

Fuel Modification Guidelines

Selecting and locating plants for a Fuel Modification Landscape plan is best done by first focusing on the density and arrangement of plants in relation to structures as a primary consideration. Second, but no less important is choosing zone appropriate plant species based on plant characteristics such as moisture content, resin/pitch and the production of dead litter from leaves, bark, seed pods etc. The following guidelines are intended to simplify this process through zone specific compositions.

Zone 1 (30' from any qualifying structure or the property line, whichever is first)

- Zone 1 should be planted “lean” and plant selections should consist of small herbaceous or succulent plants less than 2'-3' in height or regularly irrigated and mowed lawns.
- It is best not to use woody trees, shrubs and perennial species or masses of un-mowed grasses within 10 feet of the structure.
- Provide for 5ft fire department walk around immediately abutting any structure to allow for firefighter access (insert code here).
- Occasional accents of woody plants can be used sparingly to soften hard edges of structures if the selections are widely spaced and zone appropriate.
- Consider locating hardscape features such as walkways, patios, driveways, sport courts etc. so they abut the structure itself. Potted plants can be used to soften walls if necessary.
- Use inorganic mulches such as gravel within 10" of the structure

Zone 2 (30'-100' from any qualifying structure or the property line whichever is first)

- Zone 2 can be planted with slightly higher density than Zone 1. However, care should be taken not to create any horizontal or vertical fuel ladders (see basic fire behavior graphics).
- Screen plantings can be used to hide unsightly views.
- Zone 2 is the ideal location to introduce larger shade trees provided they are zone appropriate and the canopies are not continuous.
- Avoid planting woody plant species larger than 3' (in height) at maturity directly beneath any tree canopy.
- Zone 2 may not be landscaped but is still subject to hazard reduction requirements (brush clearance). Do not denude the property. <http://www.readyforwildfire.org/>
- If landscaping Zone 2, avoid creating a landscape that is as dense and hazardous as the native or existing vegetation.
- Irrigation of existing vegetation including native plants is beneficial in small amounts 1-2 times per month during summer months [?](#)

Adjacent to Access Roads

- Maintain fire engine apparatus access roads with a 20' wide path that remains clear to the sky.

Fuel Ladders/Basic Fire Behavior

Before selecting and locating plants on a Fuel Modification plan a basic understanding of wildland fire behavior is the key factor in properly arranging plants. Eliminating and avoiding the creation of fuel ladders should be the chief concern. Understanding that anything planted in the landscape can become receptive fuel for wildfire and the way in which it is arranged and maintained will greatly influence the intensity of the fire. The following diagrams will aid in arranging plant compositions wisely.

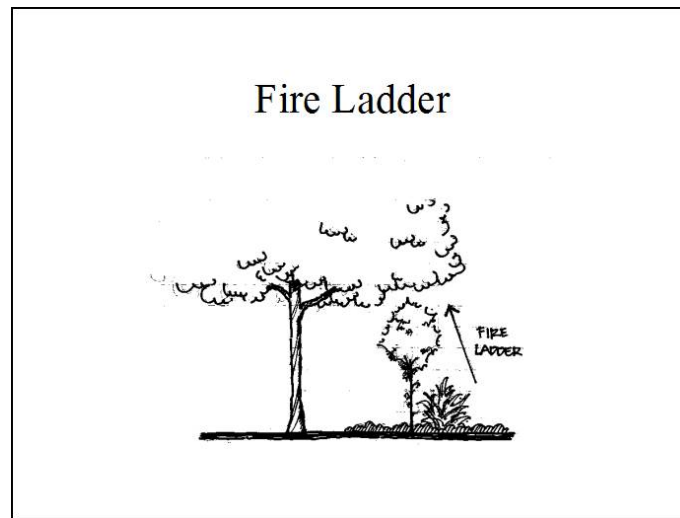


Figure 1: Fire Ladders or Fuel Ladders should be eliminated. The diagram above illustrates what not to do.



The concept of fuel ladders is crucial to planning a Fire-Wise landscape. No matter what plants are chosen, providing adequate and definite separation between ground covers, shrubs and trees is the most critical consideration in the design/plant selection process. Do not use large shrubs beneath trees. Choose plants that mature to a height of no more than two feet beneath

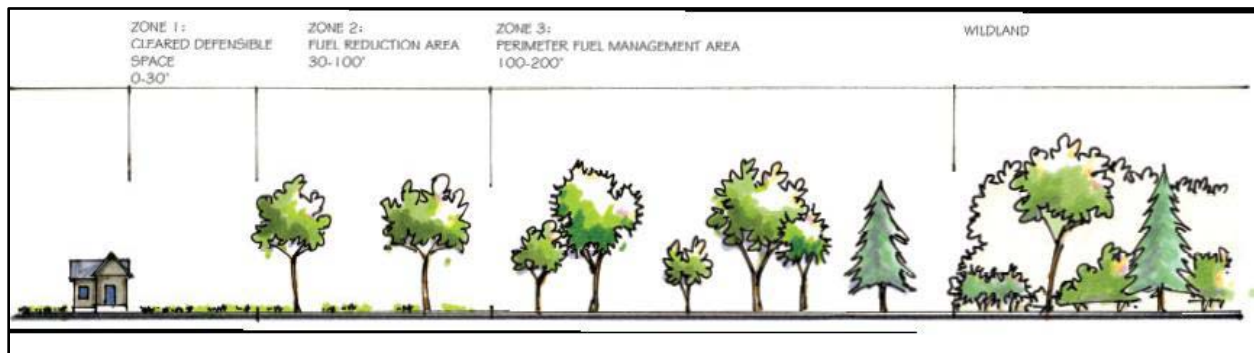


Figure 3: Note the progressive increase in density and arrangement moving away from the structure. [?](#)

Plant Placement Do's

- Do use “mass plantings” or herbaceous/succulents as ground covers even if they are not traditionally used as such. Mass plantings if properly selected can eliminate fuel ladders.
- Do plant ground covers using spacing resulting in near complete coverage at maturity.

- Do consider using patio trees as an informal screen in Zone 1.
- Do consider vines as an alternative to hedges on walls or fences 10' from structures.
- Do select varieties of plants that are slower growing and reach manageable sizes at maturity.
- Do use plants that are appropriately scaled to the size of the property and structure. A single story house does not need to be shaded by a 100' tall Sweetgum.

Plant Placement Don'ts

- Don't plant hedges directly against structures. This includes espaliers of large shrubs not allowable in Zone A. Hedges taller than 6' or within 10' of the structure are not allowed.
- Don't plant large shrubs and trees in continuous lines or large masses in Zones 1 or 2.
- Don't plant ground covers at densities that result in an "instant landscape." E.g.: Plant at a spacing that provides complete coverage once plants reach their full size.
- Don't plant large plant species that will eventually require pruning to reduce overall size.
- Don't plant vines on structures. Vines become receptive fuel beds for embers (fire brands).
- Don't assume that any plant is "fire proof." All plants will burn and assuming a plant is ignition resistant can be very misleading.
- Don't use large woody species in mass plantings.

Acceptable Plant Selections for Fuel Modification

The plant list provided is intended to be a representative sample of which plants are appropriate for each zone considering their size, moisture content, leaf litter production and chemical composition. This list is not a comprehensive list of plants available commercially. Designers may choose plants that are not on this list and may be acceptable if their plant characteristics are zone appropriate. Selecting regionally appropriate plants and the consideration of climate and microclimate adaptability is the responsibility of the designer.