

A photograph of a residential neighborhood at night, with a wildfire burning on a hillside in the background. The houses are illuminated by streetlights and their own lights, and the fire is bright orange and yellow. The text is overlaid on the image.

County of Los Angeles Fire Department Forestry Division Fuel Modification Unit

Firewise Landscaping
Strategic Landscape Planning and Design

Agenda

- 1. Fuel Modification Overview**
 - a. Fuel Modification Unit
 - b. Home Hardening

- 2. Firewise Landscapes**
 - a. Designing for Fire
 - b. Planting per Zone
 - c. Maintenance
 - d. Key Actions

- 3. Resources**
 - a. Research and Tools



Fuel Modification Overview

Purpose and Functionality

Living with Fire in California

- 5.1 million homes in California are located in the **WUI**
- A well designed firewise landscape will **not** guarantee structure survival
- Defensible space, firewise landscaping, and maintenance by the property owner are paramount to wildfire resilience





READY! SET! GO!

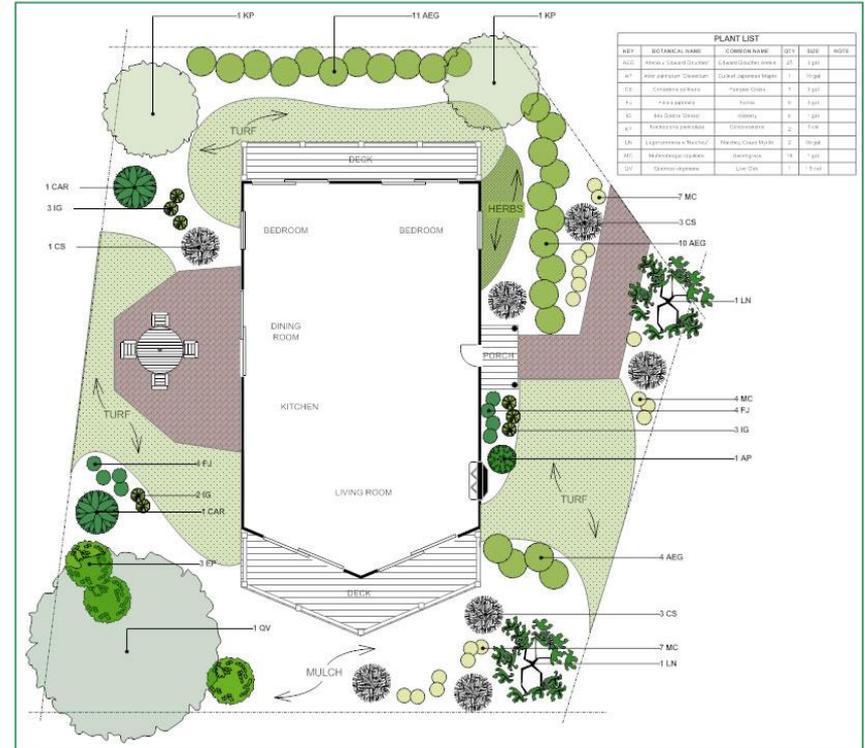
YOUR PERSONAL
WILDFIRE ACTION PLAN





Fuel Modification Unit

- We serve as a resource for the community by providing tailored recommendations on appropriate **plant species, arrangement,** and **density** to allow for Defensible Space for firefighters, and reduce the risk of fire spread to your home.



Firewise Landscaping

Plan, Prepare, Protect



Designing for Fire - Basic Principles

- **Choose** Fire-resistant landscape materials
 - River rock pathways, fire-resistant plants
- **Design** by Defensible Space Zones
 - Plan according to Zone requirements
- **Arrange** with adequate spacing to disrupt a fire
- **Maintain** the landscape
 - Clear any dead or dried vegetation
 - Keep plants well-irrigated, healthy, and pruned



Zone 0 - Ember Resistant Zone: 0-5'

This zone starts at the edge of your roof and extends 5' from the walls. Safeguarding against **embers** is crucial within this zone.

