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UCCE Master Gardeners  
San Mateo & San Francisco Counties

# Firewise Landscaping Protect Your Home!



*Photo – David Swanson - Reuters*

Presented by UC Master Gardeners of  
San Mateo and San Francisco Counties



# Firewise Landscaping Objectives

- Defensible Space
- Soil
- Mulch
- Plant Selection
- Fire Resistant Plant Characteristics
- Hydrozones
- Fire Resistant Plant Research
- PG&E - Trees
- Firewise Home Hardening
- Protecting Your Neighborhood
- LA Homes That Withstood the Fires
- Summary/Homework



*Photo - Open Clipart Vectors*



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# Defensible Space – Zone 0 – 0-5 Feet

## The Ember Resistant/Noncombustible Zone

Implement on  
all sides of the  
home

Less focus on  
plant lists more  
focus on  
placement and  
maintenance



Photo – Lisa Erdos

- Use gravel, pavers, or concrete
- Clear all dried plant material (roofs, gutters, etc.)
- Keep branches trimmed
- No combustible mulches

# Defensible Space – Zone 0 – 0-5 Feet

## The Ember Resistant/Noncombustible Zone

### Move or Replace:

- Combustible furniture/planters, etc.
- Firewood and lumber
- Fencing and gates (fire-resistant materials)
- Natural fiber doormats



Photo – Lisa Erdos



# Defensible Space – Zone 0 – 0-5 Feet

## The Ember Resistant/Noncombustible Zone

### Relocate:

- Garbage and recycling container
- Boats, RVs, and vehicles
- Stored firewood, lumber, storage containers, and propane tanks
- Plastic garbage and recycling containers



*Photo – Stefan Schweihofer - Pixabay*



# Zone 0 – Newsom’s Executive Order

## Mandating 5 Foot Clearance Around Homes

February 8, 2025 – California homeowners in “very high fire hazard severity” zones will be required to create a 5-foot “ember-resistant” zone around their houses

**The Plan** - In 45 days officials:

- Post a draft of the 5 foot rule
- Hold a public workshop to gather input
- Produce final rule by year’s end



*Photo – Cal Fire Defensible Space*

Cal Fire has provided science-based evidence showing how the first 5 feet of defensible space can make a difference to prevent embers and direct flame contact from igniting homes.

# Defensible Space – Zone 1 – 5-30 Feet

- **LEAN** - There is a small amount of vegetation present
- **CLEAN** - Vegetative debris and dead materials are routinely removed
- **GREEN** - Vegetation within this zone is kept green and well irrigated during the fire season

