

## MEETING AGENDA

### CITY OF LOS ANGELES DEPARTMENT OF RECREATION AND PARKS FACILITY REPAIR AND MAINTENANCE COMMISSION TASK FORCE

Thursday, December 7, 2023 at 10:00 A.M.  
or soon thereafter as the Board of Recreation and Park Commissioners  
adjourns its Regular Meeting noticed for 9:00 A.M.

Glassell Park  
3650 Verdugo Road, Los Angeles, CA 90065

**Please Note: Public Comment Will be Taken In-Person Only**

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LUIS SANCHEZ, CHAIR  
MARIE LLOYD, COMMISSIONER

Staff:

Jimmy Kim, General Manager  
Cathie Santo Domingo, Assistant General Manager  
Darryl Ford, Superintendent  
City Attorney Representative

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**NOTICE TO PAID REPRESENTATIVES** – IF YOU ARE COMPENSATED TO MONITOR, ATTEND, OR SPEAK AT THIS MEETING, CITY LAW MAY REQUIRE TO REGISTER AS A LOBBYIST AND REPORT YOUR ACTIVITY. SEE LOS ANGELES MUNICIPAL CODE 48.01 ET SEQ. MORE INFORMATION IS AVAILABLE AT <https://ethics.lacity.org/lobbying/>. FOR ASSISTANCE, PLEASE CONTACT THE ETHICS COMMISSION AT (213) 978-1960 OR [ethics.commission@lacity.org](mailto:ethics.commission@lacity.org).

1. CALL TO ORDER
2. CURRENT BUSINESS
  - A. West Los Angeles Civic Center Redevelopment Project  
Discussion of Proposed Project
  - B. Urban Forestry Manual  
Discussion of Manual Update

December 7, 2023

C. Quimby Park Fee Ordinance  
Implementation Update

3. PUBLIC COMMENT

Comments by the Public on Matters within Task Force Jurisdiction

4. NEXT MEETING

The next Facility Repair and Maintenance Commission Task Force Meeting is tentatively scheduled for Thursday, December 21, 2023 at 10:00 A.M. or soon thereafter as the Board of Recreation and Park Commissioners adjourns its Regular Meeting noticed for 9:00 A.M., at Balboa Sports Complex, 17015 Burbank Boulevard, Encino, CA 91316.

5. ADJOURNMENT

Additional Information

Under the California State Ralph M. Brown Act, those wishing to make audio recordings of the Commission Task Force Meetings are allowed to bring tape recorders or camcorders in the Meeting.

Sign language interpreters, assistive listening devices, or any auxiliary aides and/or services may be provided upon request. To ensure availability, you are advised to make your request at least 72 hours prior to the meeting you wish to attend. For additional information, please contact the Commission Office at (213) 202-2640.

Information on Agenda items may be obtained by calling the Commission Office at (213) 202-2640. Copies of the Commission Task Force Agenda may be downloaded from the Department's website at [www.laparks.org](http://www.laparks.org).

CITY OF LOS ANGELES  
DEPARTMENT OF RECREATION AND PARKS  
FACILITY REPAIR AND MAINTENANCE COMMISSION TASK FORCE BRIEFING  
December 7, 2023

## West Los Angeles Civic Center Redevelopment Project

On April 20, 2020, the Mayor and City Council authorized the City Administrative Officer (CAO) to work with the County of Los Angeles to issue a joint City-County Request for Proposals to redevelop the West Los Angeles Civic Center site. The Developer, West LA Commons LLC, was selected in February 2021. West LA Commons LLC is a partnership between AvalonBay Communities, Inc. and Abode Communities.

The proposed West LA Civic Center Redevelopment Project will provide improved municipal space, new commercial retail space, and green space, 926 new housing units, including 413 low-income units, parking, and a new Felicia Mahood Senior Center. The site is a 7.6 acre property that falls within the boundary of Santa Monica Boulevard, Corinth Avenue, Iowa Avenue and Butler Avenue. The City-owned portion is 4.6 acres, which includes a municipal building, a senior center, surface parking lots and open space. The adjacent 3-acre County-owned property includes the West Los Angeles Courthouse and surface parking lots.

### Project Status

Most recently, it was determined that project needed more green space and it was recommended that the new Felicia Mahood Senior Center be built on the first floor of the municipal building and that the current senior center site, which is dedicated park land, be developed as a public park.

An extension of the Exclusive Negotiation Agreement (ENA) with the developer was recently approved by the Mayor and Council for up to 28 months. The goal during this extension period is to finalize the project description, including any changes to Recreation and Parks senior center and land, and resolve the project's current funding gap due to interest rate and construction costs increases. As soon as these items are finalized, we will present the plan for the RAP-controlled property on the site for your consideration.

*City of Los Angeles*

# URBAN FOREST MANUAL

2023 UPDATE



*Department of Recreation & Parks*



## Lost

Stand still. The trees ahead and bushes beside you  
Are not lost. Wherever you are is called Here,  
And you must treat it as a powerful stranger,  
Must ask permission to know it and be known.  
The forest breathes. Listen. It answers,  
I have made this place around you.  
If you leave it, you may come back again, saying Here.  
No two trees are the same to Raven.  
No two branches are the same to Wren.  
If what a tree or a bush does is lost on you,  
You are surely lost. Stand still. The forest knows  
Where you are. You must let it find you.

—DAVID WAGONER (1999)

## Land Acknowledgement Statement

A Land Acknowledgment Statement is currently under development.

### Mayor

Eric Garcetti

### Board of Commissioners

Renata Simril, President

Luis Sanchez, Vice President

Benny Tran, Member

Marie Lloyd, Member

Fiona Hutton, Member

### Recreation and Parks Department General Manager

Jimmy Kim

Forestry Division

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Work Order Email: [forestry.joborder@lacity.org](mailto:forestry.joborder@lacity.org)

Website: [www.laparks.org](http://www.laparks.org)

Hours of Operation: 6am–2:30pm

Revised: 2023



# URBAN FOREST MANUAL

## Introduction

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The City of Los Angeles, Department of Recreation and Parks (RAP) has developed the Urban Forest Manual to raise the level of understanding of our natural ecosystems within the Los Angeles Basin and to elevate regard and appreciation for our urban forest. This guidebook has been designed for all City staff members—the gardener, the planner, the administrator, the construction staff, the activity programmer, and the facility

director—it is available for everyone, in hopes that they may better understand our most precious natural resource: urban trees. The included Tree Care Manual (see Chapter 3) provides useful information regarding the daily supervision, care, and protection of this valuable link to our ecosystem and is a guide for the custodianship of our ecological community.



Children at play at Shane's Inspiration, Griffith Park.



**Sharing the environment with all living things . . .**

An ecosystem is a specific biological community interacting with its physical environment. A biological community consists of all the populations of living things in a given area, including people. The physical environment includes climate, temperature, soil, and light. Both the biological community and the physical environment are continually interacting.

The physical environment significantly influence the biological community, and in turn, the biological community uses and modifies the environment. To assist our efforts in developing successful landscapes, it is necessary to develop an understanding of the many relationships existing between all living things and their significance to the Los Angeles Basin ecosystem.

The Department of Recreation and Parks Forestry Division is charged with the responsibility to care for and oversee this sizable portion of our public urban forest. The City of Los Angeles Department of Recreation and Parks owns and operates 538 parks and associated facilities that span over 16,000 acres throughout Los Angeles and operates according to their mission:



**Our mission is to enrich the lives of the residents of Los Angeles by providing safe, welcoming parks and recreation facilities and affordable, diverse recreation and human services activities for people of all ages to play, learn, contemplate, build community, and be good stewards of our environment.**

The Forestry Division cannot sustain an urban forest alone. The future of the Los Angeles urban forest requires the involvement of us all. The Urban Forest Manual has been developed as a guide to promote healthy trees through our daily behavior, planning, and decision-making, and to guarantee the sustainability of our urban forest ultimately.





## Purpose

The purpose of the Urban Forest Manual is to develop a single resource that will provide direction to the Department of Recreation and Parks (RAP) staff and promote the sustainability of a healthy urban forest. Since the Los Angeles ecosystem has been changed dramatically to accommodate the needs of a growing population, the natural cycles that govern a healthy ecosystem have been disturbed and in some locations completely broken. In order to survive within these altered conditions, trees in City parks must rely on human intervention. The Urban Forest Manual represents established procedures and standards that encourage tree preservation and enhance an urban ecosystem that is vulnerable to destruction. The procedures and standards

include criteria for the removal, maintenance, and planting of diverse tree species.

**The Urban Forest Manual addresses the three following subjects:**

### CITYWIDE TREE MANAGEMENT

- Recreation and Parks Forestry Division oversees tree operations within the City of Los Angeles parkland. Tree maintenance is performed in two ways: by Department staff supervised by International Society of Arboriculture Certified Arborists and/or by a contracted tree company administered and overseen by the Department's Certified Arborists. The Forestry Division also oversees proper species selection.
- Bureau of Street Services, Street Tree Division manages parkway trees along City parks and streets.

- Los Angeles Department of Water and Power manages pruning near electric utilities.
- Arborists within the Forestry Division work with Planning, Construction, and Maintenance Division landscape architects on species selection and the protection of trees during construction projects.

## URBAN FOREST SUSTAINABILITY AND TREE PLANTING PROGRAMS

- RAP Forestry Division implements pruning techniques that prolong tree health and longevity. Special care is given to applying pruning techniques that improve structure, mitigate risk, provide clearance, maintain health, manage wildlife habitat, and achieve other key objectives. Crown cleaning, crown thinning, and crown raising are the most common pruning methods used on medium to mature trees in city parks (Gilman et al. 2012). If a crown reduction is necessary, reduction cuts are used. In reduction cuts, the longest portion of a branch is cut back to an existing lateral branch that is at least one-third the diameter of the retained lateral branch. Utilizing reduction cuts along the periphery of a tree crown temporarily results in a smaller crown. Topping, or indiscriminate heading cuts on large-diameter branches, is a destructive pruning technique that is not practiced, nor accepted, in Los Angeles City Parks (rare exceptions include retrenchment and preservation pruning).
- RAP Forestry Division Program oversees proper tree selection as part of its ongoing parks reforestation. Partners such as City Plants help RAP grow tree species that are not widely available in

the Griffith Park Commonwealth Nursery using locally sourced seed whenever possible. The Division also coordinates tree-planting efforts with nonprofit organizations, seeks funds within existing resources and programs and identifies new funds through grant writing.

## TREE PRESERVATION AND MANAGEMENT REGULATIONS

**RAP adheres to the Tree Preservation Policy**—under enforcement by Forestry Division and Planning and Construction Division.

The policy and best management practices are regulatory tools that provide for the orderly protection of specified trees in city parks. The manual provides information regarding existing codes, technical regulations, standards, and specifications necessary to implement the above policies and contains guidelines for the required and recommended care, removal, and replacement of regulated trees.



**The RAP Forestry crew member works at Camp High Sierra, removing dead fir trees infested with bark beetles.**

## Intent and Purpose

City parks are enriched with a large population of trees, including magnificent individual trees, groupings of trees, Heritage trees, Special Habitat Value trees, and other ornamental trees from climates around the world. These trees, representing nearly 500 different species, provide large cooling islands for the City and offer an escape to a natural environment from the manmade cityscape. Trees are a key component in the ecosystem and are aesthetically pleasing to neighborhood landscapes. Trees provide economic benefits to the community and contribute to a high quality of life.

Sustaining trees in developed environments presents a challenge that requires careful planning and attentive maintenance. The remnants of the original native plant life of the Los Angeles Basin are increasingly vulnerable after more than a century of development and a changing climate. In order to meet these challenges, the Urban Forest Manual has been developed and approved as a policy of the Department of Recreation and Parks.



**Heritage tree—tipu tree, (*Tipuana tipu*)—one of the largest specimens in the Los Angeles area grows in the Chavez Ravine Arboretum at Elysian Park among many more species of rare and unique trees.**

The Recreation and Parks Tree Preservation Policy is the primary regulatory tool that gives direction for the orderly protection of specified trees. The policy maintains the value of trees and avoids significant negative effects on the ecosystem. By assuring preservation and protection through regulation and standards of care, these resources will remain significant contributions to the environment and landscape and will continue to add to the unique character of Los Angeles City Parks.



**Heritage tree in Green Meadows Park—fruits and flowers of an odd-looking African sausage tree, (*Kigelia africana*), rare and unique in Los Angeles landscaping.**



**Heritage tree—unusual *Eucalyptus conferruminata* in Pacific Palisades Park.**

The Tree Care Manual is included as chapter 3 in this manual and issued by the general manager through the Divisions of Forestry and Planning, Maintenance and Construction. This document establishes specific technical regulations, standards and specifications necessary to implement the RAP Tree Preservation Policy (Appendix A) and defines the city's tree preservation goals. These goals are intended to provide consistent care and to serve as indicators of achievement. Their purpose is to:

- Ensure and promote the preservation of the existing tree canopy cover within Los Angeles City parks.
- Provide standards of preservation required for protected trees.
- Increase the survivability of trees during and after construction by providing protection standards and best management practices.
- Provide standards for the replacement of trees and the planting of trees.
- Define criteria for tree risk assessment and economic evaluations.
- Establish safety standards for tree care operations.
- Provide safety criteria for employees and the public.



**“Without trees, a city is just a scab on the earth.”**

—CHUCK GILSTRAP

**top: Rodger W. Jessup Park.**

**bottom: Blue mahoe (*Talipariti elatum*) flower.**



Queensland kauri (*Agathis robusta*)—another exceptional tree in Los Angeles City Parks.

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# 1.0 INTRODUCTION TO SECTION ITEMS

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In order to provide the required and recommended care for removal and replacement of regulated trees, the Tree Care Manual (see Chapter 3) provides information regarding existing codes, technical regulations, standards, and guides and specifications necessary to implement the best management practices for trees regulated by Ordinances, Policies, and Procedures.

RAP recognizes and implements regulatory procedures for trees specified in the Tree Preservation Policy under four categories: (1) Trees Protected by LA City Ordinances, (2) Heritage Trees, (3) Special Habitat Value Trees, and (4) all other Common Park Trees. For a detailed reference of protected trees, please see the RAP Tree Preservation Policy (Appendix A).

## 2.0 Definitions

A list of the arboricultural and construction-related terms and their definitions are presented here. They are defined as they are used in the Manual. They serve to outline uniform concepts and provide an understanding of events as discussed in the document.

## 3.0 Tree Maintenance Guidelines

The best management practices for tree care operations that cause minimal harm to trees and the associated wildlife are contained here. This section provides information based on tree biology and arboricultural research over the last decade, and introduces models that project the effects climate change may have on the urban forest. It discusses techniques vital to maintaining good tree structure. It also outlines specifications for maintaining trees growing in turf. This section describes practices to avoid and recommends maintenance applications that promote tree health.

## 4.0 Protection of Trees During Construction

Information necessary to preserve trees during all stages of construction is presented here. This section discusses tree growth characteristics as they pertain to construction and provides alternative solutions to mitigate or eliminate damage to trees. It explains the tree preservation process from evaluating the resource through planning, design, impact evaluation, construction, and post-construction management.

## 5.0 Tree Removal, Replacement, and Planting

Procedures for tree removal and replacement are reviewed here. This section specifies step-by-step actions that are taken when a tree or group of trees require removal. It covers the latest specifications for tree selection and planting, as well as an introduction to climate-ready trees. It includes the Tree Planting and Selection Guidelines established for RAP. It explains the recycling process for green waste generated from pruning and removals and how mulch and organic matter are incorporated back into the park system.

## 6.0 Tree Evaluation for Hazard and Economical Value

All trees have the potential to fail, but only a relative few actually do. In establishing criteria to evaluate trees for hazards, the focus is given to trees in urban areas, recognizing the unique combinations of species and site characteristics found in cities. An understanding of hazard evaluation, risk management, and liability are critical for Department managers and arborists.

The general public often does not understand the criteria for tree removal, and RAP's position regarding the removal of hazardous trees is clarified in this chapter. When trees must be appraised, a method is provided that is most useful in city park settings. This section also explains the brush-clearing process and other fire mitigation and rehabilitation measures used by the Department.

## 7.0 Safety Standards

The latest editions of the American National Standards Institute (ANSI) safety standards for tree care operations are contained here, including safety criteria for employees and the public. The RAP Code of Safe Practices, established exclusively for the Department's Forestry Operation is also presented.

## 8.0 Appendices

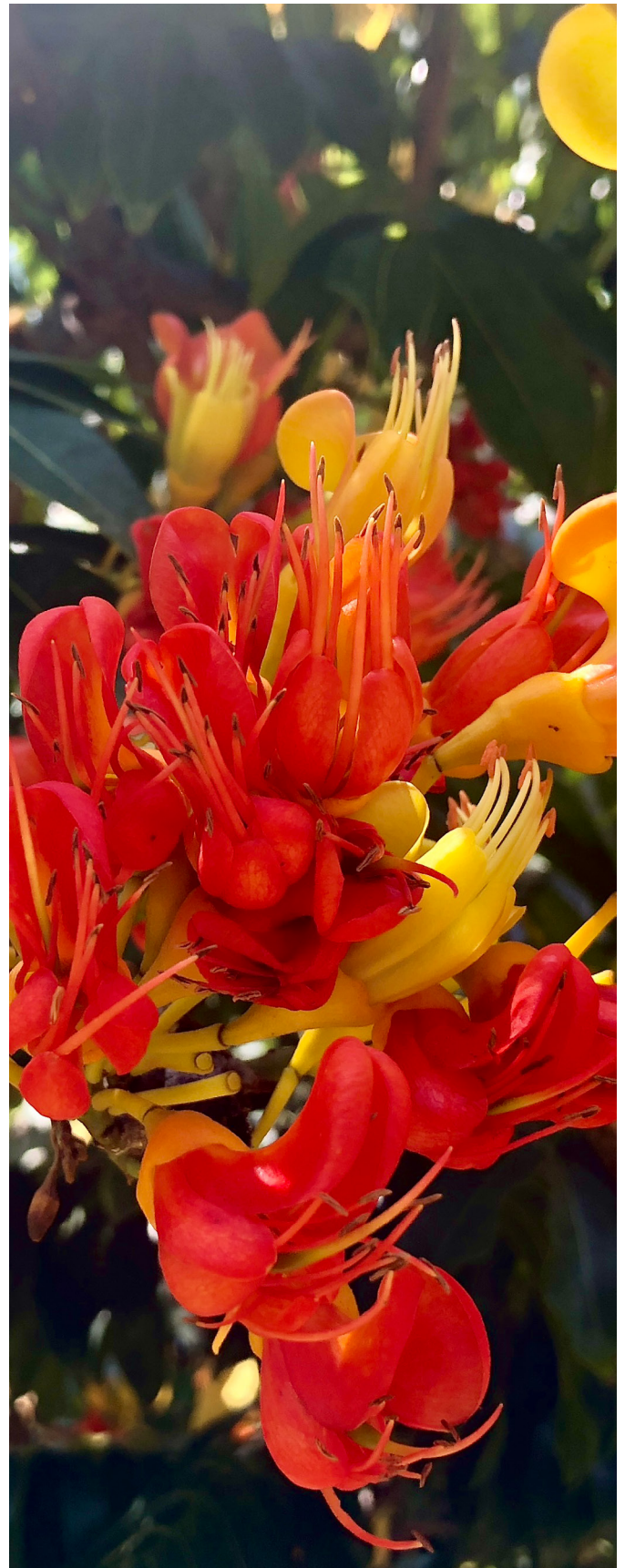
Sources are provided for technical information and supplemental material referenced within the Manual. These are highly recommended for any Department staff interacting with trees or making decisions affecting trees. The source material is given for the preservation of trees and the sustainability of the urban forest.

## 9.0 Assumptions

RAP assumes no responsibility for matters legal in character that is contained in this manual. The manual was created to conform to current standards of care, best management practices, established technical specifications, evaluation and appraisal procedures, and sound arboricultural practices as recommended by the sources listed in the References section.

## 10.0 References

Various reference resources were used to compile the manual. All of the resources are listed. It is recommended that these materials be obtained and kept as desk references.



**Moreton Bay chestnut (*Castanospermum australe*) provide spectacular flower shows each year.**

## 2.0 DEFINITIONS

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The Definitions section is a list of the arboricultural and construction-related terms and their definitions as used in the Manual. They serve to outline uniform concepts and provide an understanding of events as discussed in the document.

**Aeration.** In soil, the process by which air from the atmosphere is brought into the soil. Usually to reverse loss of macropores resulting from compaction.

**Adventitious Buds and Suckers.** Lateral buds whose growth was previously suppressed by an auxin (growth hormone) produced by the dominant leader or side branch. As the suppressing chemicals become weaker, adventitious buds produce a large number of new sprouts or sucker growth near the point of the pruning cut or wound break.

**Aging.** Orderly changes of an organism over time, or its parts as it is genetically designed. In trees, the ratio between the volume of wood with living cells being walled off to the volume of wood with living cells being generated.

**Allelopathy.** Chemical inhibition of growth and development of one plant by another.

**Amendment (Soil).** Any substance other than fertilizers, such as lime or sulfur. For example, gypsum and sawdust are used to alter the chemical or physical properties of soil, generally to make it more productive.

**ANSI A300.** American National Standards Institute—reference source for standards for pruning trees and shrubs.

**ANSI Z133.1.** American National Standards Institute—reference source for standards for arboricultural operations.

**Apical Dominance.** Upright/vertical growth supersedes lateral growth. It is one of the ways a tree attempts to regain its natural form when limbs or branches are removed through pruning, disease, or accident.

**Arboriculture.** The science and art of caring for trees, shrubs, and other woody plants in a landscape setting.

### **Best Management Practices (BMPs).**

International Society of Arboriculture's continually updated guidelines for tree care industry professionals with useful information on tree care standards and practice.

**Branch.** A secondary shoot or stem arising from the main stem or trunk.

**Branch Collar.** Trunk tissue (usually marked by a swelling or collar) that forms around the base of a branch between the main stem and the branch or a branch and a lateral. As a branch decreases in vigor or begins to die, the collar usually becomes more pronounced and more completely encircles the branch.

**Branch Bark Ridge.** A ridge of bark in a branch crotch that marks where branch and trunk tissues meet and often extends down the trunk.

**Caliper.** Synonym for trunk diameter used to measure the size of nursery stock.

**Callus.** Undifferentiated tissue is initially formed by the cambium around and over a wound.

**Cambium.** The tree cell generator. A layer of cells between the inner bark and wood. By the cell division a cork cambium forms the outer tissue of the tree's bark; on the inside a vascular cambium divides in an outward direction producing phloem and on the inner side xylem.

**Canopy.** The part of the tree composed of leaves and small twigs.

**Certified Arborist.** An individual who obtained arborist certification from the International Society of Arboriculture based on knowledge and competence, and who receives on a regular basis continuing education administered by the International Society of Arboriculture (ISA).

**City Arborist.** Recreation and Parks employee who possesses current certification from the International Society of Arboriculture.

**Circling Roots.** Roots that grow around the trunk in a circular manner, rather than laterally away from it.

**Climate Ready Trees.** Tree species that exhibit promising qualities in their ability to withstand the changes in the climate.

**Codominant.** Two or more vigorous and upright branches of relatively equal size that originate from a common point, usually where the leader has been lost or removed.

**Compaction.** Breaking down soil particles by mechanical means, resulting in loss of soil macropores and leading to lack of oxygen and water in soils. A major cause of death of tree roots. See also Soil Compaction.

**Compartmentalization.** Physiological process that creates the chemical and physical boundaries that act to limit the spread of disease and decay organisms.

**Compost.** Organic residues or mixture of organic residues and soil, that have been piled, moistened, and allowed to undergo biological decomposition.

**Conifer.** Plant that bears seeds in a cone.

**Crotch.** The angle formed at the attachment between a branch and another branch, leader or trunk of a woody plant.

**Crown.** The above ground parts of the tree, including the trunk.

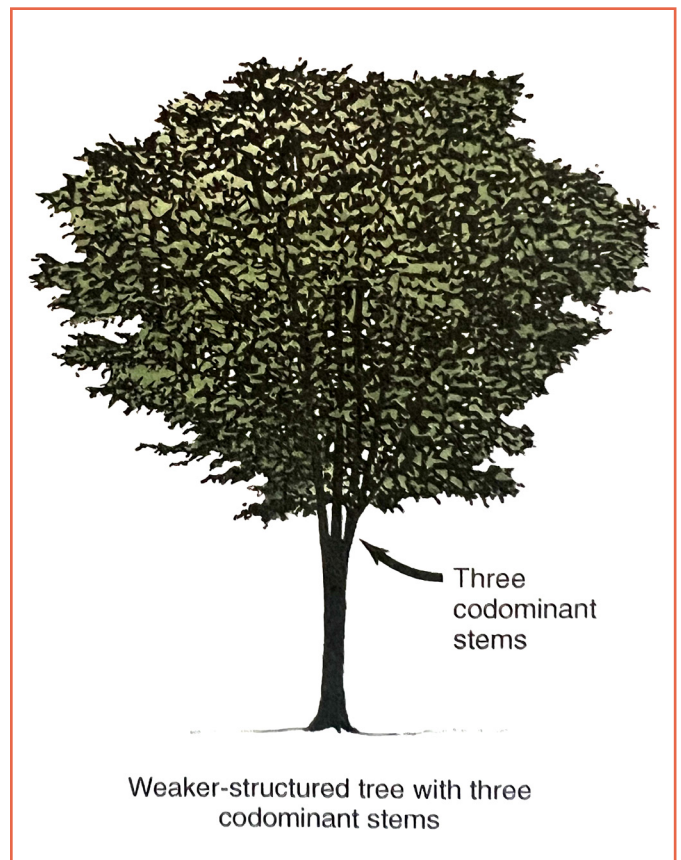
**Crown Cleaning.** The removal of dead, dying, diseased, crowded, weakly attached, and/or low-vigor branches from a tree crown.

**Cultivar.** A named plant selection from which identical or nearly identical plants can be produced, usually by vegetative propagation or cloning.

**Decay.** Process of degradation of woody tissues by fungi and bacteria through the decomposition of cellulose and lignin.

**Deciduous.** A perennial plant that loses all its leaves at one time during the year.

**Decurrent.** Round-headed or spreading plant with no main leader to the top of the plant (e.g., coast live oak).



**Decurrent growth habit.**

**Disturbance.** Various activities from construction or development that may damage trees.

**Dripline.** The width of the crown, measured by the lateral extent of the foliage.

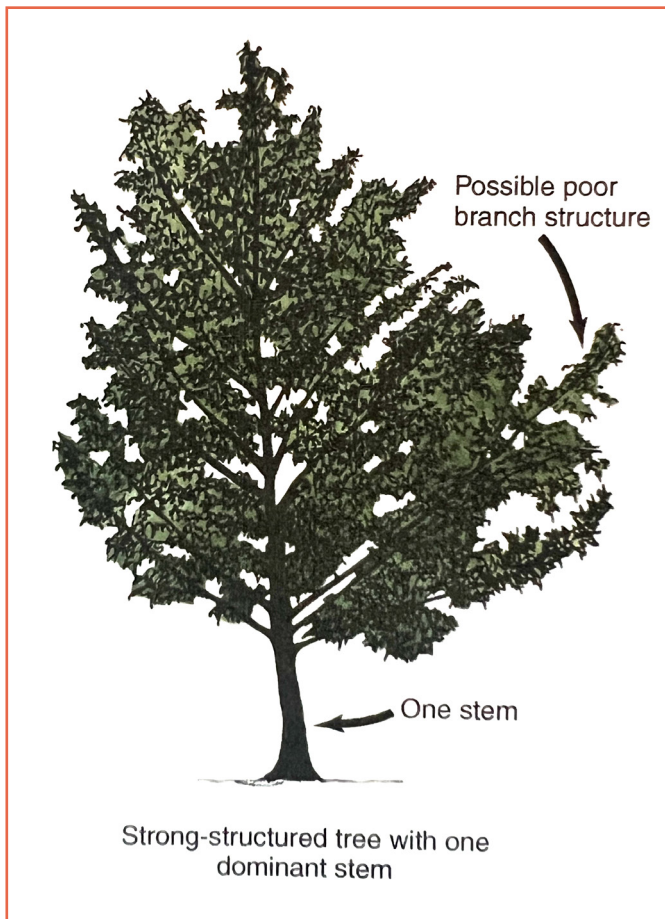


**Drop-Crotch.** Reduction cut, which reduces the length of a branch or stem back to a live lateral branch large enough to assume apical dominance—this is typically at least one-third the diameter of the cut stem. Branches are selectively pruned or removed at varying distances resulting in a thinning out of the tree canopy.

**Epicormic Shoot.** Shoots growing from mature branches or near large pruning wounds. Most of these shoots arise from latent buds and are seldom firmly attached to the stem from which they arise.

**Evergreen.** Plant that retains its leaves for more than one growing season.

**Excurrent.** Tree with cone-shaped crown with a central leader that outgrows and subdues lateral branches (e.g., *Liquidambar* sp.).



**Excurrent growth habitat.**

**Field Capacity.** The soil water content after gravitational pull has pulled away excess water.

**Final Cut.** The last cut made on a limb. It could be the only cut, or the last cut in a series. Final cuts should be made at a minimal distance from the parent stem just outside of the branch collar.

**Flush Cut.** Pruning technique in which both branch and stem tissue are removed; generally considered poor practice.

**Grading.** Altering existing terrain and elevation of land, usually performed by the use of large equipment.

**Green Waste.** Organic materials originating from tree trimmings and tree removals such as leaves and limbs/branches.

**Growth Ring (Annual Ring).** Width of secondary xylem (wood) produced by the stem in 1 year.

**Hazard Tree (Hazardous Tree).** Any tree or tree part that poses a high risk of failure or fracture that causes damage to property or injury to people.

**Heading.** Cutting a currently growing or 1-year-old shoot back to a bud, or cutting an older branch to a stub or a tiny twig not sufficiently large enough to assume the terminal role. This technique is rarely appropriate on established trees and should not be used to reduce the height or size of trees.

**Heartwood.** Nonliving xylem in the center of a trunk or branch; wood is darker in color and can be a site for storage; provides structural strength to a tree.

**Included Bark.** Bark that occurs in a crotch between branch and trunk or between codominant stems. Included bark usually:

- Prevents the trunk from growing around a branch.
- Occurs on defective V-shaped crotches in which the bark grows inward and on itself, causing a physical weakness where the co-dominant leaders meet.

**Indigenous Plants.** Plants occurring or living naturally in an area; not introduced; native.

**Integrated Pest Management.** Using pest and environmental information to determine if pest control actions are warranted and if they are, choosing methods (e.g., biological control, habitat manipulation, cultural control, plant resistance, and chemical control) based on economic and safety considerations.

**International Society of Arboriculture (ISA).** ISA is a nonprofit organization that promotes the professional practice of arboriculture and recognizes qualified, competent, and safe tree care professionals.

**Kinked Root.** A primary root(s), which is sharply bent and causes a restriction to water, nutrient, and photosynthate movement. Kinked roots may compromise the structural stability of the root system.

**Lateral.** A branch or twig growing from a parent branch or stem.

**Leader.** A dominant upright stem, usually the main trunk. There can be several leaders in one tree.

**Limb.** Same as branch, but usually larger and more prominent.

**Lions Tailing.** Removing interior lateral branches resulting in concentrated growth at branch ends.

**Mature Trees.** Trees that have reached at least 75 percent of their typical final height and spread.

**Mulching.** Any material such as sawdust, woodchips, leaves, plastic film, gravel, and loose soil that is spread on a surface to protect the soil and roots from the effects of raindrops, soil crusting, freezing, and evaporation. May aid in reducing soil compaction.

**Mycorrhizae Treatment.** Soil treatment with mycorrhizae spores to increase symbiotic relationship of tree roots and beneficial fungi.

**Parent Branch or Stem.** The tree trunk; or, the larger limb from which lateral branches grow.

**Permanent Branches (Permanent Limbs).** Branches that will remain on a tree for many years, perhaps until maturity.

**Phloem.** The food-conducting tissue of trees formed by the division of the outside layer of the vascular cambium. New phloem is produced yearly; older cells are crushed and compacted.

**Photosynthate.** Pertains to sugar and other carbohydrates that are produced by the foliage during photosynthesis, an energy-trapping process.

**Plant Health Care.** A management practice that includes regular monitoring for pest and disease, nutrition, and cultural methods to promote plant health.

**Protected Trees.** Trees protected by the RAP Tree Preservation Policy.

**Pruning.** Systematic removal of branches of a plant, usually a woody perennial.

**Root Buffer.** A temporary layer of material to protect the soil texture and roots.

**Root Collar.** The junction between the root of a plant and its stem, often indicated by the trunk flare.

**Sapwood.** Functional, conductive and youngest layer of secondary xylem positioned next to the bark tissues; transports and stores water, mineral elements, and carbohydrates.

**Scaffold Branches.** Large, main branches that form the main structure of the crown. In decurrent trees a large limb that is or will be part of the permanent branch structure of a tree.

**Shall.** Used to denote a practice that is mandatory.

**Should.** Used to denote a practice that is highly recommended.

**Slipping.** When cut, the bark easily lifts or peels in one uniform layer from the underlying wood without tearing.

**Soil Compaction.** Compression of soil particles that may result from the movement of heavy machinery and trucks, storage of construction materials, structures, paving, etc. within the tree dripline.

**Species (Tree Species).** Group of plants that resemble each other closely and that interbreed freely.

**Sucker.** Vigorous upright epicormic shoot that arises from latent buds below soil level or the graft union.

**Sustainability.** Maintenance of ecological, social, and economic functions and benefits over time.

**Taper.** The thickening of a stem (trunk) or branch toward its base.

**Target.** People or property potentially affected by tree failure.

**Temporary branch.** A small branch that is retained temporarily along the lower trunk of a young tree; not a permanent limb. Temporary branches are often left on young trees to encourage taper and sturdy trunk development and to prevent sunscald. Temporary branches provide photosynthate to increase trunk caliper and taper and to provide protection from mechanical injury. Such branches should be kept small and gradually removed as the trunk develops.

**Thinning.** Pruning technique in which branches are removed at their point of origin.

**Topping.** Pruning technique to reduce height by heading of large branches. Generally considered poor practice. See also heading.

