



**CAL FIRE**  
**Office of the State Fire Marshal**  
**Community Wildfire Preparedness and Mitigation Webinar Series**

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**January 9, 2023**

***Home Hardening Program***

# Welcome!



- The purpose of this webinar series is to host a live and interactive platform to discuss and educate on Community Wildfire Preparedness and Mitigation (CWPM) fire safety topics directly from our Office of the State Fire Marshal CWPM Staff.
- More information on the webinar series can be found any time at [osfm.fire.ca.gov/wildfire-public-education/](https://osfm.fire.ca.gov/wildfire-public-education/)

If you experience technical difficulties during this presentation, please contact Kara Garrett at (916) 201-5539 or [Kara.Garrett@fire.ca.gov](mailto:Kara.Garrett@fire.ca.gov)





# Home Hardening

## Speaker Introductions

### Dennis O'Neil

Assistant Chief

Home Hardening

[Dennis.ONeil@fire.ca.gov](mailto:Dennis.ONeil@fire.ca.gov)

Resources can be found at:

<https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/hardening-your-home/>



# CAL FIRE OSFM Home Hardening Program

## Presentation Objectives

- Define Home Hardening
- Discuss why Home Hardening is important
- Discuss what the CAL FIRE OSFM Home Hardening Program is doing to assist homeowners





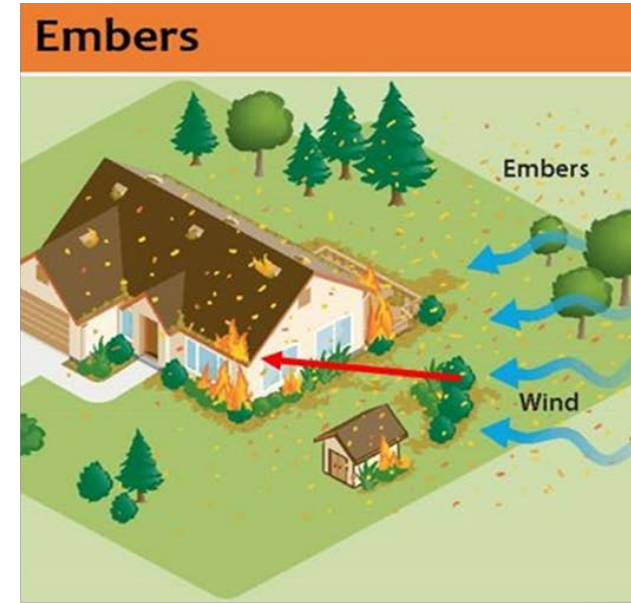
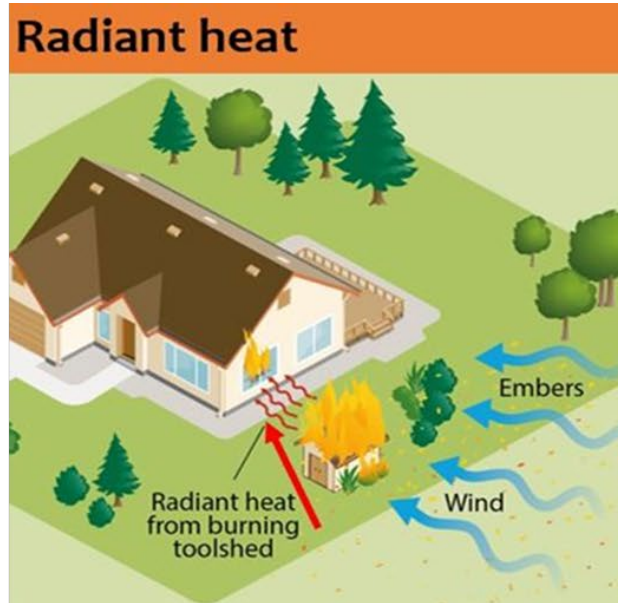
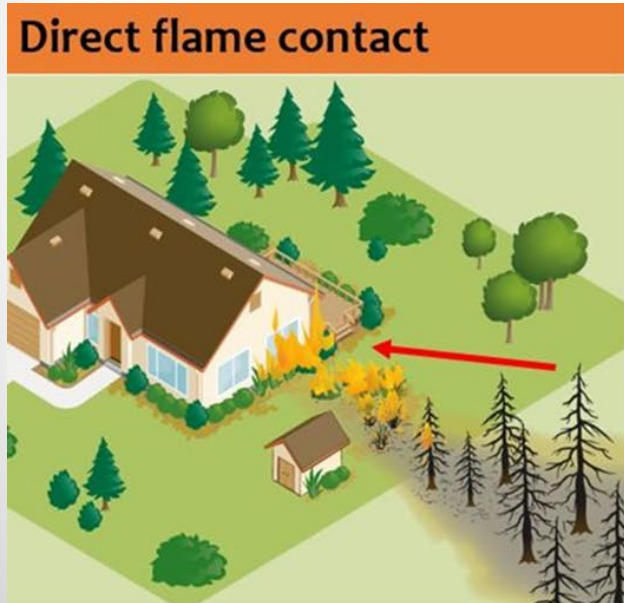
# What is Home Hardening?