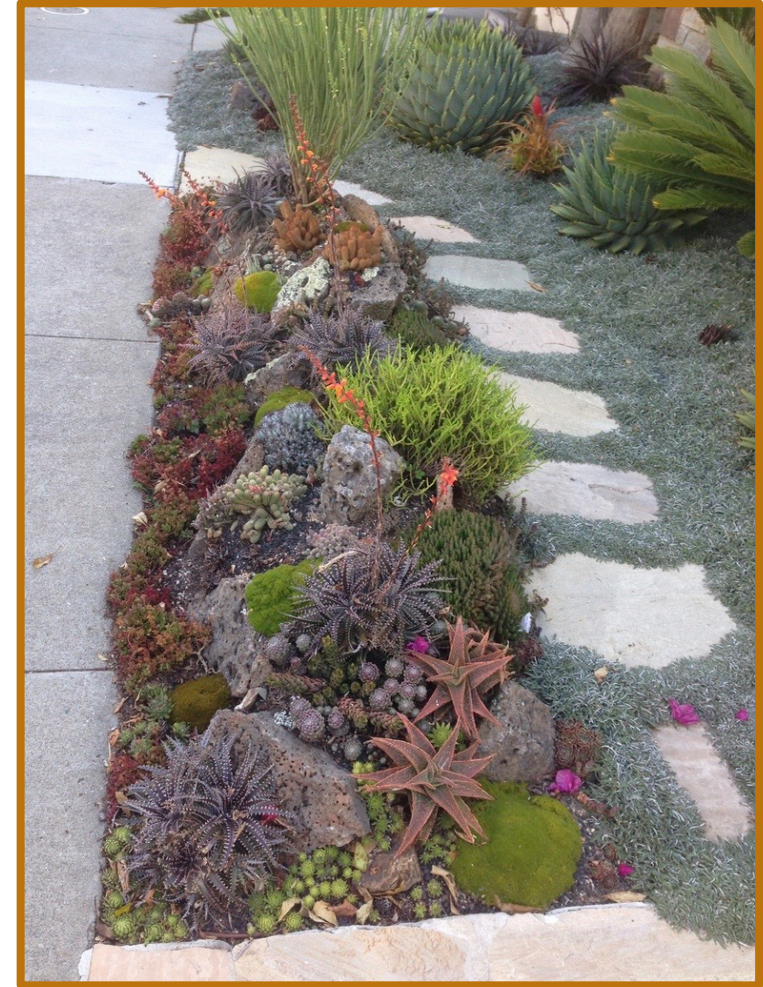


Photo – Lisa Erdos



# Defensible Space – Zone 1 – 5-30 Feet Maintenance!

- **Clear** all dead plants, grass, and weeds
- **Remove** dead leaves and pine needles
- **Trim** overhanging branches



Photo – Cal Fire

# Defensible Space – **Zone 1** – 5-30 Feet



*Photo – Sharon Califano - Pixabay*

- Move wood piles to Zone 2
- Prune flammable plants and shrubs near windows
- Ensure outbuildings and LPG tanks have 10 feet of clear space to bare soil and no flammable vegetation within an additional 10 feet around them

# Defensible Space – Zone 2 – 30-100 Feet

## The Reduced Fuel Zone

The objective of this zone is to reduce fire spread and restrict fire movement into the crowns of trees or shrubs



Photo - Yana Valachovic  
Humboldt County

- Create islands of vegetation
- Thin and prune tall vegetation
- Remove dead plant material

# Healthy Soil for Zones 5-30 feet and Beyond



*Photo: Alexander Fox - Pixabay*

- **Amend** Garden soil with compost  
- Organic Matter
- Compost **ABSORBS** water and **HOLDS** water in soil
- Compost is rich in slow-release nutrients allowing plants to establish quickly and **GROW** bigger roots with less fertilizers and water





Photos-Lisa Erdos

Taking care of the soil is important given:

**Climate Change**

**Less Rain and Longer Periods of Drought**

**Longer Wildfire Seasons**

**Compost and mulch can be applied 2-3 x per year**



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# Mulch - 0-5 feet Recommendations

- All the mulch treatments tested are combustible and not recommended for use within 5 feet of the house or other structures
- Use noncombustible rock, gravel, concrete and pavers within 5 feet of the house



*Photo - Cynthia Nations*



# Mulch - 5-30 feet Benefits

- Acts like a sponge to hold water to resist fire
- Conserves valuable water in the soil
- Cools soil temperatures
- Minimizes the heat island effect
- Reduces weeds and herbicide use
- Controls soil erosion and dust
- Enhances visual aesthetics