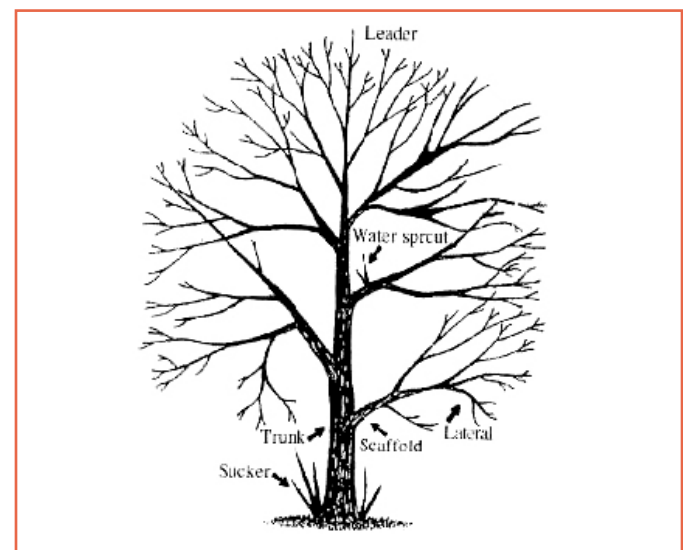
**Tree Protection Zone.** Area identified by City arborist in which no soil disturbance is permitted and activities are restricted. Usually the area of a temporary fenced tree enclosure.

**Trenching.** Any excavation to provide irrigation, install foundation, utility lines, services, pipes, drainage or other property improvements below ground.

**Trunk.** The main stem or axis of a tree that is supported and nourished by the roots and to which branches are attached.

**Undercut.** Cutting partway through the underside of a limb to prevent the bark from tearing. Failure to make an undercut can cause the bark of a tree to tear down.

**Watersprout.** Vigorous, upright, epicormic shoots that grow from latent buds in older wood. Reciprocal are suckers that arise above the soil level or graft union. Seldom firmly attached to the stem from which they arise.



**Typical Tree Framework.<sup>1</sup>**

**Wildland Urban Interface (WUI).** Areas where the built environment meets the natural environment and where there is infrastructure adjacent to or within natural areas that exhibit conditions favorable to wildfire.

**Wound.** An opening that is created when the tree's protective bark covering is penetrated, cut, or removed, injuring or destroying living tissue. Pruning a live branch creates a wound, even when the cut is properly made.

<sup>1</sup> Virginia State University, 2002. A Guide to Successful Pruning.

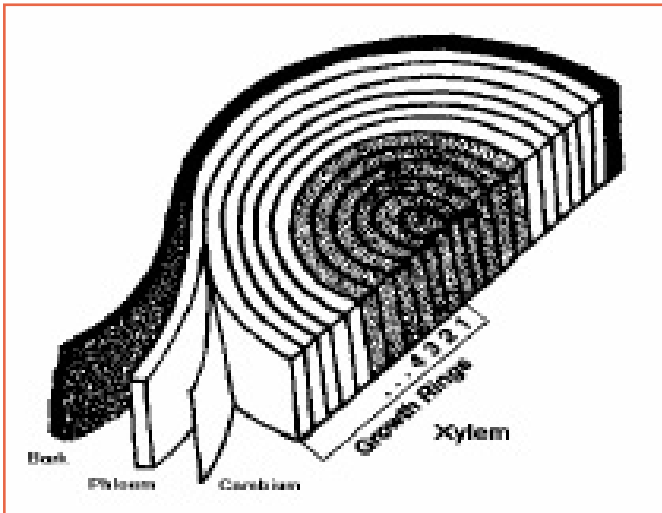
**Wound Closure.** The closing of a wound, necessary for the continued health of the tree. Wounds do not heal (return to restore to original condition or integrity) because wounding breaks or destroys the cambium; they close.

**Woundwood.** Differentiated woody tissue that forms after an initial callus has formed around the margins of a wound. Wounds are closed primarily by woundwood.

**Vertical Mulching.** Technique designed to increase aeration of compacted soils. Holes are drilled into the ground and coarse textured or organic materials are added to replace the removed soil.

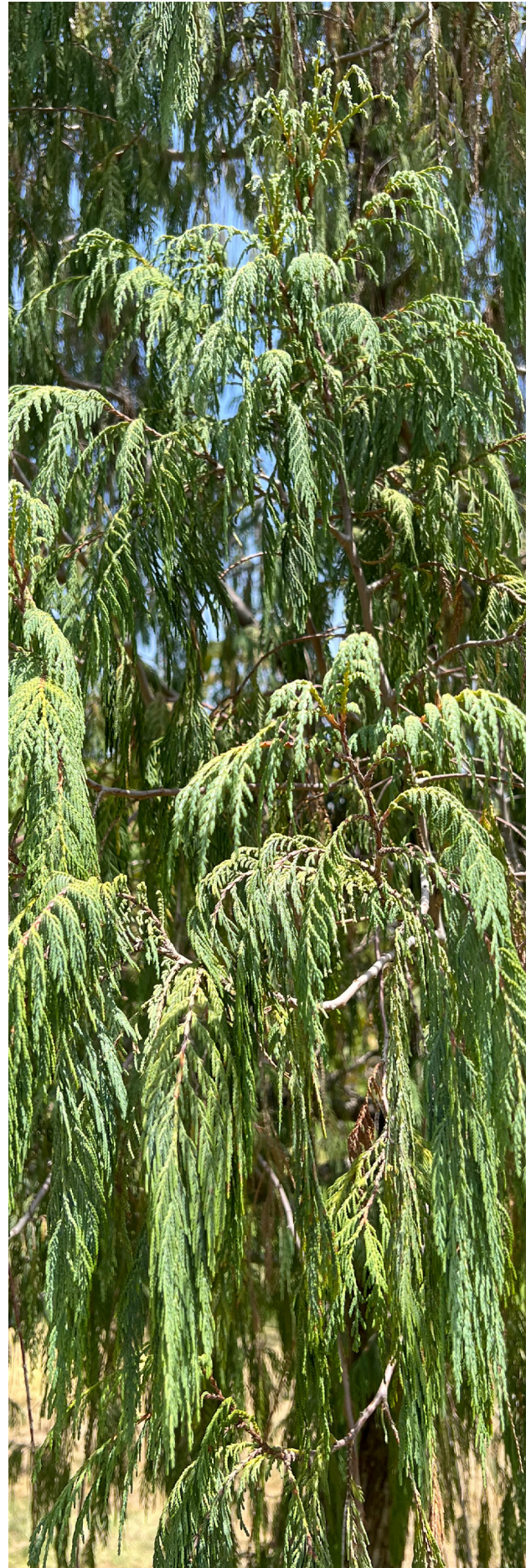
**Xeriscape.** Style of landscape design, construction, and maintenance focused on minimizing the need for supplemental irrigation.

**Xylem.** Cells formed by the division of the vascular cambium. Xylem cells function to transport and store water and mineral elements as well as provide mechanical support.



Relative locations of the phloem, cambium, and xylem.<sup>2</sup>

<sup>2</sup> ISA, 1998. Tree Climber's Guide.



## 3.0 TREE MAINTENANCE GUIDELINES

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### Introduction

Trees are a major element of city parks, and Department staff should continue to learn more about tree care in order to prolong the health of all trees. All RAP Divisions should perceive the cost of tree maintenance as an investment in its capital assets. It is the intention of the following sections to provide guidelines to maintenance practices that result in the best environment for park trees.

### 3.1 Care of Trees Listed in the RAP Tree Preservation Policy

Pruning performed on park trees adheres to the latest standards and recommendations made available by industry professionals and the International Society of Arboriculture (ISA). In the following sections, plant health care policies (e.g., watering, fertilizing, and general maintenance practices) will be discussed. Work performed on trees protected by the LA City Protected Trees Ordinance, as well as Heritage Trees and Special Habitat Value Trees, must always adhere to these recommendations.

Trees recognized as RAP Heritage Trees and Special Habitat Value Trees can be pruned with the approval of the RAP Forestry staff. Pruning shall be done in accordance with industry standards. Any work within the tree protection zone (TPZ) also requires approval from RAP Forestry staff.

Park trees recognized as Common Park Trees are to be protected by applying the most current ANSI (American National Standards Institute) and ISA recommendations for tree pruning as well as maintenance practices as described in the following sections.

### 3.2 Request for Tree Work Guidelines

To date, the Department has not established a pruning cycle, and tree care performed by the Forestry Division is by demand only. Currently, RAP pruning occurs by request and as needed, but the Department does not have adequate staffing or funding levels to follow this industry standard and best management practices for pruning. A regular pruning cycle would ultimately promote tree health while simultaneously enhancing public safety/decreasing liability and exposure.

Field staff shall call the Forestry Division at 213.485.4826 or email [forestry.joborder@lacity.org](mailto:forestry.joborder@lacity.org) any time tree pruning or inspection is required. Trees by nature shed bark and drop leaves, fruits, seeds, and small branches. In many instances, the Forestry crew will not be able to solve tree litter problems by pruning. It is important for field staff to evaluate tree pruning needs before calling in the work order. Misleading information and calling regular tree pruning needs as emergency requests results in inefficient use of the Forestry crews. On the following page is a guideline of regular job order requests and emergency requests for tree work.

#### 3.2.1 REGULAR WORK ORDER REQUESTS

Regular work order requests are for all tree maintenance that does not fall under the "Tree Emergencies" category. These types of requests include pruning of trees not posing an immediate hazard to human life or property or for large-scale projects (e.g., trees blocking light fixtures, signs, or impeding walkway/road clearance) and require a work order submitted to the Forestry Division. The lead Senior Gardener, Park Maintenance Supervisor, or Senior Park Maintenance Supervisor must call in all work order requests. Work orders will be reviewed and prioritized by Forestry Division supervisory staff.

### 3.2.2 TREE EMERGENCIES

The following is a list of possible tree emergencies in priority order:

#### High Priority

- Trees or limbs that have fallen and caused accidents or personal injury.
- Trees or limbs that have fallen and caused damage to vehicles or structures.
- Trees or limbs which are in immediate danger of falling or breaking.
- Broken hanging limbs adjacent to structures, roads, or in picnic or play areas.
- Trees or limbs blocking streets or roads.

#### Medium to Low Priority

- Trees or limbs that have fallen and are not an immediate hazard.
- Trees or limbs that have fallen and are not blocking roads or streets.
- Hanging tree limbs that may not be in immediate danger of falling.
- Dead or severely declining trees without a target present.

## 3.3 RAP Pruning Objectives

Pruning means the selective removal of plant parts to achieve the following:

- Manage risk.
- Manage health.
- Develop structure.
- Provide clearance.
- Manage size or shape.
- Improve aesthetics.
- Manage production of fruit, flowers, or other products.
- Manage wildlife habitat.

Trees and other woody plants respond biologically to pruning (wounding) in specific and predictable ways. Careful study of these responses has led to pruning practices that can best develop, preserve, and enhance the structural integrity, beauty, and functional value of trees.

Climbing spurs shall not be used to climb park trees or palms for the purpose of pruning. Climbing spurs may be used to rescue an injured worker or remove dead, dying, or hazardous trees.

### 3.3.1 INDUSTRY STANDARDS

**The ANSI A300, Part 1—Pruning Standard Practices (2017)** presents consensus performance standards for the professional management of trees, shrubs, and other woody plants. The A300 Standards are research-based guidelines useful in writing work specifications for the care and management tasks of woody plants and palms. The A300 Standards are subdivided into ten parts: Pruning, Soil Management, Supplemental Support Systems, Lighting Protection Systems, Management, Planting and Transplanting, Integrated Vegetation Management, Root Management Standard, Tree Risk Assessment, and Integrated Pest Management (IPM).

**Best Management Practices—Pruning, 3rd Edition (2019)** is the companion publication to the ANSI A300 (Part 1).

### 3.3.2 STRUCTURAL PRUNING SPECIFICATIONS

RAP is actively working towards implementing a proactive maintenance program. Though, based on current resource limitations, many routine reactive management tasks include:

- Clearing branches for public safety lighting.
- Raising the canopy above roads/sidewalks.
- Removing failed branches or entire trees.

Proactive maintenance will allow RAP to plan ahead to achieve future necessary clearance while also preventing dangerous structural defects from forming or from becoming worse. Structural pruning is core to this strategy. Structural pruning requires observation, imagination, foresight, and practice. It has many benefits, but there are also consequences when it is not applied to a tree.

### Benefits of Structural Pruning

Structural pruning can prevent premature failure by addressing clearance, weakness, structure, and risk to create sustainable, long-lived, and beneficial trees for the community. Common contributors to failure include codominant stems, weak branch unions, low aggressive branches, and decay.

Pruning early and often, especially while the tree is young, minimizes the cut size, capitalizes on a young tree's vigor and capacity for wound closure, and achieves a rapid change in tree architecture. As branches and trunks grow in length and girth over time, issues become progressively more difficult or improbable to correct.

If defects are allowed to remain, the costs and risks compound over time. Some consequences include:

- Greater need for technical, specialized pruning.
- Premature removal.
- Larger volumes of biomass that require handling, processing, and disposal.
- Increased potential for decay and tree failure.
- More severe consequences from failures due to larger trees with heavier limbs that can have larger target areas.



**Examples of tree defects. Low, aggressive branches (left). Same tree 14 years later requires a nine-inch pruning cut (right).<sup>1</sup>**

### Why Practice Structural Development Pruning?

The fundamentals of structural pruning are rooted in replicating observations of trees in forest conditions. In tropical and temperate forests, large-maturing trees typically grow one large dominant trunk with few and comparatively small branches. Hormones drive this growth habit in response to environmental factors and resource competition (Murray, 2010).

The result is a structurally stable tree that is resilient to pressures of wind, precipitation, and the weight of its expanding canopy. This natural condition is shown to be ideal for the urban environment as well.

<sup>1</sup> Gilman, E.F. 2012, *An Illustrated Guide to Pruning*. © Cengage Learning, 2012.

In Los Angeles, public trees under the care of RAP are diverse. Many large-maturing shade trees found in the city are native to distant tropical and temperate forests. Based on the tree inventory, common public trees include eucalyptus (*Eucalyptus* spp.), California pepper (*Schinus molle*), London planetree (*Platanus × hispanica*), crape myrtle (*Lagerstroemia* sp.), and lacebark elm (*Ulmus parvifolia*).

Training the architecture of these trees to resemble their forest-grown counterparts is a sound management practice. Most large-maturing trees will benefit from structural pruning, particularly when planted along streets and in other RAP-managed sites. In natural areas and undeveloped sites, such as portions of Ernest E. Debs Regional, Griffith, Elysian, and O'Melveny Parks with little or no public access, trees are allowed to grow naturally and, as a result, provide beneficial wildlife habitat.



**Well-pruned trees with a dominant central leader are visually appealing and are efficient to manage.<sup>1</sup>**



**This figure shows the same forest-grown tree at five different life stages from seedling to maturity. The trunk grows upright toward the sunlight because the crown is shaded from the sides by surrounding trees (not shown). Most branches are in the top half of the tree. This dominant trunk form is considered a strong structure. Not all trees get this tall, but most grow with this type of habit in the forest. Forest trees are usually taller than they are wide.<sup>1</sup>**

<sup>1</sup> Gilman, E.F. 2012, *An Illustrated Guide to Pruning*.



## Park Trees with Decurrent Growth Habits

Trees on open sites, such as city streets, parks, and landscapes, receive abundant sunlight and experience limited competition. Hormones interact to produce lateral, instead of mostly vertical, growth. An example of this growth habit can be found in the native coast live oak (*Quercus agrifolia*). While this broad, spreading crown without a central leader is natural, such a form is best suited to large sites where clearance or risk mitigation is not a requirement. Based on contributions to the University of California Western Tree Failure Database, the coast live oak is among the most failure-prone species present in California (University of California Agriculture and Natural Resources, 2014).



**A dormant oak tree, trained for the past ten years using the structural pruning principles, is demonstrating the benefits of structural pruning techniques.**

### Making a Plan

Before making any cuts, several considerations should be made, including tree health, species characteristics, size and type of cut, and regional climate.

### Maximum Critical Diameter

The largest size pruning wound the tree can tolerate before health is compromised is called the maximum critical diameter. Some species are known to be genetically weak or strong compartmentalizers (Gilman, 2002). However, a visual assessment can provide clues to the arborist on whether or not a large pruning wound is advisable. Are old wounds actively closing? Do existing large wounds have visible decayed wood or cavities?

### Ultimate Clearance Requirement

Determine the lowest branch of the permanent canopy. On young trees, it may be assumed that every branch below a certain height—20 feet, for example—is temporary and will eventually require removal for clearance. If temporary branches are kept short and small, when their eventual removal is required for clearance, the wound at the trunk is also relatively small (between one and three inches in diameter is preferred).

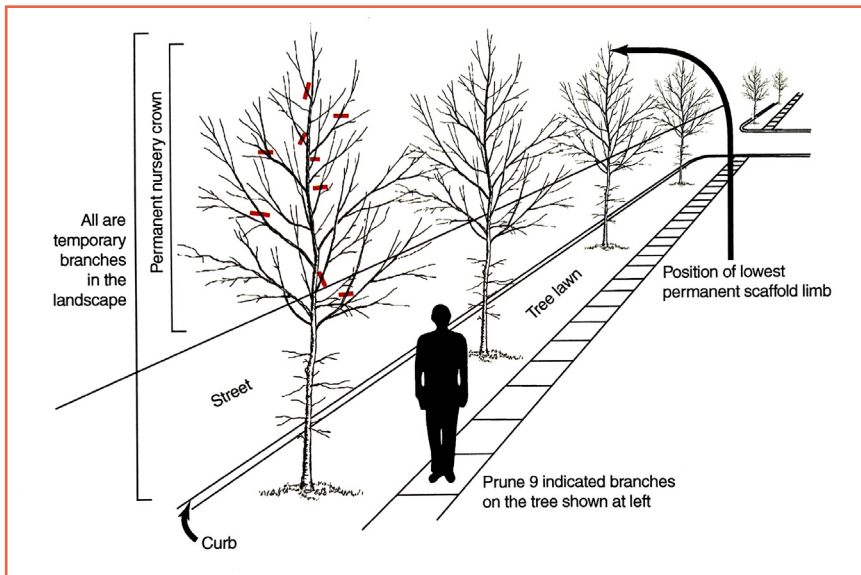
### Choice of Cuts

Reduction cuts are core to structural pruning practices, as are skillful reduction and appropriate heading cuts. A reduction cut effectively removes growth from the ends of branches, encouraging other parts of the tree to grow larger (specifically the trunk and central leader). Reduction cuts are useful for subordinating aggressive branches, maintaining short temporary branches, or slowing the growth of scaffold branches. Detailed descriptions of each can be found in the ANSI A300 (Part 1)—2017 Pruning Standard Practices.

# Structural and Wood Strength Characteristics

RAP Arborists pay attention to the structural and wood strength characteristics of commonly planted park species. These characteristics are used by staff to determine pruning needs and even help predict and prevent tree failure. Poorly structured species and soft wooded species commonly experience limb failure whereas well structured species and hard wooded species commonly do not. See below for examples in each category:

Poor Structure	Good Structure	Soft Wooded	Hard Wooded
Carob ( <i>Ceratonia siliqua</i> )	Chinese pistache ( <i>Pistacia chinensis</i> )	Alder ( <i>Alnus rhombifolia</i> )	Most oaks ( <i>Quercus</i> spp.)
Brazilian pepper ( <i>Schinus terebinthifolia</i> )	Tulip tree ( <i>Liriodendron tulipifera</i> )	Cottonwood ( <i>Populus fremontii</i> )	London plane ( <i>Platanus x acerifolia</i> )
Ornamental pear ( <i>Pyrus calleryana</i> )			Chinese elm ( <i>Ulmus parvifolia</i> )
Silk oak ( <i>Grevillea robusta</i> )			Eucalyptus ( <i>Eucalyptus</i> spp.)
Tipu ( <i>Tipuana tipu</i> )			



Many recently planted trees along streets and in other locations have no permanent branches on the tree at planting. All branches are temporary in the sense that they will be or should be removed as the tree grows taller. On all but the most narrow, upright tree types, do not allow existing branches to grow upright because they are too low on the trunk to become a permanent part of the crown. Prune so branches grow horizontally by using reduction cuts. That way, they are sure to be removed as they grow (see nine pruning cuts on the left tree).<sup>1</sup>

<sup>1</sup> Gilman, E.F. 2002. *An Illustrated Guide to Pruning*

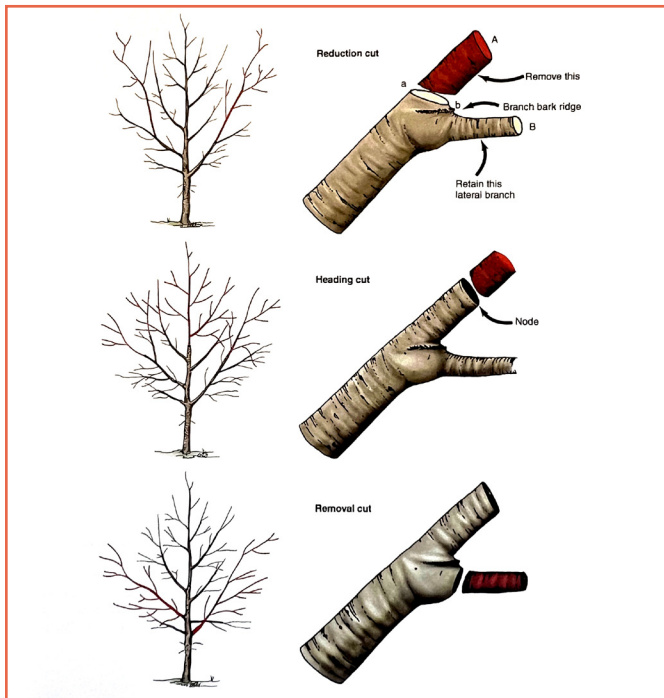
## Branch Aspect Ratio

Branch aspect ratio is the ratio of a branch (A) relative to the size of its parent branch (B) measured just beyond the branch union (i.e., A:B) (Lilly et al. 2019). For example, a branch measuring 3 inches in diameter that is attached to a parent branch measuring 6 inches in diameter has an aspect ratio of 1:2 or 50% ( $3 \div 6 = 0.5$ ). In contrast, a branch measuring 5 inches in diameter that is attached to a parent branch measuring 6 inches in diameter has an aspect ratio of 5:6 or 83% ( $5 \div 6 = 0.83$ ). Branch aspect ratio is a better indicator of the strength of a branch attachment than the branch angle. Generally, branches and parent branches with smaller branch aspect ratios have more branch wood overlap (i.e., branch collar) and are more

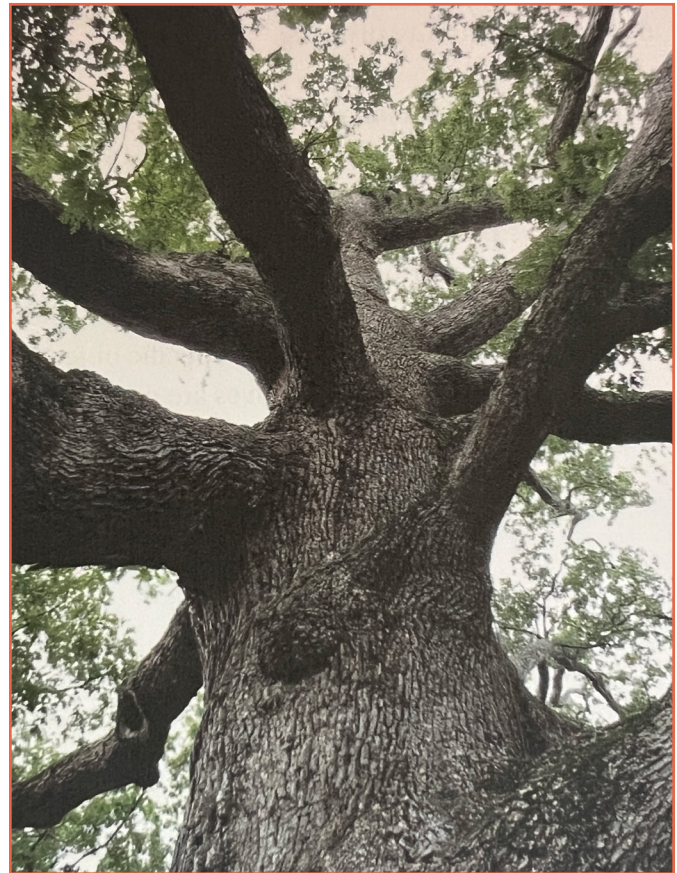
strongly attached. A branch collar helps prevent breaks at the branch union by distributing that stress to weaker parts of the branch (away from the branch union or trunk). Additionally, branch protection zones, chemically rich tissues that prevent the spread of decay into the parent branch or trunk when the branch dies or is removed, form more readily in branches with smaller aspect ratios.

## Working the Plan

The fundamental purpose of structural pruning is to select and develop a single dominant leader with branches that are smaller in diameter than the trunk. The central leader does not have to be perfectly straight but simply larger in diameter than primary branches, ideally two-to-one or greater.



A reduction cut (top) is made back to a branch (B) no smaller than about one-third (minimum) to one-half (preferred) the diameter of the cut stem (A). Making the cut from "a" to "b" rather than cutting from "b" to "a" reduces the likelihood of the union splitting. A heading cut is made back to a node or bud (center). A removal cut is made back to the collar (bottom).<sup>1</sup>



A white oak (*Quercus alba*) with a dominant leader and branches that are smaller than the trunk.<sup>1</sup>

<sup>1</sup>Gilman, E.F. 2002. *An Illustrated Guide to Pruning*

In order to select a dominant leader, especially in younger trees, removal, reduction, and/or heading cuts will be necessary to subordinate or remove competing stems. Retain branches that are spaced well apart, are spaced radially around the trunk, and are less than half the diameter of the trunk.

Arborists remove branches that are damaged, diseased, or have formed included bark (Downer, 2004). Knowing the ultimate clearance requirement for the site will dictate if a branch

should be allowed to grow naturally or if it should be considered temporary and be shortened/subordinated. Retaining low yet short branches is important to evenly distribute wind and maintain vital leaf area available for photosynthesis. To achieve sustainable structure, removing or subordinating other stems/branches that will contribute to weakness or are prone to failure, such as vertically oriented stems, branches with narrow unions, and overextended branches, will likely be necessary.

**Before Pruning**



**After Pruning**



**Spatial benefits of structural pruning, before and after.<sup>1</sup>**

<sup>1</sup>Gilman, E.F. 2002. *An Illustrated Guide to Pruning*

## Achievements of Structural Development Pruning

Development of good structure may take decades, but there are clear benefits, including:

- **Resilience and risk reduction**—Trees pruned with defect removal and weakness mitigation in mind are better equipped to withstand storms, strong winds, and increased loads of a growing canopy.
- **Lower maintenance costs**—When small cuts are made, smaller tools and equipment can be used to remove, handle, and process biomass.
- **Minimal injury to the tree**—Small cuts close faster and may resist decay-causing organisms.
- **Maximize benefits**—The City’s investment in site preparation, species selection, tree installation, irrigation, and maintenance can be returned to the community when trees are well positioned to live to their full potential lifespan.
- **Aesthetics**—When clearance pruning becomes necessary, disfiguration of the canopy is avoided by early training. Temporary limbs remain small and growth of the crown is trained away from above-ground conflicts.

Structural development may be the most important technique to ensure a tree’s long-term viability. This methodology is proven to be effective at achieving a structurally sound tree, especially when applied to large-maturing trees. Structural pruning encourages vertical growth, which anticipates and allows for the need for eventual necessary clearance while minimizing weakness and defects.

Structural pruning is not a one-time effort. As trees continue to grow, structural pruning should be the primary objective each time a tree is pruned, with other objectives being secondary. RAP is committed to maximizing trees’ lifespan, investment, and environmental benefits by utilizing structural pruning principles.

### 3.3.3 TYPES OF PRUNING

The RAP Forestry staff evaluate trees from the ground before determining the type of pruning that is required to meet the desired objective.

Considerations are based on tree species and can include the following:

- Species growth characteristics.
- Time of year.
- Tree form (e.g., excurrent or decurrent).
- Tree condition (health).
- Tree structure (presence of weaknesses or defects).

Staff determines from the ground what limbs need to be removed to achieve or enhance a tree’s structural integrity, appearance, or desired size.

Types of pruning include<sup>1</sup>:

- Structure.
- Crown cleaning.
- Thinning.
- Raising.
- Reducing.
- Restorative.
- Palm and conifer.

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<sup>1</sup>The most current version of *Best Management Practice—Pruning* does not reference the different types of pruning.

### Pruning for Structure

Structural pruning is the removal of live branches and stems to influence structural integrity. It usually follows three procedures:

1. Development or re-establishment of a dominant leader.
2. Establishment of the lowest permanent scaffold limb.
3. Establishment of structurally sound scaffold limbs by removing competing stems or branches and leaving branches with a diameter less than  $1/2$  (ideally  $1/3$  or less) of the trunk (or parent branch).

### Pruning to Clean

Cleaning is the selective removal of dead, diseased, detached, rubbing, and broken branches. This type of pruning is done to reduce the risk of branch failure and the transmission of decay, insects, and diseases.

### Pruning to Reduce Density

Reducing crown density requires strategic removal and reduction of the largest branches within a tree's outer crown. This is often prescribed to temporarily increase air and light penetration. However, if improving structure is considered first, a secondary result is often a reduction in crown density. Reducing or removing the central leader is not typically appropriate. Excessive removal of live interior and lower secondary branches results in the concentration of growth at branch ends is known as "lion-tailing" and is not acceptable.

### Pruning to Raise

Raising is the selective removal of branches to provide vertical clearance. Caution must be taken to not remove too many lower branches. This can lead to slow development of trunk taper, cause cracks or decay in the trunk, or transfer too much weight to the top of the tree.

### Pruning to Reduce

Reduction is the selective removal of branches and stems to decrease the height and/or spread of a tree. This type of pruning is done to minimize the risk of failure, to reduce height or spread, for utility clearance, to clear vegetation from buildings or other structures, or to improve tree appearance. Crown reduction shall be accomplished with reduction cuts rather than heading cuts.

### Pruning to Restore

Restoration is the selective removal of branches, sprouts, and stubs from trees that have been topped, severely headed, vandalized, lion-tailed, broken during a storm, or otherwise damaged. Full restoration usually requires several pruning events over a number of years.

### Pruning Palms

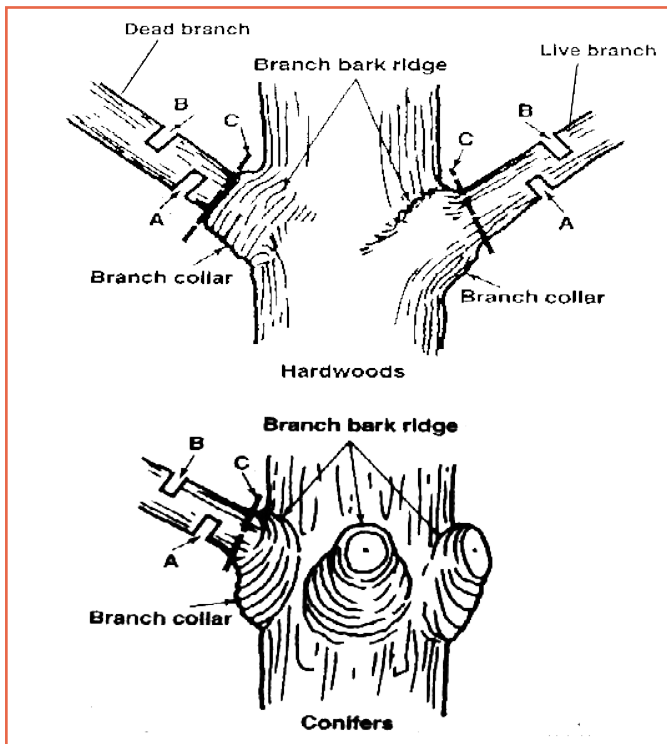
Palm pruning primarily removes dead and chlorotic fronds. Green fronds growing at an angle of more than 45 degrees from horizontal shall be retained. RAP Forestry staff minimizes the risk of disease transmission by pruning green fronds of *Washingtonia* and *Phoenix* species with handsaws disinfected in one-percent bleach solution after each tree is pruned.

### Pruning Conifers

Conifers are primarily pruned to control the density of branching, the shape of young trees, and the size of older ones. They are intolerant of topping or heading. Conifers typically have an excurrent growth habit, which is usually maintained throughout the lifespan of the tree. RAP strives to prune conifers outside of hot summer months when the infestation of the bark beetles is more likely to occur. Thinning, by the selective removal of small branches, is the most appropriate method when pruning conifers.

### 3.3.4 PRUNING CUTS

A proper pruning cut causes very little injury to the adjoining stem. When the pruning cut is properly made, a ring of woundwood forms above and below the wound during the first growing season after the cut. Pruning cuts are not covered with wound dressings or sealants. RAP typically uses two types of cuts: "Branch removal cuts" and "reduction cuts." "Flush cuts," those made *flush* with the parent stem, removes chemical barriers that counter decay and is not an accepted practice.