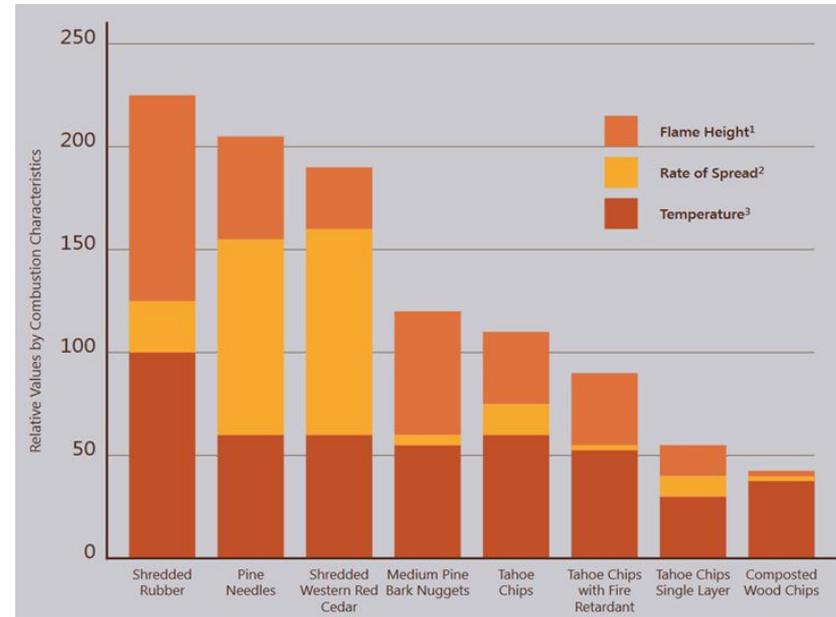
1. Remove any combustible materials such as vegetation, furniture and replace with non-combustible material such as metal or gravel



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1. Remove any combustible materials such as vegetation and furniture, and replace with non-combustible material such as metal or concrete
2. Use inorganic mulch such as stone or gravel



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3. Trim tree limbs that extend into this zone



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3. Trim tree limbs that extend into this zone
4. Do not store firewood in this area, especially under decks or overhangs



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3. Trim tree limbs that extend into this zone
4. Do not store firewood in this area, especially under decks or overhangs
5. Incorporating pathways made of river rock or gravel is highly recommended



BEFORE



Photo: [Sanoma Valley Fire](#)

AFTER



Zone A - 5'-30'

Extends 30' beyond the edge of any combustible structure or projection.
Vegetation density and arrangement should provide adequate **Defensible Space**.

1. Vegetation in this zone shall consist primarily of low-growing ground-covers and adequately spaced shrubs
2. Selected vegetation must have high moisture content



Zone A - 5'-30'

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2. Selected vegetation must have high moisture content
3. Low-maintenance/ slow growing species and small trees less than 25' in height at maturity are highly recommended
4. Vines and climbing plants are not allowed on wooden fences or decks connected to the structure



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4. Vines and climbing plants are not allowed on wooden fences or decks connected to the structure
5. Irrigation is crucial to maintain healthy vegetation and fire resistance



Zone B - 30-100'

Extends from the outer edge of Zone A for a total of 100' from the structure. Adequate **arrangement and maintenance** is critical.

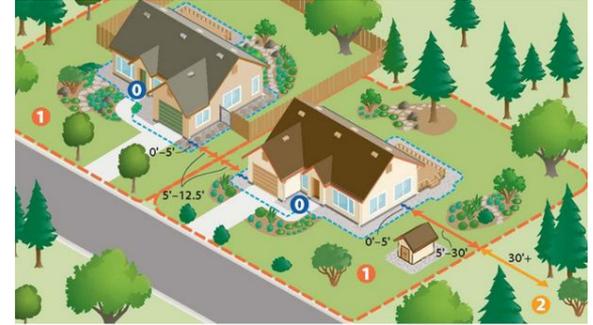
1. Create horizontal and vertical spacing between grasses, shrubs and trees to reduce ignition potential
2. Remove dead, dying vegetation and leaf litter regularly



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1. Create horizontal and vertical spacing between grasses, shrubs and trees to reduce ignition potential
2. Remove dead, dying vegetation and leaf litter regularly
3. Plant species selected shall have high moisture content and require little maintenance
4. Planting density and arrangement must provide adequate defensible space
5. Irrigation must be provided to maintain healthy vegetation