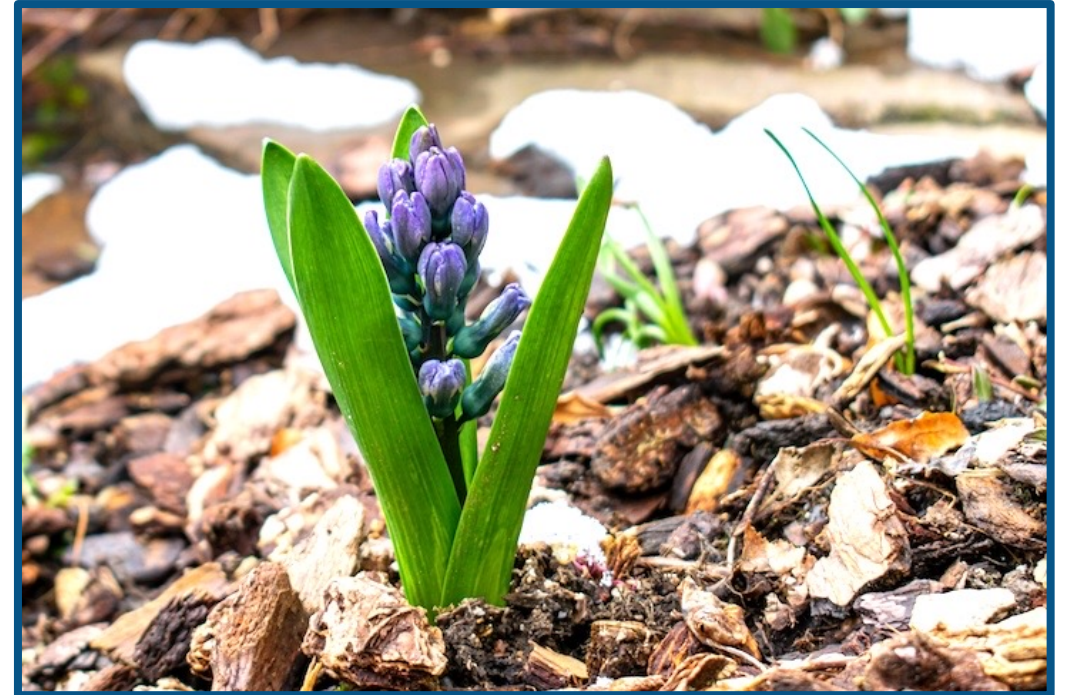
*Photo: Manfred Richter - Pixabay*



# Mulch - 5-30 feet and Beyond Recommendations

Mulch and compost together help plants survive drought, wind, and wildfires

- Use least flammable mulch application – Compost, then mulch 1 inch around plants' dripline
- Decomposed wood chips hold moisture
- Reduces weed growth
- Feeds soil providing healthier roots and plants



*Photo – Cornell Fruhauf - Pixabay*

**Mulch can smolder, but the plants will have better moisture retention and be less likely to burn.**

# Plant Selection

## What is a “Fire-Resistant” Plant?

- Do not readily ignite from a flame or other ignition sources
- Foliage and stems do not significantly contribute to the fuel and fire’s intensity
- Other factors - plant moisture content, age, total volume, dead material, and chemical content



*Photo – Cynthia Nations*



# Plant Selection - “Fire-Resistant” Plant Lists?

**Focus on the underlying principles behind designing a fire-safe home and landscape and on maintaining structures and plants properly**



*Photo – Clker Free  
Vector Image - Pixabay*

**A well maintained, irrigated ‘flammable’ plant can represent a lower ignition risk than a neglected ‘firesafe’ plant**

- Plant lists can be misleading (not just about choosing the right species and avoiding the wrong ones).
- Any plant species can burn
- Landscape maintenance is essential and any plants can burn under the right conditions.

# Fire Hazardous Plant Characteristics

## Plants Vulnerable to Burning, or Prone to Igniting and Carrying Flames.

Identify fire-hazardous plants by their characteristics, structure, and maintenance. Any plant in **poor health, lacking irrigation, or with a buildup of dry or dead material** may burn.

Retain clusters of  
dead  
leaves/branches  
(palms,  
eucalyptus,  
Italian cypress)

Dry  
grasses



Photo – Bruno Krajski - Pixabay

Dry, peeling bark

Summer-  
dormant unless  
being watered  
year-round  
(sagebrush, sages)

Produce dry leaf-  
litter and duff

# What plants become toxic after burning?

**Oleander**

**Rhododendron**

**Foxglove**

**Belladonna**



*Photo -Zsuzsa- Pixabay*

**English Yew**

**Angel's Trumpet**

**Lily of the Valley**

**Castor Bean**

**Nightshade Family**  
**Peppers, Tomatoes, Eggplants**  
**(Stems and Leaves)**

# Toxic When Burned



Photo – Piro - Pixabay



Photo – Manfred Richter - Pixabay



Photo – Gera Thuringen - Pixabay

**Pressure-treated,  
painted, or  
varnished wood.**

**Artificial Turf Grass**

**Plastics**

Fire Photo – Clker Free  
Vector Image - Pixabay



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# Plant Characteristics and Maintenance