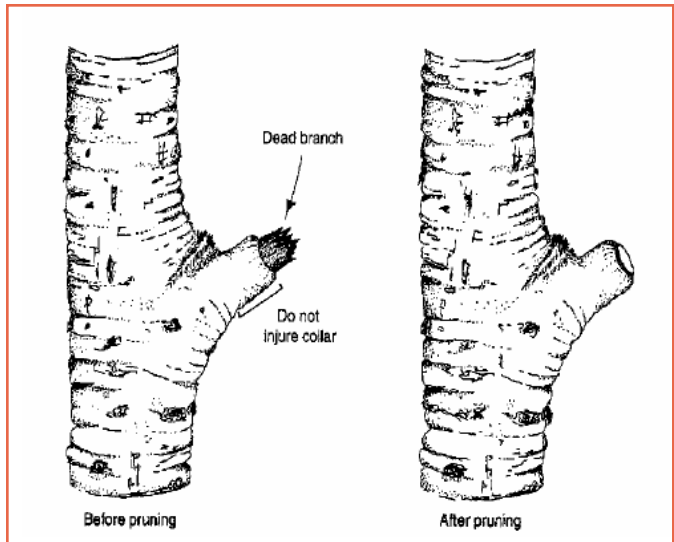


The first cut (A) undercuts the limb. The second cut (B) removes the limb. The final cut (C) should be just outside the branch collar to remove the resulting stub. A pruning cut that removes a branch at its point of origin shall be made close to the trunk or parent limb, without cutting into the branch bark ridge or collar, or leaving a stub. Branches too large to support with one hand shall be precut to avoid splitting of the wood or tearing of the bark.<sup>1</sup>

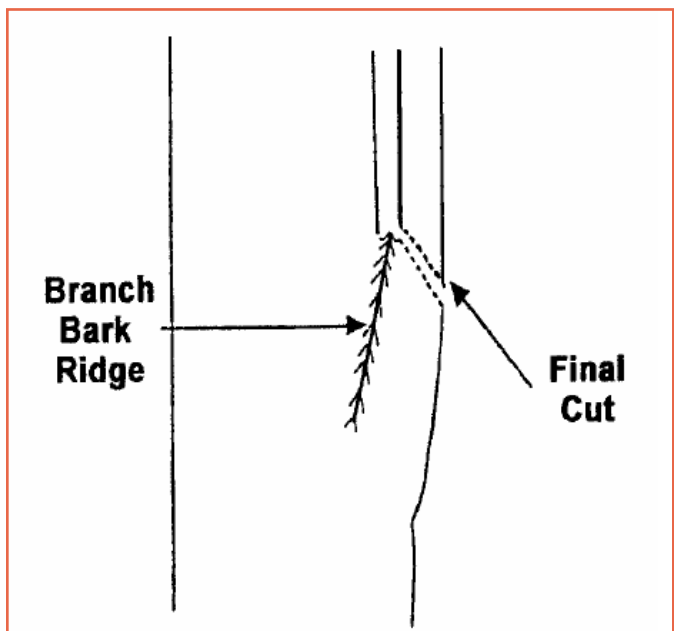
<sup>1</sup> Gilman, E.F. 2002. An Illustrated Guide to Pruning

<sup>2</sup> ANSI A300

<sup>3</sup> University of Illinois at Urbana-Champaign, Plant Health Care for Woody Ornamentals



When removing a dead branch, do not cut into the swollen collar growing around the dead branch, even if it is large. Removing the collar from around the dead branch will injure the trunk since this is composed of trunk wood.<sup>2</sup>



A final cut that removes a branch with a narrow angle of attachment should be made from the outside of the branch to prevent damage to the parent limb.<sup>3</sup>

### 3.3.5 TIMING OF PRUNING

Developing sustainable branching architecture is a key objective and is best applied early and often (see section 3.3.3). Proper structural pruning effectively “trains” growth to avoid inevitable clearance conflicts in the future and encourages desirable growth. By addressing any developing structural weakness early, the pruning cuts remain small, and the tree is best positioned to achieve good structure. Approaching pruning with these objectives leads to a long-lived, healthy, and beneficial tree.

Defects and growth habits that contribute to weakness should be addressed when they are discovered. Trees of any species with defects that pose a risk to public safety may be pruned any time of the year. Removal of dying, diseased, broken, rubbing, or dead limbs can also be accomplished at any time with little negative effect on the tree. Light pruning (removing less than ten percent of the foliage) can be performed safely on most species at any time, providing the trees are in good health.

Plant development can be slowed and plant size maintained if pruning takes place soon after the initial growth flush for the season (Lilly et al. 2019). Such pruning should not be so severe or so early as to encourage new shoot growth. If maximum dwarfing is desired, most plants should be pruned in the period from early to midsummer. This will reduce leaf area for the longest period.

Most deciduous plants can be pruned during the dormant period between leaf fall and the end of winter with similar growth results. Evergreens will be least compromised if they are pruned in the late winter. This also minimizes bark beetle attack on conifers.

Pruning when trees are dormant can minimize the risk of pest problems associated with wounding (attracting insects to fresh wounds) and can allow trees to take advantage of the full

growing season to close and compartmentalize wounds. Avoid pruning trees, especially stressed trees, during or soon after the initial growth flush in spring. This is when the cambium is active and bark is particularly vulnerable to being torn loose.

Defining objectives for pruning may be easier during the growing season. Branches that hang too low from the weight of leaves or fruit and dead and weak limbs can be more easily spotted for reduction or removal.

It is a recommended practice to evaluate each tree before pruning. If necessary, alternate the schedule according to condition. For example, if oak tree dieback (caused by *Diplodia quercina*) is found, pruning should be performed between November and January. If oak twig blight (caused by *Cryptocline cinerescens* or *Discula quercina*) is identified, reschedule pruning during dry weather in the summer or fall. To prevent trees from the attack of boring insects, pruning should be performed during the least favorable time for these insects to relocate, commonly in cooler winter months.

During bird nesting season, RAP Forestry staff does not schedule large pruning projects for park trees. Forestry staff also take special precautions to watch for signs of bird activity on the ground and scout trees for occupied nests before beginning pruning projects. On occasions when the birds are present and the tree does not appear to be at risk, the pruning project is delayed for a few months.

Further reading on tree care operations and birds can be found in section 3.4.1 Tree Care for Birds and Wildlife.



### 3.3.6 PRUNING STRESSED TREES

Pruning is cutting into a tree's live tissue. Therefore, it is important to apply pruning practices that do not compound stress. This is especially true if pruning is performed on trees that are already stressed from various other factors. When a tree is stressed, its defense system is weakened. When defense systems are weakened and a pathogen is present, infection usually takes place and may result in tree decline.

- If the tree has been recently damaged by injury or disturbance, evaluate damage to the crown, trunk, and root system, the potential for failure and proximity to targets. Extensive cracks and damage may require complete tree removal. If removal is not necessary, prune to redevelop or improve structure, form, and appearance. Reduction and removal cuts should be used to prune broken branches back to intact living branches of suitable diameter. In storm damaged mature trees, heading cuts may be appropriate when a removal cut would, for example, result in large diameter wounds near the trunk. Decay in main stem heartwood increases the potential for whole tree failure. Retain sprouts that emerge following disturbance, as they are vital to the tree's recovery process. Over time, sprouts can be reduced or removed following structural pruning principles (Gillman, 2022).
- If the tree is stressed from receiving inadequate care, prune moderately (one third or less canopy removed) to achieve the specified objectives.
- Periods of drought are characteristic of Southern California's climate. Native trees in favorable sites are adapted to these conditions and can typically withstand gaps in precipitation. However, native and non-native trees alike face uniquely harsh conditions in the urban environment. These conditions are increasingly exacerbated by extreme weather events as a result of climate change (National Integrated Drought Information System, n.d.). Pruning removes stored energy, reduces photosynthetic area, and may increase stress and water requirements. Increased stress limits a tree's capacity to defend against insect and pathogen pressure. Therefore, during times of drought, unnecessary pruning should be avoided. If specifications and resources allow, non-critical pruning may be dispersed over a two- to three-year period. Removing dead, broken, or infested branches during drought is acceptable.
- Care must be taken to prune stressed trees during the best time of the season for the species and when common pests are not present.

### 3.3.7 PRUNING YOUNG TREES

The average life expectancy for trees growing in harsh urban conditions is less than 20 years. Pruning trees early can improve tree vitality and preserve structural integrity. They may be pruned at planting time to remove branches damaged during handling and transplanting and to establish the tree's permanent framework. Lower branches are typically retained as "temporary branches"—they serve to strengthen and protect the trunk. The following should be pruned:

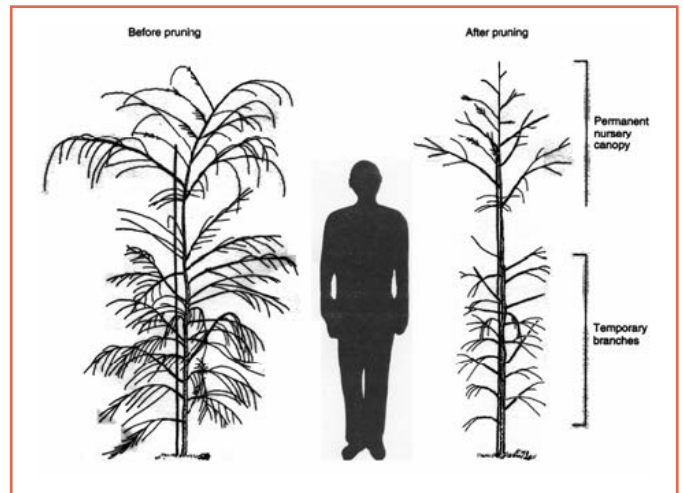
- Broken, dead, and diseased branches.
- Sucker growth arising from the base or watersprouts growing vertically from a branch.
- Crossing and rubbing branches.

Staking may be necessary to temporarily support, anchor, or protect young trees.

Subtle pruning cuts have a dramatic effect on the future structure of a tree. The goal is to develop trees with one dominant leader, strong and balanced scaffold branches, and good trunk taper and to correct weaknesses, such as included bark or codominant stems.

It is important for the field maintenance staff to:

- Monitor and adjust rubbing tree stakes and ties that are too tight. In a park setting, most properly developing trees should have stakes removed after one to three years.
- A temporary branch is considered to be any branch originating below the lowest chosen scaffold branch. Maintain temporary branches for the first three to five years after the tree has been planted. To allow mowing and prevent breaking, shorten temporary branches



**Temporary branches on the lower part of the trunk are to remain for three to five years after planting. These branches will nourish the trunk, build caliper, and prevent over extension of the leader. Be sure to shorten any temporary branches growing into the permanent canopy.<sup>1</sup>**

to 12 to 18 inches as shown below. For young trees with main stems less than one inch in caliper, retain temporary branches three-eighths of an inch or less in diameter.

Temporary branches are crucial in the development of young trees. They allow for flow of photosynthates, nutrients, and water between the trunk and temporary branches and leaves. Temporary branches aid in the development of a robust tapered trunk and can result in a tree that withstands greater stress from wind, stands erect, and is better equipped to support a crown mass at maturity. These branches should be shortened to about 12 to 18 inches and remain for at least three to five years after planting. When they are permanently removed, they should be pruned according to established guidelines. Do not "flush cut" or leave stubs, which are invitations to disease.

Only RAP Forestry arborists shall prune young trees. RAP staff not authorized who prune young trees may face disciplinary action.

<sup>1</sup>Gilman, E.F. 2002. An Illustrated Guide to Pruning

# Tree Pruning - Do



## Hire a professional arborist

Hiring an ISA Certified Arborist is a good way to ensure trees are pruned properly and safely.

## Inspect each tree

If the observed condition is beyond the original scope of work contact the manager and/or client immediately.

## Establish pruning objectives

Different trees and tree species have unique growth habits and maintenance requirements. Address the specific needs for each tree. Consider the growth cycle and structure of individual species, site characteristics, and the type of pruning to be performed.

## Promote good structure

Selective pruning promotes strong structure. Structural pruning should address issues with codominant branches and poor branch attachments, as well as establish the lowest permanent branches. Proper pruning results in cuts at the branch union where natural pathways promote compartmentalization and wound closure.

## Prune trees to reduce risk

Pruning trees can mitigate safety hazards including providing clearance for pedestrians and vehicles, addressing structural defects, and removing dead or weak branches that have potential for failure.

## Make the smallest diameter cut possible

Larger pruning cuts take longer to compartmentalize. Pruning cuts can serve as entry points for pests or decay pathogens.

## Avoid excessive removal of live foliage

Pruning too much leaf surface area can cause unnecessary stress for trees. In general, healthy trees can sustain up to 25% loss of live foliage. This percentage should be reduced for older, mature trees.

## Maintain pruning tools and equipment

Keep pruning tools sharp and disinfected to promote proper cuts and reduce the likelihood of spreading pathogens from one tree to another.

## Establish a pruning routine

Regular pruning is essential for maintaining the health and structure of urban trees. Routine pruning removes dead or diseased branches, promotes proper growth, and enhances the overall appearance of trees.

## Follow ANSI standards and ISA Best Management Practices (BMPs)

Pruning trees in accordance with ANSI standards and ISA BMPs ensures that trees are maintained safely and that pruning is less likely to cause long-term negative health outcomes for the tree.

## Hire a Utility Specialist to maintain trees near overhead wires

Pruning trees near utility lines is extremely dangerous. All overhead wires should be considered energized. Trees that are within 10 feet of primary power lines may only be pruned by a certified line clearance worker.

# Tree Pruning - Don't



## Remove more than necessary

Avoid excessive pruning and over thinning. Loss of foliage impacts photosynthesis and other biological functions. Prune selectively and conservatively, focusing on maintaining a tree's natural shape and structure.

## Prune in the wrong season

Pruning in the wrong season or during drought can harm trees. It is important to understand the optimal timing for each species.

## Use improper pruning techniques

Avoid damaging the branch bark ridge or collar, or leaving a stub. Improper pruning techniques cause damage and create entry points for pests and decay pathogens.

## Top trees

Topping results in stub cuts and adventitious growth. This improper pruning practice leads to weak, structurally unsound regrowth and makes the tree more susceptible to diseases and storm damage.

## Thin or lace trees

As trees grow, branches develop in response to the environment. Pruning can disrupt this natural balancing act. Over thinning or "lacing" trees exposes remaining limbs to more direct impacts from wind and sunlight, making trees more susceptible to sun damage and structural failure.

## Lion tail

Lion tailing is a harmful pruning practice where interior and lower lateral branches are removed. This concentrates foliage and weight at the ends of branches and results in a structure that resembles a lion's tail. Lion tailing removes a valuable food source (leaves) and increases the likelihood of limb failure.



Topping.



Lion tailing.

### 3.4 Biodiversity and the Urban Forest

Los Angeles is bordered by Santa Monica, Santa Susana, and Verdugo mountains as well as the Pacific Ocean. These diverse landscapes make LA a “Global Biodiversity Hotspot” for wildlife and plantlife. Within the city, there are a number of microclimates, each supporting a unique biodiversity. Despite being densely populated and fragmented by a vast freeway system, LA is home to more than 1,200 native species (2018 and 2022 Biodiversity Reports<sup>A</sup>). While it is important to emphasize native flora and fauna, it is equally important to recognize the valuable ecosystem services that non-native species provide in urban environments. RAP-managed parks and natural areas are home to a significant portion of urban wildlife and plantlife, including a diverse public tree resource, comprising nearly 500 different woody species. When looking at California cities that have public tree inventories, LA is one of the most species-rich (Love et al. 2022<sup>B</sup>). There are relatively few native tree species to the area and many are not adapted to the cityscape.

Species diversity and abundance in a given area can be measured using a diversity index. In 2018, LA created a baseline report based on the “Singapore Index of Cities’ Biodiversity” (2018 Biodiversity Report<sup>A</sup>). Then, as outlined in LA’s 2020 Biodiversity Report<sup>A</sup>, the City developed a set of customized indicators called the “LA City Biodiversity Index,” which is tailored to LA and is used to measure biodiversity and track changes over time. The evaluation helps to guide the City in protecting, enhancing, and mitigating impacts to biodiversity toward the no-net-loss target. The report acknowledges that “biodiversity stewardship is central to cities’ ability to provide

urban forest cooling benefits” and both public and private property are central to increasing greenspace and habitat. One of the indicators in the LA Biodiversity Index “Neighborhood Landscape/Tree Canopy Footprint” is focused on urban greening throughout LA. Scores are given based on the change (increase or decrease) in landscape/tree canopy over time.

The 2018 Biodiversity Report<sup>A</sup> outlined recommendations relating to the urban forest, including:

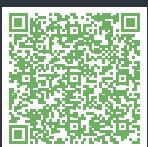
- Plant trees in locations that maximize the benefits received (e.g., increased shade, walkability, traffic calming).
- Estimate carbon storage and sequestration (RAP uses i-Tree tools<sup>C</sup>).
- Plant long-lived and/or low-maintenance trees for better carbon sequestration.
- Plant fast-growing species where immediate shading is desired.
- Explore additional tree species that are suitable for current and future climates.
- Plant native species where appropriate.
- Plant species that attract birds.

RAP takes the management implications and recommendations associated with this indicator into consideration during regular work planning and visioning.

#### 3.4.1 TREE CARE FOR BIRDS AND WILDLIFE

Wildlife provides many services such as seed dispersal, pollination, and carbon and nutrient cycling and creates a sense of place and belonging. When managing trees, RAP takes measures to reduce the impact on birds and other wildlife to help keep urban forest managers

A



Biodiversity Reports

B



“Diversity and structure in California’s urban forest”

C



iTree Tools

and wildlife safe. Since 1918, the Migratory Bird Treaty Act has been in place to support the conservation of bird species and outline unlawful activities to promote their success. The Western Chapter ISA has compiled research-based best management practices to lessen the impacts on wildlife and promote wildlife habitat during tree care operations (Bassett et al. 2021).

In addition to understanding the Act and participating in training on best management practices, RAP modifies their pruning schedule to accommodate bird nesting and has gained some knowledge about the potential bird and wildlife species that may be encountered, as well as their nesting and feeding activities. RAP modified pruning practices, when possible, to leave downed trees and snags because they create bird and wildlife habitat. However, public safety and fire mitigation take priority.

The following actions are best management practices that field maintenance staff should consider in order to avoid wildlife conflicts and minimize disturbances (Bassett et al. 2021):

- Be aware of wildlife in the area.
- Assess habitat quality and determine the breeding season of local wildlife (e.g., bird nesting is typically February through August in Southern California).
- Conduct pre-work inspections to identify any wildlife or active nests present at the work site.
- Leave nests, eggs, or young in trees.
- Minimize disturbances by taking nest status, distance from nest, temperature, duration of project, and proper tool selection (e.g., hand tools) into consideration.
- Create no mow zones under tree driplines to create pollinator habitat and nesting sites.
- Schedule inspections in rare situations where permission is needed to remove a tree with an active nest.

- Be trained and prepared for encountering wildlife encounters.
- Consult or provide wildlife-trained arborist or a wildlife biologist when encounters are likely or with questions on how to best work in the case of encountering wildlife.
- If injured wildlife is found, call the numbers listed on this card or another wildlife rehabilitation service.

If work has to be performed on trees during the nesting season, trees are evaluated by a wildlife expert and an appropriate buffer zone is established (Appendix O).

An added benefit of promoting wildlife is the natural biological controls of what are commonly considered pest species for urban trees. For example, raptors provide control for rodents that commonly gnaw at the base of trees—sometimes girdling them—or that initiate tunneling damage in and around the root system. Birds and bats feed on insects, many of which can cause feeding damage to trees.

**HAWK/OWL/FALCON:** Call Ojai Raptor Center ORC (805) 649-6884. Nighttime/after-hours emergency call/text (805) 798-3600

**WATER BIRDS LIKE PELICANS OR GULLS:** International Bird Rescue at (310) 514-2573

**OTHER WILDLIFE:** CA WILDLIFE CENTER (CWC) (818) 222-2658. Text photos to CWC at (818) 415-7269

**HELP WITH CAPTURE OR COORDINATING TRANSPORT:** Courtney McCammon (949) 285-7096 (RAP Urban Ecologist) OR Park Ranger (323) 644-6661

**UNABLE TO REACH WILDLIFE REHAB OR TRANSPORT VOLUNTEER:** Call LA Animal Services at (888) 452-7381. They can capture and coordinate with rehab.

**INJURED WILDLIFE??**



**PARK PROUD LA**



## Building Bird, Bat, and Bee Houses

While it is most important to provide habitat, including food and nesting resources for birds, bats, and insects, supplemental structures can be incorporated into the landscape. Some information is available on the optimal placement for nesting/roosting boxes that can be used by birds, bats, bees, and wasps. RAP has been partnering with community members and organizations such as the Western Los Angeles County Council Scouts Program to build and incorporate raptor nesting boxes.

RAP encourages and supports opportunities to collaborate with groups and organizations to help build and incorporate nesting/roosting boxes, and/or aid in landscape restoration, including:

- Western Los Angeles County Council Scouts Program.
- Los Angeles Unified School District (schools that have Agriculture and/or woodworking programs or classes).
- University of California Agriculture and Natural Resources Cooperative Extension.
- Natural History Museum of LA County.
- Los Angeles Zoo.
- Internal City Departments focused on biodiversity (e.g., LA Sanitation & Environment).

### 3.4.2 USING THE URBAN FOREST TO FOSTER SUITABLE HABITAT FOR WILDLIFE

Plant management techniques can be used to increase habitat quality for wildlife, including:

- Follow best management practices for tree establishment, care, and removal.
- Maintain mature trees.
- Trim mature trees to reduce risk, but maintain material when possible to provide habitat.
- When public safety allows, leave some dead, dying, or declining trees.
- Increase species, age, and spatial diversity within the urban forest.
- Use trees to create stepping stones, corridors, or other connections to strategically foster wildlife movement and increase habitat connectivity.
- Promote healthy soils by incorporating compost, biochar, mulch, and leaving organic matter (e.g., grass clippings and leaf litter).
- Use pest control tactics that minimize the risk to non-target organisms (i.e., avoid the use of pesticides as they can harm biodiversity and be detrimental to the environment and human health).
- Reduce the amount of invasive plant species and areas of turf.
- Integrate shrubs and groundcovers.
- Plant native species of trees, shrubs, groundcovers, and bunchgrasses, especially species that support pollinators and other insects.
- Leave some areas of bare ground and tall grasses for the various species of ground nesting bees.

- Ensure there are flowering plants available for pollinators throughout the growing season ([Xerces Society](#), n.d.).
- Rather than removing all material, incorporate dead wood and decaying tree parts into landscapes as potential habitat.
- Promote ongoing biodiversity projects in the LA area on both public and private land (e.g., wildlife connectivity) and support the City’s 2017 Biodiversity Motion.
  - » [Los Angeles Sanitation](#)
  - » [Los Angeles Sustainable Development Goals](#)
  - » Los Angeles-proposed [Ridgeline Protection Ordinance](#)
- Health and structural impacts on tree species that are not adaptive to new and changing conditions.
- Increased incidence in pests and disease as well as susceptibility as a result of changes in temperature, precipitation, and tree stress.
- Additional costs for mitigation and tree removal for marginal species and individual trees.
- Canopy loss, especially where key species (e.g., predominant species) become marginalized.

Tree species can adapt to climate change by contracting or changing their range (e.g., expanding northward or to a higher elevation). In a study of North American tree species, more than half were contracting their ranges in response to climate change (Zhu et al., 2012). While native tree species are important components of the urban forest, non-native landscape species should also be considered for their ability to withstand harsh urban environments.

The impacts of climate change will also differ depending on the region. In LA, there are several microclimates, each can support some unique tree species. The different microclimates in LA are coastal and inland. Therefore, RAP manages parks within each microclimate differently, especially for tree species selection and irrigation.

Increasing species diversity and tracking species performance can help managers determine suitable species and lessen the detrimental consequences in the event that one or more species are more susceptible to changes in climate and urbanization. Staff are following the results of UC Davis’ [Climate Ready Trees](#) program to incorporate species that have been identified as suitable candidates for future predicted climate conditions. These species are identified in the climate ready tree list (Appendix L).

### 3.4.3 URBAN FOREST DIVERSITY IN A CHANGING CLIMATE

Research on climate change in complex urban ecosystems is challenging and still evolving. In LA, regional climate projections estimate that the urban forest could face significant damage due to excessive heat and flooding. Under a high emissions scenario, average annual daily temperatures are predicted to rise by approximately 4.8 °F to 7.9 °F, and precipitation patterns may vary up to ten percent from current levels by the end of the century (Cal-Adapt,2022). Although there is no clear consensus on the future outcomes, it is thought that extraordinary weather events are likely to increase in years to come. As temperatures rise and precipitation patterns fluctuate from historical norms, existing tree species must adapt or succumb to the changes in climate. Impacts on Los Angeles’ urban forest and RAP’s program may include:



## 3.5 Prohibited Acts

Any damaging acts or excessive alterations to protected trees are prohibited. We discuss a few of the most common harmful practices below.

### 3.5.1 EXCESSIVE PRUNING

The most common offense in urban areas is excessive pruning. People often see different tree pruning styles and assume that these practices are good for trees.

Forestry staff are cautious to trim only as much as necessary to achieve these results: a healthy and beautiful tree, increased public awareness, and the greatest ecological benefit.

### 3.5.2 TOPPING AND HEADING

Topping is the indiscriminate cutting back of tree branches to stubs or to lateral branches that are not large enough to assume the terminal role. Topping disregards the plant's long-term health and structural integrity.

Other names for topping include "heading," "tipping," "hat-racking," and "rounding over." A common misconception is that a tall tree poses a hazard, and its height should be reduced to make it safer. Topping may reduce the hazard in the short term, but is not a viable method for height reduction.

**“Topping is perhaps the most harmful tree pruning practice known. Yet despite more than 25 years of literature and seminars explaining its harmful effects, topping remains a common practice.”**

ISA, WHY TOPPING HURTS TREES

### Topping Stresses Trees

Topping often removes 50 to 100 percent of the leaf-bearing crown of a tree. Since the leaves are the “food factories” of a tree, topping can temporarily “starve” a tree. The severity of the pruning triggers a kind of survival mechanism. The tree activates latent buds, forcing rapid growth of multiple shoots below each cut. The tree needs to form a new crop of leaves as soon as possible, and if it doesn't have the stored energy to do this, it is seriously weakened and may die.

A stressed tree is more vulnerable to insect and disease infestations. Large, open pruning wounds expose the sapwood and heartwood to attack. The tree may lack sufficient energy to chemically “defend” the wounds against invasion. Some insects are actually attracted by chemical signals to stressed trees.

### Topping Causes Decay

Cuts made along a limb between lateral branches create stubs. The tree may not be able to close these wounds and the exposed tissues are subject to decay. Normally a tree will compartmentalize these decaying tissues, but few trees can defend against multiple, severe wounds caused by topping.

### Topping Can Lead to Sunburn

When leaves are removed, the remaining branches and trunk are suddenly exposed to high levels of light and heat. The result may be sunburn of the tissues beneath the bark. This can lead to cankers, wood decay, bark splitting, and death of some branches.

### Topping Makes Trees Ugly

The natural branching structure of a tree is a biological wonder. Topping removes the ends of the branches, often leaving ugly stubs. Topping destroys the natural form of a tree.

### Topping May Create Hazards

Stubs left from topping usually decay. Shoots that are produced below the cut are often weakly attached and may be at risk of failure. Unlike typical branches that develop normally, only the outermost tissue layer of the parent branches is connected to these new shoots. The new shoots grow quickly and may become heavy and prone to breakage.

### 3.5.3 OTHER PROHIBITED ACTIONS

- “Lions tailing.” This practice removes all or most secondary and tertiary branches from the interior portion of the crown, leaving most live foliage at the perimeter of the canopy.
- Excessive root pruning that damages more than 25 percent of the root zone. Limiting root pruning operations to a distance at least 6x DBH away from the trunk will minimize consequences to both tree health and stability (see sections 4.2.5 and 4.2.6).
- Excessive tree raising.
- Compacting soil within the dripline because of unnecessary driving or parking.
- Recreation activities that will damage trees.
- Excessive pruning to accommodate solar panels<sup>1</sup> or property views.

<sup>1</sup>The City does not have a policy to address solar and tree conflicts; RAP follows state law. RAP recognizes the importance of both solar infrastructure and the urban forest.

California’s Solar Shade Control Act requires specific and limited controls on trees and shrubs. It restricts the placement of trees or shrubs that cast a shadow greater than ten percent of an adjacent existing solar collector’s absorption area upon the solar collector surface between the hours of 10 a.m. and 2 p.m. The Act exempts trees or shrubs that were: (1) Planted prior to the installation of a solar collector, (2) On land dedicated to commercial agricultural crops, (3) Replacement trees or shrubs that were planted prior to the installation, and/or (4) Subject to city and county ordinance.

## RAP Standards for Clearance Pruning

RAP uses minimum standards for pruning in order to keep the parks safe. Clearance pruning applies to the following:

- **At least nine feet over sidewalks.**
- **At least 14 to 20 feet over roads.**
- **At least six feet clearance over buildings.**
- **Security cameras and lights (illuminating walkways, buildings, ball diamonds, and parking lots) are adequately cleared on a regular basis.**

### 3.6 Maintaining Tree and Turf Association

Trees and turf are mutually exclusive in nature. It is rare to see many trees growing in grasslands and, conversely, grass is not common on the forest floor. Each plant group has its own demands and strategies to inhibit the growth of the other, leading to competition for water, nutrients, sunlight, and rooting space. Turf requires morning sunlight for optimum growth, health, and stand density.

#### 3.6.1 MULCHING AS TURF ALTERNATIVE

Golf course design considers tree location and species selection with respect to placement of turf areas. RAP uses many design alternatives at their golf courses—for example, aligning maintenance requirements by using indigenous plants or using mulch to minimize compaction and enhance tree health. RAP also uses designs that reduce the amount of turf in parks to decrease their water use. More information is provided in Appendix N, Training Topic 3—Trees and Turf Associations.

### 3.6.2 MOWING AND OTHER EQUIPMENT

Mowing equipment, spray rigs, aeration equipment, and skip loaders can all cause irreversible mechanical injury to trees. Severe damage can occur and tree trunks can eventually become girdled and die when trees are hit repeatedly with equipment such as string trimmers. Sometimes referred to as “mower blight,” trunk wounds also serve as entry points for diseases, borers, or other insects.

RAP commonly uses mulch around trees as a deterrent against this kind of damage. Tree guards are also used to protect the trunks of young trees. Tree guards should be routinely examined and either readjusted or removed as trees mature.



Crew working in trees.

## 3.7 Plant Health Care

Plant Health Care is a plant management program that consists of routinely monitoring landscape plant health and individualized plant management recommendations in order to maintain or improve the vitality, appearance, and safety of trees and other plants. Plant Health Care approaches take preventative measures and eco-smart products into consideration.

### 3.7.1 WATERING PRACTICES

Water needs of trees vary by species, tree age, soil type, microclimate, and environmental conditions. The relationship between soils, plants, and water is a complex subject and is only briefly discussed in this section.

Supplemental irrigation for mature trees should be deep and infrequent. Deep watering can increase drought tolerance and encourage deep roots less likely to damage hardscape. Excess irrigation can promote root-rotting fungi and lead to tree decline, whereas frequent shallow watering encourages surface roots that provide poor anchorage.

Watering frequency depends on temperature, humidity, wind, soil type, irrigation system, and drainage. RAP uses a soil probe to determine soil moisture and establishes its irrigation schedules accordingly. Smart controllers are available but not currently set up to run off of weather stations. The current irrigation practices do not take the kind of sprinkler head into consideration. RAP endeavors to water in the early morning when rates of evaporation are lower, irrigation is less likely to interfere with park activities, and foliage is allowed to dry during the day—an important consideration for trees that are susceptible to fungal-related foliar diseases.

Water-holding capacity is the amount of water versus air filling the soil pores or spaces. When all of the soil pores are filled with water, the soil is considered saturated. When a portion of the water has drained out of the soil pores from gravity, the soil is at field capacity. Different landscape settings and soil types have varying field capacities. Soil texture and structure (i.e., the sand, silt, and clay content and their aggregation) changes how quickly water moves through the soil (Fields-Johnson and Abbott, 2020). An optimal watering schedule regularly brings the soil back to field capacity.

The two microclimates in LA have unique rainfall patterns and soil types. Despite this, irrigation is the same across microclimates with varying needs. RAP is interested in better understanding the soil type and its water-holding capacity in the parks to match the amount of irrigation to the setting and irrigation emitters present at the site. This will allow RAP to determine the amount of water needed to irrigate more accurately based on the water demand of the site. To help determine the amount of water, the [UCANR Landscape Water Requirement Calculators](#), built upon the ANSI/ASABE S623 Standard, “Determining Landscape Plant Water Demands,” can be used.

Proper irrigation is key to the survival of newly planted trees. If rainfall is not sufficient for tree establishment, supplemental water is necessary. The best indicator is to probe the root zone, adjacent to the root ball to determine the moisture content of the root ball.

RAP largely uses overhead irrigation but tries to avoid irrigation that wets tree canopies and/or tree bases, especially of those trees that are susceptible to foliar diseases or diseases caused

by crown- or root-rotting fungi.

Native trees adapt to environmental conditions of the region and after establishment rarely require supplemental irrigation. Planting native and drought-tolerant trees in turf-dominated city parks requires careful irrigation management.

More information on watering practices can be found in Appendix N, Topic 4—“Watering Practices” and Topic 7—“Maintaining Young Trees.”

### 3.7.2 WATERING DURING DROUGHT

During periods of drought, trees need supplemental water to prevent stress and areas of dieback. Trees are a long-term investment, and drought can cause lasting stress, resulting in costly damage. Typically, the impacts of drought take several years before trees die, but there are some early signs, such as premature fall color and leaf drop and greater susceptibility to insects and disease.

Typically, irrigated parks are watered three times per week in a way that does not produce runoff. Supplemental water is necessary to maintain greenspaces and the many benefits they provide in urban areas like LA, especially during times of drought. In California, nine percent of the total statewide water use goes toward irrigating both public and private landscapes. Of this, two percent of the water is used to irrigate large parks/gardens (Hodel and Pittenger 2015). Adequately irrigating park lands will not significantly contribute to overall water use but ensures the benefits provided to residents, including wildlife, are sustained for the future.

Drought impacts LA municipal parks differently. Parks with open spaces and natural areas that are not irrigated can have trees that incur severe impacts on survival as a result of drought. Even parks that receive regular irrigation can be impacted by drought when they do not receive their typical water regime. Inadequate water during times of drought could be a result of water restrictions, turf reduction, or other instances where the trees were accustomed to receiving a greater amount of water. Drought commonly predisposes trees to additional stressors. For example, Botryosphaeria canker diseases appear on multiple kinds of park trees following drought stress (e.g., ficus, olive, and sweetgum).

Watering restrictions are enacted for irrigated park lands during droughts. Watering restrictions do not take the location and associated microclimate of the park, soil type, irrigation infrastructure (e.g., emitter type, sprinkler type), or the needs of the tree resource into consideration. While exemptions are permitted, they are difficult to obtain and it is common for parks to be so large that an irrigation cycle cannot occur in the time period given. As a result, park trees are suffering. For example, the 2015 drought was thought to have caused four percent of park trees to die (approximately 14,000 trees). Ensuring that LA parks are watered adequately during drought will require reasonable exemptions from water restrictions.

