

http://www.sdcounty.ca.gov/pds/fire_resistant.html

Landscaping Guidelines For Homes in Fire Hazard Severity Zones

City of Glendora

HOW GOOD PLANNING CAN PROTECT YOUR HOME

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Introduction

In light of the fires that devastated the foothill area of Glendora on January 16, 2014, the City is proposing a plan to mitigate future issues involving brush fires and structures. In speaking with fire authorities, we have come to realize that damage in the hardest-struck areas could have been reduced with proactive landscaping plans. Expert agencies such as CAL FIRE, the US Forest Service, and LACoFD directed us to several informative websites that could aid us and our residents in preventing personal loss, endangerment of lives and property, and the spread of wildfires.

With prevention as the main goal, they informed us of four key components that could best mitigate future issues: Landscaping, Plant Selection, Erosion Reduction, and Defensible Space.

Landscaping Tips

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Preventing Erosion Damage

Landscaping Tips to defend your home

DEFENSIBLE FIRE-SAFE ZONE

California law (Public Resources Code 4291) requires a minimum defensible space of 100 feet around your home. This space consists of a 30-foot Lean, Clean, and Green Zone and a 70-foot reduced fuel zone. The goal is to protect your home while providing a safe area for firefighters. Your local fire department has the details.

PLANTING GUIDELINES

The key to erosion control is adequate planting to hold soil in place. However, planting can also increase fire hazards during warm weather. To reduce future fire hazards and still provide effective erosion control:

CLEAR native brush within 30 feet of buildings and limit brush height to 18 inches within 70

feet of buildings. A limited number of specimen shrubs and trees are suggested within 30 feet of a building.

ELIMINATE or reduce chaparral-type plants that serve as fuel for fires, and control their regrowth. The Forestry Division of the County of Los Angeles Fire Department notes the following species: Chamise,

Red Shank, California Sagebrush, Common Buckwheat, Sage, Pampas Grass, Cypress, Italian Jasmine, Pine, Cape Plumbago, Cape Honeysuckle, and some varieties of Eucalyptus and Juniper.

KEEP landscape clean. Remove litter under trees and shrubs and prune out dead growth. Remove dead and dry portions of ground cover and succulents. Leave space (15 to 20 feet) between remaining shrubs and trees to curtail the spread of fire.

NOTE: changing landscape requires a permit. Contact the City's Planning Department for more information.

USE planting techniques similar to landscaping in newly developed areas for recently burned watersheds. In general, installing smaller plants often produces the best growth. Diversity in plant selection is more desirable than planting only a few types. Spreading shrubs and trees are easier to establish.

MINIMIZE erosion with quick-growing, fire-retardant ground cover.

AVOID large-leafed Ice Plant on slopes because it tends to "drag" surface soils down when saturated.

SELECT only fire-retardant, noninvasive plants. The Forestry Division of the County of Los Angeles Fire Department notes the following commonly planted species as invasive: Capeweed, Australian Saltbush, Sea Fig/Ice Plant, Hottentot Fig, Pampas Grass, Broom, Russian Olive, Edible Fig, Blue Gum Eucalyptus,

Algerian and English Ivy, Myoporum, Fountain Grass (all varieties), Canary Island Date Palm, Cape Plumbago, Black Locust,



Brazilian and California Pepper Tree, Cape Honeysuckle, Periwinkle, and Mexican Fan Palm.

PLANT fire-retardant, noninvasive shrubs or trees where ground cover or grass ends. Large tree species should not be planted under or near utility lines. Low-branching or wide tree species should not be planted near roads and driveways where they can interfere with emergency vehicles.

STRESS rapid-growth ground cover.

INCREASE effectiveness of fire-retardant plantings with deep and infrequent irrigation, which encourages deep root growth. Drip irrigation will concentrate the water slowly, where it is needed. Conventional overhead irrigation often causes erosion on steep slopes.

PLANT SELECTION

The Forestry Division of the County of Los Angeles Fire Department recommends that when deciding what to plant, the homeowner should select plants

for the desirable attributes of fire resistance, low maintenance, availability, and erosion control effectiveness.

TREES: Trees are particularly valuable on steep hillsides. The roots of many trees go much deeper than those of most ground cover plants. Trees that resprout after burning are generally the best choice for wildland areas, so you do not have to replant and the roots continue to grow. Selections for new tree plantings may include California natives like Coast Live Oak, Valley Oak, Toyon, Alder, Black Walnut, and California Laurel.

