based on factors that influence fire likelihood and behavior. Many factors are considered, including fire history, existing and potential fuels (including natural and ornamental vegetation), predicted flame length, blowing embers, terrain, and typical fire weather for the area. There are three levels of hazard in the State Responsibility Areas: moderate, high, and very high. Visit the [Office of the State Fire Marshal](#) website to use the property viewer.



Fire Hazard Severity Zone maps evaluate “hazard,” not “risk.” Think of them like flood zone maps, where land is described in terms of the probability of a particular area being inundated by floodwaters, rather than being specifically prescriptive about impacts. “Hazard” is based on the physical conditions that create a likelihood and expected fire behavior over a 30- to 50-year period without considering mitigation measures such as home hardening, recent wildfires, or fuel reduction efforts. “Risk” considered the potential for damage.

What is the Board of Forestry and Fire Protection’s role in defensible space?

The legislature gave the Board of Forestry and Fire Protection (Board) rulemaking authority for defensible space zones in both State Responsibility Areas (SRA) and very high fire hazard severity zones of the Local Responsibility Areas (LRA). The Board’s role is to develop minimum statewide requirements for California.

The Board has a long track record incorporating new information and scientific findings into regulations, via the annual “Call for Regulatory Review.” The Board updated the Defensible Space regulations in 2006, creating Zone 2 (30-100 feet from the house), requiring fuel modifications out to 100 feet for larger properties. The Zone 0 development reflects how regulations adapt to new information and improved scientific understanding of the mitigations that matter for structure protection and in response to the vulnerability of structures to ember exposures. When new relevant information becomes available, the public can expect the Board’s guidance and regulations to change in response.

What laws created defensible space standards in California?

The laws that require defensible space clearance around a structure are Public Resources Code (PRC) section 4291 and California Code of Regulations (CCR), Title 14, Sections 1299.01 – 1299.05 (14 CCR 1299), and, for LRA, Government Code section 51182 and 14 CCR, sections 1298.01 - 1298.04). The laws do not require a homeowner to extend the clearance beyond the property line, meaning the requirement is to 100 feet or the property line, whichever comes first. The laws apply to all buildings and structures that are defined in 14 CCR section 1299.02 as “anything constructed that is designed or intended for support, enclosure, shelter, or protection of persons, animals, or property, having a permanent roof that is supported by walls or posts that connect to or rest on the ground” and defined in 14 CCR 1298.02 as “any constructed building or structure that is intended or used for support, enclosure, shelter, or protection of persons, animals, or property, having a permanent roof that is supported by walls or posts that connect to, or rest on the ground.” Buildings less than 120 square feet in size and not used for human habitation within Zones 1 and 2 are considered outbuildings (see glossary).

History of defensible space regulations and other key building codes

In 1965, the state enacted Public Resources Code (PRC) 4291, which requires all structures within or adjacent to hazardous vegetative fuel conditions to have minimum defensible space around their exteriors. It included, among other requirements, a minimum of 30 feet of reduction and maintenance of vegetation and other fuels surrounding the exterior of a structure, which could be increased to 100 feet if certain hazardous conditions were present. As California’s population dramatically increased post-WWII, more people moved from population centers into the state’s wildlands, and the term Wildland-Urban Interface (WUI) was coined to describe this type of development. The WUI referenced the increased development in fire-prone areas and the increased hazards to life and property from wildfires. The history of devastating fires has shown that the greatest danger is the risk of fire originating in the wildland and spreading into developed areas. As increasingly large and destructive fires occurred

across the state in the latter third of the 20th century, such as the Tunnel Fire in Berkeley and Oakland in 1991, it became clear that new regulations and amendments to existing statutes were needed to mitigate the loss of life and property from wildfire.

Major changes to PRC section 4291 were enacted in 2005, accompanied by additions in 2008 and 2009. These changes expanded the defensible space requirement around structures from 30 feet to 100 feet and created two zones around each structure. The first zone, 30 feet around the structure, is considered a firebreak, often referred to as the “lean and green zone.” The second zone, extending from 30 feet to 100 feet from the structure, is a “reduced-fuel zone.” Part of PRC section 4291 required the California Department of Forestry and Fire Protection (CAL FIRE) to develop and post a guidance document on the web for homeowners to use to create proper defensible space in compliance with the law.

Following decades of structure losses, the deadly and damaging wind-driven North Bay Complex Fires (2017), Thomas Fire (2017), Carr Fire (2018), and Camp Fire (2018) were a tipping point, and in 2020, the state passed AB 3074. This legislation recognized that wildland fires can readily spread into urban areas, and the existing cultural practice of surrounding buildings with highly flammable items, including vegetation, was substantially contributing to structure loss. Assembly Bill (AB) 3074 created a third zone, termed the “ember-resistant zone,” which became coined “Zone 0” to fit into the Zone 1 and 2 naming convention, that extends from the edge of the house, or attached deck, out 5 feet. The Board of Forestry and Fire Protection, under the direction of AB 3074, developed new regulations and harmonized the requirements between Zones 0 and 1. In addition, Senate Bill (SB) 504, passed in 2024, clarified that existing and new structures shall meet the same requirements, but it extended the window for existing structures to come into compliance to three years after adoption, allowing for staging or phasing of the work. New structures built within SRA or Verh High LRA are required to immediately develop Zone 0.

Related building codes and safety standards

In addition to defensible space, there are other interrelated statutes and codes that are designed for fire protection. These include PRC section 4290, which directs the California Board of Forestry and Fire Protection to develop and maintain “Fire Safe Regulations” for SRA areas to address emergency fire equipment access, property signage, emergency firefighting water supply, and fuel modification. Additionally, the California Building Code (CBC) and the California Fire Code (CFC) also have requirements for building in the state’s SRA, including exterior finishing building components to help buildings resist ignition and protect the roof, siding, eaves, decks, balconies, and windows. In 2025, these building codes were modernized into the California Wildland-Urban Interface Code (CWUIC). The CWUIC was created to simplify compliance by merging codes from several distinct sources into the International Code Council’s WUI format, including the 1) California Building Code (CBC), formerly known as Chapter 7A (that addresses exterior wildfire exposure); 2) California Residential Code (CRC), formerly known as Section R337 (that addresses materials and construction methods); 3) California Fire Code (CFC), formerly known as Chapter 49 (that has requirements for wildland-urban interface areas), and the CCR Title 14 Fire Safe Regulations. The CWUIC is overseen by California’s Office of the State Fire Marshal, and it includes components that address vegetation and trees and has some overlap with PRC section 4291.

How does defensible space reduce building ignition and aid fire response?

Wildfire pathways

Wildland fires are spread by a combination of a moving flame front and the distribution of embers by wind, creating new spot fires. Embers are small pieces of plants, trees, or buildings that are light enough to be blown through the air and can result in the rapid spread of wildfire when blown ahead of the main fire, especially during high winds.

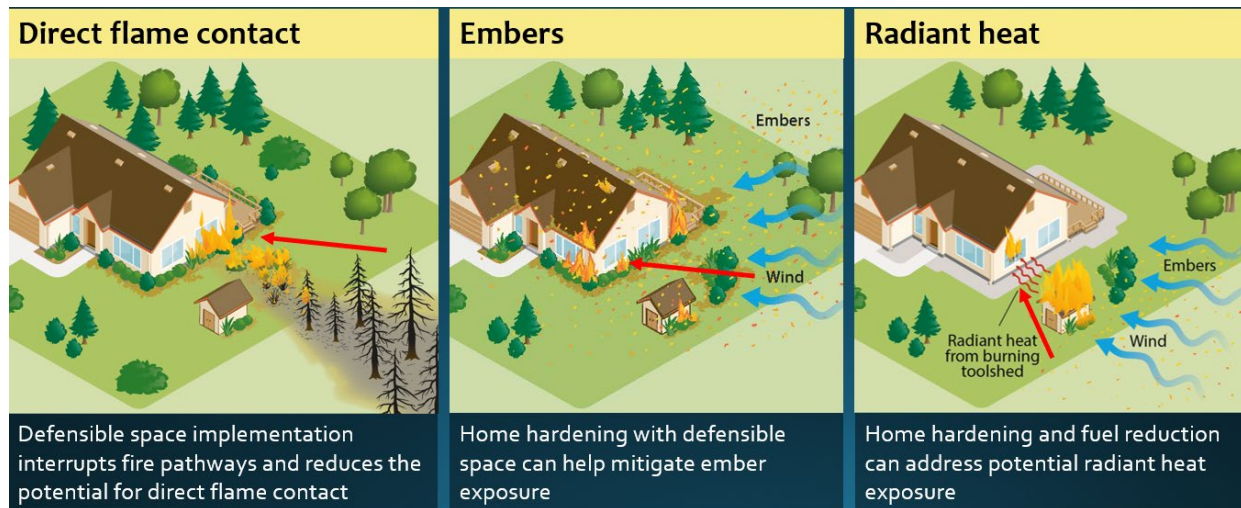


Figure 2: An illustration of the three types of fire exposures that occur during a wildfire. The caption below each panel describes how both defensible space actions, coupled with home hardening measures such as upgraded vents and windows, can help mitigate the exposures and protect buildings from wildfire. Graphics courtesy of UC ANR publication #8695.

Home and structure loss during wildfires occurs as a result of some part of the building igniting from one or more of the three basic wildfire exposures: 1) embers, 2) radiant heat, and/or 3) direct flame contact (see Figure 2).

Embers cause structure ignitions by directly igniting a part of a structure or indirectly by igniting combustible materials on or near a structure, resulting in flames touching the house or creating radiant heat exposure that may directly ignite the structure or break glass in a window or door.

How do buildings survive wildfire?

During a wildfire, a combination of factors improves building survival, including home hardening, reduced fuels through defensible space, building and landscape maintenance, and actions by fire personnel during the event. **This guide focuses on defensible space and provides insight into the interplay among the structure, near-building fuels, and firefighter safety.**

In 2025, an estimated 2 million homes were in high-fire-risk areas, and most California homes built before 2008 are less likely to be hardened or built with fire exposure in mind. The good news is that where homes have been built to Chapter 7A or the new CWUIC codes, they have fared better in the face of wildfires than those without home-hardening measures such as flame- and ember-resistant vents (e.g., Paradise, where the Camp Fire burned 18,000 structures, but the limited number built after 2008, when the code was adopted, performed better). The intention of this document is to help homeowners, residents, and commercial property owners learn to recognize fuels and vulnerable locations on and around structures, and to modify and reduce near-building fuels to reduce structure loss (*Figure 3*).

During a wildfire, building survival is improved by a combination of factors, including home hardening, reduced fuels through defensible space, building and landscape maintenance, and support from fire personnel.