To promote the conservation and efficient use of water, a Model Water Efficient Landscape Ordinance (MWELO) was adopted by the state of California in 2009 and later revised in 2015. The Ordinance requires increases in water efficiency standards for new and retrofitted landscapes through the use of more efficient irrigation systems, greywater usage, and onsite stormwater capture. It also limits the portion of landscapes that can be covered in turf.

RAP has taken additional measures to help reduce evaporation and adapt to drought and heat impacts on the park tree canopy, including:

- Using mulch around trees.
- Reducing the amount of turf by transitioning from turf to mulched and landscaped areas.
- Planting new trees between October and April.
- Installing irrigation bubblers at the tree's dripline to provide deep watering during improvement projects.
- Using reclaimed water when possible.
- Identifying priority areas where park trees should be prioritized for watering during times of drought.
- Using reclaimed water when possible.
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Climate change poses uncertainty to whether typical rainfall patterns will occur or not. LA has been getting hotter and drier, droughts are increasingly common and a reality RAP is preparing for. As droughts and water restrictions become more normal, RAP will need to find creative ways to water.

## Irrigating with Reclaimed Water

A number of LA municipal parks are irrigated using reclaimed water. To do so, wastewater is recycled through a process that converts it into a form of reusable water. As of 2022, eight golf courses, nine entire parks, and sections of Woodley Park and Griffith Park are watered using reclaimed water. This practice is beneficial because reusing wastewater provides a constant and ample water supply that is not impacted by droughts, allowing parks that use reclaimed water to be irrigated more regularly. Retrofitting the irrigation systems in established parks to allow for the use of reclaimed water is a very expensive endeavor (approximately \$1 million/mile). Therefore, it is more common for parks to be set up with irrigation that uses reclaimed water during new construction and capital improvement projects.

### Golf Courses

Hansen Dam
Woodley Lakes
Encino
Balboa
Wilson
Harding
Roosevelt
Los Feliz

### Parks by Region

Valley	Metro	Griffith Park Sections
Balboa Park	Albion Riverside/ Downey Recreation Center	Bond Area
Barry Sanders All Access Sports Field	Rio De Los Angeles	Bette Davis/Pump 7
Delano Park		CETA Forest/Old Maintenance
Lake Balboa/Anthony Beilenson Park		Crystal Springs
Sepulveda Sports Complex		Merry-Go-Round/Dry Wash
Woodley Apollo Flight Field		Mineral Wells
Woodley Cricket Field		Old Zoo
Woodley Sections 1,2,3,4		Pecan Grove
		Pote Field
		Roadside Picnic
		Shane's Inspiration Playground
		Chevy Chase Recreation Center

### 3.7.3 MULCHING

Mulching the root areas of trees is perhaps the simplest but most beneficial practice we can perform to enhance tree health and minimize competition with turf. The application of mulch can:

- Aid in soil moisture retention.
- Moderate soil temperature.
- Eliminate weed and turf competition and reduce allelopathic interference.
- Condition the soil and improve microbial activity.
- Reduce irrigation requirements.
- Prevent or alleviate soil compaction.
- Prevent soil erosion and surface crusting.
- Increase root and plant vigor.

By design, mulch keeps mowing equipment from damaging tree trunks and eliminates the need for herbicide applications. It is also aesthetically pleasing.

Mulch should be applied between four and six inches deep and kept a minimum of six inches away from tree trunks. Mulching a large area will visually and physically tie groupings of trees together.

### 3.7.4 SOIL CONDITION

Soil compaction is the largest single factor responsible for the decline of mature trees. Ninety percent of the damage to the upper 18 inches of soil occurs during the first pass by heavy equipment and cannot be reversed. RAP staff makes every effort to avoid soil compaction by not parking or driving within the dripline of trees.

The following aeration methods and drainage systems are recommended to improve soil porosity in compacted soils:

#### Drainage

Adequate drainage must be provided before planting new trees. If trees are planted in compacted soil with low water infiltration rates (less than two inches per hour), RAP may employ one of the following drainage systems:

- Redirect surface water using shallow ditches, culverts, berms, swales, and/or mounds.
- French drains at a minimum depth of three feet.
- Drain tiles or lines installed beneath trees.
- Drain holes augered at the bottom of the planting pit at a specified diameter and depth, and filled with medium-size sand or fine gravel.

#### Soil Management

Aeration of soil-supporting turfgrass should be avoided within the tree's dripline. Hollow-tine aeration can lead to the elimination of tree roots in the upper few inches of soil and usually results in improved turf root growth. Soil that is disturbed or compacted within the dripline can be loosened or aerated to protect roots, promote root growth, and/or enhance tree vitality. Though they each have upsides and downsides, one of the following aeration methods may be specified to correct compacted soil conditions:

- **Air/Pneumatic Tillage and Excavation—**Using highly compressed air, soil is cultivated, broken up, removed, and/or amended with organic matter without damaging medium and large roots.
- **Vertical mulching—**Auger holes two to four inches diameter, six inches to two feet deep, and six inches to three feet apart. Backfilling the holes with porous material (perlite, vermiculite, volcanic rock, peat moss, etc.), compost, for amended soil can improve water infiltration rates.

- **Radial trenching**—Using an air excavator, excavate a soil trench four to 18 inches wide and 12 to 18 inches deep from approximately three feet from the trunk radiating out to the edge of the dripline. The trenches shall radiate out from one foot at the closest point. Fill the trenches with high-quality replacement soil or organic matter.
- **Soil fracturing**—Using a pneumatic soil probe to deliver a sudden burst of air that cracks, loosens, or expands the soil profile. The newly expanded horizontal soil profile can be injected with amendments or fertilizers and may improve drainage.

### Fertilizing Standards and Mycorrhizae Treatments

Trees require certain essential elements to function and grow, though they typically do not require supplemental fertilizer for optimum growth. With the exception of nitrogen, most soils supply adequate amounts of nutrients. Excess and unnecessary fertilizer applications can predispose trees to disease and insect infestation, pollute groundwater, and create salt buildup in the soil. If a tree appears to have a nutrient deficiency, a laboratory soil and foliar analysis should be performed before fertilizer is applied. Current funding levels do not allow RAP to fertilize trees on an individual level. If fertilization were to occur, the following is specified: subsurface injections under moderate hydraulic pressure, using a three-foot probe and applied on three-foot centers within the dripline.

**Mycorrhizae** are root structures that are created when young lateral roots are invaded by specific fungi that form symbiotic associations to the advantage of each. Plants benefit from mycorrhizae by enhanced nutrient uptake and may improve water absorption and drought resistance.

Analysis of tree roots for the presence of native mycorrhizal fungi should be performed, and a better understanding of the species-specific mycorrhizae is warranted before the application of inoculants.

**Organic matter** used in city parks includes biosolids and compost (see section 5.20 Recycling and Green Waste). RAP has had success applying organic matter adjacent to trees growing in infertile urban soils.

**Biochar** is created through the combustion of organic material in an environment with limited to no oxygen. Biochar has a highly porous structure and a charged surface that allows it to retain nutrients. When used as an amendment, biochar can enhance soil structure, texture, and suitability for associated microorganisms. Certain soil types, such as clay- or sand-based soils where it can increase in water-holding capacity, drainage, and structural integrity, and respond well to the addition of biochar. Biochar is stable for many years; therefore, it can also be used to meet carbon sequestration goals (Fields-Johnson and Abbott 2020). The addition of biochar can help prime plant defenses to increase resistance to pests and pathogens (Poveda et al. 2021).



### 3.7.5 INTEGRATED PEST MANAGEMENT

Appropriate species selection and providing for a tree's basic growth requirements are critical components of pest management. Proper planting techniques, irrigation, pruning, and aftercare all contribute to a plant's tolerance of and defense against pests. Many factors contribute to plant stress and pest susceptibility. Drought conditions and smog, for example, are stressors. Stressors, such as severe storms, floods, droughts, and heat waves, are expected to increase as a result of climate change (see section 3.4.3 Urban Forest Diversity in a Changing Climate). All of these stressors can predispose trees to pests and pathogens.

In the 1980s, thousands of blue gum eucalyptus trees died when drought increased their susceptibility to longhorn borers. In the early 2000s, years of repeated defoliation events caused by the redgum lerp psyllid has resulted in the death of thousands of eucalyptus trees and the removal of 5,000 specimens from city parks. Over the past several decades, olive trees (*Olea europaea*) in city parks have incurred significant dieback or have died as a result of infection with a complex of pathogenic fungi (formerly thought to be caused by the bacterium *Xylella fastidiosa*) (Hodel, 2020). A total of 28 park olive trees have been removed since 2014. A recently emerged pest-disease complex, Fusarium dieback/invasive shot hole borer, can impact a wide range of tree species (Eskalen et al. 2013), including California sycamore (*Platanus racemosa*), which is an important native species in many city parks. Since 2010, 731 California sycamore have been removed as a result of Fusarium dieback/invasive shot hole borer.

**A vigorous plant is best equipped to stave off pest infestation.**

Following Integrated Pest Management (IPM) protocol and best management practices when preparing for and addressing pests and diseases can help to minimize their economic, health, and environmental consequences (Wiseman and Raupp, 2016). Some management practices include:

- Obtain current information on emergent pests and pathogens.
- Increase understanding of the biology of the pest and pathogen as well as symptoms that indicate infestation/infection.
- Identify procedures and protocols that will be followed in the case of an introduced pest or pathogen.
- Complete training and licensing in the case of pesticide or fungicide use.
- Plant tree species that are resistant or tolerant to identified pest and pathogen threats.
- Choose healthy, vigorous nursery stock.
- Diversify plantings at the genus level, as many pests threaten several species within a genus.
- Prevent the long distance movement of felled tree materials that may be harboring pests or pathogens, such as untreated logs, firewood, and woodchips.

RAP implements IPM, a strategy that is designed to prevent and suppress pest problems with minimum adverse effects on human health, the environment, and non-target organisms. The Vegetation Management Unit of the Forestry Division is responsible for pest identification and actions taken or recommended to control and, if needed, eradicate pests before damage to a tree is irreversible. RAP staff notify the Forestry Division at 213.485.4826 with observations and/or concerns. Accurate timing is critical for success.

### 3.8 Training Materials

RAP believes that providing training and sufficient information to enhance the knowledge of those involved in maintenance, construction, or recreation activities around trees is the best solution to unintentional tree damage. Training also provides additional information that helps field staff make their own decisions.

Training materials are available in various formats:

- Topics that may be distributed during tailgate meetings.
- Informational brochures.
- PowerPoint training presentation (available in outline form).

The information included in the training material focuses on the most common situations and problems occurring in our parks and explains how trees respond to these situations (Appendix N).

The material offers recommendations, alternatives, and practices to avoid or apply when working around trees. Appendix N includes the following:

- Understanding the Protected Tree Wounds.
- Tree and Turf Associations.
- Watering Practices.
- Mulch and Its Benefits.
- Tree Staking.
- Maintaining Young Trees.



**Extensive damage to a tree trunk.**



### 3.9 Tree Inventory

The successful management of any resource begins with an inventory of the resource, and the urban forest is no exception. Inventories are essential for planning, scheduling, monitoring maintenance tasks, and assisting in management decisions, particularly when developing a monetary budget.

Global positioning systems (GPS) and geographic information systems (GIS) are best for collecting and representing tree inventory data. GPS employs a handheld unit that locates a point (e.g., a tree) on the ground via a satellite system. This information can then be readily transferred to GIS. These systems of collecting data provide “layers” of information that are important to other park functions and can reduce field data collection time by 30 percent.



A tree inventory provides data specifications on tree location, species, size, condition, and management needs. The information can be used to:

- Locate planting sites.
- Identify management needs.
- Locate hazardous trees in need of pruning or removal.
- A tool in public relations as a news release that describes public tree resources, both in terms of the number and value of trees.
- Enhance the ecological value of park trees and provide direction regarding the planting of trees that are attractive and beneficial to wildlife and the connection of wildlife corridors.
- Track species performance and determine climate suitability.
- Visualize the flow of benefits and costs over time.
- Track the impact of climatic events (e.g., storms, drought, wildfire), disease or pest outbreaks, land use changes, and other stressors that can severely affect the urban forest.
- Track the benefits provided by park trees to communicate their importance.

The inventory information is used to develop IPM strategies to transition RAP’s park tree management from a reactive to a proactive approach, including:

- Identify species to avoid due to pest vulnerabilities.
- Explore planting species with known pest resistance.
- Develop treatment plans.

- Locate areas with pest infestations of trouble spots.
- Monitor for emerging pests and pathogens.

In an effort to meet the ambitious goals set by the Green New Deal, the City of Los Angeles has, as of 2022, planted 65,000 trees and nearly completed the citywide tree inventory. A comprehensive inventory of all trees in parks, golf courses, and at park facilities was recently completed. Where access was limited by terrain and steep slopes, a drone was used to collect aerial imagery to assess trees and other existing vegetation on a broader scale. As of 2022, the Los Angeles municipal park tree inventory includes 138,445 trees and 13,294 available planting sites. The inventory is maintained by RAP using TreeKeeper®, a software management system that allows managers to maintain current inventory specifics with regard to tree characteristics, health, history, and maintenance needs.

The inventory is updated on a continuous basis by inputting data into the TreeKeeper® system using handheld devices and by collecting data regarding newly planted trees.

Work history and work orders are managed in conjunction with the tree inventory. This includes assigned work, scheduled work, and completed work. For example, a work order is created when a tree needs to be removed. The inventory system is used to schedule the work, and after the removal is completed, it is updated to indicate a stump is now present. When the stump is ground, the inventory is updated to indicate the site is vacant. Moving forward, RAP intends to continue advancing the program using the tools within the inventory.

Some examples include:

- Maintaining the inventory database to track tree growth, history, and any changes in condition.
- Identifying additional planting sites for trees.
- Increasing genus and species diversity in new and replacement tree plantings to reduce reliance on over-represented groups.
- Reviewing age distribution of key species and considering ongoing planting to maintain benefits and importance value.
- Incorporating trees that promote the character of the specific park and consider the historical importance of certain tree species.
- Continuing to promote wildlife habitat by protecting standing dead trees in areas where they do not pose a hazard to the public.

There is potential to continue adding inventory attributes within TreeKeeper®, such as to track tree failure. Tree failure data should then be submitted to the University of California Western Tree Failure Database to aid the industry by providing region-specific information. The species composition in parks could also be compared against the database to help identify species that have high failure rates.

For example, RAP may want to pay particular attention to coast live oak (*Quercus agrifolia*) when monitoring trees because of not only its abundance in the inventory, but also the risk of tree failure and the threat of several pests and diseases.

In summary, the tree inventory for park trees carried out on a continuous basis will establish a baseline of where the tree population has been, where it is now, and where it is going in the future.

## 4.0 PROTECTION OF TREES DURING CONSTRUCTION

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### Introduction

The objective of this section is to reduce the negative impacts of construction on trees to achieve preservation goals. Land development is a complex process and is even more challenging when trees are involved. Construction damage can negatively influence tree health and result in tree decline and death.

Tree protection begins before construction begins. Adequate tree protection requires careful planning. Without pre-construction planning, preservation measures are not likely to be considered, delayed, or ignored until construction begins. If protective measures are not implemented early, trees are likely destined to fail. While planning can help mitigate the impacts of construction on trees, in most cases construction impacts on trees cannot be completely eliminated. The goal for our park planners and designers during the planning process and during construction is to keep injury to trees at a minimum and allow building projects to proceed and meet the desired use of the land.

All trees cannot and should not be preserved. Trees that are structurally unstable, in poor health, or unable to survive the effects of construction become a liability to the project and should be removed. A realistic tree preservation program acknowledges that conflicts between trees and development may sometimes result in the removal of some trees and recognizes the detrimental effect on the project and community when trees die after construction is completed.

Successful tree preservation occurs when designers, construction personnel, and project managers are committed to tree preservation. In many instances a monitoring arborist trained in protecting trees in a construction zone

may be hired to act as a consulting expert. All members of the project team must be familiar with the rudimentary aspects of tree biology and construction practices in order to implement an effective tree protection plan and preservation strategy.

It is commonly thought that the above-ground parts of a tree are a “mirror” of what lies below. In actuality, most roots are within the top 12 inches of soil and spread five or more times the tree height and/or canopy spread away from the tree’s trunk. The spread and depth of tree roots vary depending on species, soils, and the level of oxygen in the soil. These factors make it difficult to estimate the actual depth and spread of a tree’s root system. Making assumptions about the root system may unnecessarily damage trees that are to be protected in place.

The roots that extend out from the trunk branch out readily and taper rapidly in diameter and make up the root plate. The root plate is roughly three to six times the trunk diameter. The radius of the root plate is the primary support in winds up to 40 miles per hour. Disturbance of the roots that extend out from the trunk, including digging and other construction activities, can result in the tree tipping over and failing at the edge of the root plate.

Beyond the root plate, roots grow horizontally through the soil. These roots are primarily responsible for water and mineral transport. The depth of the roots is dependent on the oxygen levels in the soil. In areas where the soil has less oxygen or is more compacted, the roots will come to the surface. In non-compacted soils, “sinker” roots will follow natural openings into deeper soil, which are important for drought resistance. Roots do not grow uniformly around the tree and some areas may be void of roots, whereas other

areas will be heavily concentrated. A common myth is that trees have tap roots, which originate from the seed radical and is the primary root to emerge from a germinating seed. However, most trees do not have a tap root beyond the seedling stage. In fact, nurseries will remove the tap root to promote branching in the root system.

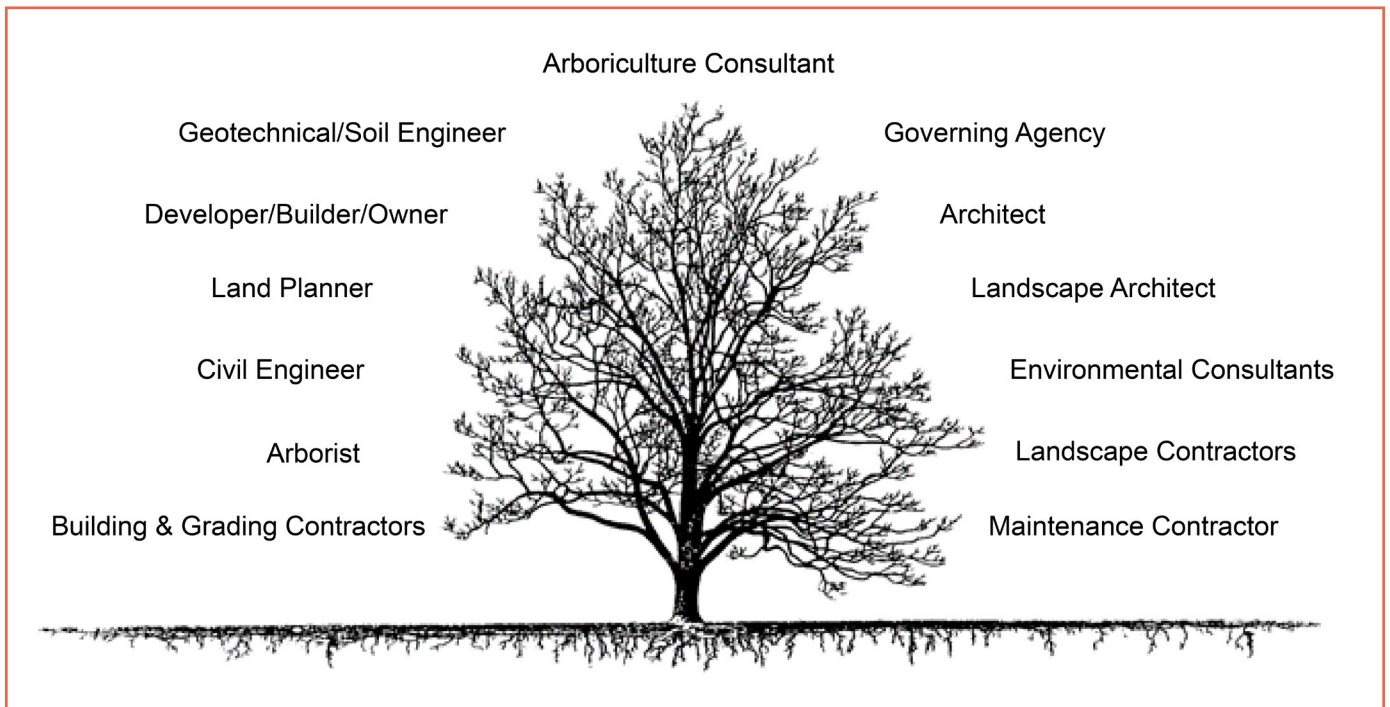
Smaller roots absorb and uptake water and nutrients from the soil. There can be hundreds of roots in a cubic inch of soil; thus, any removal of soil or root severance forces a tree to compromise its physiological processes to sustain the loss.

Not all tree roots are essential to tree health. However, successful tree preservation occurs when damage (or impact) to the rooting area is minimized or avoided altogether before, during, and after construction. The challenge is to determine when impacts will be too severe for the tree to survive, not only in the short term, but also in the long term.

While there are no quantitative methods to calculate this critical level, determining the optimum tree protection zone provides a guideline for protective measures.

The following are the three guiding principles for making trees part of the plan, which will improve the success rate for tree preservation efforts:

- Acknowledge that not all trees are in excellent health or have good structural stability.
- Tree preservation is everyone's responsibility, and each person involved in the development project must understand that their activities and decisions influence the success of tree preservation efforts.
- Preventing damage is key as there are few remedies for construction damage.



**Tree Preservation during development requires the commitment of everyone involved in the project's planning, design, construction, and management.<sup>1</sup>**

<sup>1</sup> Adapted from Matheny, N.P. and Clark, J.R. 1998. Trees and Development

## Tree Preservation Lessons Learned Through Failure and Success

In 2021, Arroyo Seco's Tiny Home Village, a housing project for unhoused people, was opened. The project was developed in a parking lot at Avenue 60 Pocket Park. The Recreation and Parks Department was not involved in the initial planning phase for this project, and upon arriving on site, it was evident that tree protection policies were not being followed.

**Lesson 1: Trees should always be considered at the start of construction projects.** The site is part of a historic alluvial fan with a riparian ecosystem. At the project site, the soil is sandy and there are a number of large sycamore trees. By the time RAP arrived on the site, many trees were already severely damaged because:

- Tree protective fencing was not installed.
- Vehicles and other materials were being stored next to the trunk of trees.
- Excavation had already occurred within the tree protection zones.

**Lesson 2: Mitigation plantings do not provide the same amount of benefits as existing mature trees.** Late in the construction process, an ADA ramp was installed, and due to damages sustained earlier in the project, a number of trees, including two mature California sycamores, had to be removed to install the ramp. To help mitigate the loss of benefits from the mature trees that were removed, new trees were planted, and the irrigation system was updated.

However, it will take decades for the mitigation plantings to return to the level of benefits that were provided by the mature sycamore trees.

**Lesson 3: Tree preservation practices help to protect and retain existing trees during construction.** A common method used to install irrigation is to trench directly through an area to run piping between emitters. Without proper consideration of existing trees, trenching often results in severed roots and significant damage to trees. To help avoid further damage to existing trees near the Tiny Home Village, trenching practices were modified to ensure that large roots were preserved. When roots were detected during trenching, work was stopped and the contractor used hand tools to finish trenching underneath the roots. Once exposed, the roots were wrapped in burlap, which was periodically wet with water to keep the roots moist. These methods successfully avoided additional root damage.



Tunneling under California sycamore roots at Arroyo Seco Ave 60 Park.

## 4.1 Planning for All Projects

No matter the size of a project, whether a project is a capital improvement project, an in-house construction project, a sport field renovation, or even the addition of a few sprinkler lines, all have the potential to affect trees. RAP considers trees as important assets and requires plotting tree locations on every section of the plans for *all* projects.

### 4.1.1 PLANNING AND DESIGNING FOR IN-HOUSE AND CAPITAL IMPROVEMENT PROJECTS

Projects may be designed by in-house design staff and/or by outside design firms. Regardless, all design teams should follow the requirements defined by RAP's Tree Preservation Policy (Appendix A) and Tree Protection Guidelines (Appendix B, C, and D) to assure that trees are accounted for from project initiation through final inspection.

#### Survey Before Planning

The site survey must accurately plot all trunk locations within the project site. The survey shall include construction staging areas and delivery routes. For all in-house projects, contact the Forestry Division for an accurate survey of trees on the job site.

#### Evaluation of Tree Health and Structure

An ISA Certified Arborist or another qualified professional with experience in construction zones must evaluate the health and structure of the trees indicated on the site plan. The evaluation shall describe:

- Location.
- Planter space.
- Species.
- Diameter.
- Vigor and condition.
- Presence of pests and/or disease.
- Method of irrigation (if applicable).
- Suitability for preservation.

For in-house projects, the Forestry Division will make available the results of tree evaluations. Understanding the health and structure of existing trees will help planners to anticipate the tolerance of the affected trees to construction activities.

#### Plan with a Vision

Conduct all projects with tree preservation in mind. Structural damage to a tree or its root system resulting from construction activities may disrupt and negatively affect physiological processes and cause depletion of energy reserves. Significant disruption will result in a decline in vigor and/or tree death, which typically does not manifest until many years after the disruption occurs. Preservation of mature trees during construction has limitless benefits to the success of a project.

When new trees are planted, consideration should be given to increasing species diversity and appropriateness of the location. To prevent destructive clearance pruning in future years, mature canopy height and root spread should be considered.

#### Plan for All Aspects and Entire Duration of Project

Construction projects are multi-faceted and often require the participation of various construction trades and subcontractors. It is important to plan for tree protection with an understanding of construction dynamics. Trees must be protected in the staging area, during demolition and grading, in construction employee parking areas, on adjacent properties, and within the actual construction site.

Arrangements must be made to ensure that trees on construction sites receive adequate irrigation, particularly when existing irrigation lines are severed or shut off. It is also critical to protect soils and minimize compaction near existing trees. For in-house projects, it is necessary to coordinate with the Principal Ground Maintenance Supervisor II. Tree protection measures shall remain in place until all construction activities have been completed.



## 4.2 Pre-Construction Requirements—Tree Protection and Preservation Plan

Prior to the commencement of a development project, the RAP forestry arborist must be assured that, if any activity of the project is within the tree protection zone (TPZ) of trees to be protected in place, a site-specific tree protection plan is prepared. The following seven steps shall be incorporated as part of the Tree Protection and Preservation Plan.

### 4.2.1 SITE PLAN

For all projects, site plans must indicate accurately plotted trunk locations and the TPZ of all trees or groups of trees to be preserved within the development area and any trees to be protected in place that are on adjacent properties. Additionally, site plans shall accurately show the trunk diameter, dripline, and clearly identified tree protection zones for each protected tree. The tree protection zone to be enclosed with tree fencing shall be specified and indicated with a bold dashed line.

### 4.2.2 PROTECTIVE TREE FENCING FOR ALL CATEGORIES OF PROTECTED TREES

Fenced enclosures shall be erected around trees to be protected. This will achieve four primary goals: (1) to keep crowns and branching structure clear from contact by equipment, materials, and activities; (2) to preserve roots and soil condition in an intact and non-compacted state; (3) to identify the structural rooting area in which no disturbance shall occur; and (4) to identify the TPZ in which no soil disturbance is permitted and activities are restricted unless otherwise approved by the RAP arborist.

All trees to be preserved shall be protected with five-foot-high chain link fences. Fences are to be mounted on two-inch galvanized iron posts, driven into the ground to a depth of at least two feet and at no more than ten-foot centers. A

two-foot wide access gate shall be installed to allow access for tree maintenance.

Tree fences shall be erected before demolition, grading, or construction begins and remain until final inspection of the project. No storage of material, topsoil, vehicles, or equipment shall be permitted within the fenced area throughout the entire duration of the construction project. All work within the protective fencing requires prior approval from the RAP arborist. Fence configurations are dependent on the site and are described as follows:

- Type I tree protection fence shall enclose the entire area of the TPZ. If fencing must be located on paving or concrete that will not be demolished, an appropriate grade-level concrete base may support the posts.



- Type II tree protection fence is for trees situated in narrow planting areas, where only the planting area is enclosed with the required chain link protective fencing. The walkways and traffic areas are left open to vehicular and pedestrian use.



- Type III tree protection fence is for trees in small tree wells, building site planters or sidewalk planters. Trees shall be wrapped with two inches of orange plastic fencing from the ground to the first branch and overlaid with two-inch thick wooden slats that are bound securely (slats shall not be allowed to dig into the bark). During installation of the plastic fencing, caution shall be used to avoid damaging branches. Major scaffold limbs may also require plastic fencing as directed by the RAP arborist.



A “Warning” sign shall be prominently displayed every 20 linear feet of protective fence.

The sign shall be a minimum of 24 inches by 18 inches and clearly state the following:

**TREE PROTECTION ZONE**

This fence shall not be removed AND is subject to penalty according to the Recreation and Parks Board of Commissioners and adopted as City policy.

**4.2.3 VERIFICATION OF TREE PROTECTION**

The project manager shall verify in writing that all preconstruction tree preservation conditions have been met as follows:

- Tree fencing installed.
- Erosion control secured.
- Tree pruning completed.
- Soil compaction preventive measures installed.
- Tree maintenance schedule established.

The Forestry Division must be engaged throughout the process and sign this verification. The contractor must verify in writing that they understand RAP’s tree protection specifications and the consequences for violating them.

**4.2.4 PRE-CONSTRUCTION MEETING**

The RAP arborist shall attend all pre-construction meetings to assure that everyone fully understands previously reviewed procedures and tree protective measures concerning the project site, staging areas, hauling routes, watering, contacts, etc.

**4.2.5 STRUCTURAL ROOTING AREA**

The structural rooting area encompasses the root plate, which includes roots that are critical for holding the tree erect under compression. The structural root plate shall be protected from all disruption. If roots in the structural rooting area are destroyed or severely damaged, there is a significant risk of catastrophic tree failure. The structural rooting area distance from any tree shall be calculated by multiplying the trunk diameter in inches measured at four and a half feet above grade by 0.9. The resulting value is the diameter of the structural rooting area.

## 4.2.6 TREE PROTECTION ZONE (TPZ)

Each tree to be retained shall have a designated TPZ, which shall be determined by calculating the radius (not the diameter) according to the following:

- **Single trunk trees**—Multiplying the trunk diameter in inches measured at four and a half feet above grade by one and a half feet.
- **Multi trunk trees**—There are different methods for multi trunk trees. For larger stature trees RAP will use the sum total. For smaller stature trees RAP will determine an appropriate method to calculate the TPZ.
- **Palm trees**—Five feet from the base of the trunk.

Calculating the area of the TPZ by squaring the radius and multiplying by pi (3.14). **The RAP arborist retains the discretion to extend or modify the TPZ at any time. For areas with groups or groupings of trees where the TPZ's overlap, the TPZ's may be combined and treated as one contiguous TPZ to create a more clearly defined and manageable TPZ.**

The TPZ shall be shown on *all* site plans, including: demolition, grading, building, utilities, irrigation, and landscaping. Improvements or activities such as paving, utility, and irrigation trenching, including other ancillary activities, shall occur *outside* the TPZ unless otherwise approved by the RAP arborist. The protection fence shall serve as the TPZ.

- Activities prohibited within the TPZ include:
  - » Parking vehicles or equipment.
  - » Storage of building materials, erosion and sediment controls, refuse, dumpsters, chemical toilets, or excavated soils.

- » Dumping poisonous material on or around trees and roots, including, but not limited to, paint, petroleum products, concrete or stucco mix, concrete washout, dirty water, or any material that may be harmful to tree health.
- » The use of tree trunks as a backstop, winch support, anchorage, as a temporary power pole, signpost, or other similar function.
- » Cutting of tree roots by utility trenching, foundation digging, placement of curbs and trenches, or other miscellaneous excavations without prior approval of the RAP arborist.
- » Soil disturbance or grade change.
- » Drainage changes.

- Activities permitted or required within the TPZ include:
  - » **Mulch**—During construction, wood chips may be spread within the TPZ to a four- to six-inch depth, leaving the trunk clear of mulch. This will aid in inadvertent soil compaction and moisture loss. Mulch shall be two-inch unpainted, untreated, shredded wood or approved material.
  - » **Root Buffer**—When areas under the tree canopy cannot be fenced, a temporary buffer is required and shall cover the root zone and remain in place at the specified thickness until the final grading stage. During the installation of constructed buffers, the wheels of the equipment shall remain on the existing pavement or on the buffer itself. The protective buffer shall consist of shredded wood chips spread over the roots at a minimum

of six inches in depth (keeping the trunk clear of chips) and layered by three-quarter-inch quarry gravel to stabilize the three-quarter-inch plywood sheets laid on top. Steel plates can also be used with heavier equipment. Wherever possible, existing pavement should remain or be retained as long as possible to serve as a buffer.

- » Irrigation, aeration, fertilization, mycorrhizae treatments, biochar, or other beneficial practices that have been specifically approved for use within the TPZ.
- **Erosion Control:** If a tree is adjacent to or in the immediate proximity of a grade slope of eight percent (23 degrees) or more, approved erosion control or silt barriers shall be installed outside the TPZ to prevent siltation and/or erosion within the zone, including, but not limited to:
  - » Silt fence.
  - » Triangular sediment filter dike.
  - » Mulch socks.

If trees within the TPZ are damaged, RAP can make final determinations on replacement fees (i.e., for larger stature multi-trunk trees, the sum will be used but for smaller stature multi trunk trees the cumulative methods may be reassessed) (Appendix I).

#### 4.2.7 TREE PRUNING, PLANT HEALTH CARE AND REMOVAL

Prior to construction, various trees may require branches to be pruned away from structures, proposed construction activity, or buildings. Branches may even require cabling or bracing to provide mechanical support. Construction or contractor personnel shall not attempt pruning. Only personnel approved by the RAP arborist can perform pruning operations.

If the RAP arborist recommends that trees be pruned, trees shall be pruned in accordance with the most current edition of ANSI A300 Part 1: "Tree, Shrub, and Other Woody Plant Management—Standard Practices (Pruning)." Trees shall be pruned to reduce risk and promote good structure. The least amount or percentage of foliage or crown will be removed to meet objectives.