FIRESCAPING TIPS



Plant Selection

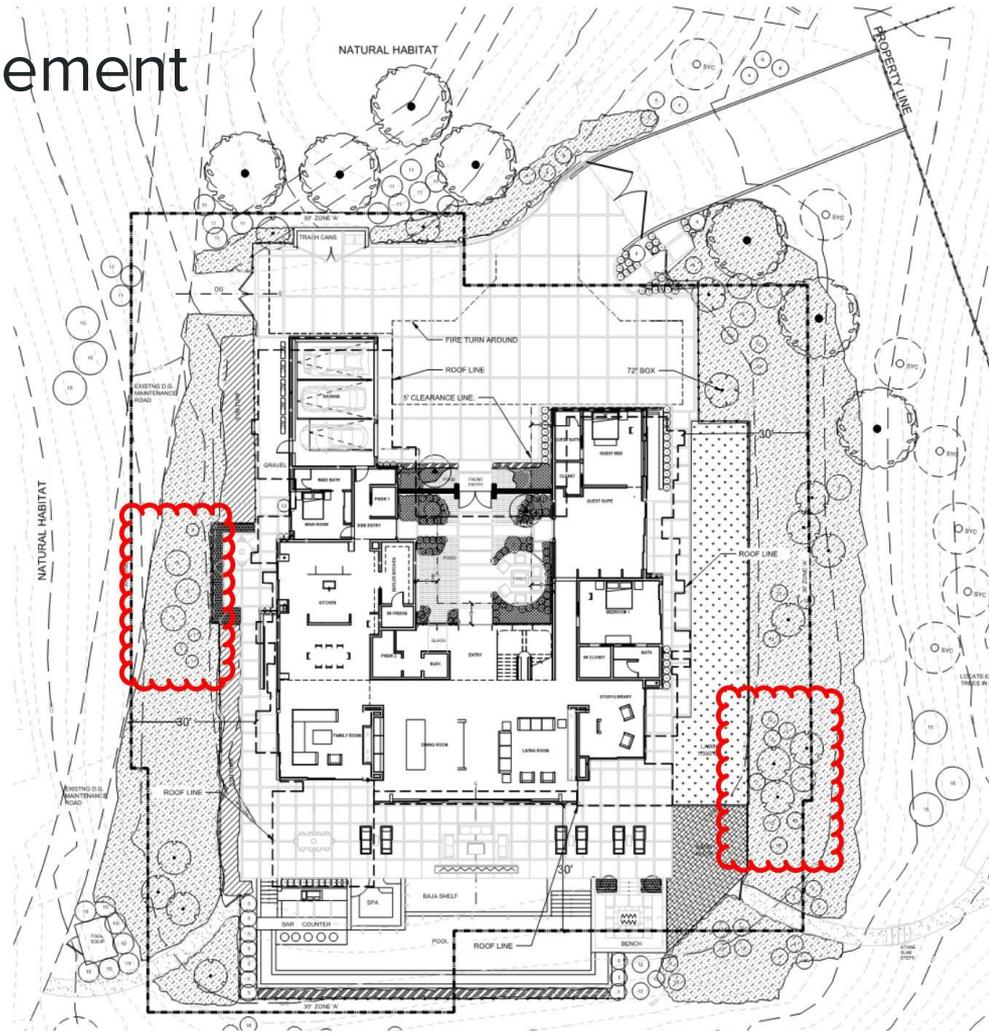
Fire Ladder



Embers flying during the 2019 Hillside Fire in San Bernardino, California. Photo: Noah Berger, AP.

Plant Placement and Arrangement

Zone A



Plant Selection - Zone A

Choose plants based on characteristics:

- **High moisture content**
 - Non-woody stems, leaves are usually fleshy, large and soft



Plant Selection - Zone A

Lantana

Choose plants based on characteristics:

- Woody vs herbaceous

Example:

- Lantana vs Verbena

Same essential look!

Both used to fill space



Verbena

Plant Selection - Zone A

Lantana



Example:

- Lantana vs Verbena
 - **Lantana** - matures to 10ft x 6ft, large, dense, develops stout, woody branches, accumulates leaf litter
 - **Verbena** - matures to 3ft x 1ft, soft, long-lived herbaceous perennial

Verbena



Plant Selection - Zone A

Example:

- Lantana vs Verbena
 - **lantana** will be more suitable planted **farther away** from the structure due to its large **size and spacing** needs
 - **Verbena** may be used **closer** to the structure



Plant Selection - Zone A

Choose plants based on characteristics:

- **Size** - choose the right size plant for the right-sized space
 - ***Know how big each plant will ultimately grow to maturity***
 - Choose plants that require little maintenance/pruning at maturity
 - Trees - pick & place trees that at maturity *will not overhang the roof*