## Steps to Reduce Ignition Risk – There are no “fire-proof” plants!

### Select plants with:

- High-moisture content
- Grow close to the ground
- Low sap or resin content
- Easily bent and thick leaves
- No fragrance
- Plants with silver or gray leaves
- Plants with no “hair” on leaves

*California Fuchsia*  
*Zauschneria californica*



*Photo – CA Native  
Plant Society*

**See Website**  
**Sustainable Defensible**  
**Space for examples of**  
**California native plants**



# Defensible Space – Trees and Shrubs **Vertical**

**Maintain space between the lowest tree branches and the ground or shrubs.**

Remove all tree branches at least six feet from the ground



Photo – Cal Fire

Allow extra vertical space between shrubs and trees

Keep at least three times the height of any shrubs between the shrubs and the lowest branches of trees.

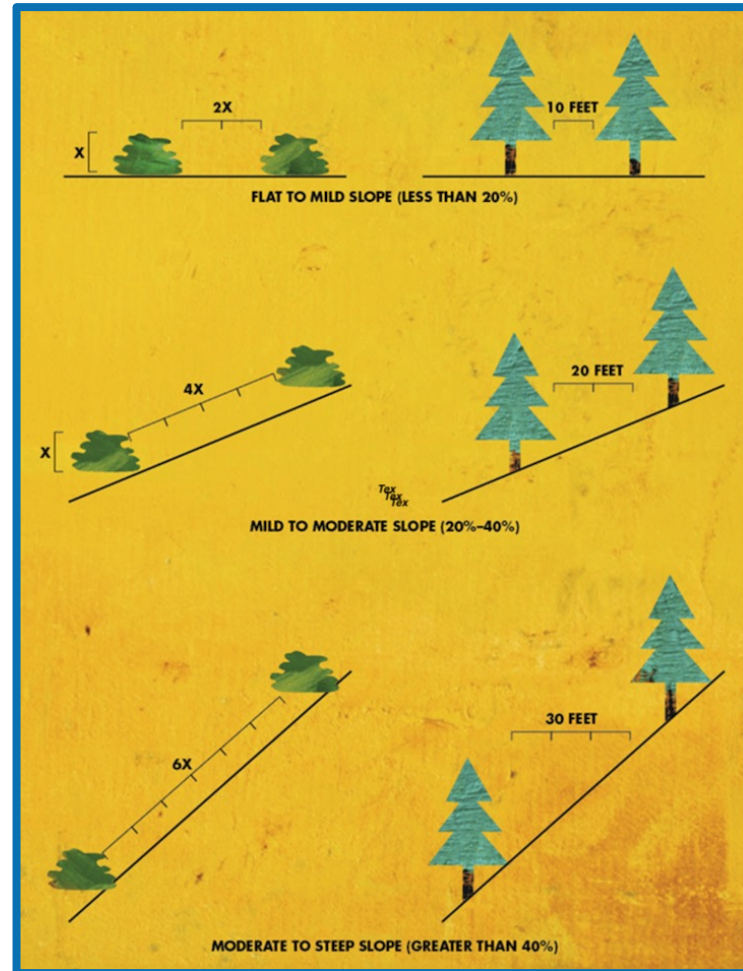
*(A 5-foot shrub is growing near a tree. 15 feet of clearance is needed between the top of the shrub and the lowest tree branch.)*

# Defensible Space – Trees and Shrubs **Horizontal**

Horizontal space depends on the slope of the land and the height of the shrubs or trees. Leave more space between vegetation on bigger slopes.

## Space between shrubs:

- Flat or mild slope (less than 20%): Two times the height of the shrub.
- Mild to moderate slope (20-40%): Four times the height of the shrub
- Moderate to steep slope (greater than 40%): Six times the height of the shrub



## Space between trees:

- Flat or mild slope (less than 20%): 10 feet.
- Mild to moderate slope (20-40%): 20 feet.
- Moderate to steep slope (greater than 40%): 30 feet.