If the RAP arborist finds that branches are defective or weakly or poorly attached and cannot be feasibly removed, cabling and bracing shall be installed in accordance with the most current edition of ANSI A300 Part 3: "Tree, Shrub, and Other Woody Plant Management—Standard Practices (Supplemental Support Systems)." The cabling system chosen shall be approved by a RAP arborist. Cables shall be taut and allow for limbs to move. Rigid braces shall be used in conjunction with cables.

If the RAP arborist determines that plant health care is necessary to promote health and prolong the life or structure of a tree, the tree shall be provided with appropriate treatments.

Removal of trees that extend into the branches and roots of trees that are to remain shall only be completed by personnel approved by the RAP arborist. The demolition or construction crew shall not damage any above- or below-ground structures for trees that will remain.

If stumps are to be removed, the developer shall first consider whether or not the roots are entangled with the roots of trees that are to remain and engage a RAP arborist for guidance. If so, these stumps shall have their roots severed before extracting the stump. Stumps shall be removed by grinding to a minimum depth of 24 inches but expose soil beneath the stump to provide drainage. If a tree is going to be replanted in the site, the entire stump shall be removed and large surface roots shall be removed within three feet of the stump.

## 4.3 Activities During Construction and Demolition Near Trees

Soil disturbance or other damaging activities within the TPZ are prohibited unless approved by the RAP arborist. If a tree that is to remain is damaged or if soil is disturbed, the following mitigation is required.

### 4.3.1 SOIL COMPACTION

Soil compaction is the single biggest factor responsible for the decline of trees on construction sites. Every effort should be made to avoid compaction of the soil within the TPZ **at all times**. Protective measures to avoid applying pressure and increasing soil density must be made before a project begins and equipment arrives on site. The following techniques can lessen compaction: vertical mulching, soil fracturing, core venting, and radial trenching. Do not compact soil to higher density than needed: to 95 percent proctor density (moisture-density) in improved areas for asphalt or concrete pavements and not to exceed 85 percent in unimproved open landscape areas that use water jet compaction.

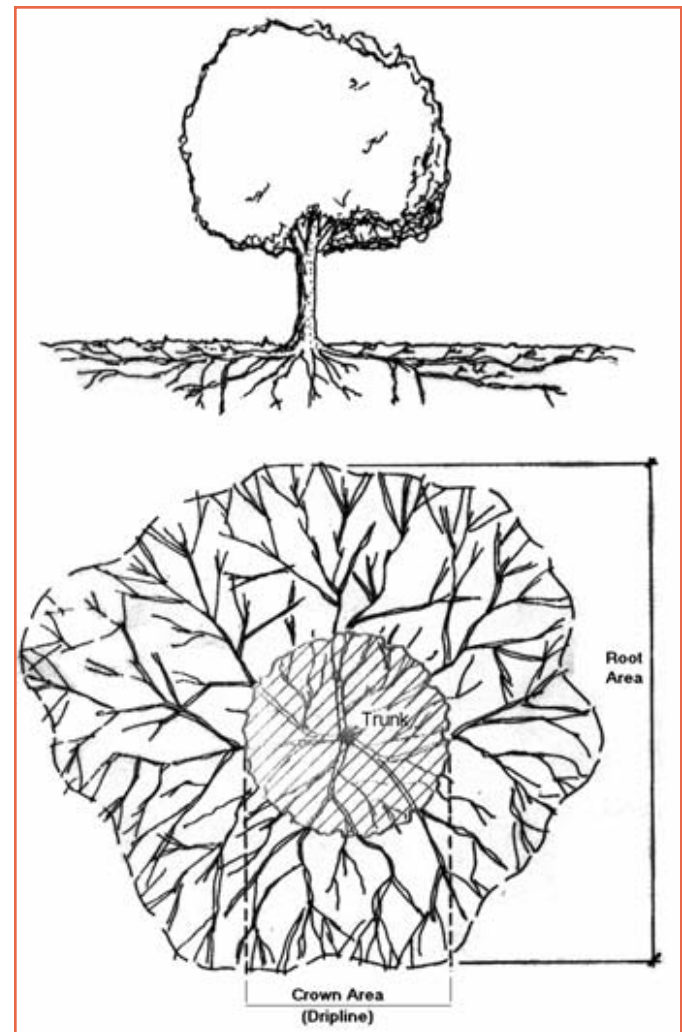
### 4.3.2 GRADING LIMITATIONS WITHIN THE TREE PROTECTION ZONE

Any changes in grade around trees can have an immediate and long-term effect on trees. During construction projects, the following regulations apply:

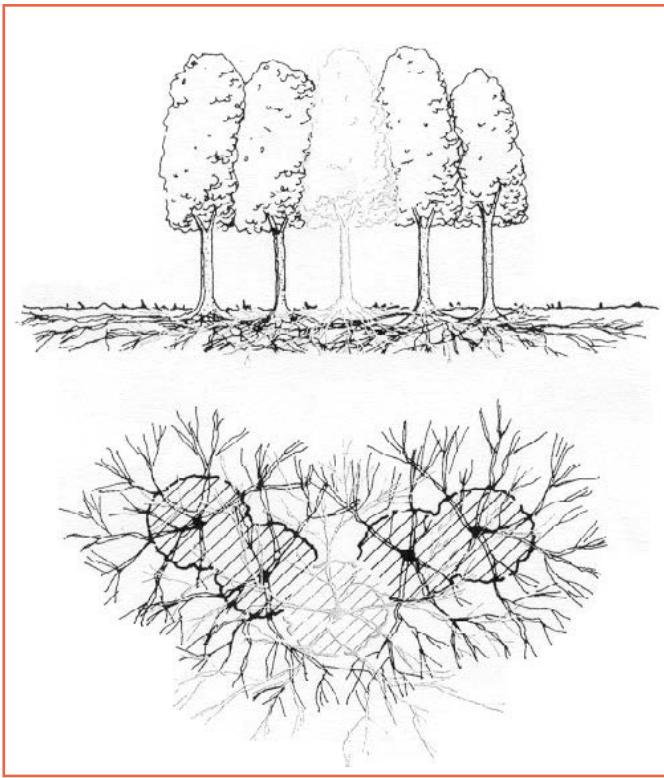
- Grade changes within the TPZ are not permitted.
- Grade changes outside the TPZ shall not significantly alter drainage patterns.
- Grade changes under specifically approved circumstances shall not allow more than six inches of fill soil or allow more than four inches of existing soil to be removed from natural grade unless mitigated.

- Grade fills over six inches of impervious overlay shall incorporate an approved permanent aeration system, permeable material, or other approved mitigation.
- Grade cuts exceeding four inches shall incorporate retaining walls or an appropriate transition equivalent.

The following pictures illustrate the pattern of tree root development and areas where encroachments may have an adverse effect on tree health. See Training Topics (Appendix N) for a list of information offered by the Forestry Division.



**Tree root system can be described as shallow and widespread, extending far beyond the edge of the canopy.<sup>1</sup>**



In many parks, where trees grow closely together, root systems of individual trees overlap and intertwine, forming a dense mat of roots.<sup>1</sup>

### 4.3.3 TRENCHING, EXCAVATION, AND EQUIPMENT USE

Wherever possible, trenching, excavation, or boring shall occur outside of the Tree Protection Zone. If no alternatives for such activities are feasible and with the approval of the RAP arborist, the following measures shall be followed:

#### Notification

The developer (or project manager) shall notify the RAP arborist a minimum of 24 hours in advance of performing any activity in the Tree Protection Zone. All pruning must be approved by a RAP arborist. In addition, all approved work inside the TPZ shall be overseen by a RAP Forestry approved monitoring arborist at the expense of the contractor.

#### Retaining Root Moisture

Avoid exposing roots during hot, dry weather. Trenches shall be backfilled as soon as possible with soil and soaked with water the same day. If the trench must be left open, all roots must be wrapped with peat moss and burlap, and a

tarpaulin to keep them from drying out. Small roots can die in ten to 15 minutes, and large roots may not survive an hour of exposure.

#### Equipment

Excavation and construction equipment shall be positioned and operated to avoid damage to tree roots, branches, and trunks. If clearance is inadequate, branches should be guyed upward or pruned to raise the crown prior to work.

#### Trenching

**If trenching is unavoidable, the following restrictions apply:**

When trenching, a minimum distance from the face of the tree in any direction shall be maintained depending on the diameter of the tree:

TRUNK DIAMETER INCHES	DISTANCE FROM FACE OF THE TREE FEET
Less than 9	9
10–14	10–14
15–19	15–19
More than 20	20+

#### Root Severance

No roots greater than two inches in diameter shall be cut without approval of the RAP arborist. Tunneling under roots is the approved alternative. Prior to excavation for foundation/footing/walls—or grading or trenching within the TPZ—roots shall be severed cleanly one foot outside the TPZ to the depth of the planned excavation. When roots must be cut, they shall be cut cleanly with a sharp saw to sound wood and flush with the trench site. Ripping or tearing roots is prohibited. If structural footings are required, discontinuous-type footings, piers, and structural-grade beams shall be used to minimize root pruning.

<sup>1</sup> Matheny, N.P. and Clark, J.R. 1998. Trees and Development

## Excavation

Any approved excavation, demolition, or extraction of material shall be performed with equipment that is placed outside the Tree Protection Zone. Hand digging, hydraulic, or pneumatic excavation are permitted methods for excavation within the Tree Protection Zone.

## Vehicles

Vehicles within the Tree Protection Zone are prohibited unless approved by the RAP arborist. If allowed, an approved protective root buffer is required.

### 4.3.4 TUNNELING AND DIRECTIONAL DRILLING

Approved trenching or pipe installation within the Tree Protection Zone shall be either cut by hand, air spade or by mechanically boring a tunnel under the roots with a horizontal directional drill using hydraulic or pneumatic air excavation technology. In all cases, install the utility pipe immediately, backfill with soil, and soak with water within the same day. Tunneling under the root system can greatly reduce both damage to the tree and the cost to repair landscape and other features destroyed in the trenching process.

There are times, such as when working in rocky soils and slopes, when tunneling is not a reasonable alternative.

**The following recommendations for tunneling depths should be observed:**

TRUNK DIAMETER INCHES	DISTANCE FROM FACE OF THE TREE FEET
Less than 9	8
10–14	8–12
15–19	13–16
More than 20	16+

When boring, a minimum distance from the face of the tree in any direction shall be maintained depending on the diameter of the tree:

When boring, a minimum depth shall be maintained based on the diameter of the tree:

TRUNK DIAMETER INCHES	MINIMUM TUNNEL DEPTH FEET
Less than 9	2.5
10–14	3
15–19	3.5
More than 20	4

### 4.3.5 ALTERNATIVE METHODS FOR HARDSCAPE TO PREVENT ROOT CUTTING

The following remedies should be considered as an alternative to severing tree roots:

- Grinding a raised walkway or concrete pad.
- Ramping the walkway surface over the roots or lifting the slab with pliable paving.
- Routing the walkway around tree roots.
- Installing flexible and/or permeable paving materials (e.g., decomposed granite), interlocking pavers, or flagstone walkways on sand foundations.

### 4.3.6 USING ALTERNATIVE BASE COURSE MATERIALS

The use of an engineered structural soil mix is an alternative material for hardscape areas near trees that may be used if approved by the RAP arborist. More information can be found at [www.amereq.com](http://www.amereq.com).

## 4.4 Tree Maintenance During Construction

Providing adequate maintenance can mitigate stressful changes that occur to a tree's environment during construction. To remain vigorous, the tree needs to maintain stored carbohydrates and preserve the effectiveness of its growth regulators. It is recommended that large projects provide:

### 4.4.1 IRRIGATION

Providing supplemental irrigation for trees under water stress may be the single most important treatment. Irrigation should be designed to achieve field capacity in the TPZ and be replaced when 50% of the water has left or the top 2" of has dried out. Sub-surface irrigation may be applied at regular specified intervals by injection on approximate three-foot centers, ten gallons of water per inch trunk diameter within the Tree Protection Zone. The irrigation program shall remain in place through the duration of the project to reach field capacity unless specified otherwise by the RAP arborist

### 4.4.2 SOIL COMPACTION MITIGATION

To prevent negligent encroachment into the Tree Protection Zone, trees to be preserved during construction must have the specified type of protection fences in place at all times. Removal of fences, even temporarily, to allow deliveries or equipment access is **not allowed** unless approved by the RAP arborist and a root buffer is installed.

The root buffer components, mulch, gravel, and metal, plywood or material approved by RAP must be maintained continually to assure their effectiveness against soil compaction.

### 4.4.2 DUST CONTROL

Accumulation of dust on trees needs to be avoided. Periods of extended drought, wind, or grading may allow dust to settle on trunks, limbs and foliage. If dust starts to accumulate, it needs to be washed off with water.

## 4.5 Damage to Trees

### 4.5.1 REPORTING DAMAGE OR INJURY TO TREES

Any mechanical or chemical damage or injury to trees shall be reported as soon as possible to the RAP arborist to implement mitigation measures.

### 4.5.2 MITIGATION AND DAMAGE CONTROL

#### Root Injury

When trenching, tree roots must be cleanly cut back to sound wood. All exposed root areas within the Tree Protection Zone shall be backfilled or covered within one hour. Exposed roots may be kept from drying out by temporarily covering the roots and draping layered burlap over the upper three feet of trench walls. The materials must be kept wet until backfilled to reduce evaporation from the trench walls.

#### Bark or Trunk Injury

Bark tracing or other plant health care treatment methods consistent with current standards shall be performed by a qualified tree care specialist within 48 hours of the injury.

#### Branch or Leaf Injury

Remove broken or torn branches back to an appropriate branch capable of resuming terminal growth within five days. The RAP arborist must be contacted within six hours if leaves are scorched from equipment exhaust pipes.



### 4.5.3 CONTRACTOR SUBJECT TO PENALTIES

If a tree designated to remain is removed or irreparably damaged as determined by the RAP arborist, a contractor shall be required to install a replacement tree matching in size, quality, and variety, using a contractor designated by the RAP arborist. If an acceptable replacement tree is not available, the contractor shall be required to pay damages to RAP Forestry for the value of the damaged tree as assessed by a qualified tree and plant appraiser, using the guidelines set forth in the most current edition of the "Council of Tree & Landscape Appraisers Guide for Plant Appraisal", the trunk formula technique through TreeKeeper®, or other industry-approved methods. The TreeKeeper® tool is based on the species, diameter, height, condition, and location value of the tree for mitigation purposes.

### 4.5.4 EMPLOYEES SUBJECT TO DISCIPLINE

In the event of damage to above- or below-ground parts of park trees, the construction supervisor or RAP supervisor shall conduct an investigation to determine the cause of the damage. If it is found that damage was caused due to the error, negligence, or willfulness of an RAP employee, then that employee may be subject to appropriate disciplinary action.

## 4.6 Monthly Tree Activity Report

The project arborist retained by the developer shall submit a monthly tree activity report of the construction sites containing trees to be preserved and protected. The project arborist shall inspect tree protection and/or plantings with the standards outlined within this manual and provide a written summary of the condition of trees, changing conditions at the site, and actions that have been taken to ensure tree protection. Monthly tree activity reports shall be emailed to the RAP arborist (see Appendix E).

## 4.7 Documents to Be Included in All Projects

### 4.7.1 MODEL TREE PROTECTION SPECIFICATIONS FOR DESIGNERS AND PROJECT MANAGERS

This document should be distributed to the planning and construction designers, project managers, city inspectors, bidding contractors, and contracted design firms (see Appendix D).

### 4.7.2 TREE PROTECTION SUMMARY AND INSTRUCTIONS ON HOW TO PREVENT DAMAGE TO TREES DURING CONSTRUCTION

Information should be distributed to the construction and maintenance staff for implementation during all in-house projects (see Appendix A, D, and F).

## 4.8 Right of Entry Permits and Documents to Be Included with Every Permit

Carnivals and festivals that are celebrated in our parks provide exceptional and enriching opportunities that bring our communities together. These activities can potentially affect the park environment. Filming crews, food concessions, permitted vendors, and special events activities affect the physical properties of our parks and trees.

In order to sustain a healthy urban forest, it is imperative that all RAP staff understand the need to protect park trees. Every individual, organization, or agency given a right of entry permit or agreement to enter RAP property should be in compliance with RAP policies protecting park trees and be given documentation that will help to ensure tree protection during the permitted activity. The document titled "Instructions on How to Prevent Damage to Trees During Construction" shall be distributed to every permittee, and the permittee shall comply with these instructions.



# 5.0 TREE REMOVAL, REPLACEMENT, & PLANTING

## Introduction

Trees in city parks are components of an ecosystem undergoing dynamic physiological processes. These trees like any others grow, develop, may become diseased and decayed, and die. To manage a sustainable urban forest, a methodology must be in place to direct us when trees need to be removed, when it is necessary to replace them, and how to prolong the longevity of an urban forest as a whole through reforestation with young, diverse, and appropriately located tree species.

## 5.1 Tree Removal

A tree in a City park may be removed based on the criteria provided in Appendix F. A tree in a city park may be removed for the following reasons: (1) if it is dead or dying, (2) if it has a pest or pathogen that cannot be feasibly treated, (3) if it is irreparably damaged or injured to the extent that is likely to die or become diseased, or (4) it is determined to pose an unacceptable risk to public safety. Furthermore, its removal should enhance the health of remaining trees within the immediate vicinity and be consistent with good forestry practices.

Nuisance trees are also removed when any part of the tree causes or is about to cause impairment of City operations (including recreation) or damage to buildings, hardscape, or permanent infrastructure lines that cannot be relocated and, in the opinion of the RAP arborist, pruning will too severely compromise the tree's structure.

Proposed capital improvement projects that recommend tree removal must have consensus of the community. Participants must agree to the removal of all trees specified in a project before the project proceeds to the next phase.



**Crews work to clear a downed tree blocking a road.**

### 5.1.1 RAP TREE REMOVAL PROCEDURE

The procedures outlined in the Tree Removal Procedure (Appendix F) must be followed when trees are removed.

Disciplinary action may apply to RAP staff if these procedures are not precisely followed.

### 5.1.2 NOTIFICATION PROTOCOL FOR LARGE-SCALE TREE REMOVAL PROJECTS

When a large number of trees have been approved for removal, the notification protocol must be followed before the project begins (Appendix G). The protocol assures that information is communicated to the public, City council offices, the Park Advisory Board, and to the Department divisions affected by the removal project. This protocol provides an opportunity for the public to become involved with forestry issues and supports Department coordination.

### 5.1.3 TREE REMOVAL—FOUR CATEGORIES OF RAP PROTECTED TREES

#### Trees Protected by LA City Ordinances

Trees Protected by LA City Ordinances (Appendix A) must always have a permit and approval from the RAP Board of Commissioners before any live, healthy, and moderate- to low-risk trees are removed. The only exception is if the tree poses an immediate threat to life or public safety. The RAP forestry staff has the discretion to conduct emergency tree removal. Documentation (including digital photos) shall follow after the hazard has been mitigated. The request for the removal of a tree in this category must begin with the RAP Forestry Division.

#### Heritage Trees

Heritage Trees must follow the RAP tree removal procedure before any alteration to the trees is made. Furthermore, the general manager of RAP or their designee must approve the removal recommendation before any action is taken. The only exception is if the tree poses an immediate threat to life or public safety. The forestry staff has the discretion to conduct emergency tree removal. Documentation (including digital photos) shall follow after the hazard has been mitigated. A record of the event will be entered to the designated Heritage Trees list.

#### Special Habitat Value Trees

RAP engages the Environmental Division before altering Special Habitat Value Trees. Special Habitat Value Trees must follow the RAP tree removal procedure before any alteration is made to them. Additionally, the general manager of RAP or their designee must approve the removal before any action is taken. The only exception is if the tree poses an immediate threat to life or public safety. The forestry staff has the discretion to conduct emergency tree removal.

Documentation (including digital photos) shall follow after the hazard has been mitigated. A record of removed trees will be entered to the Forestry Work Order System.

#### Common Park Trees

The removal of any park tree is not permitted without approval. If the tree is not a tree protected by the LA Ordinance or RAP Tree Preservation Policy (Appendix A) as a Heritage Tree or Special Habitat Value Tree, the RAP tree removal procedure takes precedence.

## 5.2 Recycling and Green Waste

The greatest value from urban trees comes from the benefits they provide when they are alive. When trees need to be pruned or removed, the woody and leafy materials can continue to provide value. RAP strives to divert all green waste produced from in-house pruning and removals from the landfill. RAP recycles green waste materials to produce mulch and compost that are incorporated back into the parks. RAP is committed to recycling as much material as possible and is playing an important role in LA's Green New Deal Plan, which aims to divert 100 percent of waste from landfills by 2050.

During in-house tree trimming and removals, RAP hauls the resulting material to the RAP green waste facility located in Griffith Park. Material that needs to be chipped is taken to the yard at Griffith Park, where staff use a horizontal grinder. Large-diameter trunks and stumps that are too large for RAP's horizontal grinder are sent to the Public Works green waste and composting facility to be processed in a larger grinder. Pruning and removal contracts require the vendor to dispose of green waste.

Recycling green waste also includes processing felled trees into lumber to create wood products, such as building materials and furniture. RAP recognizes the importance of these kinds of projects but does not currently participate in this kind of wood use for several reasons, such as:

- RAP has limited staffing to coordinate with woodworkers for pick-up and transport.
- Woodworkers need the felled material to meet certain requirements on length, diameter, and quality.
- RAP does not have a wood yard that can store the material.
- The City does not have the insurance for this kind of liability and risk/exposure.

RAP is pursuing ways these challenges can be addressed and overcome so that this level of wood utilization can be incorporated into the program in the future.

### 5.2.1 MULCH

The majority of green waste produced from RAP's and Public Works Urban Forest Division's tree trimming and removals are transported to either RAP's or Public Works Urban Forestry Division's green waste facility and turned into mulch. Palm, yucca, and bamboo materials are transported to the landfill to preserve equipment and avoid phytotoxicity to plants where the mulch is applied.

## Free Public Mulch Pick Up

The public can pick up mulch and composted biosolids at the green waste facility at Griffith Park seven days a week during park hours (6am–10pm). The Sanitation Department has additional locations throughout the city. More information on sanitation can be found using the following website: [www.lacitysan.org](http://www.lacitysan.org).

Mulch is incorporated around new tree plantings and to create compost called "zoo doo." Mulch and compost products are available to other LA City departments (e.g., Public Works and Water and Power) and free to the public. Internal and nonprofit partners can request mulch for tree-planting events and routine tree care. RAP supports five major LA City nonprofit organizations (planting partners) as well as volunteer events and other nonprofits. Mulch is delivered to the work sites, and this service requires several weeks to coordinate.



**Mulch being spread around a new tree planting in Elysian Park during a MLK Jr. Day of Service and Tu BiShvat or the "New Year of Trees."**

### 5.2.2 BIOSOLIDS AND COMMUNITY COMPOSTING

RAP has a memorandum, dating back to the mid-1990s, with LA Sanitation & Environment and the Los Angeles Zoo to create a composted product called "zoo doo." To make zoo doo, approximately 200 yards of mulch gets mixed with animal waste from the zoo and biosolids from the Terminal Island Water Reclamation Plant each week. The mixture is composted at the Griffith Park Composting Facility for approximately 46 days before it is ready for use. RAP uses the compost during various maintenance projects. For example, it is used as a top dressing for re-seeding ball fields, incorporated into flower beds (e.g., the rose garden at LA Expo), applied at golf courses during aerification of greens and fairways, and

mixed into mulch. There is an opportunity to expand the use of compost and mulch at parks throughout LA. The “zoo doo” compost is also free to the public for pick up.

RAP works with the local nonprofit LA Compost to provide residents with opportunities to access local composting infrastructure at Griffith Park and is considering incorporating compost sites at additional parks. Currently, this is small-scale production. The Forest Division anticipates adding carbon or mulch to the mixture for a high-quality compost.

### 5.3 Tree Replacement

Tree replacement is guided by the objectives and functions as defined by the Recreation & Parks Department and follows the planting specifications (Appendix L).

RAP trees are planted according to the reforestation practices. Sometimes when crowding or other physical constraints make it impossible to plant the same tree in the same place where it was removed, an alternate location is found. Undesirable tree species are not replaced.

### 5.4 Tree Planting

The role of the urban forest is to improve environmental quality and increase the economic, physical, and social health of communities. As communities continue to grow urban forests will become even more important to the quality of life.

**“A Society grows great  
when old men plant trees  
whose shade they know  
they shall never sit in”**

—GREEK PROVERB

Part of sound urban forest management is to plant desirable, sustainable trees in the urban environment. The ideal park tree is a shade tree with minimum susceptibility to wind damage and branch drop, does not require frequent pruning, produces slight litter, is deep-rooted, has few serious pest and disease problems, and tolerates a wide range of soil conditions, irrigation regimes, and air pollutants. Since relatively few trees have all these traits, it is important to match the tree species to the planting site by determining what issues are most important on a case-by-case basis.

With a potential for an increased incidence of maladapted species in the tree population due to climate change and for urban areas to exacerbate these stresses, it is important to incorporate new species in ongoing planting and tree replacement and then proactively monitor and select high-performing species for new plantings. Climate ready trees are trees that are likely better suited to the new climate trends in a particular region with traits that allow them to be drought tolerant, resist pests and disease, and withstand other stressors associated with climate change, such as increased salt and wind.

Government agencies, researchers, nonprofits, nursery growers, and nursery brokers are leading the way in the climate ready trees initiative to experimentally plant trees that are best suited to the new challenges brought up by climate change. Candidate tree species are being monitored and, when possible, being promoted/incorporated in Los Angeles parks if they seem likely to succeed in future conditions.

### 5.4.1 RAP REFORESTATION PRACTICES

In new tree plantings, RAP does a general evaluation of tree canopy in each of the city parks and/or the specific location with respect to age class; tree size; and a variety of evergreen, deciduous, and coniferous trees. RAP calls for the gradual planting of trees at each park facility in the coming decade.

On average, approximately 500 trees are planted in LA parks each year. The majority of trees planted are through grant funding and partnerships with nonprofit partners that receive the grants, such as the current collaboration with the [City Plants](#) program. City Plants coordinates with nonprofit partners and multiple LA City Departments to promote and organize tree planting and young tree care throughout the city. Additional tree planting occurs during capital improvement projects as replacement plantings and through grants or the tribute program. Follow the link to the application for an explanation of the program: ["Trees in Tribute"](#)



Kids gather around a newly planted tree.

### 5.4.2 PLANTING GUIDELINES FOR PARK TREES

Recreation and Parks Tree Planting and Selection Guidelines (Appendix L) are guidelines to assist staff in making the best possible match of tree species to a specific location. They provide a starting point for species selection and are not intended to be limiting.

Department guidelines include priorities for native habitat restoration or enhancement, prevention from large canopy losses caused by pest epidemics, climate change, and geographic consideration for species selection.

### 5.4.3 NURSERY SPECIFICATION FOR PARK TREES

It is often said that arboriculture begins in the nursery. Specifications for the purchase of trees by RAP call for high-quality, healthy plant stock. Healthy and vigorous park trees begin with plants that meet the specifications outlined in Appendix M. RAP staff may refuse plants that do not meet the specification with any cost for replacement.

### 5.4.4 SOURCING PARK TREES

Currently, RAP has a commodity contract through the General Service Department to obtain planting material from a single source. While their source stocks an assortment of species, the current process poses limitations. For example, species availability is dependent upon the nursery stock available at the time and some desirable species are not carried. Species that are difficult to source are therefore not widely planted. Working with several sources (e.g., through a prequalified list of nurseries) and working with contract growers to obtain hard-to-find species would allow the contract to better fit the Department's needs.

To promote locally adapted nursery stock, RAP and partnering organizations identify and select individual trees that show desirable traits for propagation. Parent trees have been located by RAP in Los Angeles parks, the [Huntington Botanical Gardens](#), and through regional collaborators. Propagation occurs through cloning and/or seed collection. RAP has a partnership with [City Plants](#) at [Commonwealth Nursery](#) in Griffith Park where they grow locally sourced seeds at the nursery. The resulting materials will help ensure that seedlings are well-adapted to local conditions.

#### 5.4.5 REPLACEMENT OF REMOVED TREES OR SHRUBS PROTECTED BY LA CITY PROTECTED TREES ORDINANCE

Replacement of removed protected trees or shrubs will occur with trees or shrubs of a protected variety. To the extent possible, a protected tree shall only be replaced by other protected tree varieties and shall not be replaced by shrubs. To the extent possible, a protected shrub shall only be replaced by other protected shrub varieties and shall not be replaced by trees. To the extent possible, protected trees and shrubs shall be replaced within the same property boundaries.

Protected trees and shrubs always need to be replaced with at least a 4- 24-inch box tree of one of the protected tree/shrub species.

If the diameter of the tree to be replaced is ten inches or greater, Department of Recreation and Parks' inch-per-inch replacement policy (Appendix K and L) will be used to determine the replacement requirements beyond the 4- 24-inch box protected species.

Replacement species beyond the 4- 24-inch box protected species will be determined by Planning and Forestry.





# 6.0 TREE EVALUATION FOR HAZARD & ECONOMICAL VALUE

## Introduction

Evaluation of trees for possible hazards and removal is critical if we are to provide a safe environment in our city parks. A Certified Arborist with TRAQ qualification in the RAP Forestry Division performs the evaluation and must consider risk thresholds and liability. Unlike in the natural forest where a tree manager might permit a tree with a history of branch failure to continue to be retained, in a public area, the manager must evaluate risk and mitigate the potential for failure. If a tree is determined to have moderate to high risk, RAP is responsible if the tree falls and causes damage or injury to persons or property.

Because of the value of trees to neighborhoods, if a tree is to be removed, the reason for removal is made public. Trees beautify neighborhoods, provide energy savings, offer a pleasant park setting for recreational activities, and add value to the property.

## 6.1 Hazardous Trees

All trees have the potential to fail, but relatively few actually do so. In establishing criteria to evaluate trees for risk, a focus is given to trees in urban areas, recognizing the unique combinations of species and site characteristics found in cities.

Documentation of tree risk assessment is kept in the Forestry Work Order System. The ISA Basic Tree Risk Assessment Form (Appendix H) is completed for all trees undergoing a risk assessment.

### 6.1.1 EMERGENCY REMOVAL OF TREES

If in the judgment of the arborist of the Forestry Division a tree poses an imminent likelihood of failure with high likelihood of impacting a target and causing significant or severe damage, it will be removed. If the tree is a protected tree, documentation (including digital photos) will follow after the hazard has been mitigated.



**RAP crew working to clear a downed tree off a parked car.**

It is also highly recommended that all tree removals are properly documented before the removal.

### 6.1.2 CRITERIA DETERMINING HAZARDOUS TREES

The risk level of a tree is based on the likelihood of failure, likelihood of impact, and consequence of failure.



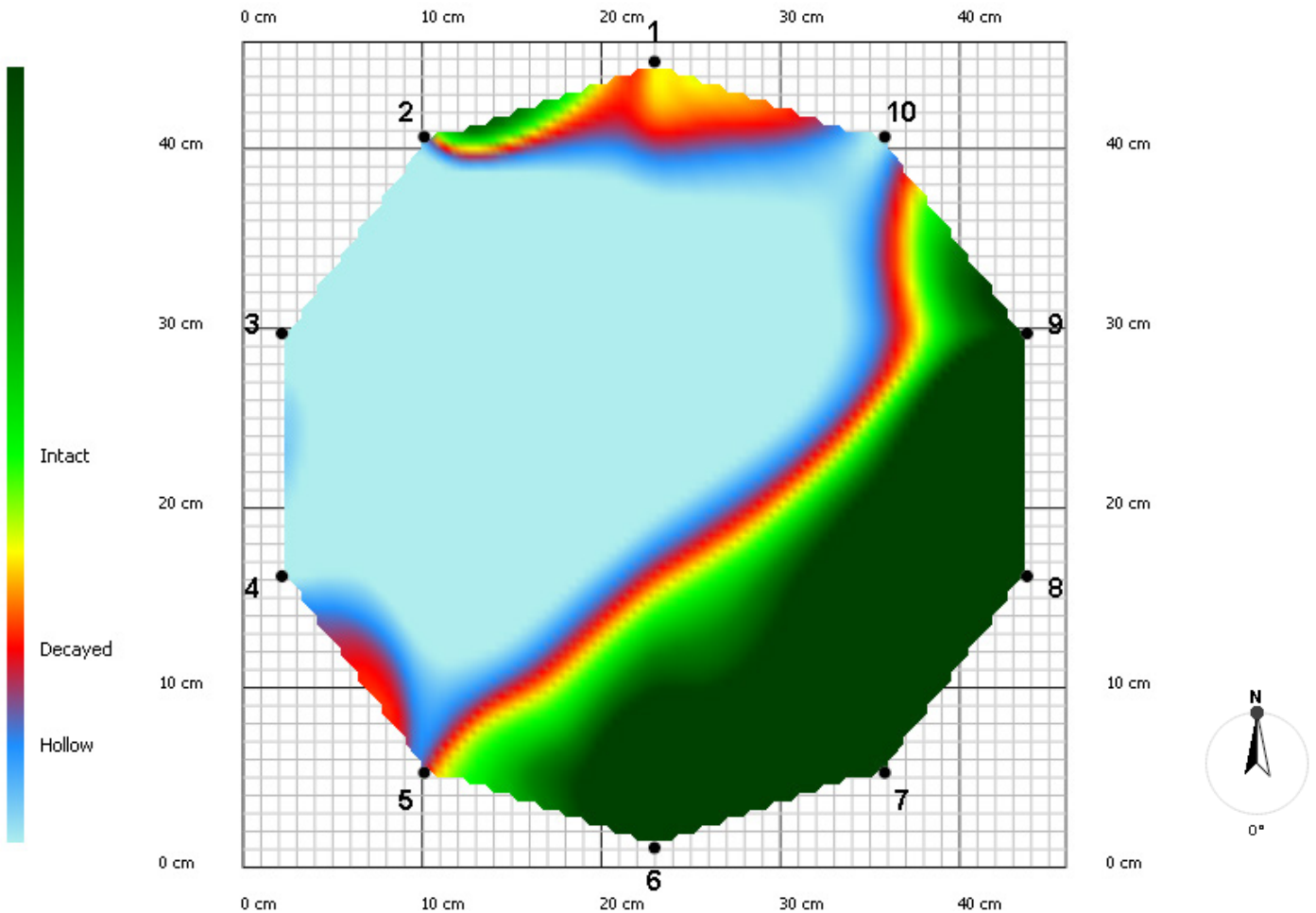
**RAP employee stands next to a large oak tree with a hollow base.**

Methods of diagnosing internal defects in trees can be broadly classified into two classes: (1) destructive methods, such as using increment borers or resistance micro-drilling, and (2) nondestructive methods, such as using acoustic

waves or electromagnetic waves. For mature and well-established park trees, especially those designated as heritage, historical, or protected trees, nondestructive diagnostic methods should be used to minimize physical damage to the trees. Sonic tomography can detect and measure patterns of internal decay of living trees without damaging the trees. Sensors are placed around the trunk to measure the speed of sound traveling through healthy versus decayed

wood. Data is captured and then displayed in an image that depicts sound wood and the extent of decayed wood or illustrates the presence of cavities.