Plant Selection - Zone A

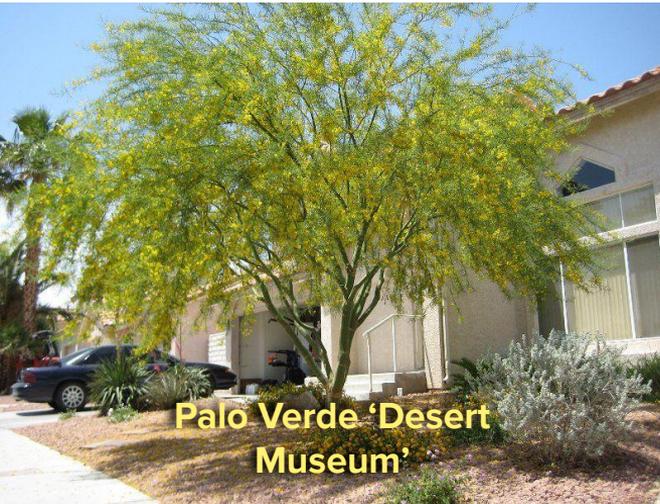
Choose plants based on characteristics:

- **Form - open and airy**

Rethink privacy screening



Fruit Trees



Palo Verde 'Desert Museum'



Giant bird of Paradise



Umbrella Tree



Giant bird of Paradise

Plant Selection - Zone A

Choose plants based on characteristics:

- **Form - Leaf traits**
 - A combination of coarse, glossy, large or soft

Avoid - dense arrangement of fine leaves or fine branching patterns



Umbrella tree



Podocarpus



Plant Selection - Zone A

Choose plants based on characteristics:

- Are they well adapted to the site's climate and microclimate?
- Consider drought tolerance, or waterwise plants
- E.g. Locally native species grow year round without human intervention

Toyon

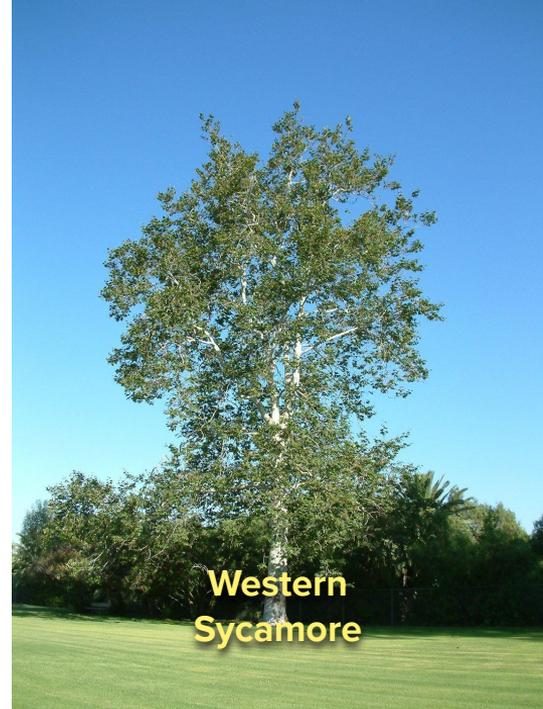


Yarrow



Plant Selection - Zone B & C

- Larger trees, woody shrubs & screening plants may be used here, **but all the principles of zone A should still apply!**
- Avoid creating continuous tree canopy leading to the house



