

TREE GUIDELINES

Best Practices for Selection, Placement, Planting, and Removal

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Endorsed by the Rossmoor Landscape Department, MOD



INTRODUCTION

Rossmoor aspires to surround its residents with a beautiful, pleasing, sustainable landscape which will be neither costly to install nor expensive to maintain. To achieve this goal, careful tree selection and placement that uses long-term planning strategies is essential. This document was developed as an educational tool to help meet these ends.

There are two overriding reasons for planting trees—aside from the environmental benefits: psychological and aesthetic. Trees are soothing and comforting and delight the eye with contrasting colors, forms, and textures. Their often-enormous scale is awe-inspiring, and the great age that some attain provides a sense of stability and endurance.

The overriding principle when selecting a tree is the concept of “right tree, right place.” Each tree should be placed so that it can grow to its full size without encroaching on adjacent trees or structures. Each tree should be selected for a stated purpose and be appropriate to its surroundings, while also taking into account the tree’s aesthetics and characteristics, and noting the constraints of each location. A tree placed in this holistic manner can be appreciated in its entirety, as well as in combination with other trees, while enhancing our wonderful views.

Proper selection and placement of each tree that uses sustainable landscape principles reduces green waste from unnecessary pruning, saves water, reduces air pollution, and lowers temperatures due to shade cast by canopies. These practices save money and resources. Additionally, tree roots help to prevent erosion by stabilizing the soil, and their leaves add organic matter that enriches the soil.

The following guidelines are best practices recommendations that have been generalized to provide a broad view of this topic. Though persons selecting trees can interpret these criteria based on their own level of expertise, it is suggested that they seek out the opinion of a skilled landscape designer or professional. Such experts can confirm the appropriateness of final tree selections, since many of these criteria are subjective.



| CONTENTS | PAGE NO. |
|-------------------------------------------------------------|-----------------|
| SECTION 1: FACTORS TO CONSIDER WHEN SELECTING A TREE | 2 |
| Selecting a Location | |
| Purpose | |
| Tree Characteristics | |
| • General Characteristics | |
| • Leaf, Flower, Fruit Characteristics | |
| • Health, Safety, and Environmental Concerns | |
| • Site Conditions and Constraints | |
| SECTION 2: PLACEMENT GUIDELINES | 4 |
| • Spacing | |
| • Siting in Proximity to Buildings and Pavement | |
| • View Considerations | |
| • Aesthetics and Compatibility | |
| • Other Considerations | |
| SECTION 3: PLANTING & REMOVAL GUIDELINES | 6 |
| • Tree Installation | |
| • Considerations for the Removal of Trees | |
| APPENDIX | 8 |
| • Additional Information | |
| ○ Tree Characteristics | |
| ○ Placement Guidelines | |
| • References & Resources | |

SECTION 1: FACTORS TO CONSIDER WHEN SELECTING A TREE

Selecting a Location

The most common locations for planting trees are:

1. Sun drenched, open areas with a lot of bare space, where paving and/or buildings and rooftops predominant—and could use some softening—and where pleasing views will not be obscured by a tree’s canopy.
2. Replacements for trees that die out or are removed—where the space warrants a new tree (see 1 above.)
3. Appropriate for the location considering the criteria in this guideline document.

Purpose

What kind of tree is desired in the proposed location? The choice of tree depends on what one is trying to accomplish. Below are examples:

1. Flowering tree (to add flower color and interest)
2. Shade tree (to cool a hot location)
3. Deciduous tree (to allow warmth from the sun in the winter)
4. Specimen, focal point, or stately tree (to draw attention to a tree in a landscape due to form or other characteristics)
5. Contrast with structures (to break up and soften rooflines and structures)
6. Screening tree to hide an undesirable view (of roofs, buildings, roadways, cars)
7. Windbreak (to provide shelter from the wind)

8. Habitat (for birds, pollinators, and wildlife)
9. Tree with contrasting color or texture (to contrast with adjacent trees or walls)
10. Street tree or sidewalk tree (to line a street or plant along a walkway)
11. Parking lot tree (to provide shade for cars)
12. Tree in a grove, woodland, or natural setting (to blend with adjacent trees)
13. Tree(s) for massing (creating a group that grow well and look good in close proximity)
14. California native tree (to blend with adjacent trees and plants, and enhance natural habitats)

Tree Characteristics

Trees have many characteristics that are listed below by category. The following should be considered before selecting a tree. This is a checklist of characteristics; see Appendix for further information.