- **Home Hardening** is the term used to describe building materials, systems and/or assemblies used in the exterior design, construction or retrofitting of buildings to resist the intrusion of flames or embers (fire brands) projected by a wildland fire.
- The term **Home Hardening** can be applied to new construction or for retrofitting existing nonconforming structures in Wildland-Urban Interface (WUI) Fire Areas.



# Direct Flame, Radiant Heat and Ember Exposure

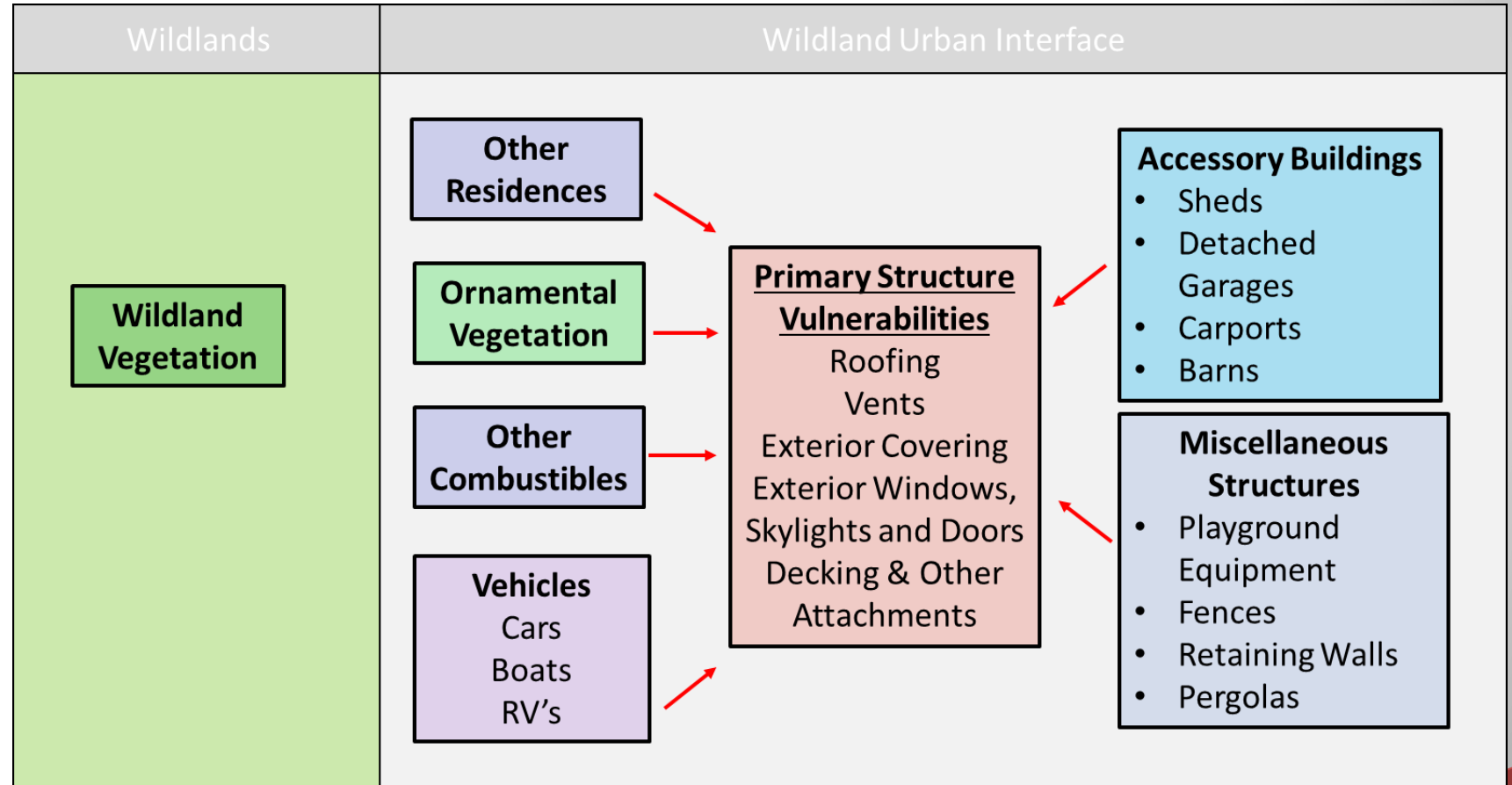
Structure losses are attributed to exposures from embers (firebrands), radiation and direct flame contact.