**Western
Sycamore**

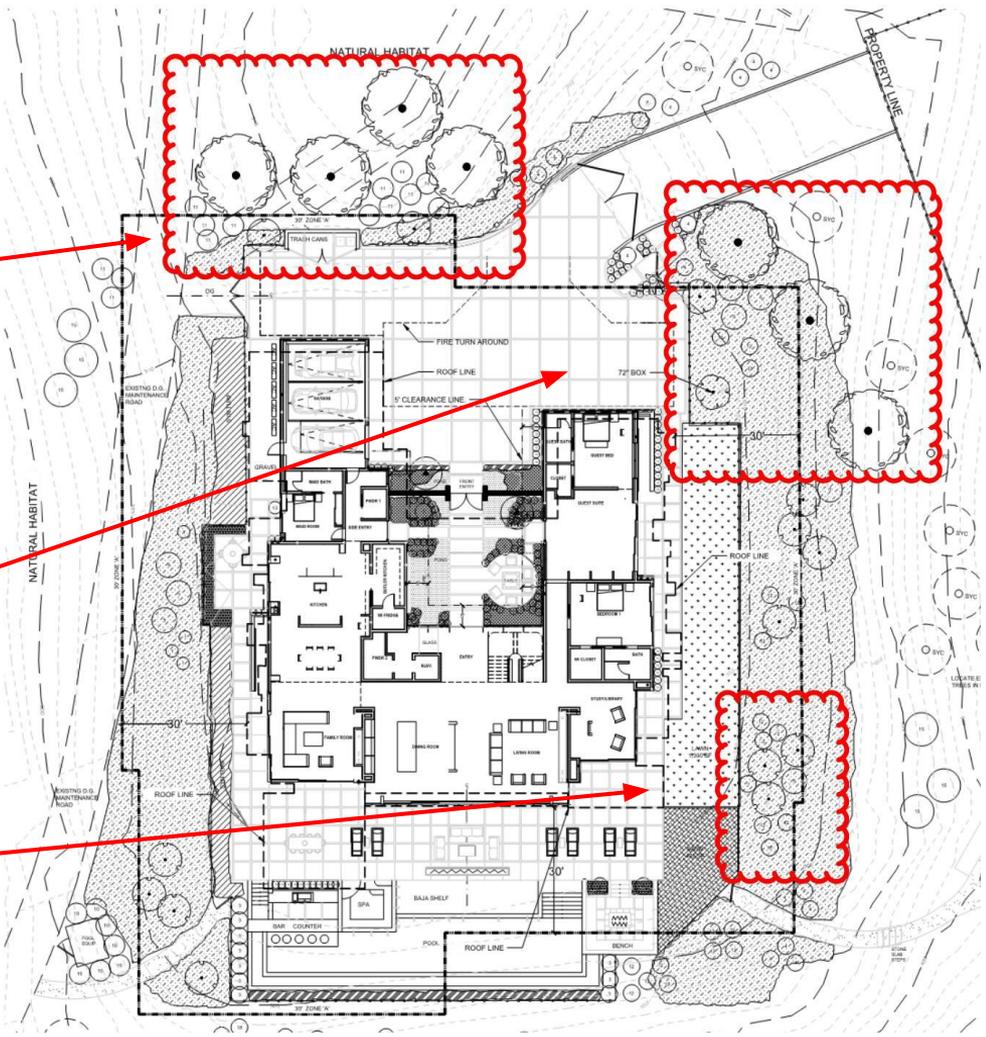


**California
Sagebrush**

Break up planting continuity



Choose: tree or shrubs



Plant Selection - Zone B & C

- Larger trees, woody shrubs & screening plants may be used here, but all the principles of zone A should still apply!
- **Avoid:**
 - continuous tree canopy leading to the house
 - **creating fuel ladders**
 - **mass planting of shrubs or double hedge rows**