# What is “Hydrozone” Planting?

## Hydrozones in a Home Landscape Plan

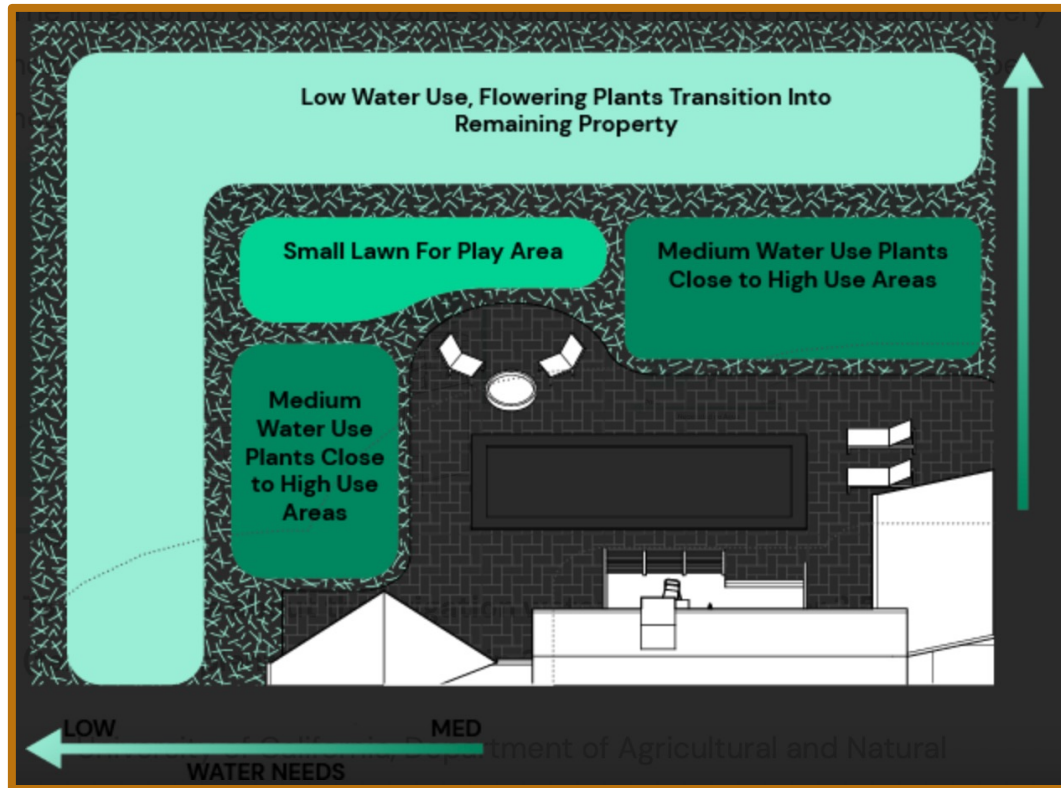


Photo – Sustainable Defensible Space

- Plants with similar cultural and water requirements are planted together
- Consider the soil, water needs, sun/shade and temperature requirements for each hydrozone

**Water Use Classification of Landscape Species (WUCOLS) for irrigation needs of over 3,500 CA plant groups.**

# Fire Resistant Plant Research

## Leaf Burn times of California Native and non-Native Plants

Source:

[https://www.laspilitas.com/classes/fire\\_burn\\_times.html](https://www.laspilitas.com/classes/fire_burn_times.html)

**Work towards a weed-free landscape:**

- No leaves on the roof
- No flammable wood furniture or lath type structures near the house
- No wood shingles or any other flammable item within thirty feet of the house