RAP occasionally uses sonic tomography to determine the extent of decay in high-value trees to determine if they are hazards and if removal is necessary. Moving forward, RAP would like to use sonic tomography more regularly.



**Internal tree health can be visualized in standing trees using sonic tomography.**

### 6.1.3 PUBLIC NOTIFICATION

Removal of any trees other than emergency removals within the limits of RAP Department must follow the Tree Removal Procedure (Appendix F). The Notification Protocol must precede removal of a large number of trees for Large-Scale Tree

Removal Projects (Appendix G). The document contained in this appendix informs respective council districts and the public by the posting of notification signs on trees two weeks prior to their removal.

## LA Parks Facilities and Disaster Recovery

Forestry employees are a dynamic resource for the City. RAP-specialized staff can be recalled to provide emergency tree work and clear roadways. RAP recreation facilities become shelters during any disaster. There are several recent examples of park facilities being used due to wildfire, including shelters during the Saddleridge Fire and the LaTuna Fire. They also open shelters for those affected by apartment fires or other emergencies that affect small, densely populated areas. These include the 27th Street explosion where 61 people were displaced and RAP opened Trinity Recreation Center to aid those affected. RAP staff support the Red Cross in running the shelters, but some shelters have been completely staffed by RAP.

In 2019, RAP sheltered 643 people, which was the largest yearly response on record. The Saddleridge Fire was the largest single emergency response, where they sheltered 325 people. On average, RAP responds to emergencies like these three to four times a year. In addition to shelters, sometimes helicopter response uses the park to stage during water dumping.



RAP Responding to an Emergency.

## 6.2 Tree Appraisal

Values of trees are subjective—it is difficult to appraise the true worth of a tree. RAP applies the following three methods of tree appraisal:

- **Repair Cost.** This method is used when there is damage to the tree. The goal is to correct the damage or mitigate further losses. The repair cost is an estimate of providing these necessary treatments.
- **Reproduction Cost.** This method is used when a tree has been significantly and/or irreparably damaged or removed. The goal is to estimate the cost to replicate or duplicate the original tree with a tree of a similar species, size, shape, and condition that provides most or all of the same benefits.
- **Functional Replacement Cost.** This method is used in similar situations as the reproduction cost method, but the functional replacement cost evaluates the cost of restoring benefits rather than duplicating the original tree.

## 6.3 Wildland Urban Interface (WUI)

The wildland urban interface (WUI) is defined as areas where the built environment meets the natural environment. Commonly, this area is characterized by infrastructure adjacent to or within natural areas that exhibit conditions favorable to wildfire. All park lands are classified as WUI, and RAP manages several naturalized areas within parks that contain flammable fuels that could facilitate the rapid spread of small and large fires (e.g., large amounts of litter, ladder fuels, peeling bark, and plant oils/resins). The hazards in the WUI have been intensified by years of fire exclusion throughout the country. As fires become more common, it is important for RAP to develop a wildfire plan that considers the park location, type of park, type of fire, and the implications fires have for the park system.

RAP follows the fire department's policies and

procedures to prevent and respond to wildfire (Appendix P). RAP dispatches a park ranger and fire equipment to all reports of fires on park land. When a fire is confirmed, the Los Angeles Fire

Department (LAFD) is requested. Griffith Park has a fire response team, which may be first on site to put out fires in certain circumstances.



### 6.3.1 PREVENTATIVE MEASURES AND BEST MANAGEMENT PRACTICES

All staff are trained on preventing wildfire, and designated staff are trained in responding to wildfire (e.g., Griffith Park Fire Response Team). While policies, procedures, and best management practices are followed during wildfire prevention and safety, many of the recent fires have burned hot, and high winds have played a role in their rapid spread. Defensible space becomes less meaningful in these types of fires, and they are expected to increase as a result of climate change.

#### Brush Clearance

The primary preventative wildfire measure in parks is brush clearance (for [more information](#) see [Ordinance No. 185789](#)). Brush clearance occurs yearly in all parks, May through August,

and the ordinance outlines acceptable equipment and conditions for it to occur. RAP Maintenance Supervisors in each district assess the need for brush clearance to stay in compliance with LAFD policies on wildfire safety. RAP solicits vendors to complete the necessary work, including tree removal and brush clearance. After a vendor is chosen, RAP ensures the work has been done to their specifications. Each year, the LA Fire Department ensures the parks are in compliance.

During the brush clearance process, RAP balances addressing public safety with preserving wildlife habitat. Bird surveys are done in some parks, especially those with sensitive habitats. This ensures that work crews follow best management practices and allow for a buffer to avoid disturbing wildlife.

## Fire Bans

The Park Ranger Division employs peace officer park rangers who enforce park ordinances and fire ordinances as they pertain to very high fire hazard severity zones. Grilling is restricted in the very high fire hazard severity zones and can be closed off in other parks during the high fire danger months. This includes caution taping of grills and interactions with park users, such as the issuance of citations or arrest for persons smoking, kindling fires, or creating a fire hazard on department property.

Other preventative measures and best management practices include (Southern California Guidebook [Sustainable and Fire-Safe Landscapes In The Wildland Urban Interface](#) and [National Park Service Wildland Urban Interface](#)):

- Identify locations with significant dead or dying vegetation and/or invasive species.
  - » Address fuel loading, fuels management, and public safety related to wildfire risk and damage.
  - » Prioritize tree management activities, including removals, structural pruning, irrigation adjustments, pest control, or other alterations in maintenance.
- Implement landscape design features, fuel breaks, tree management practices, and plant selection to help prevent the spread of fire into built areas.
- Focus on converting areas dense in highly flammable invasive plant species into more fire-resistant vegetation (characteristics include storing water in leaves or stems, deep root systems, slow growth, relatively low concentrations of volatile compounds, open branching structures with minimal dead material).

- Create defensible space by pruning up low limbs (help prevent crown fires) and continue emphasizing brush clearance in routine park maintenance.
- Be aware of red flag days and modify behaviors (e.g., heightened awareness, avoid using certain equipment/vehicles).
- Understand escape routes and emergency contact information in the case of fire.
- Regularly turn mulch piles to avoid spontaneous combustion and monitor them to catch any signs of fire early and apply water to the piles to reduce the fire hazard.
- Communicate with neighboring land managers for congruent fire mitigation across property borders.
- Balance public safety with habitat maintenance.
  - » Prescribed burning where safe to promote native species, wildlife habitat, and reduce the severity and intensity should a fire start.
- Implement and retrofit structures to be “firewise” as park improvement projects occur.

## Aerial Imagery

RAP uses aerial imagery to understand the health and density of trees and shrubs in inaccessible park land. This additional data allows managers to better understand fuel loads and density to inform wildfire prevention and planning.

## 6.3.2 POST-FIRE ACTION

It is equally important to take steps to rehabilitate parks after a fire. This entails both immediate stabilization and long-term restoration. Once it is safe to enter a burned area, RAP assesses trees and generates a plan for blocking off

areas of parks and the removal of trees that impact public safety. RAP monitors burnt areas. Snags are left when possible, to promote wildlife habitat, and RAP staff continue to monitor these areas to determine if there is a chance of tree failure months to years after the fire. RAP allows for standing dead trees to stay up when they do not cause concerns for public safety.

Some additional practices RAP considers include ([Forest Service](#)):

- Stabilize burned areas with debris traps, mulch, straw, or other materials to help prevent erosion, flooding, and sediments in the water supply.
  - » Focus on areas with steep slopes and/or fragile habitats.
- Use fencing and signage to protect both the park land and visitors from risks associated with the wildfire.
- Re-establish vegetation, including reseeding and planting trees.
- Repair damaged facilities.
- Monitor restoration treatments.

### 6.3.3 WILDFIRE AND PRIVATE PROPERTY

Article 7 of LA's Fire Protection and Prevention Code requires property owners to engage in fire safety activities relating to vegetation that could fuel a wildfire. Further, the brush clearance requirements specify that property owners in very high fire hazard severity zones also engage in safety measures. Requirements include acceptable equipment and conditions for brush clearance to occur. It also specifies the areas that need to be cleared, acceptable height of brush, and trimming/spacing for shrubs and trees (Appendix P).



# 7.0 Safety Standards

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## Introduction

Safe tree maintenance is the most important objective for the supervisory staff of the RAP Forestry Division. Employees are continuously trained on safe tree-care operations to avoid injury, loss of time, loss of equipment, damage to property, and to protect public safety. RAP recognizes safety standards, which are represented in the following two documents:

### 7.1 ANSI Z133.1 Safety Standards for the Tree Care Industry

The publication (Appendix B) establishes safety standards for tree-care operations in the United States and provides safety criteria for workers and the public.

**The following are topics covered in the publication:**

- General safety requirements.
- Electrical hazards.
- Safe use of vehicles, mobile, and towed equipment.
- Portable power hand tools.
- Hand tools and ladders.
- Tree climbing

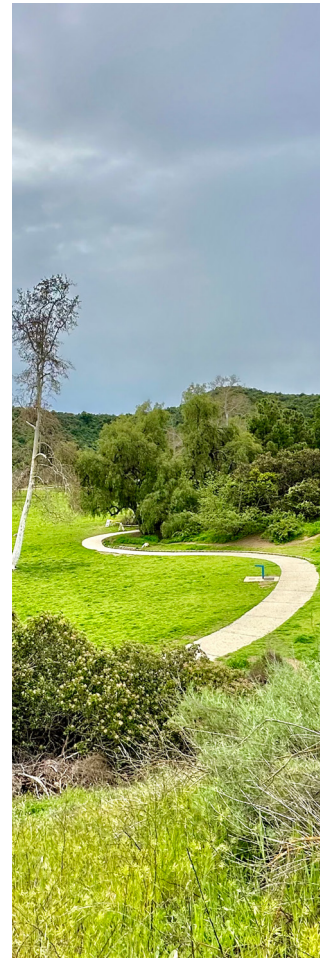
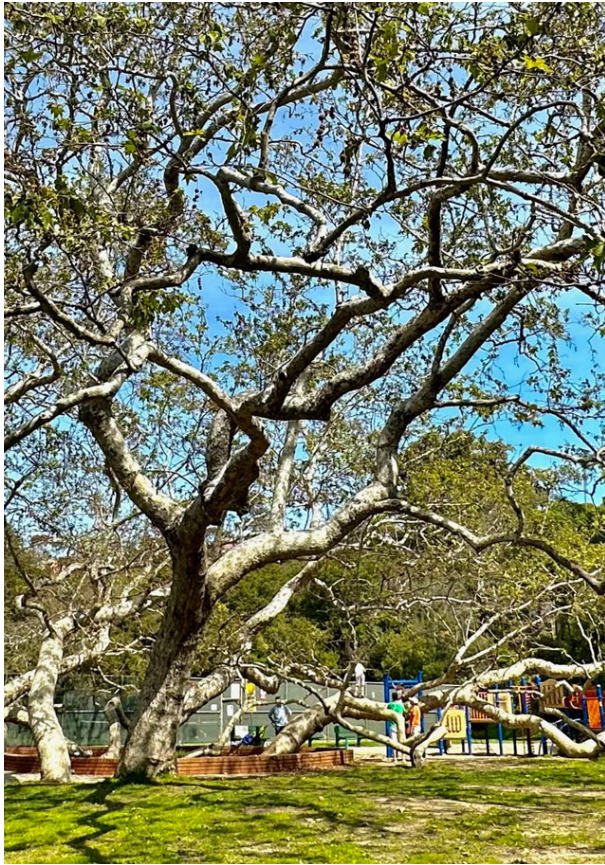
**The booklet also provides:**

- Glossary of terms used in the tree industry.
- Recommended guidelines for standard performance and safety training.
- General safety procedures that apply to all tree work.
- Available resources.
- Weight of green logs.
- Aerial rescue flowchart.
- Hand signals for crane operations.
- Electrical hazard abatement.
- Fall-protection systems.
- Live line tools.

### 7.2 RAP Code of Safe Practices for Forestry Operations

The RAP safety officer established this code to be recognized by all employees working in tree operations (Appendix C). The safety practices also apply to any contractors performing work for RAP.







# 8.0 APPENDICES

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## Appendix A. RAP Tree Preservation Policy

### PURPOSE

The purpose of the Tree Preservation Policy is to establish a regulatory tool to provide orderly protection of specified trees, protect their value, and avoid significant negative impacts to the ecosystem. The policy regulates protection of trees in four categories: (1) Trees Protected by LA City Ordinances, (2) Heritage Trees, (3) Special Habitat Value Trees, and (4) all other Common Park Trees.

### TREES PROTECTED BY LA CITY ORDINANCES

The current City of Los Angeles ordinance protects the coast live oak (*Quercus agrifolia*), Valley Oak (*Quercus lobata*), laurel bay tree (*Umbellularia californica*), western sycamore (*Platanus racemosa*), Mexican elderberry (*Sambucus mexicana*), Southern California black walnut (*Juglans californica*), toyon (*Heteromeles arbutifolia*), or any other tree of the oak genus indigenous to California but excluding the scrub oak (*Quercus berberidifolia*) measuring four inches or more in diameter, four and a half feet above the ground level at the base of the tree. This definition shall not include any tree or shrub grown or held for sale by a licensed nursery or trees or shrubs planted or grown as a part of a planting program. The RAP Board of Commissioners must grant permission before any alterations to protected trees are made that could cause them to be damaged, relocated, or removed. If the tree poses an immediate threat to life or public safety, the RAP arborist has the discretion to modify this process, maintaining proper documentation, including digital photographs. Protected trees and shrubs identified as dead trees by the RAP arborist can be removed without a permit.

### HERITAGE TREES

Heritage Trees are individual trees of any size or species that are specifically designated as heritage for their historical, commemorative, or horticultural significance. The list of designated Heritage Trees remains open for new designations and provides useful information to RAP staff regarding the importance of their actions while planning activities near Heritage Trees. Since Heritage Trees are protected trees, recommendations from the RAP arborists must be obtained before any alterations to the protected trees are made that may cause the tree to become damaged, relocated, or removed. The General Manager of RAP or their designee must approve the recommendation before any action proceeds. Pruning also can cause irreversible damage to the tree and must be in compliance with the ISA Tree Pruning Guidelines. Pruning must be performed under supervision of ISA Certified staff only. If the tree poses an immediate threat to life or public safety, the Forestry Division arborist may compromise the process as long as proper documentation, including digital photographs, is kept. Heritage Trees identified as dead by the RAP arborist will be removed and recorded into the designated Heritage Trees list. The Heritage Trees list can be obtained from the Regional Headquarters Office and the Forestry Division.

### SPECIAL HABITAT VALUE TREES

After more than a century of development, the native and indigenous landscape throughout the city has changed significantly. Special Habitat Value Trees, because of decreasing numbers and their fragility in an urban setting, are particularly noteworthy because of the following:

- California native trees provide habitat for state or federally protected animal species.

- California native trees that are located in the Pacific Flyway are important to thousands of migratory birds each spring and fall during migration season.
- California native trees provide a foundation for biodiversity and a healthy ecosystem.

The following California native trees are protected in this group: California sycamore (*Platanus racemosa*), California bay (*Umbellularia californica*), boxelder (*Acer negundo* ‘Californica’), big leaf maple (*Acer macrophyllum*), California walnuts (*Juglans californica* and *J. hindsii*), toyon (*Heteromeles arbutifolia*), native cherry trees (*Prunus ilicifolia*, *Prunus lyonii*), cottonwood (*Populus fremontii*, *P. trichocarpa*), and native willow trees (*Salix hindsiana*, *S. laevigata*, *S. lasiandra*, *S. lasiolepis*). Additional species may be included in this group with respect to their species habitat value.

Special Habitat Value Trees are protected trees. Before any alterations to protected trees are made that may cause them to be damaged, relocated, or removed, a recommendation for action must be obtained from the RAP arborists. If the area is riparian or other protected sensitive habitat, RAP’s Environmental Division should be contacted.

The recommendation, which outlines measures to protect and preserve—and in some circumstances remove—must be approved by the general manager of RAP or their designee before any action proceeds. Some forms of pruning also can cause irreversible damage to trees and must be in compliance with the ISA Tree Pruning Guidelines. Pruning must be performed under supervision of ISA Certified staff only. If the tree poses an immediate threat to life or public safety, the RAP arborist may intervene, maintaining documentation and digital photos.

Special Habitat Value Trees identified as dead by the forestry arborist will be assessed. Trees may be reduced and kept as snags if they do not threaten targets or be removed and recorded into the Forestry Work Order System.

## COMMON PARK TREES

Most city parks contain mature exotic trees that have great value beyond the shade they provide to park users. They are a scenic resource to surrounding neighborhoods, and their removal or disfigurement by extreme pruning for construction, clearance, or other reasons diminishes the value of the urban forest and often provokes public protest. Some trees have not been designated under a protected group of trees but still provide aesthetic, sentimental, economical, and environmental value.

The large number of trees in our parks has a significant cooling effect on the urban environment in Los Angeles, where tree canopy represents only 22 percent of the land. Every tree in our city parks is recognized as a valuable asset and must be protected. The Tree Care Manual (see chapters 3 and 4) provides guidelines for protecting trees during construction and offers suggestions and alternative technical solutions to avoid damages to trees. The Department’s Assistant General Managers are responsible for seeing that the planning, maintenance, construction and recreation staff follow and implement tree preservation and protection practices outlined in the Tree Care Manual.



## Appendix B. ANSI Standards and Best Management Practices

### ANSI STANDARDS

ANSI A300 standards represent the industry consensus on performing tree care operations. The standards can be used to prepare tree care contract specifications.

- ANSI A300 Pruning Standard—Part 1, 2017.
- ANSI A300 Soil Management—Part 2, 2011.
- ANSI A300 Support Systems Standard—Part 3, 2013.
- ANSI A300 Lightning Protection Systems Standard—Part 4, 2008.
- ANSI A300 Construction Management Standard—Part 5, 2012.
- ANSI A300 Transplanting Standard—Part 6, 2012.
- ANSI A300 Integrated Vegetation Management Standard—Part 7, 2012.
- ANSI A300 Root Management Standard—Part 8, 2013.
- ANSI A300 Tree Risk Assessment Standard a Tree Failure—Part 9, 2017.
- ANSI A300 Integrated Pest Management—Part 10, 2016.

Includes guidelines for implementing IPM programs, including standards for Integrated Pest Management (IPM), IPM practices, tools and equipment, and definition.

- ANSI Z133 Safety Standard, 2017.

Reviews general safety, electrical hazards, use of vehicles and mobile equipment, portable power hand tools, hand tools and ladders, climbing, and work procedures.

The ANSI publications can be obtained from:

- International Society of Arboriculture (ISA), [www.isa-arbor.com](http://www.isa-arbor.com).
- American National Standard Institute Standard for Tree Care Operations—Tree, Shrub, and Other Woody Plant Maintenance—Standard Practices.

### BEST MANAGEMENT PRACTICES (BMPS)

*Integrated Pest Management, Second Edition, P. Eric Wiseman, and Michael J. Raupp, 2016*

Provides a comprehensive overview of the basic definitions, concepts, and practices that pertain to landscape IPM. The publication provides specific information for designing, planning, and implementing an IPM program as part of a comprehensive Plant Health Care (PHC) management system, including topics such as:

- Action Thresholds.
- Monitoring Tools and Techniques.
- Preventive Tactics.
- Control Tactics.
- Documentation and Record keeping.

*Integrated Vegetation Management, Second Edition, Randall H. Miller, 2014*

A guide to the selection and application of methods and techniques for vegetation control for electric rights-of-way projects and gas pipeline rights-of-way. Topics included: safety, site evaluations, action thresholds, evaluation, and selection of control methods, implementing control methods, monitoring treatment and quality assurance, environmental protection, tree pruning and removal, and a glossary of terms.

**Lightning Protection Systems, Third Edition, E. Thomas Smiley, A. William Graham, Jr, and Scott Cullen, 2015**

Describes proper installation and maintenance of lightning protection systems that can effectively prevent serious lightning damage to trees. It also serves as a companion publication for American National Standard for Tree Care Operations—Tree, Shrub and Other Woody Plant Management—Standard Practices (Lightning Protection Systems).

**Managing Trees During Construction, Third Edition, Nelda Matheny, Dr. E. Thomas Smiley, Ryan Gilpin, and Dr. Richard Hauer, 2023**

Describes tree conservation and preservation practices that help to protect selected trees throughout the construction planning and development process so that they will continue to provide benefits for decades after site disturbance, including planning phase, design phase, pre-construction phase, construction phase, and post-construction phase.

**Reducing Infrastructure Damage by Tree Roots, Larry Costello and Katherine S. Jones, 2003**

Provides a comprehensive reference on tree and infrastructure conflicts, containing up-to-date descriptions and assessments of methods used to reduce damage. The information guides tree managers, planners, and engineers to create effective management plans.

**Root Management, Laurence R. Costello, Gary Watson, E. Thomas Smiley, and Richard Hauer, Second Edition, 2023**

Recommended practices for inspecting, pruning, and directing the roots of trees in urban environments to promote their longevity while minimizing infrastructure conflicts. Special companion publication to the ANSI A300 Part 8: "Tree, Shrub, and Other Woody Plant Management—Standard Practices" (Root Management).

**Soil Management, Bryant Scharenbroch, E. Thomas Smiley, and Wes Kocher, 2014**

Focuses on the protection and restoration of soil quality that support trees and shrubs in the urban environment, including goals of soil management, assessment, sampling and analysis, modifications and amendments, tillage, conservation, and a glossary of terms.

**Tree Injection, Shawn Bernick, and E. Thomas Smiley Second Edition, 2022**

Provides guidance for arborists who use tree injection to systemically treat trees for pest problems, nutrient deficiencies, or growth regulation. Topics include:

- Why Use Tree Injection?
- Types of Tree Injection
- Potential Damage from Tree Injection
- Application Considerations
- Administering Injections
- Record Keeping and Legal Considerations
- Tree Ring Porosity of Hardwood Tree Genera
- Sample Bid Specifications and Tree Injection Contract Language

**Tree Inventories, Second Edition, Jerry Bond, 2013**

Provides considerations for managing large numbers of trees considered as individuals rather than groups and serves as a guide for making informed decisions that align inventory goals with needs and resources, including inventory goals and objectives, benefits and costs, work specifications, and maintaining inventory quality.

**Tree Planting, Second Edition, Gary Watson, 2014**

Provides processes for tree planting, including site and species selection, planting practices, post-planting pruning, and early tree care. Other topics included are time of planting; nursery

stock; types, selection, and handling; preparing the planting hole; planting practices; root loss and new root growth; redevelopment of root structure; pruning; palms; after planting; final inspection; and a glossary of terms.

**Tree Pruning, Third Edition, Sharon J. Lilly, Edward F. Gilman, and E. Thomas Smiley, 2019**

Provides an interpretation of the ANSI 300 Pruning standards that is useful in the specification and practical application of pruning. Includes descriptions and background information on pruning systems, pruning objectives, a tree's response to pruning, types of cuts, work practices, and others.

**Tree Risk Assessment, Second Edition, E. Thomas Smiley, Nelda Matheny, and Sharon Lilly, 2017**

A guide for assessing tree risk as accurately and consistently as possible, to evaluate that risk, and to recommend measures that achieve an acceptable level of risk, including topics: risk assessment basics; levels and scope of tree risk assessment; assessing targets, sites, and trees; tree risk categorization; risk mitigation preventive and remedial actions; risk reporting; tree-related conflicts that can be a source of risk; loads on trees; structural defects and conditions that affect likelihood of failure; response growth; and description of selected types of advanced tree risk assessments.

**Tree Shrub Fertilization, Third Edition, E. Thomas Smiley, Sharon Lilly, and Patrick Kelsey, 2013**

Aides in the selection and application of fertilizers for trees and shrubs, including essential elements, determining goals and objectives of fertilization, soil testing and plant analysis, fertilizer selection, timing, application, application area, rates, storage and handling of fertilizer, and sample fertilizer contract for commercial/municipal clients.

**Tree Support Systems, Third Edition, E. Thomas Smiley and Sharon Lilly, 2014**

Presents proper installation and maintenance for cabling and bracing branches, guying established trees, and guying and propping newly planted trees. Covers installation and tools needed for methods on both established and newly planted trees.

**Utility Pruning of Trees, Geoffrey P. Kempter, 2004**

Describes the current best practices in utility tree pruning based on scientific research and proven methodology for the safe and reliable delivery of utility services while preventing unnecessary injury to trees. An overview of safety, tools, and equipment, pruning methods and practices, and emergency restoration are included.

**Utility Tree Risk Assessment, John W. Goodfellow, 2020**

Guides utility personnel, utility vegetation managers, utility tree risk assessors, and line clearance contractors in assessing tree-related risk to overhead electric utility infrastructure by tree failure as accurately and consistently as possible, and to support decisions related to risk mitigation practices that achieve utility objectives. It also serves as a companion publication to the ANSI A300 Part 9: Tree, Shrub, and Other Woody Plant Management—Standard Practices (Tree Risk Assessment a. Tree Failure).



## Appendix C. Code of Safe Practices

### CITY OF LOS ANGELES DEPARTMENT OF RECREATION AND PARKS CODE OF SAFE PRACTICE FORESTRY DIVISION

1. Employees and contractors shall follow all safety rules and regulations established by the federal, state, and local government. Employees shall report any unsafe condition or practice immediately to their supervisor.
2. All employees shall participate in a safety tailgate at least every ten working days.
3. Any employee known to be under the influence of drugs or alcohol shall be removed from the job site and reported immediately to supervision.
4. Horseplay, scuffling, or other acts which can have an adverse effect on employee health and safety shall be prohibited.
5. Supervisors shall ensure that employees engaged in tree work are provided safe operating rules. Employees shall be trained and instructed in the hazards involved in their job assignments, including proper use of equipment.
6. All tree surgeon supervisors shall be certified arborists or obtain certification by the end of their probationary period. Each work location where tree care operations are to be done shall be under the direction of a qualified arborist.
7. Employees shall be instructed to ensure that all safeguards and controls are in place.
8. When removing a tree, the work area shall be clear to prevent injury and provide escape.
9. No employee shall knowingly be permitted to work if that employee's ability is impaired by fatigue or illness and might unnecessarily cause injury to other employees.
10. No employee shall operate power equipment that requires specific training and certification unless they have been trained and possess the current certification for that equipment.
11. No employee shall operate a motor vehicle without a current California driver's license for the class of vehicle assigned. All accidents involving City vehicles shall be reported immediately to supervision and the police department.
12. All on-the-job injuries shall be reported immediately to supervision no matter how slight. Employees shall be trained in the identification of poisonous plants and harmful animals.
13. Employees are responsible for inspecting all hand and power tools before the start of each shift. Any damaged or defective hand or power tools shall be removed from the job immediately and tagged out of service.
14. Power saw engines shall be shut off or have the chain brake engaged whenever the saw is carried for a distance greater than 50 feet or across hazardous terrain.

15. Saw engines shall be shut off for all maintenance, refueling, and adjustments.
16. All personal protective equipment, such as head, hand, face, eye, hearing, respiratory, and cut resistant leg protections, shall be worn at all times when required.
17. All tree workers' saddles and ropes shall be inspected daily.
18. Employees engaged in tree maintenance or removal in proximity to electrical conductors and other energized equipment shall be trained to recognize and be qualified to work within electrical hazards.
19. If employees cannot maintain a minimum distance from energized conductors, employees shall report the concern to the supervisor. The work will then be contracted out to be completed by a qualified line-clearance arborist.
20. Tree workers shall never carry tools while climbing.
21. Supervisors shall establish rescue procedures and provide training in first-aid, cardiopulmonary resuscitation (CPR), and aerial rescue.





## Appendix D. Model Tree Preservation Specifications

### TREE PROTECTION SPECIFICATIONS

#### 1.01 TREE PROTECTION

**I. All trees that occur within the area of work, as shown on the plans, and not specifically designated for removal, shall be protected by the following means:**

- A. **Determining the Tree Protection Zone (TPZ)** - The **radius** (not the diameter) of the TPZ, measured from the outside of the tree trunk, shall be calculated by Recreation and Parks (RAP) Forestry according to the following:
1. **Single trunk trees** - multiply the trunk diameter in inches, measured 4.5' above grade, by 1.5 feet.
  2. **Multi trunk trees** - multiply the sum of the diameters of all trunks in inches, measured 4.5' above grade, by 1.5 feet.
  3. **Palm trees** - 5' from the base of the trunk.
- B. Once determined, the TPZ is to be clearly shown on all plans, including concept plans, for discussion purposes, including at the RAP Capital Improvements Meetings.
- C. Beyond the TPZ, the contractor shall also be responsible for protecting all trees within the boundaries of the construction zone, including vehicular access areas leading to the construction zone, lay down areas, and any other areas impacted by construction activities. Any damage to trees in these areas shall also be subject to the same monetary or replacement requirements specified in Section II below. Any necessary root cutting in this area must be confirmed with either the RAP or other approved arborist. See also the General Conditions for any damage done by the contractor to landscaping or other park amenities that fall outside the boundaries of the construction zone.
- D. Within the boundaries of the construction zone (including the TPZ), the contractor shall be responsible for mitigating construction-related dust accumulation on all trees by spraying the trunks, limbs, and foliage with water to a maximum height of 30 feet during the months of April through November, at monthly intervals.
- E. Within the TPZ, the contractor shall adhere to the following requirements, including, but not limited to:
1. No stockpiling or storage of any material, debris, or soil.
  2. No storage of any construction equipment.
  3. No vehicular access.
  4. No cutting of roots.
  5. No disturbance of soil or grade changes.
  6. No objects of any kind to be attached to tree trunks.

- F. The contractor shall install a 5' high temporary chain link fence with one pedestrian access gate along the boundary of the TPZ. See *5' HIGH TREE PROTECTION FENCE* detail at the end of the document.
- G. The contractor shall provide one sign per each 20 lineal ft. of fence bordering the TPZ indicating that fencing shall not be removed. See sign detail that is included as part of the temporary chain link detail.
- H. No work is permitted within the TPZ without the approval of each of the following: 1) the project landscape architect, 2) the project manager, and 3) RAP Forestry staff. Any work authorized within the TPZ must be done in accordance with the recommendations of a RAP arborist and under the supervision of a Monitoring Arborist. A Monitoring Arborist must be: 1) an ISA Certified Arborist or a Registered Consulting Arborist, with verifiable experience in protecting trees during construction; 2) approved by RAP Forestry. The Monitoring Arborist shall be hired and paid by the contractor.
- I. Irrigation to all trees not specifically designated for removal shall be kept in operation for the duration of the project. Contractor shall be responsible for hand watering all impacted trees if necessitated by temporary shutdowns to existing irrigation systems. Trees are to be irrigated deeply and infrequently so that soil moisture is detectable at a minimum depth of 18" using a soil probe.
- J. Upon job completion, contractor shall remove all items installed to protect trees during the construction process.
- K. Any of the following Southern California native tree species fall under Ordinance No. 177404 of the Los Angeles Municipal Code:
  1. Oaks, including Valley Oak (*Quercus lobata*), California Live Oak (*Quercus agrifolia*), or any other tree of the oak genus indigenous to California but excluding Scrub Oak (*Quercus dumosa*);
  2. Southern California Black Walnut (*Juglans californica* var. *californica*);
  3. Western Sycamore (*Platanus racemosa*);
  4. California Bay (*Umbellularia californica*).

Contractor shall comply with the requirements of the ordinance found at:  
[http://cityplanning.lacity.org/Code\\_Studies/Other/ProtectedTreeOrd.pdf](http://cityplanning.lacity.org/Code_Studies/Other/ProtectedTreeOrd.pdf).

## **II. Consequences of violating the Tree Protection Specifications:**

- A. ANY FAILURE BY THE CONTRACTOR TO ADHERE TO THE REQUIREMENTS SPECIFIED WITHIN THESE SPECIFICATIONS WILL RESULT IN THE SUSPENSION OF ALL CONSTRUCTION ACTIVITIES, TO BE DONE AT THE CONTRACTOR'S EXPENSE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PAYMENT FOR OR REPLACEMENT OF ANY TREES DAMAGED THROUGH NON-COMPLIANCE WITH THESE

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SPECIFICATIONS. The choice of whether the damaged trees are replaced or paid for will be determined by RAP Forestry.

1. **Monetary valuations** for damaged trees will be determined by RAP Forestry.
2. **How RAP determines the quantity, species, and location of replacement trees:**
  - a) Measuring the diameter of the tree(s) being replaced:
    - 1) For single trunk trees, the diameter (DBH) is measured 4.5' above the ground.
    - 2) For multi-trunk trees, the DBH of each of the multiple trunks is measured 4.5' above the ground, then all are summed to arrive at a single diameter value.
  - b) The ratio of the sum of calipers (as defined by RAP Nursery Specifications) of new trees planted vs. the sum of the diameters of existing trees removed shall be at least 1:1. The specific number of replacement trees will be determined by RAP Forestry staff and the project landscape architect.
  - c) If the replacement ratio cannot be achieved within the project boundaries, then one of the following shall apply:
    - 1) Deliver the trees to RAP Forestry.
    - 2) Deliver the trees to the nearest RAP service yard.
    - 3) Plant the trees beyond the project on an approved, area-wide basis.
  - d) RAP Forestry staff and the project landscape architect shall determine the replacement tree species/planting location and shall also ensure the health/quality of the trees.