Plant Selection - Recap



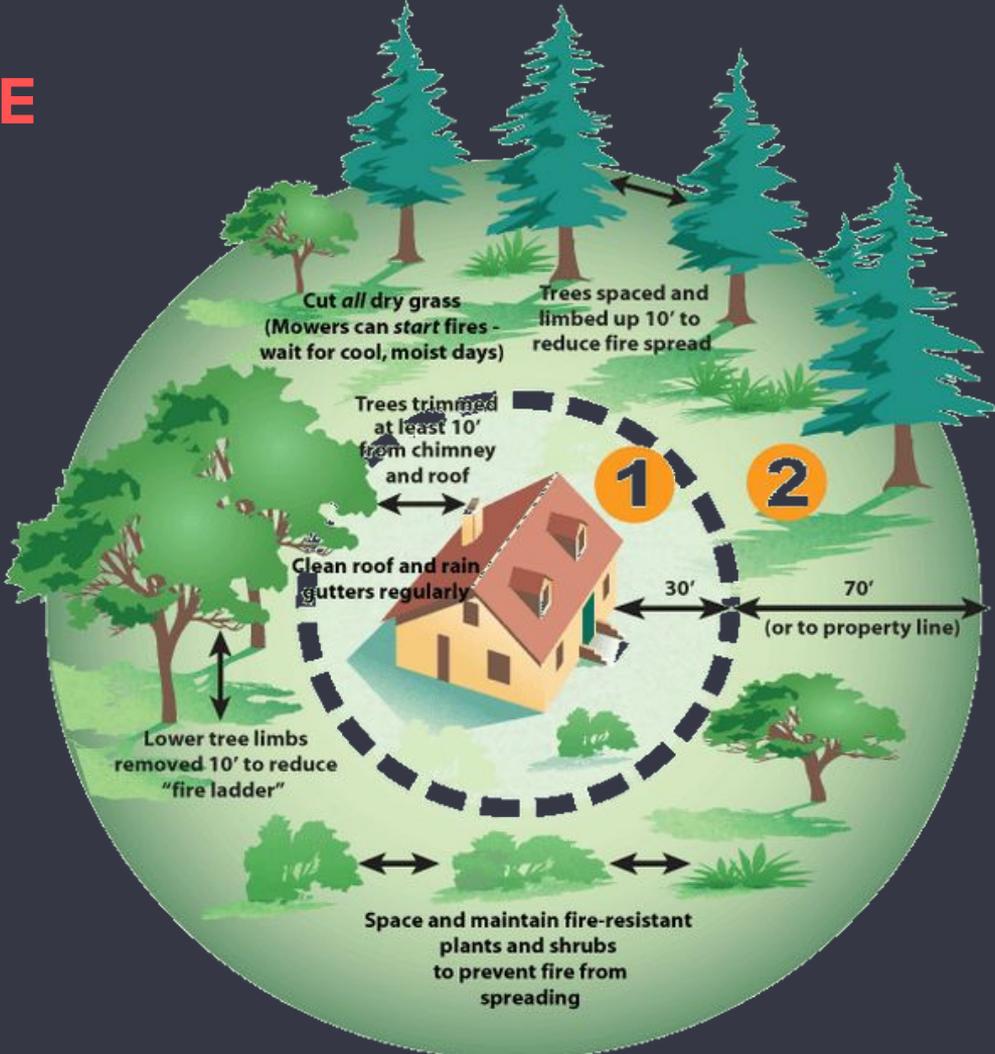
Choose plants based on characteristics:

- **High moisture content**
- **Size** - maturity-size appropriate to the placement location
- **Form** - open canopy
- Are **well adapted** to the site's climate and microclimate
- Consider **drought tolerance**, or waterwise plants

Avoid plants such as:

- Shrubs/trees with dense leaves and branches
- Palms with persistent dead fronds and fibrous trunks
- Shrubs, grasses, perennials that develop dense thatch and deadwood
- Hedges abutting structures and trees overhanging structures

MAINTENANCE



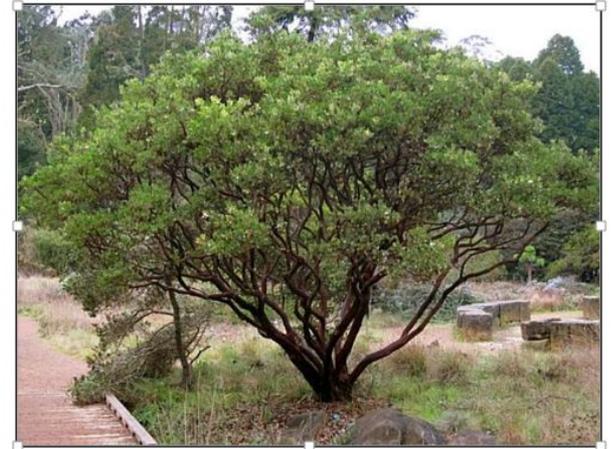
Maintenance



- **Pruning**
 - Keep trees and shrubs 6 - 10' or $\frac{1}{3}$ height from the ground
- **Clearing**
 - Remove dead or dying vegetation from:
 - Gutters
 - Understory of trees & shrubs
- **Irrigation - watering**
 - Existing vegetation regularly
 - Drought-tolerant natives monthly during the summer or as necessary

Consider plant characteristics when selecting species

- Evergreen/Deciduous (maintenance)
- Texture
- Form
- Size
- Pruning needs
- Growth Rate



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Maintenance

- Pruning methods (no substitute for plant selection)
- Accumulation of dead plant material
- Leaf litter on roofs and gutters
- Weeds
- Irrigation