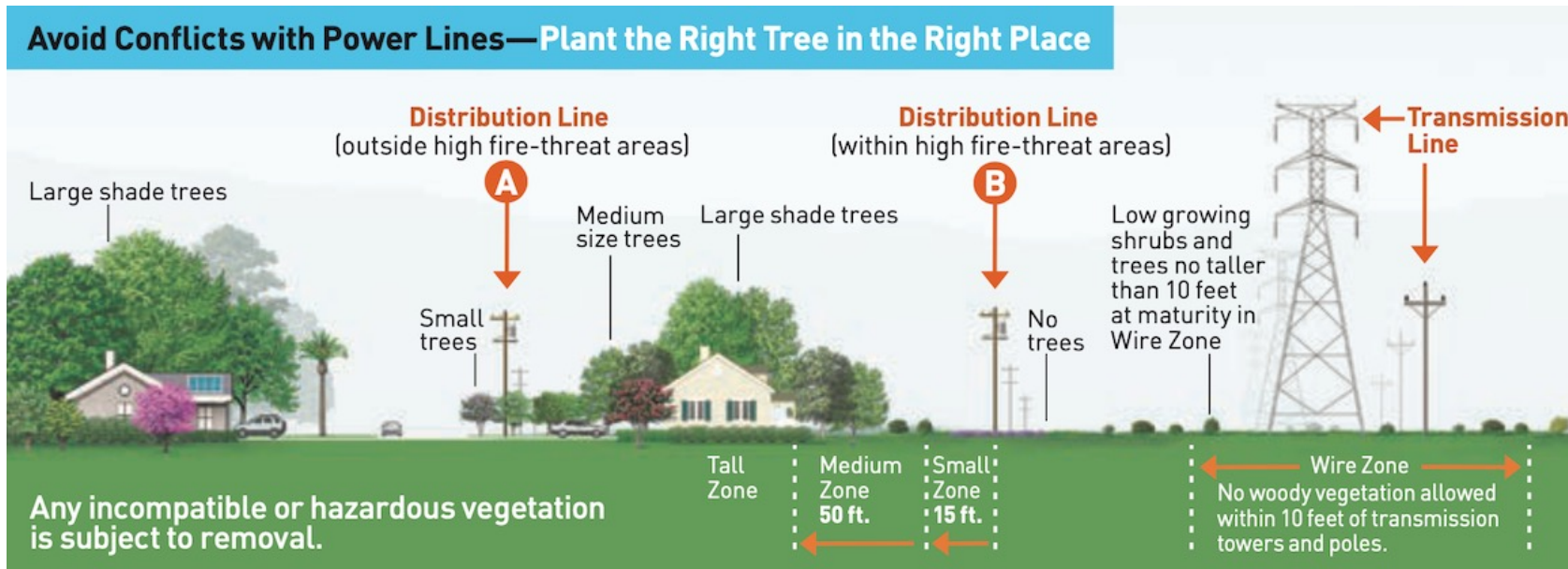


Photo – falco - Poxabay



Photo – Cker Free Vector  
Image - Pixabay

# PG&E – Trees and Shrubs for Power Line-Friendly Landscaping



The guide from PG&E was created to help you select the right trees and shrubs when planting near power lines.

- Plan Before You Plant
- How to Plan and Care for Your Tree
- Key Characteristics of Recommended Small Trees
- Keeping the Lights On and Your Community Safe

# Cal Fire – Prescribed Fires

**First-of-its-kind fund provides support and protection for prescribed fire and cultural burning, reducing wildfire risks in California**



The planned and controlled application of fire to the land under specified conditions, to reduce vegetation and risk from wildfire

# Firewise Home Hardening in Defensible Space

The process of making a home less vulnerable to wildfires using fire-resistant materials, removing debris, and creating a buffer zone around the home

- Use non-combustible materials - brick, slate, tile, aluminum, or stone for the roof and exterior
- Seal gaps under shingles and roof tiles
- Install mesh screening on vents and chimneys (1/8")
- Windows - multi-paned with at least one pane of tempered glass
- Decks - compliant noncombustible, ignition-resistant products



Photo – Userrold - Pixabay

# Protecting Your Neighborhood

If you don't have a 100-ft zone or more around the house: Prioritize implementing the recommended actions under Zone 0 and 1.