GROUND COVERS: Selections for new ground cover plantings may include Bearberry Manzanita, Trailing African Daisy, Sunrose, and Woolly Yarrow.

GRASSES: Selections for grass plantings or seeding may include Red Fescue and Bird's Foot Trefoil.

SHRUBS: Selections for new shrub plantings may include Aaron's Beard, California Fuchsia, Carmel Creeper, Creeping Rosemary, Creeping Sage, Dwarf Coyote Brush, Green Lavender-Cotton, Gray Lavender-Cotton, Small Leafed Ice Plants, and Point Reyes Ceanothus.

DEBRIS FLOWS

Another equally dangerous problem, usually in hillside or mountainous areas, is debris flows. Remember that debris flows:

CONSIST of large quantities of soil, rocks, boulders, trees, or brush being moved by floodwaters.

OCCUR when floodwaters flow over hillside and natural streambed areas and are most serious in areas denuded by recent fire or grading.

ARE highly destructive and leave large quantities of sediment and rocks in their paths when the storm subsides.

CONTAIN sufficient strength to destroy objects in their path.

CAN be controlled or directed to reduce property damage.

EROSION

A complicating problem of storm or floodwaters passing over land is often erosion. The result of erosion is often steep banks of scoured soil or other ground material.

Remember that erosion:

CANNOT be controlled while it is happening and is often not seen until the flood waters have subsided.

CAN seriously undermine structures, leading to major failures.

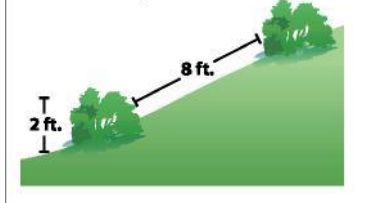
OCCURS most often when waters flow rapidly over loosely compacted soil or denuded slopes.

Shrub Minimum Horizontal Space

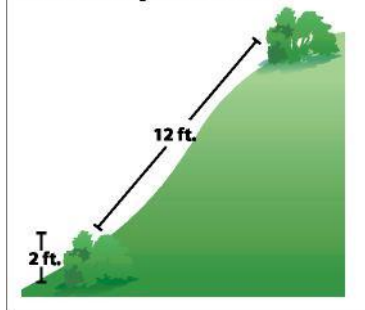
2 times the height of the shrub



4 times the height of the shrub



6 times the height of the shrub



Landscaping Permit

The City of Glendora adopted a Landscaping Ordinance and permit process to promote the values and benefits of landscapes, recognizing the need to conserve water and other resources as efficiently as possible, and to establish a structure for designing, installing, and maintaining water-efficient landscapes. The ordinance protects public health and safety within the city's moderate, high and very high fire hazard zones, per the City's fire hazard severity zone map. Establishing a landscaping structure protects natural resources, including but not limited to animal and biological resources, and reduces risk of debris flows and fire damage.

If your home is in the Fire Severity Zone, you must obtain a permit before installing, restoring or changing your landscape.

How do you obtain a permit? Submit plans to the City's Planning Department, showing defensible space, plant and tree selection, irrigation, erosion control and drainage.

All landscape plans must be reviewed and stamped by a Licensed Landscape Architect, certifying that the plans meet the guidelines set in ordinance 21.03.060 of the Glendora Municipal Code.

General Rules

Below are some general rules to be followed in most cases involving flood waters, debris, and erosion.

NEVER underestimate the power of debris flows.

TRY to direct debris flows away from improvements.

AVOID trying to control or confine the flows more than is required.

CLEAR a path for the debris.

USE your house or building as a deflector, if necessary.

ALWAYS place protection to deflect debris, not to dam or stop it.

TRY to install more permanent measures to protect your home. In general, the problem of debris flows will exist for several years after a burn. Sandbags usually last for only a year.

ALWAYS work with adjacent affected property owners.

BE prepared to sacrifice the use of portions of your property to achieve the greatest amount of protection.

AVOID altering drainage patterns that could worsen conditions for your neighbor.

DEBRIS will often enter a building through windows - board them up.

REMEMBER to protect your most valuable property first - your home.

THEN consider what time and money are available to protect other less valuable objects such as swimming pools or landscaping.

Before You Landscape

If working with an existing landscape, an assessment of what is there is imperative. What kind of plants, where they are located, what condition they are in, and how they are irrigated are all questions that need to be asked and answered.