Figure 3. Before-and-after image of a single-family house that implemented Zone 0. Note the relocation of the plants away from the deck and the installation of a noncombustible gate (courtesy of ChatGPT). While not required by this regulation, best practice is to install metal mesh screening around the perimeter of the deck to minimize debris accumulation and ember entry into the under-deck area.

How buildings are vulnerable to wildfire and what can be done about it

Each building has varying levels of wildfire vulnerability. This guide provides a high-level overview of these vulnerabilities and explains how surrounding fuels can interact with each building component. Keep in mind that structures differ significantly in type, materials used, maintenance levels, and spacing between structures. Recognizing each building component's vulnerabilities helps prioritize what needs to be done in each situation. The image below (*Figure 4*) illustrates building components, and Table 1 breaks down a structure's vulnerabilities by component.



Figure 4. This image identifies different building components that can affect a building's survival in wildfires. See Table 1 for mitigation actions for each part of the structure. This image is currently out of compliance with defensible space requirements.

Table 1: Building components and their unique wildfire vulnerabilities and mitigation actions.

Component and Priority	Vulnerability	Recommendations
#1 Roof	Because the roof has a large horizontal surface, it is the most vulnerable component of a structure. The roof protects the structure from the sun and rain and, during a fire, from embers. Complex roofs, where the roof meets vertical walls and/or include dormers and valleys, present additional vulnerabilities. A roof also catches debris from trees and other vegetation that may be carried by the wind prior to or during a wildfire.	Use roof materials with a Class A fire rating. Follow the manufacturer's installation instructions because some roof coverings need additional protection to meet Class A requirements. Common Class A fire-rated materials include asphalt fiberglass composition shingles, tile, and steel. Install with a metal drip edge at the roof edge. Clean out and maintain gutters and valleys. Consider upgrading the siding at the roof-to-wall intersections on complex roofs. Plug gaps between the roof covering and sheathing. Maintain the roof and replace it when necessary.
#1 Vents	Vents provide two essential functions. Vents allow air circulation to reduce attic heat and help moisture escape,	Replace 1/4" mesh vent screens with a minimum 1/8" metal mesh or install ember- and flame-resistant vents. Regularly check vents for blockages. If air

#1 Base of the wall	preventing moisture-related degradation over time. Embers can pass through the foundation, roof, or attic vents. Once inside, embers can ignite debris and items stored inside the enclosed space (i.e., attic or crawl space). Regardless of siding type, the base of the wall is highly vulnerable to fire. Embers often accumulate at the base of the wall, and sheathing (e.g., plywood or OSB) or house wrap may be exposed, with an unprotected edge. Many combustibles are frequently present near the base of the wall, and if ignited, can ignite the base of the wall and allow flames to spread into the wall cavity.	circulation is restricted, moisture can be trapped and lead to other problems. Keep combustible items away from vents, both inside and outside your home. A perimeter concrete foundation with 6 inches of vertical clearance is recommended. If this isn't possible, removing all combustibles at the base of the wall is critical. Additionally, metal flashing can be used to cover lower portions of combustible siding. To prevent the moisture degradation of the wood siding, the vertical leg of the metal flashing should terminate at a lap joint or be “let in” to an upward angled kerf cut to avoid water from getting between the siding and flashing.
#2 Gutters #2 Eaves	Gutters help protect the lower 1/3 of the wall from roof water runoff. However, leaves and needles can accumulate in gutters and catch fire from embers. This could directly expose the roof edges to flames and may allow fire to penetrate into the attic. The overhang of the eave protects the structure from rain and sun. Depending on the design, the under-eave area can also trap heat, and embers may enter through under-eave vents. Open-eave construction, where rafter tails are exposed, is most vulnerable, as the area between rafter tails can trap heat and gaps between the rafter tails and blocking can allow embers to accumulate. Soffited (boxed-in) eaves are more resistant to embers and flames.	Regularly check gutters and keep them clean. Installing metal gutter guards may help keep most debris out of the gutter and protect the roof edge from flammable debris. Regardless, all gutters require regular cleaning. In areas that receive snow, gutters are less common. With open-eave construction, inspect eaves for gaps around rafter roof tails and blocking. Plug or caulk gaps. If possible, use ignition-resistant or noncombustible construction materials to “box-in” the eaves. Upgrade vents to 1/8” or 1/16” metal mesh screening or approved ember- and flame-resistant vents. Remove vegetation and combustible materials below eaves. Regularly check vents for airflow blockages. If air circulation is restricted by paint or spider webs, moisture can be trapped and lead to other problems

#2 Decks	Decks are vulnerable to fires, as embers can ignite vegetation or stored materials below the deck or the top of the deck. Leaves and needles can collect between the gaps of the deck boards, creating fine fuels for embers to ignite. On top of decks, embers can also land on wood furniture, doormats, brooms, umbrellas, or other easily ignitable items. If the deck ignites, it will provide radiant heat and/or flame exposure to either the exterior wall or the under-eave area.	Keep the area under the deck clear of vegetation and stored combustible items. Clean and maintain the deck by removing debris that can accumulate on the deck and in the gaps between the deck boards. If it is safe, before evacuating, bring combustible door mats, brooms, and furniture cushions inside. Move deck furniture off the deck. Move BBQ propane tanks away from the house. For a new deck, there is installation guidance to help increase the deck's resistance to wildfire.
#2 Fences	Vegetative debris often collects at the base of a fence, and if ignited, allows flames to spread to the fence. Combustible fences attached to the structure create a direct path for a fire to touch the structure. Fences close to the structure can provide direct flame contact to the structure or radiant heat that can damage a window or ignite siding.	Replace the first 5 feet of attached fences with metal or non-combustible materials. Remove vegetation and combustible materials in contact with the fence. Where parallel fences are within five feet of the structure, work to upgrade the fence to a noncombustible material along this section. This does not mean replacing the entire fence, but only the section that is within five feet of the structure.
#2 Garage	Garages commonly have gaps around doors where embers can enter.	Check your garage walls and doors for gaps and upgrade where needed.
#3 Windows	The glass is the most vulnerable part of the window. Multi-pane tempered glass is best because it is more resistant to thermal exposures than regular annealed glass. Dual pane provides a second layer of protection if the first pane fails. Larger windows are more vulnerable than smaller windows. Vinyl window frames can deform when exposed to radiant heat, damaging the window and potentially causing failure.	Install or upgrade to multi-pane tempered glass windows. Remove vegetation immediately under windows. When a neighboring structure is within 30 feet or less, tempered glass is highly recommended for windows that face the neighboring building. Consider installing noncombustible shutters to further protect the window to close upon evacuation.

	As a fire approaches, close all windows and skylights to prevent ember entry.	
#3 Siding	Siding is vulnerable if exposed to flames or radiant heat for extended periods. A carefully developed and maintained Zone 0 will minimize this exposure. Where neighboring structures are within 30 feet, using noncombustible materials would reduce vulnerability. Gaps and joints in siding can create places where flame penetration can occur. Poorly maintained or degraded siding is also vulnerable to flame penetration. Many homes with stucco, CMU block, or fiber-cement siding are destroyed during wildfire because other design and maintenance considerations have not been followed or have been overlooked, allowing embers to ignite external materials or penetrate the building. In general, combustible panels and horizontal siding with more complex lap joints (e.g., tongue-and-groove and shiplap) are more resistant to flame penetration into the wall cavity.	Along with the 5' noncombustible horizontal zone, maintain a 6" noncombustible vertical zone between the ground (and other horizontal surfaces) and the start of the siding. Inspect all siding and plug or caulk gaps and joints. If a structure is close to the house, fire-retardant gypsum board can be installed under the siding to increase the wall's fire resistance should the siding ignite. Gel coatings are difficult to install and provide protection for only a limited number of hours; therefore, they are not recommended.

Which parts of a structure does Zone Zero protect?

Zone 0 is key for protecting the base of the wall, the under-eave and under-deck areas, and breaking the pathways for fire to travel to the structure. Every structure, regardless of style, design, and materials used, has vulnerabilities to wildfire. Maintenance and upgrades are key to building survival. **Defensible space requirements have to account for a wide range of structure types, building ages, maintenance levels, fire exposures, and critical fire weather conditions.**

Base of the wall issues

As wildfire spreads, wind can distribute embers ahead of the main flaming front. These embers are collected in locations where leaves and other debris have already accumulated. They often collide with vertical components such as a wall or fence and drop to the ground. If there are combustibles in that location, the embers can ignite those fuels and create a new spot fire (*Figure 5*).



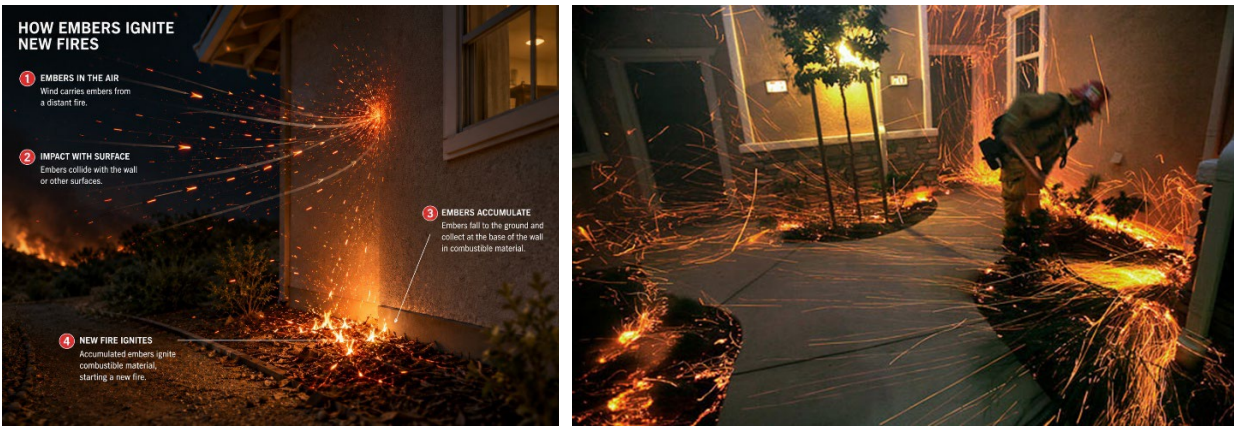


Figure 5: The illustration on the left shows how embers can collide with the structure and drop to the base of the wall, landing in combustible items (courtesy of ChatGPT). The photo on the right shows an actual example of that process where the accumulated embers are glowing yellow at the base of the wall (courtesy of LA Times).