General Characteristics

1. Size: small, medium, or large
2. Shape of canopy: spreading, rounded, oval, or columnar
3. Shade tree: wide canopy for shade
4. Understory tree: trees that grow in the shade of other trees
5. Natural habitat: native to the area
6. Growth rate: fast, moderate, or slow
7. Longevity: long or short-lived
8. Trees as shrubs: some smaller trees can be maintained as shrubs
9. Shrubs as trees: some taller shrubs can be grown into tree form
10. Trunk type: single or multi-trunk
11. Problems: diseases, pests, droppings, etc.

Leaf, Flower, Fruit Characteristics

1. Fall color
2. Winter appearance
3. Evergreen trees: broadleaf and coniferous
4. Flowers, seed pods, and/or berries

Health, Safety, and Environmental Concerns

1. Root damage potential
2. Invasive species
3. Tidy vs. untidy
4. Fire resistance
5. Oxygen output capacity
6. Allergens: low to high

Characteristics relating to Site Conditions and Constraints

1. Soil requirements
2. Water requirements
3. Climate zone
4. Sun or shade requirements/tolerance
5. Wind tolerance

SECTION 2: PLACEMENT GUIDELINES

When selecting a tree, it is important to be familiar with the surroundings of its proposed location so it can be placed appropriately. See Appendix for further information.

1. Spacing: Trees should be placed so they are allowed to grow to their full, mature size without encroaching on the canopy of adjacent trees or buildings. It's important to keep in mind that adjacent trees may still be growing and maturing, and can also grow larger.

Likewise, separation from buildings and roofs reduces costly and ongoing trimming and gutter cleanouts.

- Large trees of different species—that grow in excess of 40' wide—are best planted a minimum of 30'-70' apart.*
- Large trees of the same type can be grouped closer together since their canopies can combine into one mass, creating a grove or forest effect. Generally, these trees should not be closer than 30' apart.*
- Medium trees—that grow less than 40' wide—should be spaced with consideration of the width of their mature canopies. Generally, these trees should not be closer than 20' apart.*
- Small trees—that grow less than 15' wide— should be spaced with consideration of the width of their mature canopies. Generally, these trees should not be closer than 15' apart.*

*Note: All distances stated are suggestions, and are dependent on the width of the tree canopy at maturity. Trees with a narrow canopy can be placed closer together.

2. Siting in Proximity to Buildings and Pavement:

- Large trees should be placed a minimum of 30' from building walls and roofs; small trees at least 10 feet away, or at a distance that can be easily maintained. The roots of trees planted closer than this can damage foundations.*
- A mature tree canopy does not want to brush against a building or overhang a roofline, both of which eventually require building and tree trimming maintenance issues and costs. It may also create a fire hazard.
- When placing trees, consider their impact on both the nearest buildings and the larger neighborhood.
- Trees planted adjacent to paving should be a deep-rooting type, in order to avoid lifting curbs or paving. Regardless, consider the use of a root barrier along paving edges and curbs where trees are planted within 10'.
- Avoid planting trees that may drop undesirable debris onto sidewalks or paths; they could be slippery or be a trip hazard.

3. View Considerations:

- Generally, as new trees grow, they should not block desirable views from private and public areas, such as manors, buildings, walkways, and driveways.