Are the plants in the landscape drought tolerant?

Drought tolerant plants are a good indicator of fire-safe planting. Plants that are drought tolerant tend to have thick, spongy, leaves that absorb and hold water for long periods. Additionally, having short groundcover nearest your home is best. There is nothing wrong with having turf, provided it is kept short and free of dead material and leaves.

Plants that are low in oils and resins and that produce a minimum of dead material are best.

- If you have plants that are not drought tolerant and are resinous, removal is not necessary in most conditions. If these plants already exist, best practice is to keep them pruned free of dead material, away from structures, and spaced away from each other so as not to cause ignition to spread.

Irrigation

Drip irrigation is best for drought tolerant plants. Once established, most drought tolerant



plants do well on their own, needing little water to continue to thrive. Many native species of this area are drought tolerant, but there are some imported plants that do well. Additionally, in the case of fire and its aftermath, we suggest having an automatic shut-off valve installed to prevent water loss and water damage.

Clearing leaf litter, using mulch, and pruning away dead material are necessary.

- Leaf litter can be used as a mulch. Keeping it moist and spread evenly underneath planting material is best. If piled up and left to dry, it will only add to a dangerous fire condition.

- Use the proper mulch. Large wood chips or hardwood chips are best. Do not use fine, hairy material. In fiery conditions, thin, fine-haired mulch (such as Palm fiber) catches readily and the embers spread quickly. Use thick, coarse wood chips and keep them moist. This will help to keep fires from spreading.

Plant Selection

Most native species of the area are best suited for this zone. The plants recommended for this area should be low in resin, low in oils, and not produce a lot of leaf litter or dead twigs and branching on the inside of the plant. With enough radiant heat, all plants can catch fire. There is no such thing as a fire-proof plant! However, there are fire-resistant plants, and plants that do not combust when caught on fire. Additionally, if you live in a wildfire area, it is best to keep vigilant with landscape maintenance. The City has provided a brief list of plants that do well in fire-related areas, provide good color, and are attractive in the landscape. It cannot be stated often enough: use ground cover close to the house; use shrubs and bushes as you move away from the house; and at the farthest perimeter plant trees for shade, wind screening, and privacy screening. This idea is a part of defensible spacing.



- Combustible versus smoldering: A great example of a combustible plant is the Italian Cypress. This plant is laden with resins and oils that cause the plant to combust when caught on fire.

Additionally, all the dead material is trapped inside the tight branching, becomes very dry and adds fuel for burning. It was reported to us that a row of a dozen Italian Cypress burned within 30 seconds to a minute after the first one caught on fire, with flames spreading from one to the other.

Smoldering fire is typical with Oak trees, a native species very hard to ignite. The Oak trees have a thick, spongy, fire-resistant bark. Their leaves are small and dense and do not contribute well to a fire. The branching is spaced well and the trees produce a smoldering fire -- that is, a fire with low flame volume, and few embers that fly and catch other trees and objects on fire. Because the tree's wood is so dense, it often comes back from a fire.

Defensible Space

What is Defensible Space? The fire authorities define it simply as the design and maintenance of landscape that will reduce the chances of structure loss during a fire. Extending outwards from the home, the landscaping should start low or close to the ground. As you radiate outwards, the plant material can become taller. Defensible space can be the most important step in the landscape process to defend against fire. However, the combination of all three components of Landscaping, Plant Selection and Defensible Spacing is best.



- The "safe" perimeter can be anywhere from one hundred feet

(100') to two hundred feet (200'), depending on the size of your property and the proximity of your neighbor's property.

- This is calculated in relation to your home. Measuring from your home outwards, there should be at least 100' of only ground cover or low-lying shrubs. If there are trees in this zone, they should be smaller and of the type and variety that the City recommends. We have provided a list of the recommended species as a separate handout.
- Spacing: Spacing between plants and between the ground and plants is extremely important. Having adequate space between plants deters fire from catching and spreading from plant to plant. Additionally, keeping your plants clean, irrigated, and maintained on a regular basis is very important to fire suppression.
- Proper maintenance: This does not mean the entire removal of all plants within close proximity to a structure. It is highly recommended that combustible or highly flammable plants be removed selectively.
- Interspersing hardscape throughout your landscape is highly recommended. Walkways, small walls, and small greenbelts are all good ways to break a fire's path. A small change in your landscape can redirect or slow down an oncoming fire.
- The entire removal of all plants is not the City's goal, only removal of the plants that can add "fuel" to a fire. The City has provided a list of the plants that do poorly in fire-related situations.