Flames that touch the base of the wall are a major concern because many walls are assembled without flashing that protects the bottom edge of the wall (Figure 6). Even with stucco or EIFS styles of cladding, it is common to see the sheathing [often plywood or oriented strandboard (OSB)] or the house wrap exposed. Many structures that have wood siding do not have metal flashing at the base. When these elements are exposed, they can provide a pathway for fire to burn into the wall cavity. Because these are difficult elements to retrofit, removing combustibles at the base of the wall can greatly protect the structure.



Figure 6. The image on the left shows a simplistic assembly of an exterior wall that illustrates sheathing, house wrap, and siding (courtesy of ChatGPT). On the right is a photo of the base of a stucco wall with the sheathing visible behind the weep screed (photo courtesy of Steve Quarles). Without proper flashing, the sheathing and house wrap can be vulnerable to flames and allow fire to enter the wall cavity.

Under-eave issues

The area under the eave can trap heat and flames during wildfire (Figure 7). With many structures, the under-eave area is commonly constructed with wood or wood-based materials and contains essential vents that allow cool air to enter the attic and help hot air escape through the roof or gable-end vent

system. A fire under the eave is a significant concern because it can ignite the wood materials or allow embers or flames to enter gaps along exposed rafters or through the vents.



Figure 7: The left image shows flames trapped under the eave. The middle image illustrates exposed rafters and freeze-block venting in the blocking. The image on the right shows a soffited eave and strip vents. All images courtesy of Steve Quarles.

How can items attached to the structure cause vulnerabilities?

Trellises, fences, and other combustible items can serve as a pathway, or fuel ladder, to a structure. Many of these items can be readily ignited. Fuel ladders are more broadly understood in wildland settings, where small or short vegetation can help fire climb vertically to taller vegetation. Eliminating fuel ladders is a key strategy for Zone 1 and 2. Figure 8 illustrates both types of fuel ladders. Eliminating the fuel continuity can help protect the structure and reduce the potential for fire to climb into the canopy. For these reasons, the Zone 0 regulation calls attention to trellises and attached gates or fences to help reduce fuel ladders (or pathways) to the structure.



Figure 8: The left image illustrates how fire can progress through the vegetation to the fence and from the fence to the structure. Installing a metal or noncombustible panel or gate can prevent the transmission of fire to the structure. This process is very similar to the role that shorter vegetation plays, where it can act like a “fuel ladder” and assist fire in climbing into the canopy of the taller vegetation shown as a tree in this example. Image courtesy of the UC ANR Fire Network.

California's three defensible space zones: their purposes, where to start, and how to maintain conditions

Zone 0: Purpose, Goal, and Standard

Zone 0 (0-5 feet) around a structure reduces the likelihood of structure ignition by reducing the potential for direct ignition from flame contact, from embers accumulated at the base of a wall, and/or from indirect ignitions when embers ignite vegetation, vegetative debris, or other combustible materials located close to the structure.

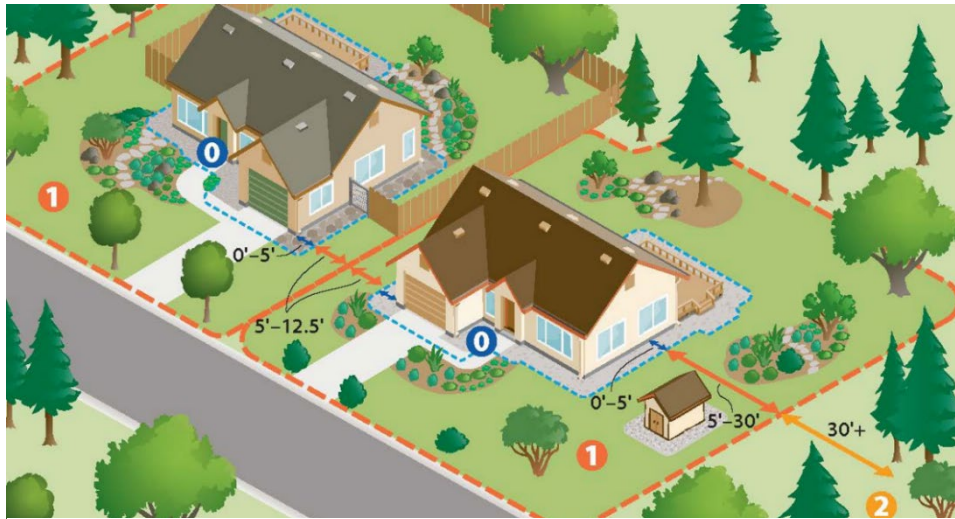


Figure 9. Graphic illustration of the three defensible space zones in a neighborhood where neither home has a full 100 feet of property width. Graphic courtesy of UC ANR publication #8695.

Zone 0 is the area within **the first five feet around the structure** and any outbuildings, attached decks, and stairs (Figure 9). The zone also includes the area under attached decks, stair landings and over the roof. While not required, Zone 0 works best when there is a 6-inch vertical area between the ground and the start of the building's exterior siding. Zone 0 is a critical component of structure defense and, when coupled with Zone 1 and Zone 2, is essential to providing effective defensible space. The [appendix](#) compares Zone 0 activities, compliance dates, and relevant citations, and the remainder of this document will help the reader with potential questions. The specific requirements for Zone 0 are as follows:

- Remove all dead and dying debris on roof, gutters, and under decks
- Remove dead and dying tree branches
- Remove tree branches under eaves, within 10 feet of chimneys and stovepipes, and 5 feet above a roof
- Remove ladder fuels/branches on the tree's first 6 feet from the ground (or first third, whichever is smaller)
- No combustible mulches, such as bark, woodchips, or synthetic materials such as mulch from shredded tires
- No firewood storage
- No vegetation under eaves (or where there is no eave, the area less than one foot from the structure)
- No vegetation within 2 feet of windows, doors, posts, or vents



- No vegetation within 5 feet of decks, stairs, or pergolas attached to structure
- No combustible fences/gates attached to structure
- In areas at least 1 foot from structure, not under eaves, and at least 2 feet from windows, doors, or vents, the following is permitted:
 - Well-maintained non-woody plants that are less than 3 inches tall, including lawns and ground covers
 - Well-maintained non-woody plants up to 18 inches tall in groupings up to a 1 square-foot area, set apart by 1.5 times the height of the tallest plant
 - Well-maintained non-woody plants up to 18 inches tall in unaffixed, noncombustible pots or containers no larger than 5-gallon capacity and spaced apart 1.5 times the height of the tallest plant

Zone 1: Purpose, Goal, and Standard

Zone 1 (5-30 feet) from the structure reduces the likelihood of fire burning directly to the structure. This is accomplished by modifying fuels and creating discontinuity between planting groups that limits the pathways for fire to reach the structure and reduces the potential for near-building ember generation and radiant heat exposure. An additional important purpose of this zone is to provide a defensible zone for fire personnel to stage and take direct action.

- Remove all dead or dying grass, plants, shrubs, trees, branches, leaves, weeds, and pine needles from the Zone whether such vegetation occurs in yard areas around the “Building or Structure,” on the roof or rain gutters of the “Building or Structure,” or on any other location within the Zone.
- Remove dead tree or shrub branches and keep all branches a minimum of ten (10) feet away from chimney and stovepipe outlets.
- Relocate exposed firewood piles unless they are completely enclosed covered in a fire-resistant material to Zone 2.
- Remove flammable vegetation and items that could catch fire which are adjacent to or under combustible decks, balconies, and stairs.

Zone 2: Purpose, Goal, and Standard

Zone 2 (30-100 feet) from the structure is designed to reduce the potential behavior of an oncoming fire in such a way as to drop an approaching fire from the crown to the ground. Fuel modification includes removing dead vegetation and reducing living vegetation to eliminate fuel ladders and creating vegetation separation between individual or islands of trees or shrubs.

These vegetation modification requirements are more significant for those properties with steeper terrain, denser fuels, highly volatile fuels, and areas subject to frequent fires.

Zone 2 also facilitates direct defensive actions, improving the function of Zones 0 and 1 by reducing the flame heights and the potential for ember generation and radiant heat exposure to structures.

- In this zone, create horizontal and vertical spacing among shrubs and trees using the “Fuel Separation” method, the “Continuous Tree Canopy” method (shown below), or a combination of both to achieve defensible space clearance requirements. Further guidance regarding these methods is contained in the State Board of Forestry and Fire Protection's “General Guidelines for Creating Defensible Space,” incorporated herein by reference **(with 2006 original graphics shown**



below), and the CAL FIRE “Property Inspection Guide” (<https://osfm.fire.ca.gov/what-we-do/community-wildfire-preparedness-and-mitigation/prevention-field-guides>).

— In both the Fuel Separation and Continuous Tree Canopy methods, the following requirements apply:

- Dead and dying woody surface fuels and aerial fuels shall be removed. Loose surface litter, normally consisting of fallen leaves or needles, twigs, bark, cones, and small branches, shall be permitted to a maximum depth of three (3) inches (3 in.).
- Cut annual grasses and forbs down to a maximum height of four (4) inches (4 in.).
- All exposed wood piles must have a minimum of ten (10) feet (10 ft.) of clearance, down to bare mineral soil, in all directions.

For Zones 1 and 2- other shared requirements

(1) Outbuildings and Liquid Propane Gas (LPG) storage tanks shall have the following minimum clearance: ten (10) feet (10 ft.) of clearance to bare mineral soil and no flammable vegetation for an additional ten (10) feet (10 ft.) around their exterior.

(2) Protect water quality. Do not clear vegetation to bare mineral soil and avoid the use of heavy equipment in and around streams and seasonal drainages. Vegetation removal can cause soil erosion, especially on steep slopes. Keep soil disturbance to a minimum on steep slopes.

Fuel Separation standard (Zone 2)

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 Table below). Groups of vegetation (numerous plants growing together, less than 10 feet in total foliage width) may be treated as a single plant

Grass generally should not exceed 4 inches in height. However, homeowners may keep grass and other herbaceous plants less than 18 inches above the ground when these grasses are isolated from other fuels or when 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.