- Trees may be intentionally placed to block undesirable views from manors of rooftops, other buildings, driveways, and roadways.
- The mature height of a tree should be carefully considered so as to avoid having to keep it trimmed to a smaller size to protect views.
- Use large shrubs in place of trees—where trees would eventually block desirable views—since they generally do not grow tall.
- To screen views of bare hillsides, instead of planting closely spaced trees across the bottom of the slope, place trees strategically amongst large shrubs and ground covers on the slope to create a more natural effect.
- To screen views of bare walls, it is suggested that low growing trees and tall growing shrubs be used so as not to crowd the building. If there is room large trees can be planted a minimum of 30' away.
- Trees in front of first or second floor bedroom and bathroom windows may be desirable for privacy reasons. However, in high foot-traffic areas, residents tend to leave such windows covered most of the time, so the view may not be a consideration. Such issues may be decided on a case-by-case basis.
- Trees located to the side of windows or doors that frame, but do not block a view, may be acceptable.
- Tall growing trees opposite first-floor manor windows may be acceptable if their canopy will eventually grow above the sight line of the window. This is because the view will only be blocked temporarily until the tree grows taller, leaving only its trunk in front of the window.
- For driver visibility, trees at street and entry corners should begin to branch out no less than 6' from the ground, and should be set back so they don't block a driver's sightline. (Municipal standards for tree setbacks at corners should apply.)

4. Topography: The slope of the land is a consideration in the selection of a tree. Some trees may struggle when planted on steep slopes with minimal loose, fertile soil. Exposed sandstone can be especially challenging because there is little fertile soil for roots to spread. Select trees in these locations that can adapt to challenging soil conditions.

5. Aesthetics and Compatibility: Select trees to infill landscaped areas that visually harmonize with the form and shape of other trees in each area. New trees placed at the edges of existing naturalized habitats (i.e., in areas adjacent to open space), such as oak woodlands, should harmonize with that setting.

6. Natural Layout: Trees in groupings should be placed so they are staggered to create a more natural look, and not in a row.

7. Formal Layout: Trees that line a street ("street trees") or walkway should be set in a straight line. Select trees that are dependable in form and tend to grow in a uniform shape and rate. If trees die out or become unhealthy, replace with the same tree to maintain continuity.

8. Other Considerations:

- **Hydrozoning:** Group trees with the same water needs in the same area. Trees planted in lawn areas must be able to withstand frequent watering.

- **Microclimates:** There are a variety of microclimates in this valley. Tree selection should be appropriate for a site's microclimate and geography, and take into consideration such factors as the amount of hot, south-facing sun, prevailing winds, exposed slopes, shade from buildings and nearby trees, etc.
- **Planting under or near dying trees:** If a large diseased or old tree is expected to die within 10 years, a young tree can be planted nearby, so that when the mature tree is removed the younger tree will already be established and in robust health. The young tree should be placed so that it will not become damaged when the large tree is removed.
- **Proximity to underground pipes:** Place trees away from pipes and underground utilities—if these locations are known—to lessen future root invasion problems.

SECTION 3: PLANTING & REMOVAL GUIDELINES

Tree Installation

1. Tree Planting:

- A hole should be dug so it is at least twice the diameter of the rootball.
- The rootball should sit on native soil—not compacted fill which can cause sinking after planting.
- The top of the rootball should be 1"- 2" above adjacent soil level.

2. Tree Staking:

New trees should be supported by two tree stakes and rubber tree ties until the tree can stand upright on its own with a straight trunk.

- Stakes should be checked from time to time and straightened or reset if leaning.
- Stakes should be removed (or cut off at the ground) when the tree trunk exceeds the diameter of the 2" stakes—generally after about two years.

3. Root Barriers:

If a tree is to be placed less than 10' from pavement edges or curbs, consider installing a 2' deep root barrier along the edge of the impacted pavement to prevent shallow roots from lifting or cracking the paving.

4. Deer Caging:

Protective wire cages should surround a young tree to prevent deer from eating leaves and to keep antlers from rubbing against the trunk. Cages can be removed after 1 or 2 years or at the discretion of the contractor.

5. Tree Watering:

Deep and infrequent watering is best—once per week—so a tree can develop a deep root system that can better withstand drought conditions.

This is facilitated by installing:

- a 3' diameter basin (approx.) that is created with a 3"-5" high soil berm around the base of a tree to hold water, depending on the size of the new tree's root ball.
- a bubbler at the base of each tree.
- one 4" diameter inspection tube (perforated), with cap, to test for standing water at the bottom of the root ball. Standing water can cause the tree's roots to rot.
- 1"- 3" deep mulch around the base of the tree to retain moisture and keep weeds down. Mulch should not contact the trunk of the tree because it can cause rot and disease.