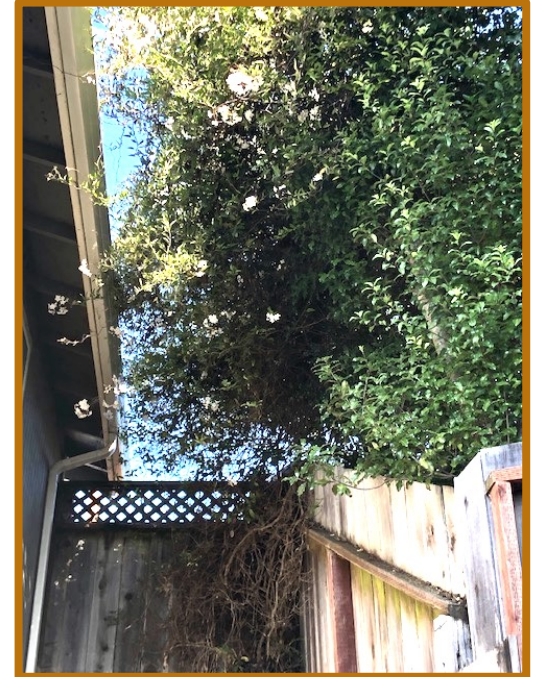


*Photo - Cynthia Nations*

**Neighboring  
Overgrown  
Trees**

Look at the Cal Fire website under  
“Firewise Communities”

- Form a core group
- Develop a wildfire risk assessment plan
- Engage the community
- Apply for community recognition – See National Fire Prevention Association



*Photo - Cynthia Nations*

**Overgrown  
Trees and  
Shrubs on  
Roof**

# Architect - Greg Chasen - Fire-Proofing Decisions

LA Homes That Withstood the Fires.



Photo – Clker Free Vector  
Image - Pixabay



Photo - Gre Chasen



Photo – Jill Connelly - Bloomberg

- Yard is free of vegetation, fenced off by cast-in-place concrete garden wall
- Landscaping - sparse Mediterranean desert style
- Owner removed trash cans and other loose items from around the house
- Left the side gates open because a fire can spread along a fence to a house.
- The cast-in-place garden wall prevented heat from getting to the house when a neighbor parked his car there and it burned.

# Architect - Greg Chasen - Fire-Proofing Decisions

- No eaves or overhangs
- No attic vents
- Roof is metal, with a fire-resistant underlayment
- House front-gabled without multiple roof lines, dormers or other pop-outs
- The deck is Class A wood - resistant to ignition as concrete or steel
- Tempered glass protects interiors
- Front of house built with heat-treated wood



*Photo - Greg Chasen*



*Photo – National Fire Protection Association*

**Summary Homework**  
**Watch Video**  
**“Your Home Can Survive a  
Wildfire”**  
[https://www.youtube.com/  
watch?v=vL\\_syp1ZScM](https://www.youtube.com/watch?v=vL_syp1ZScM)



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Leaf Burn Times of California Native Plants (And Several Non-Native Plants)

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Water Use Classification of Landscape Species (WUCOLS) - <https://ccuh.ucdavis.edu/wucols>

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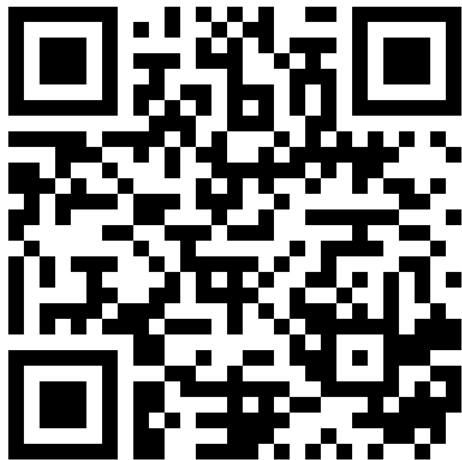
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Photographs cited on slides.

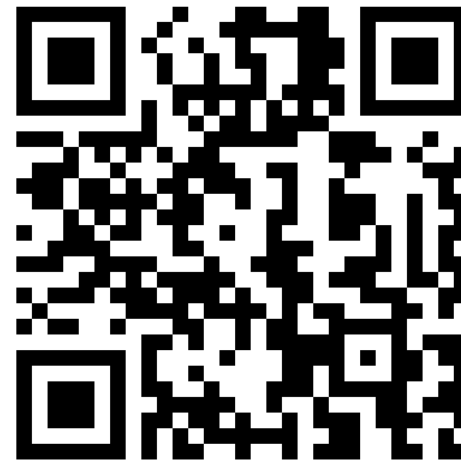


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