# Sources of Flame, Radiation, and Ember Exposure

**Home Hardening** also considers the relationship between the primary residence and its exposure to nearby combustibles.

These nearby combustibles create fire pathways that can impact the primary structure.





# Example of a Fire Pathway

Grass fire transitioned to fence > transitioned to a shed > transitioned to the primary residence.



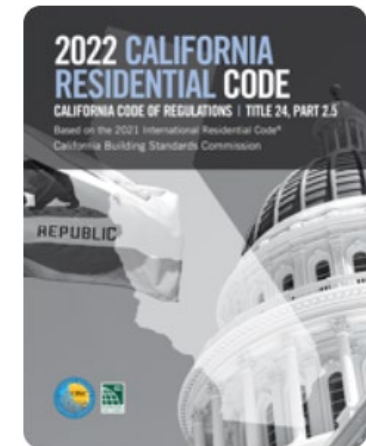


# California Building Code Chapter 7A Materials and Construction Methods for Exterior Wildfire Exposure

- **Effective January 1, 2008**
- Established **minimum standards** for the protection of life and property by increasing the ability of a building to **resist the intrusion of flames or burning embers** projected by a vegetation fire and contributes to a systematic reduction in conflagration losses.
- **Required-** New buildings that submitted on or after January 1, 2008- All unincorporated lands designated by the State Board of Forestry and Fire Protection as State Responsibility Area (SRA). Land designated as Very-High Fire Hazard Severity Zone by cities and other local agencies. Land designated as Wildland Interface Fire Area by cities and other local agencies.
- **The code addresses the following building components:**
  - Vegetation Management Compliance
  - Roofing
  - Vents
  - Exterior Covering
  - Exterior Windows, Skylights and Doors Decking
  - Accessory Buildings and Miscellaneous Structures