6. Slope Planting:

To create a watering basin (see #5 above), construct a stacked rock edge or low wall on the downslope side—to retain beneficial new soil—that will hold water and mulch.

7. Soil Surfaces Under Trees: For bare soil areas under trees—for both new and existing trees—mulch is the preferred material to cover the ground. Riverwash cobbles, though less desirable, may sometimes be used in certain situations for aesthetics. However, in areas that receive hot afternoon sun, cobbles can heat the soil which can damage surface roots and dry out the soil.

Considerations for the Removal of Trees

1. Removal of Old and Diseased Trees

- If a tree has a lot of dead twigs and branches during the growing season, it is an indication that it is unhealthy. An arborist should review the tree to assess the health and suggest treatment or removal. Exception: California Buckeye which goes dormant (leaves turn brown) during the summer.

2. Removal of Crowded Trees

- Where appropriate, remove some existing trees to eliminate excessive crowding in tree groupings. Keep the trees most appropriate for the setting or with the best shape, so they can grow unhindered to their full size. Young trees that will create a crowding situation in the future should be removed soon to maximize the health of the remaining trees.
- In a crowded situation, a tree can be removed for the health of the predominant tree—the healthiest and best looking. Select carefully to comply with The Walnut Creek Tree Removal Permit Application that states: “Removal to be a benefit or detriment to other trees on site” (B. Criteria, 5L).

3. Permit and Replacement Trees

- Trees with a trunk less than 9” diameter—measured at 4’6” from the ground—can be removed without a city permit, unless trees were installed for mitigation purposes or as a requirement of a development.
- Trees with a trunk over 9” diameter require a city permit to remove.
- Approval is at the discretion of the city arborist and must meet certain criteria as outlined by the Walnut Creek Tree Protection Ordinance.
- The removal of a tree that requires a permit also requires a replacement tree or trees as mitigation.
- Consider replanting new trees where most needed, taking these placement guidelines into consideration.
- New trees—at maturity—should be size-appropriate for their location.

4. Other considerations

- When feasible and accessible, a stump should be ground (called “stump grinding”) below ground level so it is not seen and plants can be installed in its place.
- This applies to stumps adjacent to walkways, driveways, and buildings, and less so to those on slopes and in natural areas. In these areas they can be left to decay, which provides a good habitat for many living things.
- It is not usually feasible or recommended to transplant young trees slated for removal to other locations because it may not be cost effective. Additionally, their survival rate tends to be low.

In summary: The selection of any tree for a specific location is worthy of thoughtful consideration. The information listed in this guide can help create a healthier and more sustainable landscape that can be beneficial in the long term.

With these criteria in mind, one can consult tree lists and resources to create a shortlist of appropriate trees from which a final tree can be selected for a desired location.

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APPENDIX

Additional Information: Following is supplementary information relating to the above guidelines.

SECTION 1: TREE CHARACTERISTICS

Trees have many characteristics as listed below by category. The following should be considered before selecting a tree.

General Characteristics

Size: There are four general categories: small (under 20' tall x 20' wide), medium (under 40' x 40'), large (under 65' x 60'), very large (over 65' x 65'). *Ascertain the height and width of the canopy of the tree at maturity using reference materials.*

Trees should not crowd each other at any point in their life cycle. Select a tree based on its size at maturity.

Shape of Canopy: spreading (e.g., oak), rounded (camphor), oval (red maple), columnar (hornbeam), pyramidal (redwood, cedar), weeping (mayten, birch), vase (crape myrtle), compact (citrus), etc.

Shade Tree: has a wide-spreading canopy that casts significant shade.

- Evergreen—offers shade under canopy throughout the year. Tree canopies that cast shade on walkways and buildings can reduce air temperature and, for buildings, air conditioning costs.
- Deciduous—offers shade and cooling under canopy in summer; allows sun to penetrate for desirable heat gain in the winter, since it has no leaves.

Understory Tree: small trees that grow under the canopies of larger trees and tolerate the shade of that tree.

Natural Habitat: trees that are native to this area.

Growth Rate: slow (generally less than 12" height and width per year), moderate (about 24" per year), fast (over 36" per year). Note: fast growing trees often have weaker branches that tend to break.