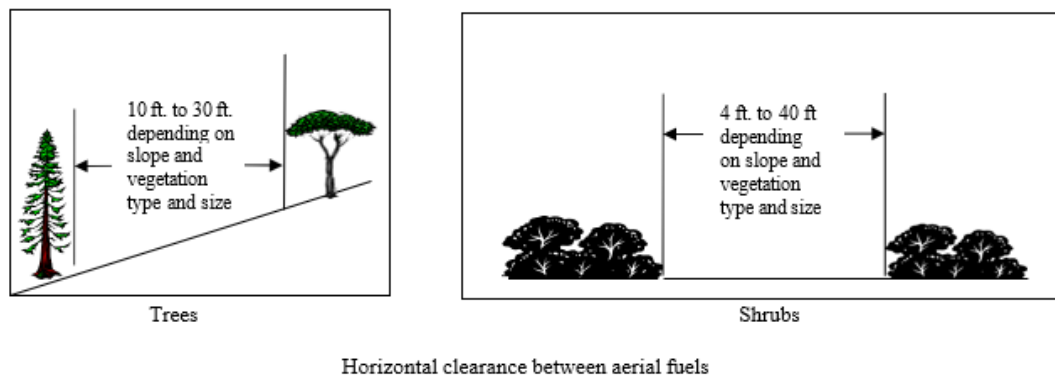


Figure 10. Illustration to help interpret horizontal separation standards between vegetative fuels. Source: Board of Forestry and Fire Protection's 2006 "General Guidelines for Creating Defensible Space".

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

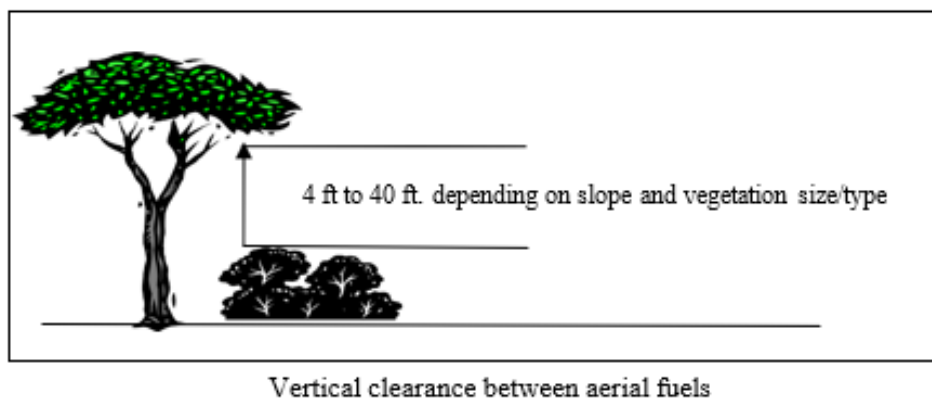


Figure 11. Illustration to help interpret vertical separation standards between vegetative fuels. Source: Board of Forestry and Fire Protection's 2006 "General Guidelines for Creating Defensible Space".

Continuous Tree Canopy (Zone 2)

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 the 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.

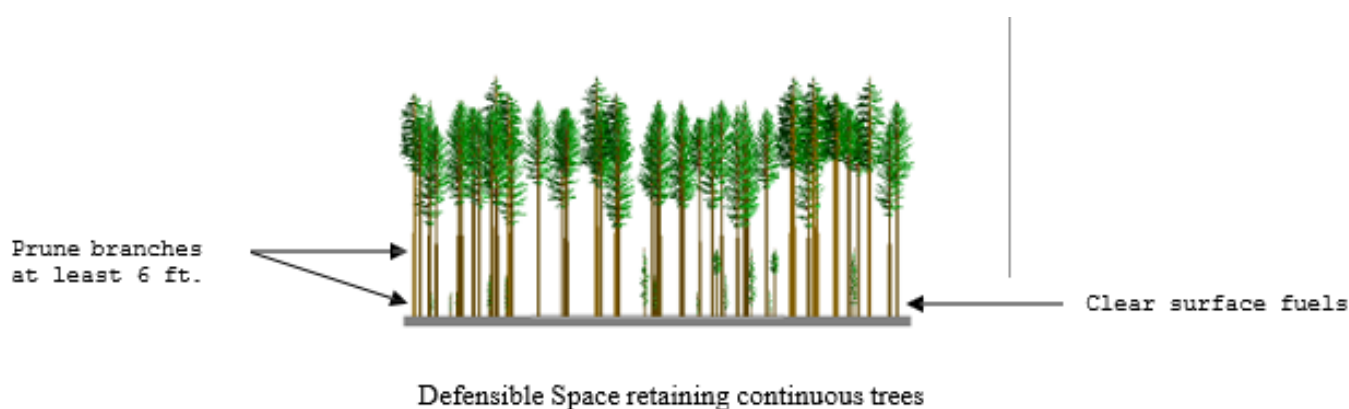


Figure 12. Illustration to help interpret removing ladder fuels in a forest where there are no fuel breaks. Source: Board of Forestry and Fire Protection's 2006 "General Guidelines for Creating Defensible Space".

Table 2. Plant spacing standards for both trees and shrubs at various slope angles. Source: Board of Forestry and Fire Protection's 2006 "General Guidelines for Creating Defensible Space".

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

Standards for Zone 0-2 and Best Management Practices

What are the compliance timelines?

The Zone Zero regulations apply immediately to all **new building permits** upon the regulations' effective date, and then to **existing homes** over a phased-in period from the effective date. There are a few portions of the regulations – like tree maintenance, debris on roofs and gutters, and firewood removal—that go into effect immediately to ensure alignment with the California Wildland Urban Interface Code building code (CWUI) and current state law. Regardless of timelines, the **best practice is to address what you can as soon as you can, given the unpredictable nature of wildfire. While the regulations are designed to allow for flexibility, budgeting, and phased work, every effort toward reducing fuels around your home can improve the chances that the structure will survive wildfire.** To understand the minimum requirements, Figure 13 illustrates the noncombustible “safety zone” for the structure. Within the regulations, there are two phases of required implementation timelines (see below and [appendix](#)).

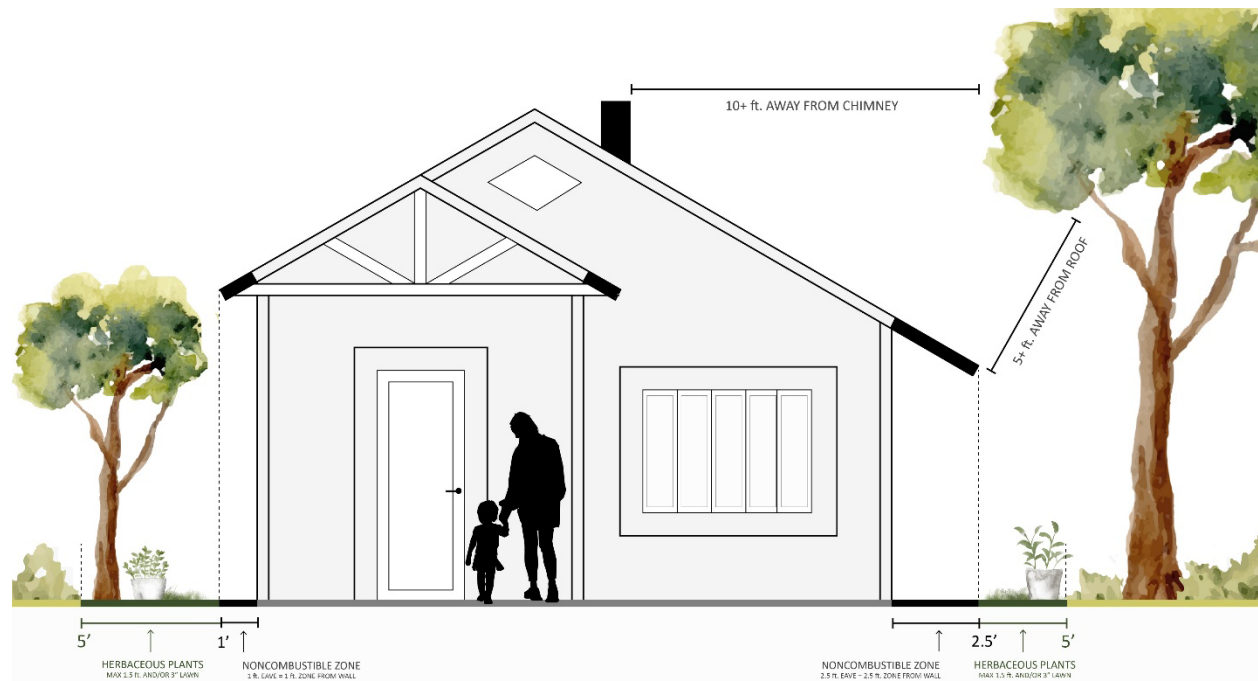


Figure 13. This front view represents how Zone 0 can be divided into a noncombustible “safety zone” immediately adjacent to the building, surrounded by a low-combustibility zone out to the remaining 5 feet. The noncombustible “safety zone” is a vegetation-and fuel-free zone and is required at 1 foot from the occupied structure or to the outer edge of the eaves (whichever is greater, as shown by the vertical dashed lines); 2 feet from windows, glass doors, and vents; and 5 feet around attached decks, stairs, and pergolas. The best practice is still a full five-foot noncombustible zone around the structure.

This means that a one-foot eave triggers at least a one-foot safety zone (left-hand side of the diagram), and a 2.5-foot eave triggers at least a 2.5-foot safety zone (right-hand side of the diagram). Outside of this zone, to five feet, herbaceous plants are allowed up to 18 inches tall, lawn and other ground covers must be kept under 3 inches in height, and potted plants must be in noncombustible containers less than 5 gallons in capacity. This illustration shows two examples based on eave width and includes a mature, trimmed tree that provides shade, with lower branches removed to reduce fire risk. Note: Homeowners could have up to five years to phase this zone into their property.

Phase 1 (to be implemented within the first 3 years): During this phase, at a minimum, 1) remove combustible items such as firewood, dead leaves and branches, mulch, and wood chips within 5 feet of the structure and 2) remove dead and dying plants, trimming trees according to reduce fuel ladders and



remove branches under the eaves, and implementing or adjusting for allowable vegetation during this time period. However, existing regulations still require the immediate removal of exposed firewood piles, combustible debris on roofs and rain gutters, dead tree branches, and branches within 10 feet of chimneys.

Phase 2 (to be implemented within 5 years, with the exact timeline to be decided by the local jurisdiction): Phase 2 gives the property owner the time to focus on the area closest to the building to create a noncombustible “safety zone.” This phase protects the most vulnerable parts of a structure—such as the base of the wall, windows, decks, and eaves—while still allowing flexibility based on the design of the home. During this phase, create an under-eave noncombustible safety zone for vegetation (other than trees), replace combustible gates, and make any necessary adjustments to sheds and fencing.