**FENCING MATERIALS**

- 1** POSTS: O.D., LINE POSTS 2-3/8 IN. O.D. POST SPACING TO BE 10'-0" MAX. POSTS TO BE DRIVEN 2' BELOW RELATIVE GRADE.

**2** FABRIC: 9 GAUGE, 2 IN. MESH, KNUCKLE TOP AND BOTTOM, PLACE ON OUTER SIDE OF POST.

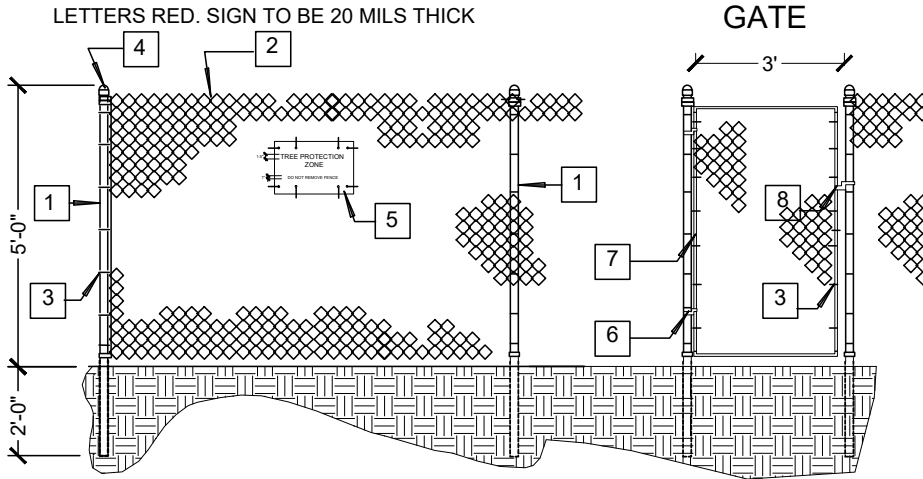
**3** TIE WIRES: 11 GAUGE AT 12" O.C.

**4** POST TOPS MALLEABLE IRON OR PRESSED STEEL.

**5** 24"x18" SIGN. ATTACH WITH TIE WIRES. SIGN TO BE PROVIDED BY RAP. SIGN TO BE WHT LETTERS RED. SIGN TO BE 20 MILS THICK
- 6** HINGES: INDUSTRIAL BULLDOG HINGE (180 SWING) 2 HINGES PER GATE, ONE TOP AND ONE BOTTOM.

**7** GATE FRAME: SIDES, 2-3/8" DIA

**8** LOCKABLE CAST ALUMINUM FORK LATCH  
POST TOPS MALLEABLE IRON OR PRESSED STEEL.



**ELEVATION**

**NOTES:**

- 1. CHAIN LINK FENCE MATERIALS SHALL CONFORM TO THE CHAIN LINK FENCE AND MISCELLANEOUS METAL CONSTRUCTION SECTION OF THE NOTICE TO CONTRACTORS.
- 2. THE BOTTOM OF THE FABRIC SHALL BE POSITIONED ONE INCH ABOVE FINISH GRADE.
- 3. PROVIDE FOR ONE 3' WIDE GATE PER ENCLOSURE.
- 4. ALL FENCING TO HAVE A STANDARD GALVINIZED FINISH

**GRIDNO 5' HIGH TREE PROTECTION FENCE**

N.T.S.	REFINFO	RP DETAIL 500.1
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# Appendix E. Monthly Tree Activity Report



## Monthly Tree Activity Report

**City of Los Angeles Department of Recreation and Parks**

This report is due every month and must be emailed to the RAP Arborist.

### **Tree Inspection Information**

Inspection Date:
Inspector Name:
Site Address:

### **Project Contact Information**

Project Manager
Company Name:
Contact Phone & Email:

### **Project Arborist**

Arborist Name:
Company Name:
Contact Phone & Email:

### **Include the following information on each tree activity report:**

1. Assignment Activity (Demolition/grading/trenching/excavation/tunneling/directional drilling/equipment use)
  - Inspect to verify that tree protection measures are in place
  - Determine if field adjustments or plan revisions may be needed

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2. Field Observations (general site-wide and list by individual tree)
  - Tree Protection Zones (note any changes/shifts in fence placement, storage of materials, debris, etc.)
  - Tree health and condition (note changes in leaf color, defoliation, presence of dead or dying limbs, etc.)

--



3. Action Items and Due Date (list site-wide and list by individual tree)

- Tree Protection Zone
- Root zone buffer material

4. Recommendations, notes, or monitor items for project/staff/schedule

5. Past visits (must carry-over items satisfied/still outstanding)

6. Photographs (please attach to email)

7. Tree Location Map (please attach to email)

## Appendix F. Tree Removal Procedure

All park trees are valuable assets of the Department of Recreation and Parks (RAP). The steps listed below have been developed to have the least effect on park property when it is necessary to remove a tree. These steps must be adhered to at all times:

### Step One. Submit a Tree Removal Request to Forestry Division When:

- A tree is confirmed to be dead by the RAP arborist.
- A tree is diseased or damaged and cannot be reasonably treated, and the RAP arborist determines that it poses an unreasonable risk to public safety.
- A tree presents obstacles to infrastructure repairs or causes impairment to a park function, which cannot be reasonably mitigated through means other than removal.
- Other reasons as determined by the RAP forestry arborist.

### Step Two. Provide Detailed Information

- Contact the Forestry Division at 213.485.4826.
- Indicate what “protection category” the tree is in: Tree Protected by LA City Ordinances, Heritage Tree, Special Habitat Value Tree, or Common Park Trees.
- Provide a project outline that includes a timeline.

### Step Three. Forestry Division Actions

- Evaluation of the tree removal request.
- Confirmation of the tree’s protection category.
- Inspection and evaluation of the tree with appropriate staff.
- Discussion of alternatives and recommendations.
- All information is entered into the Forestry Work Order System.

### Step Four. Obtain Final Approval for Removal of Tree

- For trees that are protected by LA City ordinance, Forestry Division personnel will contact the RAP Board of Commissioners and initiate the process necessary to obtain a tree removal permit.
- For Heritage or Special Habitat Value Trees, the RAP arborist makes a recommendation to the general manager for removal. The general manager or designee must make the final approval before the tree can be removed.
- For a Common Park Tree, the RAP arborist may recommend removal.

### Step Five. Tree Removal Procedures to Mitigate Risk

During routine tree removal operations, forestry staff may determine that a tree must be removed for safety or other reasons. Staff members should:

- Contact the Principal Forester or Tree Surgeon Supervisor II and explain the situation.
- The Principal Forester or Tree Surgeon Supervisor II will contact all appropriate RAP staff to obtain further instructions and final approval before authorizing the tree to be removed.
- **Exception to the Rule:** If any park tree poses an immediate life-threatening emergency or safety hazard, the RAP arborist may bypass the regular procedure and authorize removal of the tree. Detailed documentation will be required, including digital photos of the tree before and after the hazard has been mitigated

### Step Six. Notification Protocol for Large-Scale Tree Removal

Forestry Division and region personnel must follow established notification protocol when informing the public, local government officials, organizations, and department representatives about large-scale tree removal projects.





## Appendix G. Notification Protocol for Large-Scale Tree Removal Projects at Los Angeles City Parks

Large-scale removals should be avoided at all costs. However, there are many stressors that can cause many trees in a park or in the city to die off, such as invasive pests, diseases, and drought. Examples of this are the lerp psyllid that hit certain species of eucalyptus and the invasive shot hole borer (ISHB). In such cases, the following protocols will be followed.

1. Forestry Division will notify the Principal Ground Maintenance Supervisor II and the Recreation Superintendent of the respective region as well as the Director of Public Relations as soon as the project is identified but no later than three weeks prior to commencement of the tree removals.
2. The Regions will inform the appropriate Council office and Park Advisory Board (PAB) immediately upon notification from the Forestry Division.
3. Forestry staff will post a notice of “intent to remove trees” in the respective park. Notification will include: sections of the park will be closed, the dates for the project, and contact information for the Forestry Division. Other information may be included as well.





# Appendix H. Basic Tree Risk Assessment Form

## ISA Basic Tree Risk Assessment Form

Client \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_  
 Address/Tree location \_\_\_\_\_ Tree no. \_\_\_\_\_ Sheet \_\_\_\_\_ of \_\_\_\_\_  
 Tree species \_\_\_\_\_ dbh \_\_\_\_\_ Height \_\_\_\_\_ Crown spread dia. \_\_\_\_\_  
 Assessor(s) \_\_\_\_\_ Time frame \_\_\_\_\_ Tools used \_\_\_\_\_

Target Assessment							
Target number	Target description	Target zone			Occupancy rate 1 – rare 2 – occasional 3 – frequent 4 – constant	Practical to move target?	Restriction practical?
		Target within drip line	Target within 1x Ht.	Target within 1.5x Ht.			
1							
2							
3							
4							

### Site Factors

History of failures \_\_\_\_\_ Topography Flat  Slope  \_\_\_\_\_ % Aspect \_\_\_\_\_  
 Site changes None  Grade change  Site clearing  Changed soil hydrology  Root cuts  Describe \_\_\_\_\_  
 Soil conditions Limited volume  Saturated  Shallow  Compacted  Pavement over roots  \_\_\_\_\_ % Describe \_\_\_\_\_  
 Prevailing wind direction \_\_\_\_\_ Common weather Strong winds  Ice  Snow  Heavy rain  Describe \_\_\_\_\_

### Tree Health and Species Profile

Vigor Low  Normal  High  Foliage None (seasonal)  None (dead)  Normal \_\_\_\_\_ % Chlorotic \_\_\_\_\_ % Necrotic \_\_\_\_\_ %  
 Pests \_\_\_\_\_ Abiotic \_\_\_\_\_  
 Species failure profile Branches  Trunk  Roots  Describe \_\_\_\_\_

### Load Factors

Wind exposure Protected  Partial  Full  Wind funneling  \_\_\_\_\_ Relative crown size Small  Medium  Large   
 Crown density Sparse  Normal  Dense  Interior branches Few  Normal  Dense  Vines/Mistletoe/Moss  \_\_\_\_\_  
 Recent or planned change in load factors \_\_\_\_\_

### Tree Defects and Conditions Affecting the Likelihood of Failure

**— Crown and Branches —**

Unbalanced crown  LCR \_\_\_\_\_ % Cracks  \_\_\_\_\_ Lightning damage   
 Dead twigs/branches  \_\_\_\_\_ % overall Max. dia. \_\_\_\_\_ Codominant  \_\_\_\_\_ Included bark   
 Broken/Hangers Number \_\_\_\_\_ Max. dia. \_\_\_\_\_ Weak attachments  \_\_\_\_\_ Cavity/Nest hole \_\_\_\_\_ % circ.  
 Over-extended branches  Previous branch failures  \_\_\_\_\_ Similar branches present   
**Pruning history** Dead/Missing bark  Cankers/Galls/Burls  Sapwood damage/decay   
 Crown cleaned  Thinned  Raised  Conks  Heartwood decay  \_\_\_\_\_  
 Reduced  Topped  Lion-tailed  Response growth \_\_\_\_\_  
 Flush cuts  Other \_\_\_\_\_  
 Main concern(s) \_\_\_\_\_  
 Load on defect N/A  Minor  Moderate  Significant  \_\_\_\_\_  
 Likelihood of failure Improbable  Possible  Probable  Imminent  \_\_\_\_\_

**— Trunk —**

Dead/Missing bark  Abnormal bark texture/color   
 Codominant stems  Included bark  Cracks   
 Sapwood damage/decay  Cankers/Galls/Burls  Sap ooze   
 Lightning damage  Heartwood decay  Conks/Mushrooms   
 Cavity/Nest hole \_\_\_\_\_ % circ. Depth \_\_\_\_\_ Poor taper   
 Lean \_\_\_\_\_ ° Corrected? \_\_\_\_\_  
 Response growth \_\_\_\_\_  
 Main concern(s) \_\_\_\_\_  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent

**— Roots and Root Collar —**

Collar buried/Not visible  Depth \_\_\_\_\_ Stem girdling   
 Dead  Decay  Conks/Mushrooms   
 Ooze  Cavity  \_\_\_\_\_ % circ.  
 Cracks  Cut/Damaged roots  Distance from trunk \_\_\_\_\_  
 Root plate lifting  Soil weakness   
 Response growth \_\_\_\_\_  
 Main concern(s) \_\_\_\_\_  
 Load on defect N/A  Minor  Moderate  Significant   
 Likelihood of failure Improbable  Possible  Probable  Imminent



## Appendix I. Policies for the Installation and Preservation of Landscaping and Trees on Public Property

### OF RECREATION AND PARKS DEPARTMENT

Official City of Los Angeles Charter June 8, 1999.

#### General Objectives

The urban forest is recognized as a vital infrastructure system essential to the quality of life in the City of Los Angeles. Tree canopy and landscaping are important factors in every neighborhood, enhancing aesthetics, mitigating the heat island effect, improving air quality, reducing stormwater runoff, providing economic, psychological and sociological benefits to all inhabitants. Therefore, planting new trees, which will develop broad canopies, as well as the preservation of mature tree canopy and landscaping shall be considered to be a priority on all park lands.

#### Proposed Improvement Projects

While planting new trees and preserving existing mature trees is a priority on RAP property, not all areas within recreational spaces are suitable for trees and landscaping. Improvement projects may provide opportunities to plant additional trees and optimize tree cover and landscaping; however, trees will only be planted in suitable locations and when resources allow.

Trees and landscaping may be planted in areas adjacent to parkways, on slopes, adjacent to streets, in isolated land remnants, in or adjacent to street frontages abutting public buildings or structures, in median and traffic islands, and on the grounds of public buildings provided that a tree is the right species in the right place and planted for the right reasons.

Parking lots, roofs, plazas and other impervious surfaces are known to contribute to urban heat islands. Narrow planting spaces with limited soil volumes, compaction from pedestrian traffic,

damage from vehicles or vandalism are some examples of the hurdles for trees growing in urban areas. Therefore, planting trees in LA requires thoughtful design and careful selection of tree species.

During construction, if any portion of construction or its staging areas affects existing landscaping, detailed guidelines for tree preservation and protection during construction shall be implemented (see Chapter 4).

#### Authority And Responsibility

##### Within the Recreation And Parks Land

The Los Angeles Department of Recreation and Parks Authority Under City Charter (2018) authorizes the Recreation and Parks Department to manage and control all recreation and park lands (Appendix J). RAP has the power and duty to establish and maintain trees and landscaping in all Recreation and Parks properties.

RAP is responsible for the design, construction, and operations of all Recreation and Parks properties, including tree and site selection.

##### Adjacent Public Buildings and within Their Grounds, Including Parking Lots

RAP has contracts in any given fiscal year with the Fire Department, the Department of General Services, and the Police Department to maintain the landscapes at specific sites. Some landscape services are performed by RAP staff.

#### Removal

Before removal of existing trees is approved, a detailed investigation of all possible alternatives to prevent removal of the trees shall be made. Trees may be permitted for a removal if a tree is:

1. Dead or dying
2. Infested with a pest or pathogen that cannot be feasibly treated
3. Irreparably damaged and/or injured to the extent that it is likely to die
4. Determined to pose an unreasonable risk to public safety

## Replacement of Trees

When healthy, sound trees are removed or damaged (e.g., capital improvement projects), the existing trees' aggregate diameter, measured at breast height (DBH, or 4.5-feet above the ground; multi-trunk trees are to be measured immediately below the lowest trunk) shall be replaced at an equal or greater rate of caliper of new trees. Each one-inch DBH of the existing tree shall be replaced with a minimum one-inch caliper new tree. Replacement trees shall have a minimum caliper of ¼-inch. For example, a single-trunk tree with a DBH of 9 inches may be replaced with 36 trees of ¼-inch caliper, or with 3 trees of 3-inch caliper. This replacement ratio should represent a minimum. All replacement trees shall be healthy and free of kinked, overgrown, or otherwise defective roots.

It is not always feasible to plant replacement trees in the park where the trees were removed nor in surrounding parks. If the replacement ratio cannot be achieved on an individual project, RAP will require payment in lieu of planting (Appendix K). The formula to determine payment will be based on the current market rate to purchase, plant, and care for a 24" box tree for a 3-year establishment period. The 24" box tree will be equal to 2" of replacement diameter at standard height. The money will be put in an account used to procure, plant, and provide supplemental water and maintenance to establish the trees. It may also be used for urban forestry projects and to support training for the Recreation and Parks Forestry Division.

## Tree Selection

Tree species selected for a particular area shall conform to the Recreation and Parks Department Tree Planting, Selection, and Maintenance Guidelines (Appendix L). Deviations in species selection shall be made with the approval of the Recreation and Parks Principal Forester.

Tree species and site selection should balance maximizing environmental benefits and aesthetics with appropriate maintenance levels.

Tree species that will eventually provide a wide canopy and significant shade are preferred in spaces that can support them (i.e., adequate soil volume, no overhead utilities, etc.). Palm species provide fewer environmental benefits and require more frequent maintenance than trees and therefore will only be approved in specific circumstances.

## Biodiversity

There are no native tree species to the urban environment. The use of a combination of both native and non-native species allows for greater opportunity to provide ecosystem services, urban forest cooling, greenspace, and habitat. To enhance biodiversity, trees will be planted in locations that maximize the benefits received. Long-lived and/or low-maintenance trees will be preferred to encourage long-term carbon storage and sequestration. Native species will be planted where appropriate and tree species that are suitable for current and future climates will continue to be explored.

## Removal of Invasive Species and Habitat Restoration

Invasive species can have significant impacts on native ecosystems or plants. Controlling invasive species is important for habitat restoration. Tree species that are considered invasive by the California Invasive Plant Council or determined by RAP arborists may be removed without a permit.

## Maintenance of Trees

Maintenance of landscaping based on the best available arboricultural practices and urban forestry practices using state-of-the-art professional standards for planting, pruning, and general maintenance, including but not limited by use of the most recent management tools shall be the responsibility of the Recreation and Parks Department. Agencies shall develop a maintenance schedule for trees located on lands under their control.

# Appendix J. Los Angeles Department of Recreation and Parks Authority Under City Charter

## DEPARTMENT OF CITY PLANNING

### CITY PLANNING COMMISSION

SAMANTHA MILLMAN  
PRESIDENT

VAHID KHORSAND  
VICE-PRESIDENT

DAVID H. J. AMBROZ  
CAROLINE CHOE

RENEE DAKE WILSON  
KAREN MACK

MARC MITCHELL  
VERONICA PADILLA-CAMPOS  
DANA M. PERLMAN

ROCKY WILES  
COMMISSION OFFICE MANAGER  
(213) 978-1300

## CITY OF LOS ANGELES CALIFORNIA



ERIC GARCETTI  
MAYOR

## EXECUTIVE OFFICES

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LOS ANGELES, CA 90012-4801

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EXECUTIVE OFFICER  
(213) 978-1272

LISA M. WEBBER, AICP  
DEPUTY DIRECTOR  
(213) 978-1274

<http://planning.lacity.org>

Date: December 6, 2018

To: Michael Shull, General Manager, Department of Recreation and Parks  
Frank M. Bush, General Manager, Department of Building and Safety  
Ralph M. Terrazas, Fire Chief, Fire Department  
Gary Lee Moore, City Engineer, Department of Public Works, Bureau of Engineering

From: Vincent P. Bertoni, AICP, Director of Planning 

Subject: Department of Recreation and Parks Authority under City Charter

In response to recent discussions involving management and staff from Department of Recreation and Parks, Department of City Planning and the City Attorney's Office, all parties concur that the City of Los Angeles Charter establishes broad authorization for the Department of Recreation and Parks to pursue parks and recreational facilities located on property owned or controlled by the City for public recreation, including facilities leased to, or operated and/or managed by private operators and any accessory use or building, within the City of Los Angeles. This memorandum does not apply to privately owned and operated park projects. The following Charter Sections (only applicable language listed) provide the aforementioned authority:

### Section 590. Powers and Duties of the Department.

The Department of Recreation and Parks shall have the power and duty:

(a) to establish, construct, maintain, operate and control, wherever located:

- (1) all parks of the City of Los Angeles;
- (2) all recreational facilities, museums, observatories, municipal auditoriums, sports centers and all lands, waters, facilities or equipment set aside or dedicated for recreational purposes and public enjoyment; and
- (3) all property acquired by it or assigned to its jurisdiction for public recreation.

(b) to design, construct and operate, lease, rent or sell concessions or privileges to be exercised for the benefit, education, amusement, convenience or enjoyment of the public, in connection with any function, site or facility under the jurisdiction of the department;

(c) to establish schedules of charges for special services;

(d) to promote public recreation and cooperate with other public agencies and organizations for that purpose; and

(e) to establish, maintain and operate playgrounds or other recreational facilities upon portions of public streets, under terms and conditions provided by ordinance.

Section 591. Board of Recreation and Parks Commissioners.

The Board of Recreation and Park Commissioners shall have the power:

- (a) to control all recreation and park sites;
- (b) to control, appropriate and expend all money in the Recreation and Parks Fund and authorize the City Treasurer to invest any surplus funds under its control in accordance with Section [303\(b\)](#); and
- (c) to organize the work of the department into divisions and to appoint an administrative officer for each division or for any group of divisions.

Section 594. Control and Management of Recreation and Park Lands.

- (a) Management and Control. The Department of Recreation and Parks shall operate, manage and control all property now or hereafter owned or controlled by the City for public recreation, including parks, and shall have power in the name of the City to acquire and take by purchase, lease, condemnation, gift, in trust or otherwise, any and all property necessary or convenient for recreation, including park purposes.
- (b) Acquisition of Property. No real property shall be acquired by the City for recreation sites, including parks, unless first approved by the Board of Recreation and Park Commissioners.
- (c) Restrictions on Transfer of Dedicated Parks. All lands heretofore or hereafter set apart or dedicated as a public park shall forever remain for the use of the public inviolate; but the board may authorize use of the lands for any park purpose, and for.....
- (d) Transfer to Purposes other than Recreation and Park Purposes. No sites under the management and control of the department shall be devoted or transferred to any other purpose in whole or in part, except in compliance with.....

As stated in Section 591 of the Los Angeles Charter, the Board of Recreation and Park Commissioners (Board) has the power to control all City-owned and operated parks and recreational facilities. In addition, all proposed park projects require approval by the Board, thus ensuring consistency with adopted City plans. The Board shall have the authority to determine appropriate locations for park projects, uses associated with park projects, accessory structures and buildings, and any off-street parking to satisfy park project needs. This authorization exempts Department of Recreation and Parks projects, including facilities leased to, or operated and/or managed by private operators and any accessory use or building, from the regulations of [Chapter I of the Los Angeles Municipal Code](#) and any General Provisions and Zoning chapters that may be adopted subsequent to this memorandum, including but not limited to the following:

- A. Use for each zone (Parks and recreational facilities shall be permitted in all zones.)
- B. Restriction for each zone (Parks and recreational facilities, including any accessory use or building, shall be permitted in all zones.)
- C. Area for each zone (The area of each structure and/or building shall not be restricted in all zones.)
- D. Specific Plans
- E. Districts, including Overlays
- F. Off-street parking
- G. Height
- H. Signs



Further, any Department of Recreation and Parks project, including facilities leased to, or operated and/or managed by private operators and any accessory use or building, shall not be subject to any Department of City Planning entitlements for development, including but not limited to the following:

- A. Project Permit Compliance
- B. Zone Change (Changes to zones will continue to be reflected during the community plan update process.)
- C. Conditional Use Permit (The sale of alcoholic beverages for on or off-site consumption requires approval by the RAP Board. Department of Recreation and Parks will be responsible for coordinating directly with the California Department of Alcoholic Beverage Control regarding license authorizations.)
- D. Variance
- E. Adjustment
- F. Site Plan Review
- G. Previously approved entitlements having a Sunset Clause

All other City regulations for development projects, not administered or regulated by Chapter I of the Los Angeles Municipal Code, shall continue to be enforced by each respective City department, unless otherwise stated by said department. All Department of Recreation and Parks projects that require building permits for construction, including tenant improvements, shall be subject to all current building code regulations as enforced by the Department of Building and Safety.

In addition, this memorandum does not supersede any State of California or Federal regulations, including but not limited to, the California Coastal Act (California Government Code Sections 30000-30900), the Subdivision Map Act (California Government Code Sections 66410-66499.58), or the Americans With Disabilities Act.

Finally, the Department of City Planning and the Department of Recreation and Parks will jointly write a Memorandum of Understanding for the purpose of maintaining communication regarding all proposed park projects. Department of Recreation and Parks staff has agreed to convene with Department of City Planning staff on a quarterly basis, as needed, to solicit urban design feedback for all proposed park projects to ensure consistency with applicable design guidelines and adopted plans.



## Appendix K. Payment in Lieu of Planting

It is not always feasible to plant replacement trees in the park where the trees were removed nor in surrounding parks. When such a situation arises, RAP will require payment in lieu of planting. The formula to determine payment will be based on current market rate to purchase, plant, and care for a 24" box tree for 3 year establishment period. The 24" box tree will be equal to 2" of replacement diameter at standard height.

**Definitions.** The definitions provided in this policy shall govern the construction, meaning, and application of words and phrases used in this section.

1. *Recreation and Parks Tree Replacement Policy* shall mean whenever trees are removed, the existing trees' aggregate diameter, measured at breast height (DBH, or 4.5-feet above the ground; multi-trunk trees are to be measured immediately below the lowest trunk) shall be replaced at an equal or greater rate of the caliper of new trees. Each one-inch DBH of an existing tree shall be replaced with a minimum one-inch caliper new tree. Replacement trees shall have a minimum caliper of ¼-inch. For example, a single-trunk tree whose DBH is 9 inches may be replaced with 36 trees of ¼-inch caliper, or with 3 trees of 3-inch caliper. This replacement ratio should represent a minimum. If the replacement ratio cannot be achieved on an individual project, it should be applied on an area-wide basis.
2. Current market rate will be determined by getting bids from Recreation and Parks pre-qualified landscape contractors to procure, plant, and provide supplemental water and tree care for three years. The bids will be averaged out to establish the current market rate for that fiscal year.
3. Supplemental water shall mean twice-a-month visits for three years.
4. Maintenance for Newly Planted Trees:
  - Tree care will consist of providing trees planted in irrigated areas supplemental deep watering twice a month for the whole 3-year period of establishment. The only exception is when we have received normal to high rain for the season. After the rainy season ends the supplemental watering will resume.
  - Tree care will also consist of maintenance of the tree stakes by either adjusting or replacing the tree ties, re-staking, or removal of stakes (when they become unnecessary because the tree is established) during the trees establishment period of three years.
  - Tree care will also consist of maintaining the mulch and weeds within the tree basin. The mulch shall be maintained at 4"-6" depth over the planted root ball and not mounded against the trunk. Weeds shall be hand-pulled and line trimmers shall not be used. Tree guards will be installed at the time of planting to protect the trunk of the young trees and maintained during the establishment period.
5. Pruning shall only be done by an ISA Certified Arborist trained in young tree structural pruning standards.
6. An in-lieu fee is hereby established to cover, at current market rate, the cost to procure, plant and provide supplemental water and tree care for three years for each 24" box tree. Each 24" box tree will account for 2" of replacement DBH to fulfill Recreation and Parks Tree Replacement Policy.
7. The in-lieu fees established in this section shall be placed in the Forestry MRP account and used to procure, plant, and provide supplemental water and maintenance to establish the trees. It may also be used for urban forestry projects and to support training for Recreation and Parks Forestry Division.

## Appendix L. Recreation and Parks Department Tree Planting, Selection, and Maintenance Guidelines

The urban forest, which includes trees in our parks, improves environmental quality and increases the economic, physical, and social health of communities. Urban forests will be important to the quality of life as communities continue to grow in the next decade. Urban forests provide energy benefits, improve air and water quality, and have social benefits such as noise abatement, creation of wildlife habitat, reduction of exposure to ultraviolet light, provision of pleasure, improvement of individual health, provision of jobs and educational opportunities, and increased land value.

The ideal park tree is a shade tree with minimum susceptibility to wind damage and branch drop; does not require frequent pruning; produces slight litter; is deep-rooted; has few serious pest and disease problems; and tolerates a wide range of soil conditions, irrigation regimes, and air pollutants. Few trees have all these traits, it is important to match the tree species to the planting site by determining what issues are most important on a case-by-case basis. A tree list is provided to establish a uniform guiding principle, but is not meant to limit tree selection if another tree is a better choice for the planting site.



**Crew working to trim a tree that has fallen on a car after a storm.**

Our department recognizes a number of factors that should be considered when selecting park trees.

Below is a list of guidelines and recommendations that RAP recognizes as important when selecting and planting park trees:

- The use of California native tree species and trees that are indigenous to the area that have proven to adapt well.
- Trees that conserve water and energy.
- To avoid a monoculture, non-native trees from a diverse species list that represent a minimum ratio of no more than 20 percent of one genera, ten percent of one species, and five percent of one cultivar.
- Trees must be compatible with the climate zone recommended by the current edition of the Sunset Western Garden Book.
- Trees are selected to provide shade. Large trees should be used only when space permits proper branch and root development.
- Trees are selected to provide aesthetics with respect to color, shape, and texture.
- Dense evergreen trees are recommended where windbreaks are desired.
- Tree species that drop fruit or seed pods should not be planted near paved areas used by pedestrians.
- Trees (in their maturity) that will conflict with overhead power lines, lights, underground main water or sewer lines, signs, and buildings shall not be planted.
- Newly planted trees are selected to match water requirements with those of surrounding plants.
- Trees will only be planted in locations where adequate aftercare can be provided.

- Nurseries that provide trees with their natural form intact will be used as suppliers (e.g., those that do not prune remove lower branches).
- Minimum 15-gallon-sized trees are recommended for planting in our parks. Smaller-sized specimens may be considered on slopes.
- A minimum of 30 feet between newly planted trees is required. Denser spacing may be considered for palms or if the density does not interfere with the use of the park or hinder proper tree development and where denser spacing does not affect park programming and will enhance the natural feel of the park (e.g., trees that grow in groves).
- Trees are required to be properly staked with three wooden stakes and cinch ties.
- The possibility of vandalism needs to be considered when planning, planting, and establishing replacement agreements or policies.
- For every hazard tree removed, the replacement ratio is minimum two to one.
- A six-foot diameter tree basin shall be established around all newly planted trees.
- It is recommended trees have root protection barriers installed when rodents are present. Root barriers are always installed according to the manufacturer's specifications.

To establish a compatible climate zone and properly match the palette of tree species for each zone, the locations of city parks are divided into two communities:

### Inland Plant Community and Coastal Plant Community

The Department's arborists, horticulturists, landscaping, and maintenance staff have selected the tree species listed below to be the primary tree palette. Trees on this list have proven to work well in California's temperate climate, require moderate pruning, and are considered to be pest and disease resistant. Other tree species will be considered on an individual basis.

### Climate Change and Species Selection

As a result of climate change, much of California is increasingly vulnerable to longer and more frequent periods of drought. Additionally, the number of days with extreme heat is on the rise. These changes are already having negative effects on tree species that were once successful. These shifts have prompted various research projects to identify how climate change will affect environmental conditions and how tree species may respond to future climatic conditions. Groups like the USDA Forest Service, UC Davis, and local wholesale nursery, Devil Mountain Nursery, are conducting experiments to identify which tree species are "climate ready".

### Federal and State Information for the Region:

- [California's Fourth Climate Change Assessment](#)
- [LA County Extreme Heat and Climate Change](#)

## TREE PALETTE FOR PARKS

Inland Community areas compared to coastal regions have hotter summers and higher levels of air pollution. This region's climate is still mild enough to grow a diverse mix of trees. The ocean influences the Inland Community climate less than 15 percent of the time. The community's boundaries correspond with Sunset Western Garden Book's climate zones 18, 19, 20, and 21.