Longevity: short-lived (50 years or less—e.g., poplar), average (50-150 years—maple), long-lived (over 150 years—oak, sycamore, redwood). Note: trees tend to live longer in their natural habitat and less long in urban areas and landscaped settings, especially near paving areas or in crowded conditions.

Trees as Shrubs: some smaller trees can be maintained as shrubs, with careful, selective pruning, though this is not recommended. This is a high maintenance and costly practice.

Shrubs at Trees: some larger-growing shrubs can be trained as trees by removing the lower branches.

Trunk: single (referred to as a “standard”), multi-trunk, or low branching.

Problems: level of resistance to diseases, insects, and pests (low, moderate, high).

Leaf, Flower, Fruit Characteristics

Fall Color: showy and bright (red, orange, or yellow); moderate; none (leaves turn brown).

Winter Appearance: evergreen (retains leaves); semi-evergreen/half deciduous (loses some leaves); deciduous (loses all leaves).

Evergreen Trees: There are two types: broadleaf (flat leaves) and conifer (cone-bearing with needle-like leaves). They provide winter habitat for birds and wildlife.

Flowers and/or Berries:

- showy, moderate, insignificant, or none
- bloom or berry season

Health, Safety, and Environmental Concerns

Root Damage Potential: shallow or deep rooting. Shallow/surface roots may cause damage to paving and adjacent structures and/or intrude into underground pipes (low, medium, high).

Invasive species: Trees that tend to reseed or where stems sprout from roots can be detrimental to a landscape and become a nuisance (limited, moderate, high).

Fire Resistance: less flammable, more flammable.

Tidy vs. Untidy

- Litter type: quantity of leaves/berries/bark/fruit/seed pods/cones, etc. that drop on walkways, lawns, roadways, and adjacent to manors, can create tripping or slipping hazards.
- Leaf size: smaller leaves, flowers, and seeds can compost in place below the tree or in adjacent planting beds. Large leaves may require removal (e.g., magnolia); small leaves can clog drains so place tree away from drain inlets.
- Deciduous trees drop their leaves all at once in the fall—so they tend to be “cleaner” trees than evergreens which tend to drop leaves and debris throughout the year.
- Drip sap/honeydew onto pavement and cars: dripping of toxins/oils on the ground can prohibit growth of plants under canopy (e.g., eucalyptus).
- Thorns: Trees with thorns should be kept away from walkways and paths.

Oxygen Output: “Trees create oxygen, people use oxygen.” The larger the tree, the more oxygen it produces. One mature tree can produce enough oxygen in a season to support 10 people.

Allergens: low to high coupled with each season (pollens, pubescent leaves).

Characteristics relating to Site Conditions and Constraints

Soil Requirements: Range from average, sandy (fast-draining), loamy, or clay (slow or poor-draining). Most soil in this valley is heavy clay and thus slow draining. At locations with rocky sandstone slopes created from grading cuts, it is very difficult to establish new trees.

Water Requirements: Range from moderate, occasional, infrequent, or none once established. It is good to avoid trees designated as high or regular water users—which may not survive droughts or are very costly to irrigate. Trees needing occasional or infrequent watering would be termed “summer-dry” or “drought-tolerant.”

Note: deep-rooting trees tend to be more drought tolerant than shallow-rooting trees. Examples: deep rooting: sycamore; shallow rooting: redwood. Trees planted in lawn areas must be tolerant of frequent surface watering.

Climate Zone: Each tree grows best in its recommended climate zone, as listed in the *Sunset Western Garden Book*. Rapidly evolving climate conditions should also be considered—to the extent possible—especially for longer-lived trees.

Microclimates: The climate of a very small area that differs from the larger surrounding area.

Sun and/or Shade Tolerances: These range from full sun, partial sun/morning sun, filtered sun, to shade.

Wind Tolerance: Tolerates prevailing winds, or needs sheltered location.

SECTION 2: PLACEMENT GUIDELINES

Appropriate placement is best achieved by utilizing the stated concept of “right tree, right place.” While visiting the site where the tree is to be located, assess the surroundings—noting adjacent trees and buildings—as well as the views that could be impacted, and then use the criteria below that apply.