During this phase, it is recommended to start under and around attached decks (regardless of the surface material) and stairs, removing weeds, woody mulch, and vegetation. This will help protect the deck and under deck from ignition. Next, remove other combustibles around the house or structure. One strategy is to start on the less visible side of the structure to build confidence. Over time, it may become easier to develop a new aesthetic that protects the property and meets your aesthetic vision. For those with a wood fence running perpendicular to the structure, prioritize upgrading the five feet of wood fence or gate that touches the house with a noncombustible panel or gate. This will break the wick of fire, should the fence ignite in the future.

Where does Zone 0 start?

Zone 0 starts at the face of the exterior wall and perimeter of any attached deck or stairs as shown in [Figure 1](#). For structures that do not look like the single-family home in Figure 1, the key is to understand where the roof dripline comes down, where second-story floors are located, and where attached decks and balconies are. The following illustrations (*Figures 14-16*) offer some possible configurations. In each example, the goal is to work with the inspector to understand the risk and develop a reasonable strategy to reduce the potential for ember ignition or for flames to touch the edge of the wall, causing the eave to trap heat. The following images attempt to explore the risks and potential approaches.



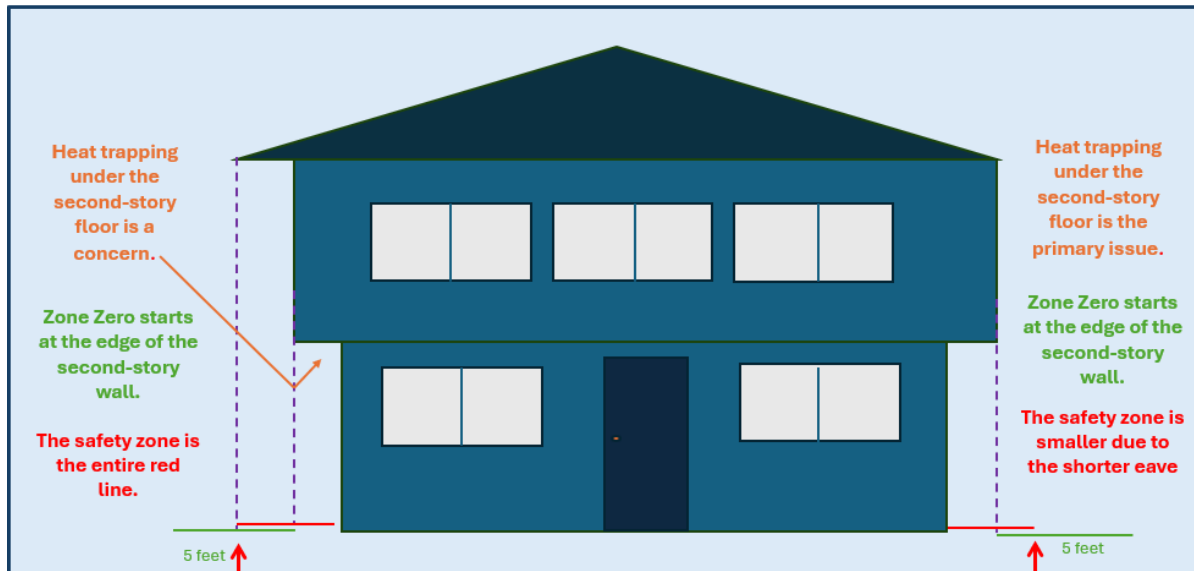


Figure 14. This illustration clarifies where Zone 0 starts and the issue of concern with a two-story building and a cantilevered second story. In this situation, Zone 0 starts at the edge of the second-story wall, and the safety zone is the area from the edge of the ground-based wall to the edge of the eave dripline (left). If the roof did not include an eave (right), the safety zone would be smaller and include the area from the edge of the ground-based wall plus an extra foot from the eave.



Figure 15. This illustration clarifies where Zone 0 originates, the issue of concern, and the width of the safety zone. On the left, the safety zone is just the area under the eave. On the right, because decks require a full five feet of noncombustible clearance, the safety zone is farther from the ground-based wall and the eave.

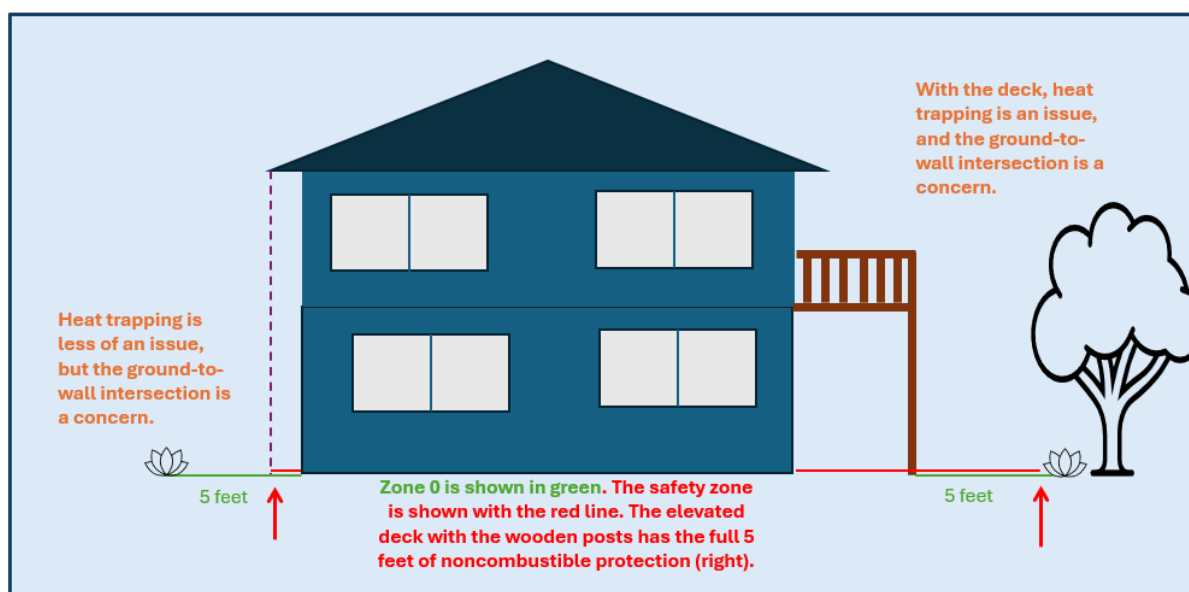
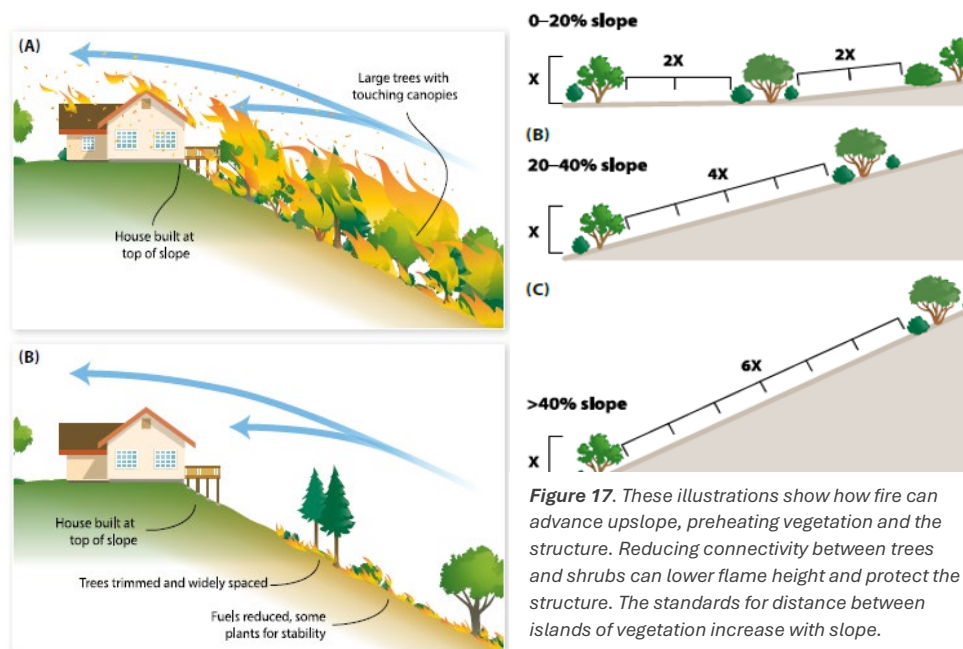


Figure 16. This illustration clarifies where Zone 0 starts, the width of the noncombustible safety zones, and the issue of concern for a two-story building with a wood deck and wood support posts

Are the regulations different for structures in different vegetation types?

The regulations are the same regardless of whether the structure is in forest, grassland, oak woodland, chaparral or a more urban setting. However, as fuel density increases, best practice is to increase separation between fuels and the structure. This is especially true for structures that are at the top of a slope. In these situations, more separation between islands of vegetation is recommended (see Figure 17). This separation can reduce the chance that flames will reach the structure and reduce the amount of heat pushed upslope toward the structure.



What will enforcement look like?

The Board of Forestry and Fire Protection is not responsible for enforcement. However, the Board understands that Zone 0 will be enforced like other defensible space requirements. In Local Responsibility Areas, local fire authorities handle enforcement. For those in a State Responsibility Area, CAL FIRE's Defensible Space Inspectors will help the homeowner understand the importance of this zone and prioritize actions over three years. Inspections aim to confirm good-faith progress toward compliance, and technical assistance, education, and continued progress will be prioritized.

The goal is not to penalize property owners but to help people better understand their risks and implement critical mitigations within homeowners' control to reduce the impacts of future wildfire exposures. These actions also help improve the potential for fire response personnel to safely stage on the property and take defensive fire actions. Making a home “attractive” and safe for fire response is a critical action that can help protect your home, family, and community.

Considerations if the structures are close or if the structure is in a town or city

As structure density increases (meaning < 30 feet between buildings), the potential for radiant heat impacts increases. Reducing fuels to minimize the chance of buildings igniting becomes more imperative in these settings, as it can be difficult to move fire personnel quickly enough to suppress fires before they take hold in communities. The key is reducing connecting fuels between the wildlands and the community, and then between structures. Each proactive action can slow the spread of fire and give more time for fire personnel to take direct action and reduce actions that may be needed. Where structures are near each other, all structures, regardless of their value, matter. If there is an outbuilding and it's close to a valuable structure, its adjacency increases the reason for action. For example, if a small shed ignites, the radiant heat from that shed can cause the primary structure to ignite.

Considerations for small lots

Defensible space requirements only extend to 100 feet or to the property line if less than 100 feet from the structure. If the property line is only 10 feet from the neighbor, you only need to implement Zone 0 and Zone 1 requirements.

The Board understands that curb appeal matters, regardless of lot size. For smaller lots, keep in mind that herbaceous plants are allowed in Zone 0, as long as they are outside of the safety zone located under the eave (*Figure 18*).