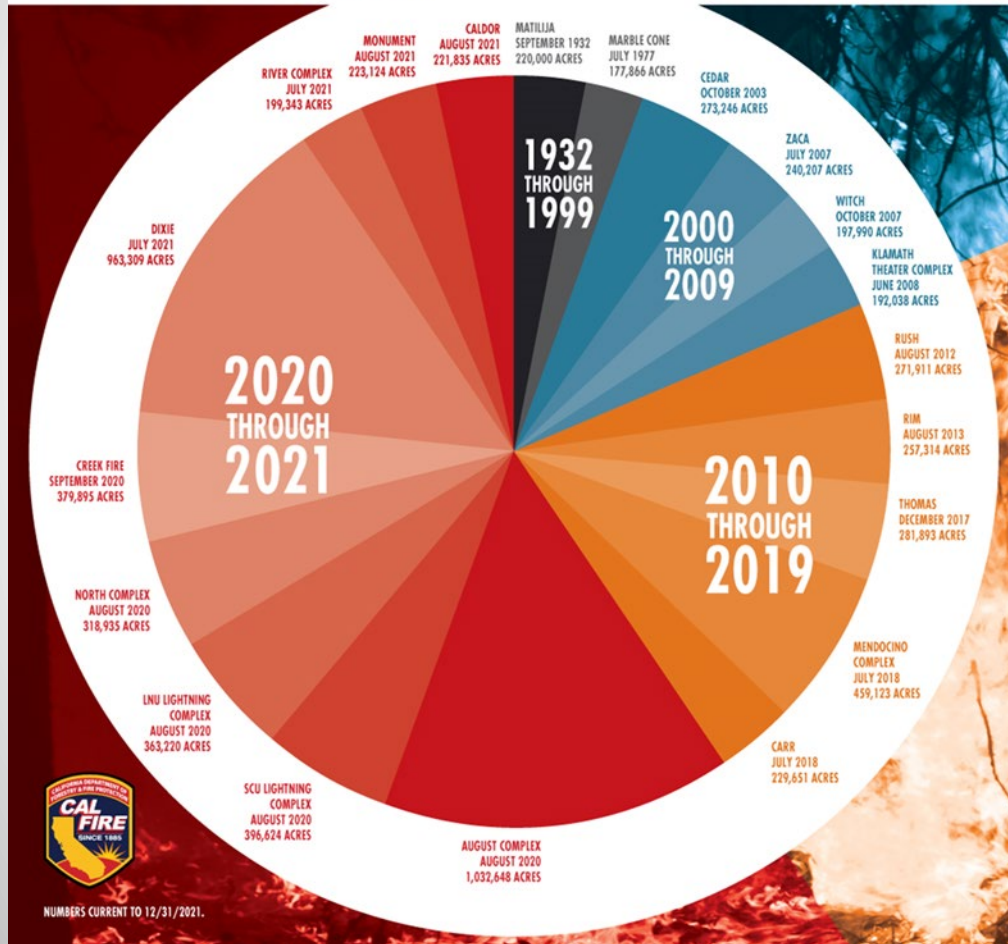
2022 California Building Code,  
Title 24, Part 2 (Volumes 1 & 2)



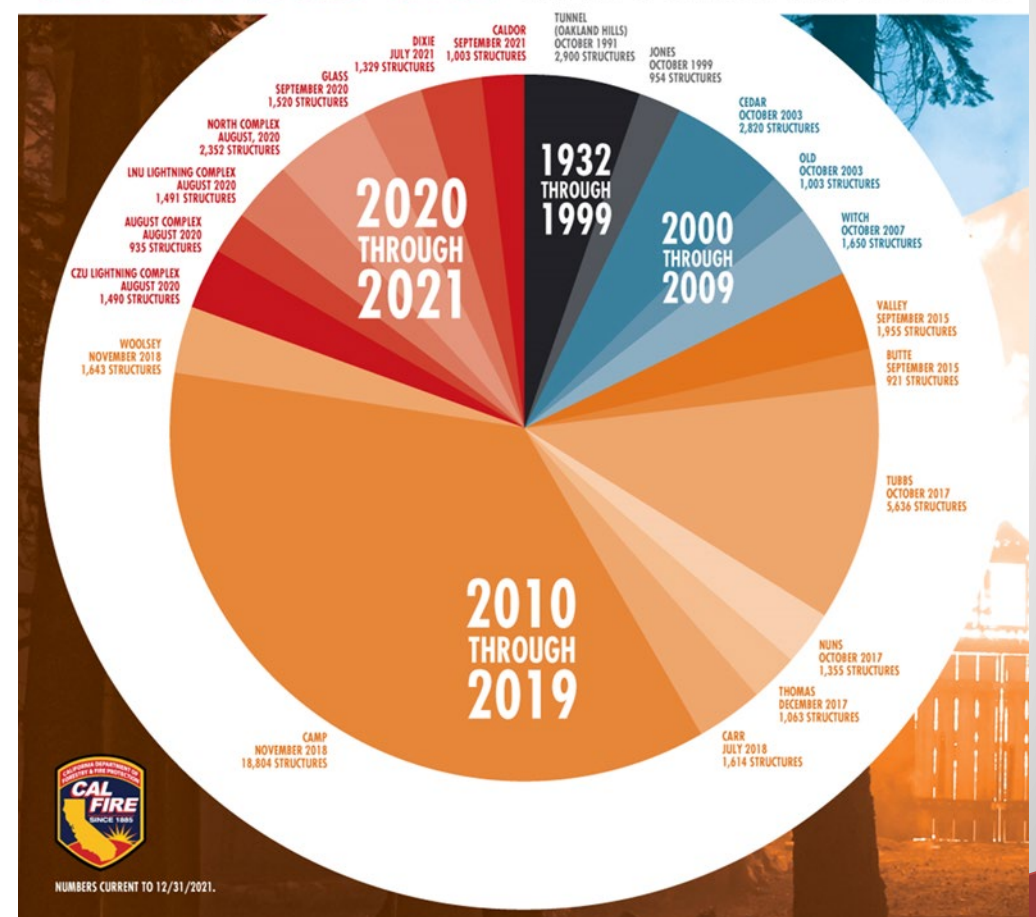
2022 California Residential  
Code, Title 24, Part 2.5