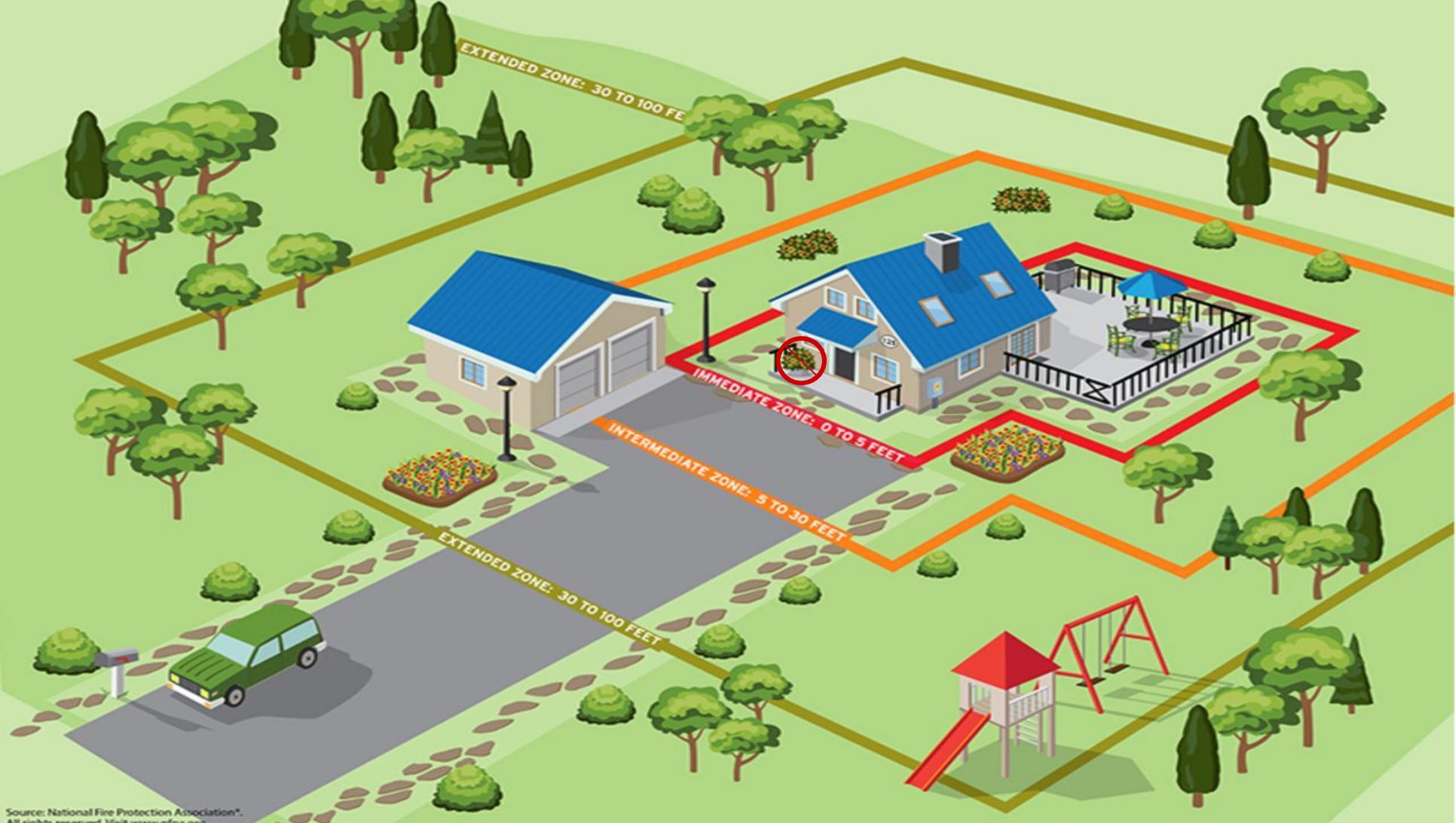


Under planted/denuded



KEY ACTIONS

1. Establish your Zones
2. Strategic Plant Selection & Arrangement
3. Regular Maintenance





Rational Action

Thinning rather than "clearing" is the proper description of how to construct effective defensible space. Properly spacing existing shrubs and clearing out dead wood protects a home by creating an ember barrier and a heat absorber.



Overreaction

Is this the environment in which we want to live? The cleared 300 feet of dirt will soon be covered in flammable weeds and scarred by erosion gullies. What this owner has done is create a bowling alley for embers to target the house.



Clear your gutters!

Resources

Research and Tools

Resources

- [Personal Wildfire Action Plan Checklist](#)
- [City of Los Angeles Fire Department, Firewise Communities](#)
- [Forestry Division's Guide to Creating and Maintaining Defensible Space](#)
- [CAL FIRE Firewise Communities](#)



Homeowner Action is Critical



County of Los Angeles Fire Department
Forestry Division
Fuel Modification Unit