Spacing

- Consider the concept of “design in the fourth dimension”—that being time—and imagine the size of the tree in 75 years. Aesthetically, it’s a good idea for trees to be far enough apart that, even when mature, there is separation from the canopies of adjacent trees.
- Avoid planting trees close together for a quick effect unless there is an advance agreement to remove some trees in a grouping at a future time—when they begin to crowd each other. Ongoing maintenance to thin out trees costs money, and crowding both impacts the health and appearance of trees and can look cluttered.
- Though planting like trees with wide canopies close to each other can create one canopy mass, keep in mind that if one of the trees dies out and is removed the remaining canopy will be permanently deformed.
- Installing multiple trees where one tree will suffice is expensive, unhealthy for adjacent trees due to crowding, and an unsustainable option that should be avoided.

View Considerations

Generally, new trees—as they grow—should not block desirable views from private and public areas, such as residences, walkways, and driveways.

- Regular or ongoing tree pruning is not a sustainable practice: it is expensive and can eventually cause the tree to take on an unnatural form.
- Evergreen trees provide year-round screening while deciduous trees—which lose their leaves in the winter—will allow partial screening with obscured views.

References:

- I. **Tree List** (a spreadsheet of recommended trees for this valley is under development.) Lists of trees can be found in the “books” list below. Here are two of note:

Trees and plants that are appropriate for the East Bay are in this book that can be bought on Amazon.com:

Plants and Landscapes for Dry-summer Climates, East Bay Municipal Water District (EBMUD), 2004.

Lists of trees and plants and their water needs are presented in this book. The entire book is viewable by clicking the link below the book name:

Landscape Plants for California Gardens, Bob Perry, Land Design Publishing, 2010

[Click here](#) to view this book.

- II. **Tree Names:** While individual trees can have many informal names (“common” names) there is only one proper name (“botanical” name). And, there is only one commonly accepted way of writing out botanical names.

Example: Botanical name: *Cedrus atlantica* ‘Glauca’, Common name: blue atlas cedar

Here’s how to format tree names: [Click here](#).

- III. **Field Checklist** (under development: a short guide that lists the primary selection and placement criteria that can be taken into the field)

Resources:

Online:

To look up tree **descriptions** enter tree name here:

Cal Poly State University: selectree.calpoly.edu (very easy to use)

San Marcos Growers Nursery: smgrowers.com

Monrovia Nursery: <https://www.monrovia.com/shop.html> (enter tree name in top left box)

Missouri Botanical Garden: www.missouribotanicalgarden.org

California native trees: www.calscape.org

To see tree **images/photos** go to: <https://images.google.com/> and enter tree name.

To find correct **formatting of tree names** go to Wikipedia and enter the name that you have: <https://www.wikipedia.org/>

Books:

Plants and Landscapes for Dry-summer Climates, East Bay Municipal Water District (EBMUD), 2004.

Gardening in Summer-Dry Climates, Nora Harlow and Saxon Holt, Timber Press, 2021

Sunset Western Garden Book, Meno Park, CA, Sunset Publishing.

Landscape Plants for California Gardens, Bob Perry, Land Design Publishing, 2010

California Native Plants for the Garden, Carol Bornstein, David Fross, Bart O'Brien, Cachuma Press, 2007.

California Native Trees and Shrubs, Lee W. Lenz and John Dourley, Claremont, CA, Rancho Santa Ana Botanic Garden, 1981.

Introduction to Trees of the San Francisco Bay Region, Glenn Keator, UC Press, 2002.

Right Plant, Right Place, Nicola Ferguson, Simon & Schuster, NY, 1992.

Trees and Shrubs for Temperate Climates, Portland, OR, Timber Press, 1979.

Trees and Shrubs of California, John David Stuart, John O. Sawyer, and Andrea Pickart, UC Press, 2001.

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This manual is viewable and can be downloaded by all residents through these websites:

- MOD landscape department
- Nature Walker's Club

Residents can print out their own copy if they wish.

This guidelines will be periodically revised and updated. Notification of revised editions will be emailed to all on Richard McPherson's email list.

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