# Why is Home Hardening Important?

## TOP 20 LARGEST CALIFORNIA WILDFIRES

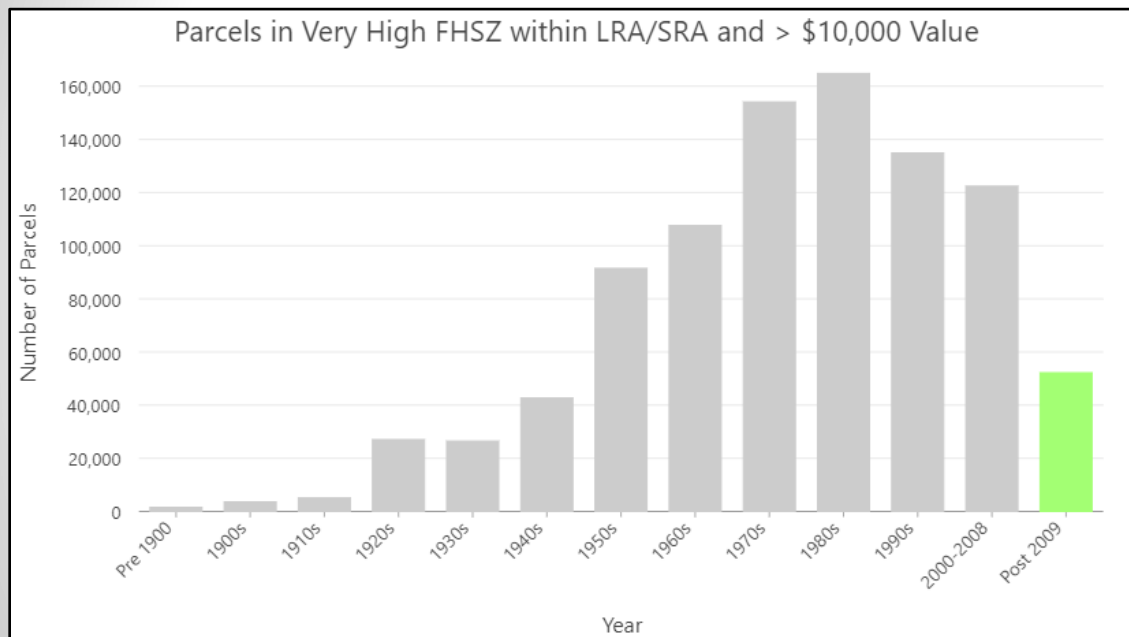


## TOP 20 DESTRUCTIVE CALIFORNIA WILDFIRES



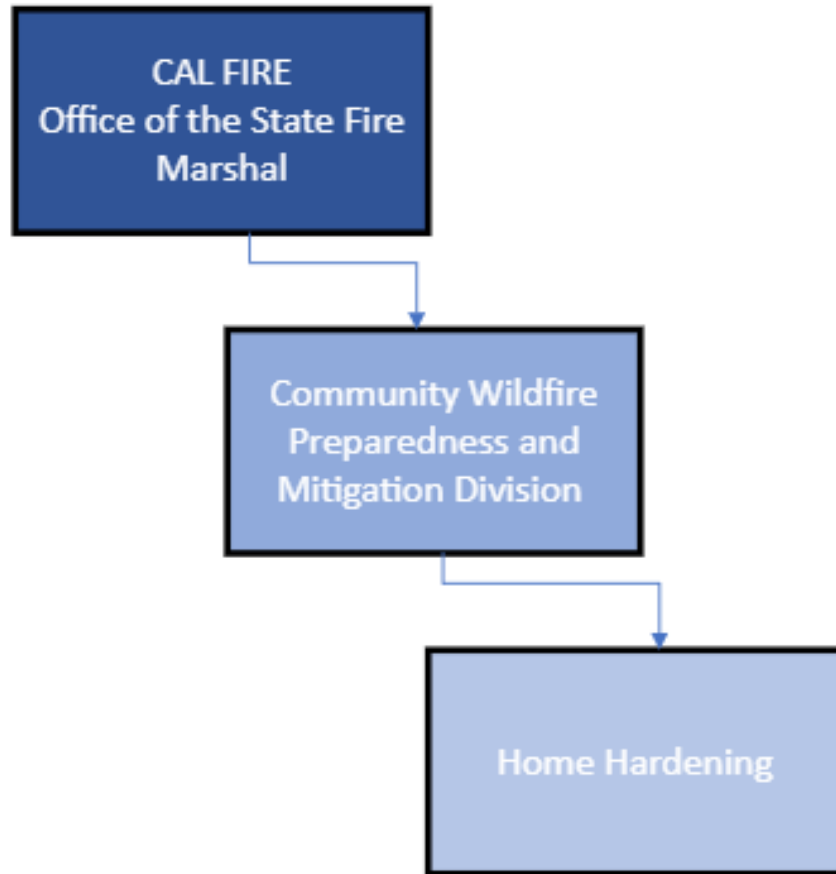


# Why is Home Hardening so Important?



- The graph to the left depicts the large number of parcels throughout the state that are in **Very High Fire Hazard Severity Zones** and that were built prior to the initiation of the Chapter 7A code and have made improvements.
- Existing non-conforming structures (Structures Built Prior to the initiation of Chapter 7A) may not have been built with fire resistant construction.
- There are many cost-effective strategies a homeowner can do to retrofit their existing homes to bring them into alignment with the Chapter 7A standards.

# Home Hardening Program Overview





# Chapter 7A Code Development

- Home Hardening personnel participate in the OSFM California Building Code Chapter 7A working group and sub-groups on minimum building requirements in the Wildland-Urban Interface.



## Code Development and Analysis

The Office of the State Fire Marshal's Code Development and Analysis Division reviews all of California's regulations relating to fire and life safety for relevancy, necessity, conflict, duplication and/or overlap. The division also prepares the California State Fire Marshal's fire and life safety regulations and building standards for review and adoption by the California Building Standards Commission.



# California Wildfire Mitigation Program (CWMP)

Assembly Bill 38, (Wood, 2019) **Fire safety: low-cost retrofits: regional capacity review: wildfire mitigation**

Directed the *Office of Emergency Services* (Cal OES) to enter into a joint powers agreement (JPA) with the *Department of Forestry and Fire Protection* (CAL FIRE) to develop and administer a comprehensive wildfire mitigation program (CWMP).

- Encourage cost-effective structure hardening and retrofitting.
- Facilitate vegetation management, the creation and maintenance of defensible space, and other fuel modification activities.
- Offer financial assistance to those eligible under the program.