Outside of the safety zone, what plants are allowable in Zone Zero?

Well-maintained herbaceous plants and flowers are allowed outside of the safety zone, within Zone 0 (*Figure 13*), with the following conditions:

- Non-woody smaller plants, such as bulbs, impatiens, begonias, petunias, poppies, yarrow, and non-thatching succulents (i.e., avoid ice plant) are allowed in spaced groupings
- Low ground covers. Examples include blue-star creeper, beach strawberry, creeping thyme, and mosses.
- Grass or lawn is allowed but must be maintained and mowed to the three-inch requirement.
- Potted plants in noncombustible pots that are less than 5 gallons, no taller than 18 inches, and are set apart by 1.5 times the height of the plant from each other (see *Figure 13*).



Considerations for fences

The regulations prohibit construction of new combustible fences within Zone 0 (within five feet of the structure) while continuing to allow existing combustible fences to remain in place and having no impact on fences beyond Zone 0. Property owners may continue to repair existing combustible fences using the same materials, avoiding unnecessary replacement costs. Where a fence or gate is attached to an occupied structure, however, the regulations require a noncombustible gate or panel to be installed within five years of the Zone 0 regulation adoption. Fences more than five feet from the structure are not impacted by the regulations.

The regulations do not require wholesale replacement of existing combustible fences. Existing combustible fences may remain, repairs using existing materials may continue, and only where an attaching combustible gate exists, or a fence is fully replaced, would the applicable Zone 0 standards apply (within Zone 0—not beyond).



Figure 18. These six homes representing different regions of the state, shown in street view, have been edited in Adobe Photoshop to illustrate how Zone 0 might look in practice over the phase-in period. Note that each house has a Zone Zero that includes a noncombustible zone immediately adjacent to the structure, as well as some herbaceous plantings outside the eave dripline. Note that existing trees are allowed to remain in Zone 0. It is understood that the camera angle affects the perceived impact of Zone 0 on the look and feel of the fire mitigation.

Are trees allowed in Zone 0?

Properly maintained trees are allowed in all defensible space zones. Trees are important; they provide shade, minimize heat impacts, support wildlife and other biodiversity, and are beautiful. However, trees drop leaves and needles on and adjacent to homes, on roofs, and in rain gutters, providing a regular source of “fuels” that are easily ignited by embers. The lower limbs of trees can also serve as fuel ladders that allow fire to climb to the upper canopy. To protect and preserve trees within Zone 0, the regulations focus on removing fallen leaves and needles from the roof, rain gutters, and ground, as well as the pruning of dead, dying, and lower branches (*Figure 19*). These maintenance actions are essential for protecting structures from wildfire.

Existing trees are allowed in Zone 0 if they are maintained and lower branches are pruned to minimize the opportunity for fire to climb into the canopy. Maintained trees cannot have dead and dying branches, and no branches should be within 5 feet above the roof or 10 feet of chimneys.

However, planting **new trees** in Zone 0 is not allowed. This is because the California Wildland-Urban Interface Code (2025) requires that the location of new trees be planned so that the canopy does not fall within ten feet of a building or structure. This is current state regulation outside of the Board’s jurisdiction.

Tree trimming requires knowledgeable tree care professionals. While the Board cannot specify who can trim a tree, it is recommended that removal of large limbs be conducted by certified arborists who meet ANSI A300 tree care standards and California’s fire safety standards.

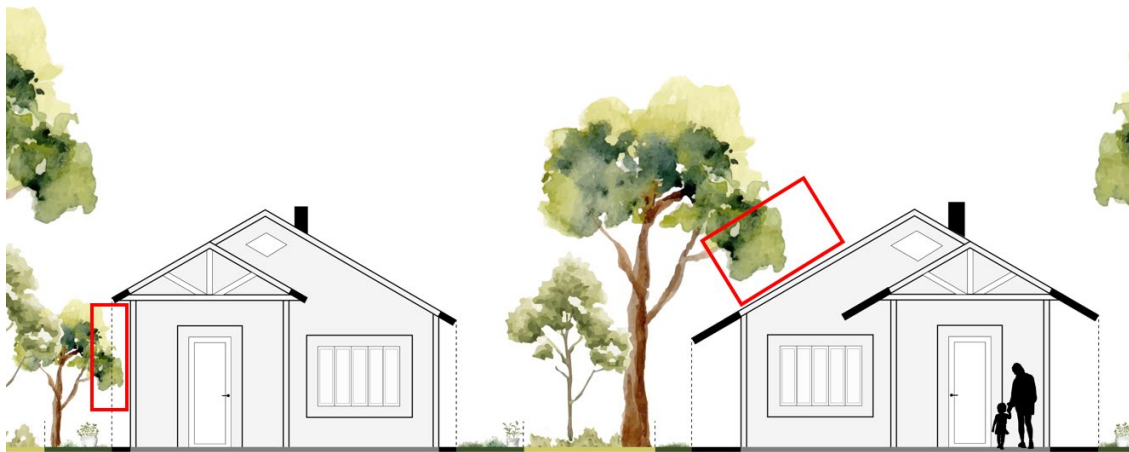


Figure 19: This illustration shows trees within Zone 0. On the left is a young tree with most of the ladder fuels removed, but a few smaller branches remain under the eaves and would need to be trimmed as indicated by the red box. On the right side, a larger tree is very close to the roof. While the lower ladder fuels are removed, an inspector would suggest removing one limb to provide 5 feet of clearance between tree limbs and the roof, reducing the risk of fire transmission to the roof. The recommended trimming area is indicated by the red box on both trees.

Suggestions for privacy

Privacy is important, and when evaluating a yard or landscape, consider the placement of plants that block views into the neighbors. If privacy is a concern, strategically work around or locate vegetation or features that provide privacy from a little farther away from the structure. In addition to vegetation, noncombustible privacy screens and other features can also be incorporated. With defensible space, vegetation is allowed, and inspectors understand that relocating and growing future vegetation to create privacy may take a little creativity and time. UC Master Gardeners are a good resource for



suggestions for your situation, and they can help you identify focal points for plantings that are disconnected from other fuels. A 2025 design competition from UC Berkeley landscape architects also offers some ideas (see <https://wildfireprepared.org/csaa-uc-berkeley-wildfire-prepared-home-design-winners/>).

Considerations for weed management, mulch, and weed cloth

Weed suppression, water retention, and nutrient inputs are often provided by woody mulch, and weed suppression is often controlled by weed cloth, both of which are flammable. For Zone 0, weed cloth under rock mulch is allowed, but other alternatives may be worth pursuing. Compacted decomposed granite or sand can be highly effective in controlling weed growth; use of pavers or natural stone can be aesthetically pleasing and suppress weed growth. Some decomposed compost can also be effective if it is more like soil and less like woody mulch. Woody mulch is allowed outside of Zone 0, but it is recommended that the homeowner consider future placement and how mulch may aid fire in traveling to the structure. Consult your local UC Master Gardeners to discuss alternative materials and strategies.

Working with neighbors

Where houses are close together, shared interests in fire protection can be beneficial. California law only requires property owners to manage fuels on their own property (see [Figure 9](#)). However, the condition and arrangement of the neighbors' fuels may be of concern. Working with neighbors is not always easy, and the best recommendation is to improve conditions on your property first as an inspiration and good-faith effort to demonstrate commitment to fire protection. Over time, a community work party could be organized to assist those who need some extra help.

What role does home hardening provide?

Building survival in the face of wildfire is improved by a combination of factors including home hardening, reduced fuels through defensible space, and support from fire personnel. The Board's Zone 0 work is part of a multi-pronged state-led effort to help safeguard people, their homes, and communities. The Board of Forestry and Fire Protection recognizes the importance of "home hardening" (i.e., taking measures to improve the ignition resistance of structures) but does not have regulatory authority over building construction. In 2008, California's building code was updated to address wildland fire exposures for new construction (known at the time as Chapter 7A), which incorporated many of the most protective elements of home hardening. In 2025, this code was updated and is now referred to as the California Wildland Urban Interface Code (CWUIC). Retrofitting existing homes built prior to these codes is a recommended approach to take in conjunction with defensible space actions.

Considerations for multi-family homes, commercial buildings, and tall buildings

The Zone 0 regulation applies to all structures in California in certain fire hazard zones, regardless of occupancy type, age, or construction materials. While a comprehensive analysis of every building configuration is beyond the scope of this guidance, several cross-cutting vulnerabilities such as edge-of-wall details, window performance, and under-eave conditions remain relevant across all occupancies. However, certain building types introduce additional considerations that merit attention.

Multi-family properties often feature shared walls, stacked units, and a higher density of attachments such as carports, breezeways, and balconies. These elements can create complex ember-catching geometries and increase the likelihood that ignition in one area will affect multiple households. Storage limitations are also common; items typically kept in enclosed garages, tools, chemicals, cardboard

boxes, recreational equipment are frequently stored outdoors or in partially enclosed carports. These exposed combustibles can become ignition sources during ember showers. Communities may benefit from developing protected storage solutions or shared noncombustible storage facilities to reduce fuel accumulation near structures.

Modern commercial buildings are often constructed with more robust materials and assemblies than single-family homes, but their wildfire resilience still depends heavily on long-term maintenance. Features such as rooftop equipment, parapet walls, loading docks, dumpsters, and service yards can accumulate debris or combustible materials that compromise Zone 0 performance. Regular inspection and maintenance of these areas, especially around mechanical equipment, exterior utility connections, and delivery zones, is essential. Commercial occupancies also experience higher turnover in outdoor furnishings and temporary installations (e.g., seasonal displays, portable signage), which can inadvertently introduce combustible items into Zone 0.

Taller buildings (3+ story buildings around 40+ feet in height) generally incorporate noncombustible exterior materials and fire-resistant assemblies, but they present unique challenges at ground level. The base of a taller building often includes recessed entries, ventilation grilles, planter boxes, and complex façade geometries that can trap embers. Wind patterns around tall structures can intensify ember deposition at corners and alcoves. Additionally, tall buildings frequently rely on podium-level courtyards or rooftop amenity decks, where combustible furnishings, landscaping, or decking materials may be present. Ensuring that these elevated outdoor spaces meet Zone 0 principles, noncombustible surfaces, limited fuel, and regular debris removal is critical to preventing ember ignition above grade.

Across all occupancy types, the central principle remains the same: Zone 0 must be maintained as an ember-resistant buffer, regardless of how complex or modern the building may be. Multi-family properties require attention to shared attachments and exposed storage; commercial buildings require disciplined maintenance of service areas and rooftop equipment; tall buildings require careful management of ground-level recesses and elevated outdoor spaces. These considerations help ensure that Zone 0 functions effectively as the first line of defense against ember-driven ignition.