FAMILY FIRST



Protecting your home is protecting your family.

LANDSCAPING RESTORATION RESOURCES

RESOURCES ACCESSIBLE ONLINE

www.cityofglendora.org/colbyfire

sdcounty.ca.gov

fs.fed.us/restoration/CFLRP/

www.cal-ipc.org

www.diablofiresafe.org

extension.orst.edu/deschutes/FireResPlants

habitatnetwork.org

www.fire.ca.gov/

http://ceeldorado.ucdavis.edu/Master%5FGardener/Firesafe_Landscaping.htm

<http://firecenter.berkeley.edu>

<http://groups.ucanr.org/HWMG>

<http://firecenter.berkeley.edu>

Publications/Brochures

Defensible Space Landscaping in the Urban/Wildland Interface

A Compilation of Fire Performance Ratings of Residential Landscape Plants

General Guidelines for Creating Defensible Space

PROPERTY DRAINAGE HINTS TO HOMEOWNERS

Proper planting of slopes prevents erosion. Keep plants watered, but do not overwater. Replant barren areas.

Make inspections during rains. This is when trouble occurs. Watch for gullying. Correct problems as soon as possible.

Sandbags, tools, and sheets of plastic may come in handy during heavy rains. Keep them available. However, in case of predicted heavy rains, evacuate your home.

If unusual cracks, settling, or earth slippage starts, immediately consult a qualified civil engineer or geologist.

Do not alter your slopes or drainage without expert advice. Consult a state licensed civil engineer.

Do not let conditions on your property create a problem for your neighbors. Work with neighbors to minimize problems.

It is unlawful to divert flows from their natural path to the detriment of your neighbors.

Normal property drainage must flow to the street or an approved drainage device. When landscaping, homeowners should avoid disrupting flow patterns created when the property was originally graded. Obstructions such as patios, sidewalks, and decks must not be placed in side swales unless an alternate method of drainage is provided. Deep ponding and saturation of the soil can result in severe property and foundation damage.

GLOSSARY OF TERMS

A lay person's definitions of flood-related terms

Bench Drain - Typically, a gunite or concrete V-ditch located horizontally and vertically along residential hillside areas. This device assists in draining the slope to protect against hillside erosion. Typical width is 3 to 5 feet and typical depth is 12". (Same as a Slope Drain)

Debris - Any combination of soil, rock, mud, trees, or vegetation usually transported by debris flow.

Debris Flows - Consist of any soil, rocks, boulders, trees, or brush being moved by stormwaters and containing sufficient strength to destroy or move objects such as cars and buildings in their path.

Drainage Patterns - The drainage paths stormwater runoff usually or historically takes through a given area.

Engineered Concrete Block Walls - Walls engineered to withstand loads caused by water and debris. These walls are considered to be permanent, and do not require yearly replacement.

Flood - (1) A general and temporary condition of partial or complete inundation of normally dry-land areas from the overflow of inland or tidal waters; or (2) the unusual and rapid accumulation or runoff of surface waters from any source.

Ground Cover - Typically a low-lying plant that will spread outward, eventually covering all surrounding bare soil.

Gullying - Formation of ditches or hollows worn by running water.

Natural Watercourse - An unimproved natural stream of any size. Includes rivers, creeks, branches, canyons, arroyos, gullies, washes, etc.

Ornamentals - Plants or shrubs grown for their decorative effect.

Overgrowth - Foliage that has grown and spread out so as to obstruct or block any natural watercourse, improved drainage device, or structure.

Rainy Season - The period of the year from October 15 to April 15 when County of Los Angeles usually receives its largest amount of rain.

Riprap - A layer of large stones or boulders placed together without order, usually used for erosion protection along streams or shore lines.

Sandbags - A burlap or plastic bag that can be filled with sand or native soil, which can be stacked or placed to redirect storm and debris flows away from homes or property improvements.

Slope Drain - Typically a gunite or concrete V-ditch located horizontally and vertically along residential hillside areas. This device assists in draining the slope to protect against hillside erosion. Typical width is 3 to 5 feet and typical depth is 12". (Same as a Bench Drain)

Sump - A low-lying area with no drainage outlet.

Sump Pump - A pump designed to pump water out of a sump or basement.

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