# California Wildfire Mitigation Program

- Program currently funded 75% through FEMA Hazard Mitigation Grant Program funds; matched 25% with state appropriated funds.
- Directed the JPA to develop criteria and a scoring methodology to prioritize financial assistance
  - Area and community vulnerability to wildfire
  - The impact of future climate risk factors and community wildfire vulnerability assessments
  - Vulnerable Populations
- Areas eligible for financial assistance under the CWMP
  - State responsibility areas located within any FHSZ
  - Local responsibility areas located within a very high fire hazard severity zone



# FEMA



# CWMP Accomplishments

- The program is currently in the demonstration phase, being piloted in three select areas:
  - Whitmore in **Shasta County**
  - Dulzura in **San Diego County**
  - Kelseyville-Riviera in **Lake County**
- The lessons learned during the demonstration phase will be used to refine the program before expanding to additional areas within demonstration counties, and ultimately, across the state.





# Home Hardening Training and Education

- Home Hardening personnel are tasked with developing and implement statewide training and education to promote the Home Hardening Program.

The screenshot shows the CAL FIRE website with the following elements:

- Header:** CAL FIRE logo, "WILDFIRE IS COMING... ARE YOU READY?", and "Use the CAL FIRE App: English Español".
- Navigation:** HOME, PREPARE (selected), PREVENT, POST WILDFIRE, FOREST HEALTH, PERMITS, TOOLKITS, ESPAÑOL, MORE.
- Main Content:** A large graphic with the text "PREPARE FOR WILDFIRE" and "HARDENING YOUR HOME".
- Text:** "Prepare for wildfire and harden your home now. There are three ways your home can be exposed to wildfire: direct flames from a wildfire or burning neighboring home; radiant heat from nearby burning plants or structures; and flying embers. Flying embers from a wildfire can destroy homes up to a mile away and are responsible for the destruction of most homes during a wildfire."
- Left Sidebar:** Social media sharing icons (Facebook, Twitter, Pinterest, Email, Print) and a list of links: "PREPARE FOR WILDFIRE", "READY, SET, GO!", "GET READY", and "Defensible Space".

<https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/hardening-your-home/>



# Low Cost Retrofit List and WUI Products Handbook



## Low-Cost Retrofit List

### Low-Cost Ways to Harden Your Home

1. When it is time to replace your roof, replace it with a Class A fire rated roof. [OFSM Wildland Urban Interface \(WUI\) Products](#)
2. Block any spaces between your roof covering and sheathing with noncombustible materials (bird stops).
3. Install a noncombustible gutter cover on gutters to prevent the accumulation of leaves and debris in the gutter.
4. Cover your chimney and stovepipe outlets with a noncombustible corrosion resistant metal mesh screen ([spark arrestor](#)), with 3/8-inch to 1/2-inch openings.
5. Install ember and flame-resistant vents. [OFSM Wildland Urban Interface \(WUI\) Products](#)
6. Caulk and plug gaps greater than 1/8-inch around exposed rafters and blocking to prevent ember intrusion into the attic or other enclosed spaces.
7. Inspect exterior siding for dry rot, gaps, cracks, and warping. Caulk or plug gaps greater than 1/8-inch in siding and replace any damaged boards, including those with dry rot.
8. Install weather-stripping to gaps greater than 1/8-inch between garage doors and door frames to prevent ember intrusion. The weather-stripping must be compliant with UL Standard 10C.
9. When it's time to replace your windows, replace them with multi-paned windows that have at least one pane of tempered glass. [OFSM Wildland Urban Interface \(WUI\) Products](#)
10. When it's time to replace your siding or deck, use compliant noncombustible, ignition-resistant, or other [OFSM Wildland Urban Interface \(WUI\) Products](#)
11. Cover openings to operable skylights with noncombustible metal mesh screen with openings in the screen not to exceed 1/8-inch.
12. Install a minimum 6-inch metal flashing, applied vertically on the exterior of the wall at the deck-to-wall intersection to protect the combustible siding material.

\*This list was developed as a best practices guide and to assist homeowners to ensure their home is more ignition-resistant from wildfires. Low cost can be subjective. Some of these items are based on upgrading to more stringent materials when that feature is up for replacement due to normal maintenance or lifespan, i.e. roofs.