Considerations for historic structures and buildings with living (vegetative) roofs

These structures can be culturally important and have unique fire vulnerabilities; however, the Board does not have the authority to exempt historic or culturally important structures. Existing statutes expressly identify the categories of property exempt from defensible space (including Zone 0) requirements within the Local Responsibility Area or LRA (Gov. Code sec. 51184) and the State Responsibility Area or SRA (Pub. Res. Code sec. 4291). For the LRA, these include habitats for threatened or endangered species, natural lands, and open space lands. It could also include, if exempted by a local agency, structures made entirely of nonflammable material (Gov. Code sec. 51183). Within the SRA, the State Fire Marshal may adopt regulations exempting structures with noncombustible exteriors. Because the Legislature has specifically established these exemptions to the defensible space requirements, the Board does not possess independent authority to create additional exempt categories.

Local jurisdictions within an LRA may, however, enact an alternative practice that exceeds the state minimums that considers location variations (including fire risk, structure composition, potential response to emergency conditions, etc.). Alternatively, a cultural institution could seek an exemption from its local jurisdiction under Government Code section 51183 or the CAL FIRE Director pursuant to Public Resources Code section 4291.

Green (also referred to as “living” or “vegetative”) roofs on buildings are not subject to the Board’s jurisdiction for Zone 0, as its authority does not include structures themselves. The Board’s authority is the area adjacent to and around the structure. A true green roof (one established via the design and construction process, rather than a roof with overgrown vegetation on it, and depending on how it was designed and constructed, may meet ASTM E108) is part of the structure itself and therefore not part of Zone 0. Whether a green roof is permitted is governed by building codes, including the CWUIC where applicable.

Why does the roof need 5 feet of clearance?

The roof is key to fire protection, as embers can land on it and ignite leaves, needles, cones, acorns, and other branches dropped from trees in the area or over the roof (see Figure 17). The required 5 feet of separation from the roof and overhanging branches protects the overhanging trees from debris on the roof igniting and from flames climbing into the canopy of the trees. The roof, in essence, is like a new horizontal surface. There is substantial evidence from many peer-reviewed wildfire experiments demonstrating that roofs are primary ember-landing zones and that accumulated leaf litter, needles, and small branches ignite readily under ember exposures. Overhanging vegetation increases debris loading, raises ignition probability, and creates vertical continuity that allows flames from a roof-level ignition to reach tree canopies. The 5-foot clearance requirement used in these defensible-space regulations reflects a practical separation distance that lessens flame contact to overhanging branches and limits physical roof damage caused by vegetation contact. As a roof ages and starts to fail, it is likely to be more vulnerable to fire exposures.



Figure 20. Roof and visible tree debris. Protecting the roof and keeping it clean of debris is an important fire protection action.

What about plant lists? Are there fire-smart plant choices?

All plants will burn under the “right or certain” conditions, regardless of their classification (“fire resistant,” “fire safe,” “firewise,” etc.). This is because growing conditions and maintenance can have a greater impact on the flammability of plants than the species itself. Native plants, pollinator-friendly plants, or drought-tolerant plants can be good choices for those labeled qualities, but these features don’t directly translate to fire resistance. Whether a plant ignites depends more on pruning, maintenance, and cleanup than on what type of plant it is. Some plants, such as lavender, may initially exhibit lush, non-woody growth, only to become woody and choked with dead material several years later. Other plants may develop a dead thatch layer under a green surface that is highly combustible (e.g., succulents such as ice plant or “hens and chicks” species). Plant “resilience” is different from “resistance.” Resiliency refers to a plant that may have adaptive characteristics to respond quickly after a fire, such as seedbeds and cones that germinate or open after heat exposure.

Further, even well-maintained and irrigated plants can be overcome by dry conditions that may develop during red flag warning days, radiant heat from burning adjacent structures, or as flames travel upslope



(see [Figure 14](#), page 21). When these things occur, woody plants in Zone 0 can serve as additional fuel, producing enough heat to break windows or ignite siding.

Can plants catch embers before they reach my house?

While vegetation may seem like it could interrupt the path of embers, the history of California's wildfires has shown that houses surrounded by green vegetation still burn. This is in part because embers can ignite the dry debris and leaves at the base of these plantings, or they can collide with some portion of the wall above the plants and fall to the base of the structure, where they may encounter combustible items (e.g., mulch, vegetative debris, or stored items) and create a spot fire that lead to potential structure ignition via flames touching the structure or fire causing radiant heat exposure to the home.

It is common to see green vegetation surviving after a building has burned, and some correlate that green vegetation with building survival. This outcome is not due to those plants acting as “fire safe” barriers, but rather to variability in ember landing patterns, wind shifts, suppression efforts, or simple chance. It's an example of correlated observation, not causal information.

Can green vegetation shield the structure from radiant heat?

Higher moisture content plants are indeed harder to ignite. That's why fuel moisture content is such an important factor in predicting fire spread. However, even high-moisture-content fuels ignite, especially under higher heating conditions such as forest fires with very high foliar moisture content. The heat produced in a house-to-house scenario, commonly seen in dense urban neighborhoods under high winds, is high enough to evaporate moisture in plants quickly and ignite them.

The firestorms in California over the last decade have occurred on days when wind speeds are elevated and are often followed periods of prolonged drought or high-temperature days. Under these conditions, shrubs and other herbaceous vegetation can become desiccated because they often have thin branches and leaves that are more susceptible to drying. Looking at radiant heat alone and ignoring ember ignition of dry materials lodged on the ground around the base of a hedge, a hedge may act as a temporary “heat shield,” but if the heat from the adjacent building or vegetation is sustained, it is likely the hedge will dry out and become an additional source of fuel and burn. Fire professionals have long observed this condition.

Is a commitment to irrigation sufficient to protect existing plants in Zone 0?

Regular watering is important for plant health; unfortunately, water availability can change unexpectedly due to short or prolonged droughts, irrigation malfunctions, an individual's ability to maintain their yard, and no agency has the authority to mandate irrigation.

Zones 1 (5-30 feet from the house) and 2 (30-100 feet) are suitable locations for lush and well-maintained gardens, and if conditions change and water becomes limited, the presence of these plants in a drier state in Zones 1 and 2 can be mitigated by disconnecting planting groups and by the low combustibility of a future Zone 0.

Considerations for other fuels that are not identified in the regulations

Many other items can act as fuel in a wildfire. These include garbage cans (and contents, especially paper recycling containers), cars and recreational vehicles, wood retaining walls, play structures and surrounding landing surfaces, portable pet structures, outdoor kitchens, etc. These items can pose significant risks to the primary structure, and if alternative locations exist outside Zone 0, relocate them where possible. If there is sufficient time in preparation for an evacuation, relocating these items into

the garage or away from the structure is highly recommended. For items that cannot be relocated either permanently or temporarily, and are not subject to the Zone Zero regulations, such as the outdoor kitchen or wood retaining walls, work to eliminate connected fuels to these structures to minimize the chance of their ignition.

Considerations for properties and agencies in LRA jurisdictions

The intent of the local flexibility provision is to allow local agencies to adopt alternative practices that achieve the same or greater wildfire risk reduction outcomes as the statewide Zone 0 standards. The determination would be based on findings supported by the local agency responsible for fire protection that demonstrate that the alternative practice provides **substantially similar practical effects** in reducing structure ignition potential and improving defensible space effectiveness in Zone 0.

The local agency responsible for fire protection would be responsible for developing any alternative practices, and the appropriate governing body is required to approve the finding and alternative practices. The Board's regulations are designed to establish a statewide baseline while recognizing that local agencies are often best positioned to evaluate local conditions and determine whether alternative approaches can achieve equivalent or greater levels of protection.

For local agencies responsible for fire protection, local fire risk, emergency response capabilities, topography, California Wildland-Urban Interface Code compliance, lot sizes, structure density, structure type, and composition may inform findings that support local alternative practices.

The Zone 0 regulations establish minimum statewide requirements under the Board's authority. Existing regulatory requirements related to the California Fire Code, the California Wildland-Urban Interface Code, and locally adopted fire code amendments remain in effect.

The local flexibility provision provides a mechanism for local agencies to adopt alternative practices that meet or exceed the wildfire risk reduction objectives of the Zone 0 regulations. Local governments developing alternative methods should ensure that any locally adopted provisions are consistent with applicable legal authorities and code requirements

How do these regulations affect homeowners' insurance?

These regulations create a minimum base requirement for properties in all Fire Hazards Severity Zones in SRA and the Very High Hazard Severity Zones in LRA. They do not apply to all of the homes and structures throughout the state. Insurers use their own proprietary models to evaluate risk and set their own fuel management requirements. Some insurers, at the time this guidance document was developed, have developed their own requirements that must be met before insuring a property. For example, some insurance companies require compliance with the "Wildfire Prepared Home" Essential (Base) Level designation program developed by the Institute of Business and Home Safety (IBHS). The requirements for the Wildfire Prepared Home Essential Level designation program are similar to the Board's regulations, but they are more restrictive regarding trees and vegetation in Zone Zero. The Wildfire Prepared Home program also has certain home-hardening requirements. The Board's regulations help residents focus on fuel management and are key for protecting vulnerable parts of structures (i.e., the under-eave, ground-to-wall intersections, the under-deck area, windows, etc.) and breaking the pathway for fire to travel to the structure. When shopping for insurance, sharing photos and information about your approach to fuel management may help make your home more attractive to insurers.



Zone 1: What planting arrangements are recommended?

First, it is recommended to limit tall woody vegetation at the transition from Zone 0 to 1. This is because, during wildfire, wind can push the flames horizontally. When this occurs, the flames from one fuel can touch another. If a dense hedge or wall of vegetation five feet from the structure ignites, flames could easily be pushed horizontally and touch the siding or window of a house or structure. Therefore, it is recommended to limit the height of vegetation around the outer perimeter of Zone 0 by another 5 feet or so.

Second, in garden or landscape design, using planting groups that are disconnected from other planting groups can help break a fire from traveling through the yard to the structure or to other planting groups. This “islanding” approach is shown in Figure 1 ([page 1](#)), where planting groups are established that are separated from other groups to break the connectivity between fuel and vegetation groupings.

Zone 2: How to protect soils and minimize erosion

Vegetation removal can also cause soil disturbance, soil erosion, and the regrowth of new vegetation, and it can 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.