Updated 2/17/2022

CALIFORNIA DEPARTMENT OF FORESTRY  
and FIRE PROTECTION  
OFFICE OF THE STATE FIRE MARSHAL



STATE FIRE MARSHAL LISTED  
WILDLAND URBAN INTERFACE (WUI)  
PRODUCTS

HANDBOOK

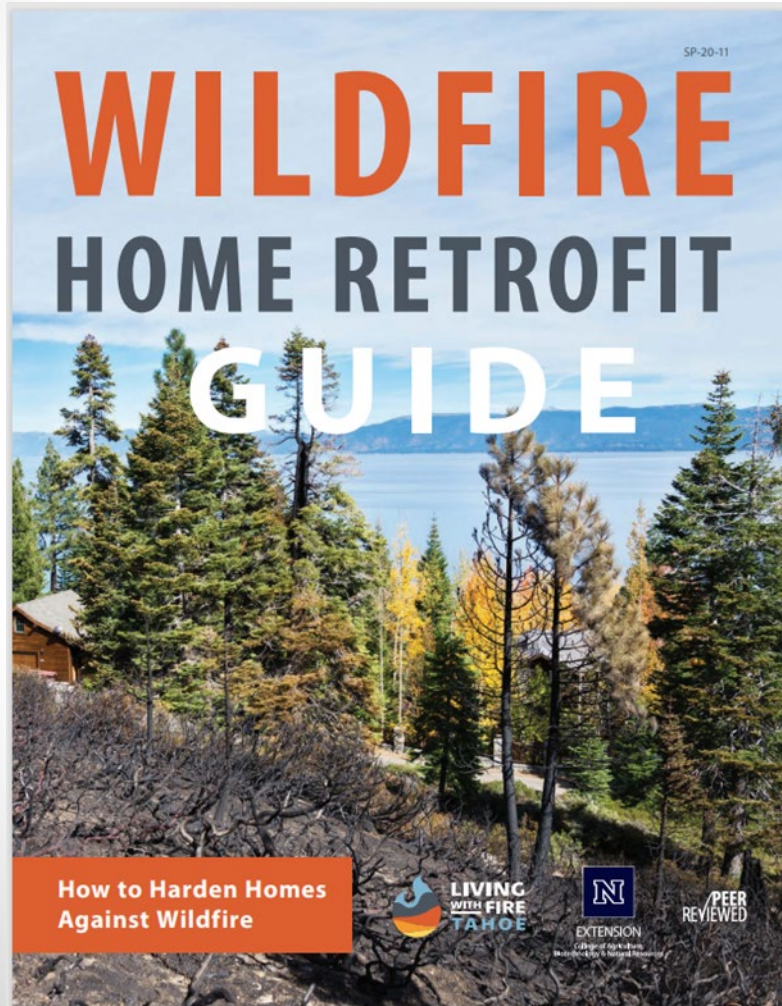
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FIRE ENGINEERING AND INVESTIGATIONS DIVISION  
BUILDING MATERIALS LISTING PROGRAM


December 14, 2021




# Wildfire Home Retrofit Guide and Useful Links



## Useful Links

[Fire Information Engine—Preparing Your Home](#) 

[University of California—Fire Resources and Information](#) 

[IBHS Wildfire Guidance for Home & Business Owners](#) 





# Questions?

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### Dennis O'Neil

Assistant Chief

Home Hardening

[Dennis.ONeil@fire.ca.gov](mailto:Dennis.ONeil@fire.ca.gov)

Resources can be found at:

<https://www.readyforwildfire.org/prepare-for-wildfire/get-ready/hardening-your-home/>

Information on the California Wildfire Mitigation Program (CWMP) can be found at:

<https://osfm.fire.ca.gov/boards-committees/california-wildfire-mitigation-program/>





# Upcoming Webinars

Join us for our upcoming webinars!

- 1/23/2023 – Defensible Space
- 2/27/2023 – Combining Defensible Space and Home Hardening
- 3/13/2023 – CalSTATS program
- 3/27/2023 – Strategic Fire Plan and Unit Fire Plans



More information on the webinar series can be found any time at [osfm.fire.ca.gov/wildfire-public-education/](https://osfm.fire.ca.gov/wildfire-public-education/)