Zones 1 and 2: How to protect riparian areas and sensitive habitats

Areas near water (riparian areas), such as streams or ponds, are a particular concern for protecting water quality. To help protect water quality in riparian areas, discuss potential methods for limiting impacts to the waterway with your inspector, including avoiding removal of vegetation associated with water, avoiding use of heavy equipment, and not clearing vegetation to bare mineral soil.

Considerations for building a new structure and lot development

There are many options and alternatives for new builds. When fire is a consideration, plot design, layout, and material choices can help protect the primary structure and reduce the potential for building-to-building interactions. First, if it is possible to anticipate storage and outbuilding necessity, this can reduce the need to add additional sheds or ancillary structures. Second, designing walkways and walls as firebreaks, including these as part of Zone 0 from the beginning, can help build fire resistance and match it to aesthetics. Planning for future landscaping and use of concrete or steel for planting bed separation can help reduce the continuity of one planting group to another. Additionally, positioning the house back from the edge of a steep slope, orienting roof planes to shield the structure from upslope winds that carry embers, incorporating soffited eaves, using CWUIC-approved building materials, and building structures with simpler roof designs and no roof-to-wall intersections can be highly beneficial.



Where to get more information

The following organizations have many technical and support resources for those learning more about defensible space, home hardening, and defensible space standards.

- The California Board of Forestry and Fire Protection
 - The California Office of the State Fire Marshal
- CAL FIRE
- University of California Agriculture and Natural Resources Fire Network
- California Fire Safe Council
- Local Fire Safe Council websites
- Local Fire Services
- Insurance Institute for Business and Home Safety
- National Institute of Standards and Technology
- Firewise USA
- National Fire Protection Association

Guidance to inspectors or community educators

The goal is to encourage and inspire landowners and homeowners to 1) act, 2) help them see their part in improving their and their neighbors' safety, and 3) develop a partnership with the fire service. For some, it can be very empowering to learn that there are simple actions that can substantially improve the chance that a structure will survive during a wildfire. To build this partnership, it may be helpful to share that during a wildfire, emergency responders' priority is to protect life, and resources may be unavailable to defend structures. In that case, what can be done, prior to the wildfire, to keep the structure in the best condition possible so that if structure defense is needed, the area near the structure is safe for fire personnel to work and the level of structure defense is realistically achievable? It may not be well known that there is good evidence that defensible space leads to greater structure survival rates.

While this guide is not a substitute for training on the inspection process, a few additional tips include:

- Helping the homeowner/property managers see the potential pathways for embers, flame contact, and radiant heat exposures. Each exposure type may take a different mitigation approach. How can the pathways be interrupted so that fire does not travel directly to the structure? Is it cleaning out debris from underneath steps and decks? Is it with a gate or fence section replacement? Is it with raking away combustible mulches?
- Helping to develop a prioritization plan. What is immediately achievable and what will take time and resources to implement? Part of the approach may include working on one side of the structure first to find an approach that works for them, meets their aesthetics, and achieves fire mitigation. Focus on practical approaches.
- Sharing how you have personally addressed the concerns where you live or have a flip book of images of how others have addressed complicated issues to inspire action. A picture is always worth a thousand words.
- Recommending a consultation from their local UC Master Gardener program to help with future plant selection and ideas on yard design and maintenance.



- Keeping in mind that penalties are not a place to start a conversation; lean into a common sense and solutions-oriented approach. Starting the work is often the hardest part, but once people are engaged, it is easier to keep the momentum going. Your personal stories are worth leaning into.

Glossary of terms

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.

Combustible. Vegetative, wood, or other materials that are likely to ignite and transmit flames in wildfire.

Critical fire weather conditions- Simply, it is when conditions are dry, hot, and windy. Most commonly, these conditions are understood as “**red flag warnings**” (<https://www.weather.gov/gjt/firewxcriteria>), and very important for all to recognize. Unstable air and/or strong surface winds tend to occur in transition zones between high- and low-pressure systems, both at the surface and in the upper air. **Cold front** passages create strong, shifting winds and unstable air that can enhance the smoke column or produce thunderstorms. **Foehn winds** occur on the lee side of mountain ranges and are typically very strong, often occurring suddenly with drastic warming and drying. The area between the upper ridge and upper trough has the most critical upper air pattern because of unstable air and strong winds aloft that descend to ground level (<https://www.nwcg.gov/publications/pms437/weather/critical-fire-weather>).

Defensible Space. The buffer landowners are required to create on their property between an Occupied Structure and the plants, brush, and trees, or other Combustible items surrounding the Occupied Structure.

Existing Occupied Structure. An Occupied Structure that was constructed, under construction, or for which the building permit application for initial construction had been submitted before the effective date of the regulation that added this subsection.

Ladder Fuels. Fuels that can transmit fire vertically to other vegetation, structures, or Combustible landscape features.

New Occupied Structure. An Occupied Structure for which the building permit application for initial construction was submitted after the effective date of the regulation that added this subsection.

Noncombustible. Materials that pass the American Society for Testing and Materials (ASTM) E136 standard test method, thus meeting the standard for “noncombustible materials” described in Section 501.4.1 (and any amendments thereto) of Title 24, Part 7 of the California 16 Wildland-Urban Interface Code. *Note: In relation to the “safety zone,” this means that nothing combustible should be located in this area (i.e., no plants, wood chips, stored materials, etc.).*

Non-Woody Plant. A plant that lacks hardened stems or trunks. This includes, but is not limited to, herbaceous plants with soft, green stems, such as annuals, perennials, bulbs, grasses, ferns, mosses, and some succulents.

Occupied Structure. Any constructed building or structure that is intended or used for support, enclosure, shelter, or protection of persons, animals, or property, having a permanent roof that is supported by walls or posts that connect to, or rest on the ground. An Occupied Structure, for the



purpose of determining an ember-resistant zone, includes an attached deck, stairs, or pergola, but does not include patios made of Noncombustible materials. For the purposes of these regulations, an attached deck, stairs, or pergola includes those that are self-supporting and within one (1) foot of the Occupied Structure. *Note: In relation to this guidance document, “building” and “structure” are often used interchangeably. For questions about applying each term, carefully read the Zone Zero rule text.*

Outbuilding. Buildings or structures that are less than one hundred-twenty (120) square feet in size and not used for human habitation. For purposes of this Section, an Outbuilding is not an Occupied Structure as defined above.

Tree. A woody perennial plant with a well-defined stem or trunk, a diameter at four and a half (4.5) feet above the ground of at least four (4) inches, and a height at maturity of at least fifteen (15) feet.

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Appendix

A comparison of Zone 0 activities, compliance dates, and relevant citations.

The regulations, once effective,¹ will apply to the State Responsibility Area (SRA) and areas designated as Very High Fire Hazard Severity Zone within the Local Responsibility Area (LRA). [Fire Hazard Severity Zones | OSFM](#)

Zone 0 is the first five feet around the building/structure, beginning at the exterior surface of the exterior wall, attached deck, stairs, or pergola.

For New Occupied Structures² in the SRA and LRA: All regulations are effective *immediately* upon the effective date of the regulations.

For Existing Occupied Structures³:

Activity	Compliance Date	Citations
Remove debris from roof and rain gutters (currently required under state law)	Immediately ⁴	1298.04(c)(2); 1299.03(e)(2)
Remove firewood (currently required to be covered with fire resistant material under state law)	Immediately	1298.04(c)(2); 1299.03(e)(2)
Remove dead/dying tree branches (currently required under state law)	Immediately	1298.04(c)(2); 1299.03(e)(2)
Remove tree branches within 10 feet of chimney/stovepipe outlet (currently required under state law)	Immediately	1298.04(c)(2); 1299.03(e)(2)
Remove tree branches under eaves	Immediately	1298.04(c)(2); 1299.03(e)(2)
Remove fallen leaves and tree needles, Combustible mulches	Within 3 years ⁵	1298.03(c)(3); 1299.03(e)(3)
Remove all vegetation and Combustible debris from under decks, balconies, pergolas, and stairs	Within 3 years	1298.03(c)(3); 1299.03(e)(3)
Remove Ladder Fuels on trees	Within 3 years	1298.03(c)(3); 1299.03(e)(3)
Remove tree branches within areas 5 feet above roof and, where no eave, 1 foot of structure walls	Within 3 years	1298.03(c)(3); 1299.03(e)(3)
Remove vegetation from under eaves (or within 1 foot of structure where there are no eaves)	Within 3 years, or 5 years if local agency/CAL FIRE sets timeline ⁶	1298.03(c)(4); 1299.03(e)(4)

¹ The effective date is the date the regulations are filed with the Secretary of State, following approval by the Office of Administrative Law.

² New Occupied Structure (or New Building or Structure in the SRA regulations) means a building for which, after the effective date of the regulations, the building permit application for initial construction was submitted.

³ Existing Occupied Structure (or Existing Building or Structure in the SRA regulations) means a building that, prior to the effective date of the regulations, was constructed, under construction, or for which a building permit application has been submitted.

⁴ Immediately means upon the effective date of the regulations.

⁵ Within 3 years of the effective date of the regulations.

⁶ Of the effective date of the regulations.



Remove vegetation within 5 feet of attached decks	Within 3 years, or 5 years if local agency/CAL FIRE sets timeline	1298.03(c)(4); 1299.03(e)(4)
Remove vegetation within 2 feet of windows, doors, posts, vents	Within 3 years, or 5 years if local agency/CAL FIRE sets timeline	1298.03(c)(4); 1299.03(e)(4)
For areas in Zone Zero not covered above, ensure vegetation standards are followed: - Well-maintained non-woody plants up to 18 inches - Groundcover 3 inches max - Potted plants are well maintained, non-woody, no more than 18-inches high and in containers less than 5-gallon size and spaced apart 1.5 times plant height	Within 3 years, or 5 years if local agency/CAL FIRE sets timeline	1298.03(c)(4); 1299.03(e)(4)
Remove Combustible fences and gates attached to structure (or within 1 foot)	Within 3 years, or 5 years if local agency/CAL FIRE sets timeline	1298.03(c)(4); 1299.03(e)(4)
Ensure attached fences/gates have 5-foot Noncombustible span from point of attachment (or closest point if within 1 foot of structure)	Within 3 years, or 5 years if local agency/CAL FIRE sets timeline	1298.03(c)(4); 1299.03(e)(4)
No new Combustible or gates (whether attached or not) permitted; repairs OK using same material	Within 3 years, or 5 years if local agency/CAL FIRE sets timeline	1298.03(c)(4); 1299.03(e)(4)
Outbuildings (if Combustible) removed	Within 3 years, or 5 years if local agency/CAL FIRE sets timeline	1298.03(c)(4); 1299.03(e)(4)