Scientific Name	Common Name	Tree Type*	Utility Friendly (yes, no)	Hardscape Damage Potential (information unavailable, low, moderate, high)	Edible Fruit (yes)	Wildlife Value (e.g., edible fruit, nectar, pollen, habitat, etc.)
<i>Acacia stenophylla</i>	shoestring acacia	BES	N	L		
<i>Acer paxii</i>	evergreen maple	BES	N	L		
<i>Acrocarpus fraxinifolius</i>	pink cedar	BDL	N	M		
<i>Aesculus californica</i>	California buckeye	BDS	Y	L		
<i>Aesculus x carnea</i>	red horse chestnut	BDM	N	L		
<i>Afrocarpus falcatus</i>	African fern pine	CEM	Y	L	Y	
<i>Agathis robusta</i>	Queensland kauri	BEL	N	H		
<i>Agonis flexuosa</i>	peppermint tree	BES	N	M		
<i>Albizia julibrissin</i>	mimosa; silk tree	BDS	N	M	Y	Nectar, Pollen
<i>Allocasuarina verticillata</i>	coast beefwood; mountain she-oak	CES	N	M		
<i>Angophora costata</i>	gum myrtle	BEL	N	M		Pollen
<i>Araucaria araucana</i>	monkey puzzle tree	CEL	N	M		

**Tree Type:** BDS: Broadleaf Deciduous Small, BDM: Broadleaf Deciduous Medium, BDL: Broadleaf Deciduous Large, BES: Broadleaf Evergreen Small, BEM: Broadleaf Evergreen Medium, BEL: Broadleaf Evergreen Large, CES: Coniferous Evergreen Small, CEM: Coniferous Evergreen Medium, CEL: Coniferous Evergreen Large

<b>Water Use</b> (very low, low, moderate, high)	<b>Minimum Grow Space</b> (feet)	<b>Max Height</b>	<b>Canopy Width</b>	<b>Pests, Diseases</b> (resistant, susceptible)	<b>Other Considerations</b> (e.g., allergen potential, moderate/high BVOC emissions, etc.)
VL	5	30	20	S:Null R:Deer	Allergen potential Moderate BVOC emissions, fast growing and roots may sprout
M	5	35	15–20	S: Armillaria, Root Rot, Verticillium, Invasive Shot Hole Borer, Aphids. R: Deer	Allergen potential
M	>10	70	15–30	S:Null R:Deer	Fast growing, weak branch strength
L	5	25	20–30	S:Armillaria, Phytophthora ramorum/Sudden Oak Death, Invasive Shot Hole Borer, Thrips	Allergen potential, Poisonous
M	>10	50	30–50	S:Chlorosis, Powdery Mildew, Rust, Beetle Borers R:Deer	Allergen potential, Poisonous, weak branch strength
M	>10	65	25–35	S:Null R:Deer	Fruit is resinous
M	>10	150	60–75	S:Null R:Deer	
L	5	35	15–30	S:Phytophthora, Root Rot R:Deer	High BVOC Emitter
M	5	35	20	S:Armillaria, Fusarium, Root Rot, Invasive Shot Hole Borer, Caterpillars R:Deer	Allergen potential
M	5	35	20–35	S:Armillaria, Phytophthora, Root Rot R:Deer	
L	>10	65	30–50	S:Armillaria R:Deer	
M	>10	90	25–35	S:Phytophthora, Root Rot, Sooty Mold, Leaf Spots, Scales R:Deer	

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Araucaria bidwillii</i>	bunya-bunya	CEL	N	M	Y	Fruit
<i>Araucaria columnaris</i>	Cook pine	CEL	N		Y	Fruit
<i>Araucaria cunninghamii</i>	hoop pine	CEL	N	M	Y	Fruit
<i>Araucaria heterophylla</i>	Norfolk Island pine	CEL	N	M	Y	Fruit
<i>Arbutus 'Marina'</i>	Marina strawberry tree	BEM	N	L	Y	Fruit, Nectar, Pollen
<i>Arbutus unedo</i>	strawberry tree	BES	N	L	Y	Fruit, Nectar, Pollen
<i>Banksia integrifolia</i>	coast banksia	CEM	N		Y	Nectar, Pollen
<i>Brachychiton acerifolius</i>	flame bottle tree	BDM	N	M		Pollen
<i>Brachychiton bidwillii</i>	little kurrajong	BDS	Information unavailable	Information unavailable		Pollen, Nectar
<i>Brachychiton discolor</i>	Queensland lacebark; hat tree	BDM	N	M	Y	Fruit
<i>Brachychiton rupestris</i>	narrowleaf bottle tree; Queensland bottle tree	BDM	N	M	Y	Fruit
<i>Caesalpinia (Paubrasilia) echinata</i>	Brazilwood	BES	Information unavailable	Information unavailable		Pollen
<i>Callistemon citrinus</i>	lemon bottlebrush	BES	Y	L		Nectar
<i>Callistemon rigidus</i>	stiff bottlebrush	BES	Y	L		Nectar
<i>Callistemon viminalis</i>	weeping bottlebrush	BES	Y	L		Nectar
<i>Calodendrum capense</i>	Cape chestnut	BDM	N	L		Nectar

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
M	>10	100	20–30	S:Null R:Deer	
M	>10	160	20	S:Mealybugs R:Deer	
M	>10	160	20	S:Phytophthora, Root Rot R:Deer	
M	>10	100	60	S:Null R:Deer	
L-Moist	2	40	30	S:Anthracnose, Phytophthora, Root Rot, Rust, Scales, Thrips R: Armillaria, Deer	
M	5	35	20–35	S:Phytophthora, Root Rot, Rust, Scales, Thrips R:Armillaria	Allergen potential
VL	>10	60	15–30	S:Null R:Deer	
M	>10	60	30–40	S:Null R:Deer	Seeds are edible if cooked, hairs are removed
L, Drought tolerant	Information unavailable	12–15	12		
M	>10	65	30	S:Root Rot R:Deer	Allergen potential
M	>10	40	20–30	S:Root Rot R:Deer	Irritant Seeds can be eaten raw, young stems edible
M, Drought tolerant	Information unavailable	40	40		Thorns, Endangered species
L	5	25	25	S:Chlorosis R:Deer	High BVOC Emitter, Allergen potential, leaves can be used in tea
L	2	20	10	S:Null R:Deer	
L	2	20	15–20	S:Armillaria, Root Rot R:Deer	High BVOC Emitter, Allergen potential
M	5	40	25–40	S:Null R:Deer	



## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Carya illinoensis</i>	pecan	BDL	N	M	Y	Fruit, Pollen
<i>Casimiroa edulis</i>	white sapote	BDM	N	H	Y	Fruit, Pollen
<i>Cassia fistula</i>	golden shower tree; crown of gold tree	BDS	N	L	Y	Pollen
<i>Castanea sativa</i>	Spanish chestnut	BDL	N	L	Y	Fruit, Pollen
<i>Castanospermum australe</i>	Morton Bay chestnut	BEL	N	M	Y	Fruit, Pollen
<i>Casuarina cunninghamiana</i>	river she-oak	BEL	N	L		Habitat
<i>Casuarina equisetifolia</i>	horsetail tree; ironwood	BEL	N	L		Habitat
<i>Cedrus atlantica</i>	Atlas cedar	CEM	N	M		Habitat
<i>Cedrus atlantica 'Glauca'</i>	blue Atlas cedar	CEM	N	M		Habitat
<i>Cedrus deodara</i>	deodar cedar	CEM	N	M		Habitat
<i>Cedrus libani</i>	cedar of Lebanon	CEL	N	L		Habitat
<i>Ceiba speciosa</i>	floss silk tree; kapok	BDM	N	M		
<i>Celtis australis</i>	European hackberry	BDL	N	M	Y	Fruit
<i>Cercis canadensis</i>	eastern redbud	BDS	N	L		Fruit
<i>Cercis canadensis 'Forest Pansy'</i>	Forest Pansy redbud	BDS	N	L		Fruit

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
M	>10	100	70	S:Chlorosis, Mistletoe, Phytophthora, Root Rot, Aphids, Beetle Borers, Beetle Grubs, Caterpillars R:Armillaria, Deer	
M	>10	50	25–30	S:Null R:Deer	Wet fruit
M	5	35	40–75	S:Root Rot, Leaf Spot, Caterpillars R:Deer	Weak branch strength
M	>10	100	50	S:Armillaria, Chlorosis, Phytophthora, Root Rot R:Deer	Allergen potential
M	>10	100	15–40	S:Null R:Deer	Poisonous
L	>10	70	30	S:Phytophthora, Root Rot R:Deer	Allergen potential
L	>10	65	20	S:Armillaria, Phytophthora, Root Rot R:Deer	Allergen potential
M	>10	65	35–50	S:Phytophthora, Root Rot, Sooty Mold R:Deer	
M	>10	60	25–40	S:Phytophthora, Root Rot, Sooty Mold R:Deer	
M	>10	60	20–30	S:Armillaria, Phytophthora, Root Rot, Sooty Mold, Beetle Borers R:Verticillium, Deer	Allergen potential
M	>10	100	80–100	S:Null R:Verticillium, Deer	Allergen potential
L	>10	60	40–50	S:Null R:Deer	Thorns
M	>10	70	40–50	S:Null R:Armillaria, Deer	Allergen potential
M	5	35	25–35	S:Anthracnose, Crown Rot, Armillaria, Phytophthora, Caterpillars, Scales R:Deer	Allergen potential
M	5	30	20–25	S:Anthracnose, Crown Rot, Armillaria, Phytophthora, Caterpillars, Scales R:Deer	Allergen potential

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Cercis canadensis</i> var. <i>texensis</i> 'Oklahoma'	Oklahoma redbud	BDS	Y	L		Fruit
<i>Cercis occidentalis</i>	western redbud	BDS	Y	L		Fruit
<i>Cercocarpus betuloides</i>	mountain mahogany	BES	Y	L		Pollen, Habitat
<i>Chilopsis linearis</i>	desert willow	BDS	N	L		Pollen, Habitat
<i>Chionanthus retusus</i>	Chinese fringe tree	BDS	Y	L		Pollen
<i>Chiranthodendron pentadactylon</i>	Mexican hand tree	BEM	N	H		Pollen, Habitat
<i>Cinnamomum camphora</i>	camphor tree	BEM	N	H		Edible Fruit
<i>Corymbia aparreninja</i>	ghost gum	BEM	N	M		
<i>Corymbia calophylla</i>	redgum; beautiful leaf eucalyptus	BEL	N	M		Edible Fruit, Pollen
<i>Corymbia ficifolia</i>	red flowering gum	BEM	N	M		Edible Fruit, Pollen
<i>Corymbia maculata</i>	spotted gum	BEL	N	M		Pollen
<i>Corymbia torelliana</i>	cadaga	BEL	N	M		Pollen
<i>Cotinus coggygria</i>	smoke tree	BDS	Y	L		Pollen, Edible Fruit
<i>Cryptocarya rubra</i> ( <i>alba</i> )	cryptocarya	BES	N	M	Y	Edible Fruit

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
M	2	15	15	S:Canker, Leaf Spot, Verticillium, Scales R:Deer	
M	2	20	20	S:Crown Rot, Phytophthora, Root Rot, Caterpillars, Scales R:Armillaria, Deer	
VL	2	20	20	S:Null R:Null	Allergen potential
VL	2	30	20	S:Root Rot R:Texas Root Rot, Deer	Allergen potential
M	2	20	12	S:Null R:Deer	Allergen potential, wet fruit
L	>10	60	20–30	S:Null R:Deer	
M	>10	65	50–60	S:Anthracnose, Armillaria, Phytophthora, Root Rot R:Deer	Allergen potential
VL	5	50	20–35	S: Armillaria, Root Rot and Beetle Borers R: Deer, Texas Root Rot, Verticillium	
L	>10	130	50–100	S:Armillaria, Root Rot, Beetle Borers R: Deer, Texas Root Rot, Verticillium	
L	5	45	15–60	S:Armillaria, Phytophthora, Root Rot, Invasive Shot Hole Borer, Beetle Borers, Thrips R:Texas Root Rot, Verticillium, Deer	
L	>10	100	30–40	S:Armillaria, Phytophthora, Root Rot, Beetle Borers, Psyllid R: Texas Root Rot, Verticillium, Deer	High BVOC Emitter
L	>10	90	15–40	S:Armillaria, Phytophthora, Root Rot, Beetle Borers, Thrips, Sooty Mold R: Texas Root Rot, Verticillium, Deer	High BVOC Emitter
L	2	15	18	S:Root Rot, Verticillium R:Armillaria, Deer	Allergen potential
M	5	30	20–30	S:Null R:Deer	

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Cupressus cashmeriana</i>	Kashmir cypress	CEM	N	L		
<i>Dais cotinifolia</i>	pompon tree	BDS	Y	M		Pollen
<i>Dombeya cacuminum</i>	strawberry snowball tree	BEM	N			
<i>Dombeya rotundifolia</i>	South African wild pear	BDS	Y	L	Y	Edible Fruit, Pollen
<i>Dombeya wallichii</i>	pink ball tree	BES	N	M		Nectar
<i>Dracaena draco</i>	dragon tree	BES	Y	L	Y	Edible Fruit
<i>Dracaena spp.</i>	dracaena species					
<i>Ehretia anacua</i>	anacua	BDM	N	Information unavailable	Y	Edible Fruit, Nectar
<i>Ehretia tinifolia</i>	bastard cherry	BES	Information unavailable	Information unavailable	Y	Edible Fruit, Pollen, Nectar
<i>Eriobotrya deflexa</i>	bronze loquat	BES	Y	L		
<i>Eriobotrya japonica</i>	edible loquat	BES	N	L	Y	Edible Fruit, Pollen
<i>Erythrina caffra</i>	kaffirboom coral tree	BDM	N	M		
<i>Erythrina coralloides</i>	naked coral tree	BDS	N	L		
<i>Erythrina crista-galli</i>	cockspur coral tree	BDS	Y	L		
<i>Erythrina falcata</i>	Brazilian coral tree	BDM	N	L		
<i>Erythrina humeana</i>	natal coral tree	BDS	N	L		
<i>Erythrina x sykesii</i>	Australian coral tree	BES	N	L		
<i>Eucalyptus camaldulensis</i>	red gum; river red gum	BEL	N	M		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
M	>10	60	15–20		
L-M, Drought tolerant	2	18	15	S: Pink disease	
L-M, Drought tolerant	5	50	15–25		
M	5	25	15–20		
H	5	30	20	S:Null R:Deer	
L	2	20	15	S:Null R:Texas Root Rot, Deer	Wet fruit
L	Information unavailable	50	20–50		Wet fruit
M	5	10	10		Wet fruit
M	5	25	15–25	S:Fire Blight R: Deer	
M	5	30	15–30	S: Fire Blight, Armillaria, Root Rot	
M	5	40	40–60		Allergen potential
M	5	30	30	S: Sooty Mold, Invasive Shot Hole Borer, Aphids	Allergen potential
M	2	20	15–20	S: Armillaria, Root Rot, Sooty Mold, Aphids, Erythrina Gall Wasp	Allergen potential
L	5	40	20–40		Allergen potential
M	5	30	15–20		Allergen potential
M	5	30	15–20		Allergen potential
L	>10	150	45–105	S: Armillaria, Root Rot, Beetle Borers, Psyllid	High BVOC Emitter, Allergen potential

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Eucalyptus cinearea</i>	silver dollar tree	BEM	N	Information unavailable		
<i>Eucalyptus cladocalyx</i>	sugar gum	BEL	N	M		
<i>Eucalyptus conferruminata</i>	bushy yate; spider gum	BES	Y	L		
<i>Eucalyptus cornuta</i>	yate	BEM	N	M		
<i>Eucalyptus deglupta</i>	rainbow eucalyptus	BEL	N	M		
<i>Eucalyptus erythrocorys</i>	red-cap gum	BES	N	L		
<i>Eucalyptus grandis</i>	flooded gum; rose gum	BEL	N	M		
<i>Eucalyptus leucoxylon</i>	white ironbark	BEL	N	M		
<i>Eucalyptus leucoxylon 'Rosea'</i>	pink flowering gum; pink flowering yellow gum	BEL	N	H		
<i>Eucalyptus macrocarpa 'Rosea'</i>	large-fruit red flowering gum	BES	Y	L		
<i>Eucalyptus megacornuta</i>	warty yate	BES	N	M		
<i>Eucalyptus nicholii</i>	Nichol's willow-leaved peppermint	BEM	N	M		
<i>Eucalyptus parvifolia</i>	small-leaved gum	BEM	N			
<i>Eucalyptus polyanthemos</i>	silver dollar gum	BEL	N	M		
<i>Eucalyptus pulverulenta</i>	silver mountain gum; mealy-white gum	BEM	N			
<i>Eucalyptus punctata</i>	gray gum	BEL	N			
<i>Eucalyptus resinifera</i>	red mahogany	BEL	N			

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
M	5	40-50	20-50		Fast growing
L	>10	90	45-75	S: Armillaria, Phytophthora, Root Rot, Beetle Borers	
L	5	25	15-30	S: Armillaria, Phytophthora, Root Rot, Beetle Borers	
L	>10	65	25-40	S: Armillaria, Phytophthora, Root Rot, Beetle Borers	
H	>10	125	60-80	S: Armillaria, Phytophthora, Root Rot, Beetle Borers	
L	5	30	25	S: Armillaria, Phytophthora, Root Rot, Beetle Borers	High BVOC Emitter
M	>10	250	60-75	S: Armillaria	
L	>10	90	18-60	S: Armillaria, Root Rot, Beetle Borers	
L	5	90	30-60	S: Chlorosis, Armillaria, Phytophthora, Root Rot, Beetle Borers, Thrips	High BVOC Emitter
VL	2	20	20	S: Root Rot, Branch Blight, Aphids, Scale insects	
L	5	30	15	S: Armillaria, Phytophthora, Root Rot, Beetle Borers	
M	>10	50	15-40	S: Armillaria, Root Rot, Beetle Borers	
L, Drought tolerant	5	30-50	30-50		
L	>10	75	15-45	S: Armillaria, Root Rot, Beetle Borers	High BVOC Emitter
L	5	35	15	S: Armillaria, Psyllid	
		100			
		150	50		



## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Eucalyptus robusta</i>	swamp mahogany	BEL	N	M		
<i>Eucalyptus rudis</i>	desert gum; flooded gum	BEM	N	M		
<i>Eucalyptus saligna</i>	Sydney blue gum	BEL	N	M		
<i>Eucalyptus sideroxylon</i>	red ironbark	BEL	N	H		
<i>Eucalyptus spathulata</i>	swamp mallee	BEM	N	L		
<i>Eucalyptus torquata</i>	coral gum	BES	N	L		Fruit
<i>Eucalyptus viminalis</i>	manna gum; ribbon gum	BEL	N	M		
<i>Euphorbia tirucalli</i>	pencil tree	BES	Y	L		
<i>Ficus auriculata</i>	Roxburgh fig	BDS	Y	L		
<i>Ficus benghalensis</i>	banyan fig	BEL	N	M		
<i>Ficus benjamina</i>	weeping fig; Benjamin fig	BEL	N	M		
<i>Ficus carica</i>	edible fig	BDS	N	L	Y	
<i>Ficus drupacea</i>	banyan fig; Mysore fig	BEL	N			
<i>Ficus elastica</i>	rubber tree	BEM	N	H		
<i>Ficus maclellandii</i>	Long leaf fig	BES	Information unavailable	Information unavailable		
<i>Ficus macrophylla</i>	Moreton Bay fig	BEL	N	H	Y	
<i>Ficus microcarpa</i>	Indian laurel fig	BEM	N	M		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
L	>10	75	30–75	S: Armillaria, Phytophthora, Root Rot, Beetle Borers	
L	>10	60	25–40	S: Armillaria, Phytophthora, Root Rot, Beetle Borers, Psyllid, Thrips	High BVOC Emitter, Allergen potential
M	>10	150	85	S: Armillaria, Phytophthora, Root Rot, Beetle Borers	
L	>10	90	30–60	S: Chlorosis, Armillaria, Phytophthora, Root Rot, Beetle Borers, Thrips	High BVOC Emitter
L	5	40	20	S: Armillaria, Phytophthora, Root Rot, Beetle Borers	
VL	5	35	15–30	S: Armillaria, Phytophthora, Root Rot, Beetle borers R: Deer	Allergen potential
M	>10	150	25–50	S: Chlorosis, Armillaria, Phytophthora, Root Rot, Beetle Borers	Moderate BVOC Emitter
VL	2	20	6		Allergen potential
M	5	25	15–25		
H	>10	100	120	S: Sooty Mold, Scales	High BVOC Emitter
M	>10	100	50–60	S:: Root Rot, Sooty Mold, Verticillium, Mealy Bugs, Scales, Spider Mites	High BVOC Emitter
M	5	30	20	S: Canker, Fusarium, Armillaria, Root Rot, Invasive Shot Hole Borer	High BVOC Emitter, Allergen potential
M	>10	110	40		
H	5	45	25–30		
M	5	6–12	4–6	S: Mealy bugs, Scales, Root rot	
M	>10	180	70–130		High BVOC Emitter, Allergen potential
M	>10	35	35–40		High BVOC Emitter, Allergen potential

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Ficus pertusa</i>	Sonoran strangler fig; camichin	BEM	N	H		
<i>Ficus rubiginosa</i>	rustyleaf fig	BEM	N	H		
<i>Ficus sur</i>	Cape fig	BDL	N	H	Y	
<i>Ficus sycomorus</i>	sycamore fig	BEM	N	H	Y	Fruit, Pollen
<i>Fraxinus angustifolia</i> 'Raywood'	Raywood ash	BDM	N	M		
<i>Fraxinus velutina</i>	velvet ash; Arizona ash	BEM	N	H		
<i>Fraxinus velutina</i> 'Modesto'	Modesto ash	BDM	N	H		
<i>Geijera parviflora</i>	Australian willow	BEM	N	L		
<i>Ginkgo biloba</i>	ginkgo	BDM	N	M		
<i>Handroanthus chrysotrichus</i>	golden trumpet tree	BDS	N	M		
<i>Handroanthus heptaphyllus</i>	pink trumpet tree	BDS	N	L		
<i>Harpullia arborea</i>	tulipwood	BEL	N			
<i>Harpullia pendula</i>	Australian tulipwood	BEM	N	L		
<i>Hesperocyparis arizonica</i>	Arizona cypress	CEM	N	L		
<i>Hesperocyparis arizonica</i> var. <i>glabra</i>	smooth Arizona cypress	CEM	N	M		
<i>Hesperocyparis macrocarpa</i>	Monterey cypress	CEM	N	M		
<i>Hesperocyparis macrocarpa</i> 'Lemon Yellow'	Lemon Yellow Monterey cypress	CEL	N	H		Nectar

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
M	>10	60	50–70		
M	>10	50	35–60		High BVOC Emitter
M	>10	100	30–60		
M	Information unavailable	70–115	30–40	S: Powdery mildew, Root rot, Aphids, Whiteflies	
M	>10	50	20–30	S: Root Rot, Sooty Mold, Verticillium, Beetle Borers, Scales, White Fly	Allergen potential
M	>10	50	30–40	S: Mistletoe, Root Rot, Rust, Beetle Borers, Spider Mites, White Fly	Allergen potential
M	>10	30	30–40	S: Mistletoe, Root Rot, Rust, Beetle Borers, Psyllid, Spider Mites, White Fly	Allergen potential
M	5	35	20		Moderate BVOC Emitter
M	>10	65	25	S: Anthracnose	Moderate BVOC Emitter, Allergen potential
M	2	30	25–30		Moderate BVOC Emitter
M	5	30	15–25		
M	Information unavailable	110	40		
M	5	40	15–25		
L	5	40	20	S: Leaf Blight	
L	>10	50	20	S: Branch Blight, Juniper Blight, Caterpillars, Spider Mites	Allergen potential
L	>10	65	15–20	S: Armillaria, Phytophthora, Root Rot, Beetle Borers	
L	>10	65	20	S: Canker	

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Heteromeles arbutifolia</i>	toyon	BES	Y	L		
<i>Hibiscus elatus</i>	Cuban bast; blue mahoe	BEL	N		N	
<i>Hymenosporum flavum</i>	sweetshade	BEM	N	L		
<i>Inga feuillei</i>	ice cream bean tree; pacay	BEM	N		Y	
<i>Jacaranda mimosifolia</i>	jacaranda	BDM	N	L		
<i>Juglans californica</i>	southern California black walnut	BDS	N	M	Y	
<i>Juglans hindsii</i>	northern California black walnut	BDM	N	M	Y	
<i>Juglans nigra</i>	black walnut	BDL	N	H	Y	
<i>Juglans regia</i>	English walnut	BDL	N	M	Y	
<i>Juniperus chinensis 'Torulosa'</i>	Hollywood juniper	CES	Y	L		
<i>Juniperus deppeana</i>	alligator juniper	CEL	N	L		
<i>Juniperus scopulorum</i>	Rocky Mountain juniper	CES	Y	L		Fruit
<i>Kigelia africana</i>	African sausage tree	BEM	N			
<i>Koelreuteria bipinnata</i>	Chinese flame tree	BDM	N	L		
<i>Koelreuteria elegans</i>	flamegold	BDM	N	L		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
L	5	25	15	S: Sudden Oak Death, Armillaria, Root Rot, Scales, Thrips	
	>10	80	60–80		
M	5	35	15–20		
M	5	60	30–60		
M	5	50	15–30	S: Phytophthora, Root Rot, Invasive Shot Hole Borer, Aphids	
M	5	30	15–30	S: Mistletoe, Phytophthora, Root Rot, Sooty Mold, Aphids, Caterpillars	Moderate BVOC Emitter, Allergen potential
M	>10	60	30–60	S: Mistletoe, Phytophthora, Root Rot, Sooty Mold, Aphids, Caterpillars	Moderate BVOC Emitter, Allergen potential
M	>10	100	70	S: Armillaria, Anthracnose, Phytophthora, Root Rot, Beetle Borers, Caterpillars	Moderate BVOC Emitter, Allergen potential
M	>10	100	50–60	S: Bacterial Blight, Canker, Chlorosis, Aphids, Husk Fly, Scales, Spider Mites, Anthracnose	Allergen potential
M	2	15	10	S: Armillaria, Root Rot, Rust, Beetle Borers, Spider Mites	
M	>10	70	20–25	S: Armillaria, Root Rot, Rust, Aphids, Beetle Borers, Spider Mites	Allergen potential
M	5	20	10	S: Texas root rot	
M	>10	50	15–20		Allergen potential
M	5	40	15–30		High BVOC Emitter
M	>10	50	35–50	S: Verticillium, Scales, Root Rot, Canker	

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Koelreuteria paniculata</i>	goldenrain tree	BDM	N	L		
<i>Lagerstroemia indica</i>	crape myrtle	BDS	Y	L		
<i>Lagunaria patersonii</i>	primrose tree	BEM	N	L		
<i>Laurus nobilis</i>	Sweet bay	BEM	N	M		
<i>Leptospermum laevigatum</i>	Australian tea tree	BEM	N	L		
<i>Liriodendron tulipifera</i>	tulip tree	BDL	N			
<i>Lophostemon confertus</i>	Brisbane box	BEM	N	M		
<i>Lyonothamnus floribundus ssp. aspleniifolius</i>	fernleaf Catalina ironwood; Santa Cruz ironwood	BEM	N	M		
<i>Malosma laurina</i>	laurel sumac	BES	Information unavailable	Information unavailable		Pollen, Nectar, Fruit
<i>Melaleuca armillaris</i>	drooping melaleuca	CES	N	L		
<i>Melaleuca linariifolia</i>	flax-leaf paperbark	BES	N	L		
<i>Melaleuca nesophila</i>	pink melaleuca	BEM	N	L		
<i>Melaleuca quinquenervia</i>	cajeput tree	BEM	N	L		
<i>Melaleuca styphelioides</i>	prickly melaleuca	BEM	N	L		
<i>Metasequoia glyptostroboides</i>	dawn redwood	CDL	N	M		
<i>Metrosideros excelsa</i>	New Zealand Christmas tree	CEM	N	M		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
M	5	35	25–40	S: Root Rot, Verticillium, Beetle Borers, Plant Bug, Scales	High BVOC Emitter, Allergen potential
L	2	25	25	S: Leaf Blight, Sooty Mold, Powdery mildew, Aphids	
M	5	50	20	S: Sudden Oak Death, Armillaria, Root Rot, Scales, Thrips, Phytophthora	Allergen potential
M	5	40	15–30	S: Leaf Blight, Phytophthora, Root Rot, Psyllid, Scales	
L	5	30	15–30	S: Chlorosis, Armillaria, Root Rot	
M	>10	90	30–50		
M	5	50	15–25	S: Phytophthora, Root Rot, Scales	High BVOC Emitter
L	5	40	15–20	S: Leaf Blight, Phytophthora	
VL	5	20	20		
M	5	30	15–30	S: Phytophthora, Root Rot	
L	5	30	20–25	S: Chlorosis, Phytophthora, Root Rot	High BVOC Emitter
L	5	30	15–30	S: Sudden Oak Death, Armillaria, Root Rot, Scales, Thrips, Phytophthora	
L	5	40	15–25	S: Phytophthora, Root Rot	High BVOC Emitter, Allergen potential
M	5	40	15–20	S: Sudden Oak Death, Armillaria, Root Rot, Scales, Thrips, Phytophthora	
H	>10	90	15–20		
L	5	35	30–35		High BVOC Emitter



## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Michelia champaca</i>	champaca	BES	Y	L		
<i>Nyssa sylvatica</i>	sour gum; black tupelo	BDM	N	L		
<i>Olea europaea</i>	olive	BES	N	M	Y	
<i>Peltophorum africanum</i>	African wattle; weeping wattle; yellow poinciana	BDM	N	Information unavailable		Pollen
<i>Peltophorum pterocarpum</i>	yellow poinciana; yellow flame tree	BEM	N	L		
<i>Phytolacca dioica</i>	pokeberry	BEM	N	H		
<i>Pinus canariensis</i>	Canary Island pine	CEL	N	M		
<i>Pinus coulteri</i>	Coulter pine	CEL	N	M		
<i>Pinus edulis</i>	pinyon pine	CEM	N	L	Y	
<i>Pinus eldarica</i>	Afghan pine	CEL	N	M		
<i>Pinus halepensis</i>	Aleppo pine	CEM	N	M		
<i>Pinus patula</i>	Jelescote pine	CEL	N	M		
<i>Pinus pinea</i>	Italian stone pine	CEL	N	M		
<i>Pinus ponderosa</i>	ponderosa pine	CEL	N	M		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
M	5	25	15–25	S: Armillaria	
H	>10	50	20–30	S: Fusarium, Phytophthora, Root Rot, Rust	Allergen potential
L	5	30	25–30	S: Armillaria, Phytophthora, Root Rot, Scales, Psyllid, Anthracnose	Allergen potential
M		45	15–20		Poisonous
M	>10	50	30–40		
M	>10	60	40–50		Allergen potential
M	10	80	20–35	S: Armillaria, Phytophthora, Root Rot, Sooty Mold, Aphids, Beetle Borers, Spider Mites	Moderate BVOC Emitter, Allergen potential
M	>10	80	30–40	S: Armillaria, Pitch Canker, Aphids, Beetle Borers	Moderate BVOC Emitter, Allergen potential
L	5	35	20–25	S: Armillaria, Root Rot, Aphids, Scales	Moderate BVOC Emitter, Allergen potential
L	>10	80	15–25	S: Armillaria, Aphids	
M	>10	60	20–40	S: Armillaria, Phytophthora, Root Rot, Pitch Canker, Aphids, Spider Mites	Allergen potential
M	>10	70	20–30	S: Armillaria, Chlorosis, Aphids	Allergen potential
M	10	80	20–40		Allergen potential
L	>10	100	25–30	S: Leaf Blight, Pitch Canker, Red Ring Rot, Pitted Sap Rot, Armillaria, Aphids, California Five Spined Engraver Beetle, IPS, Red Turpentine Beetle	Moderate BVOC Emitter, Allergen potential

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Pinus monophylla</i>	singleleaf pinyon pine	CES	N	L	Y	Fruit
<i>Pinus radiata</i>	Monterey pine	CEL	N	M		
<i>Pinus roxburghii</i>	chir pine	CEL	N	M		
<i>Pinus sabiniana</i>	gray pine	CEL	N	M	Y	
<i>Pinus thunbergii</i>	Japanese black pine	CES	N	M		
<i>Pinus torreyana</i>	Torrey pine	CEM	N	M		
<i>Pistacia chinensis</i>	Chinese pistache	BDM	N	L		
<i>Pistacia x 'Red Push Push'</i>	Red Push pistache	BDM	N	L		
<i>Pittosporum phillyraeoides</i>	willow pittosporum	BES	Y	L		
<i>Pittosporum tenuifolium</i>	tawhiwhi tree; tarata pittosporum	BES	N	L		
<i>Pittosporum tobira</i>	Japanese pittosporum; Japanese cheesewood	BES	Y	L		
<i>Pittosporum undulatum</i>	Victorian box	BEM	N	L		
<i>Pittosporum viridiflorum</i>	Cape pittosporum; Cape cheesewood	BES	Y	L		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
L	5	30	20	S: Verticillium	
M	>10	100	25–35	S: Armillaria, Leaf Blight, Phytophthora, Root Rot, Aphids, Beetle Borers, California Five Spined Engraver Beetle, IPS	Allergen potential
M	>10	80	30–40	S: Armillaria, Aphids	Allergen potential
L	>10	70	15–20	S: Sudden Oak Death, Root Rot, Scams, Thrips, Pitch Canker, Mistletoe, Western Gall Rust, Armillaria, Aphids, California Five Spined Engraver Beetle, IPS	Allergen potential
M	5	30	20–35	S: Armillaria, Aphids	Moderate BVOC Emitter, allergen potential
M	>10	50	20–25	S: Armillaria, Pitch Canker, Aphids, Beetle Borers, Spider Mites	Moderate BVOC Emitter, Allergen potential
L	5	35	25–35	S: Verticillium, Root Rot	Moderate BVOC Emitter, Allergen potential
M	5	40	20–40		
M	5	25	15	S: Leaf Blight, Sooty Mold, Aphids, Scales	Allergen potential
M	5	30	15	S: Leaf Blight, Sooty Mold, Aphids, Scales, Anthracnose	
M	5	25	15	S: Leaf Blight, Phytophthora, Root Rot, Sooty Mold, Aphids, Scales	Allergen potential
M	5	40	30–40	S: Leaf Blight, Sooty Mold, Aphids, Scales	Allergen potential
L	2	20	10	S: Leaf Blight, Sooty Mold, Aphids, Scales	Allergen potential

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Platanus mexicana</i>	Mexican sycamore	BDM	N	M		
<i>Platanus occidentalis</i>	American sycamore	BDL	N	M		
<i>Platanus racemosa</i>	California sycamore	BDL	N	M		
<i>Platanus x hispanica</i>	London plane tree	BDL	N	H		
<i>Podocarpus elongatus</i>	Breede River yellowwood; Cape yellowwood	BEL	N		Y	
<i>Podocarpus henkelii</i>	long-leafed yellowwood	BEM	N	L		
<i>Podocarpus latifolius</i>	real yellowwood	BEM	N	L		
<i>Podocarpus macrophyllus</i>	yew podocarpus; yew pine	BES	N	L		
<i>Podocarpus totara</i>	totara	CES	N	L		
<i>Populus fremontii</i>	Fremont cottonwood	BDL	N	H		
<i>Populus nigra</i>	black poplar	BDL	N	H		
<i>Prunus caroliniana</i>	Carolina cherry laurel	BES	N	L		Fruit
<i>Prunus ilicifolia ssp. Lyonii</i>	Catalina cherry	BES	N	L		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
M	>10	50	30	S: Leaf Blight, Invasive Shot Hole Borer, Beetle Borers, Scales, Spider Mites, , Anthracnose, Powdery mildew	High BVOC Emitter, Allergen potential
M	>10	90	50–70	S: Sooty Mold, Mites, Scales	High BVOC Emitter, Allergen potential
H	10	80	20–50	S: Anthracnose, Armillaria, Phytophthora, Mistletoe, Invasive Shot Hole Borer, Leaf Miner, Scales, Spider Mites	High BVOC Emitter, Allergen potential
M	>10	85	50–70	S: Anthracnose, Powdery Mildew, Invasive Shot Hole Borer, Scales, Spider Mites, Powdery mildew	Allergen potential
M	Information unavailable	90	30–40		
H	5	35	60–75		
M	>10	50	40–45		
M	2	30	20	S: Sooty Mold, Mites, Scales	
M	5	30	18–25		
H	>10	80	30–50	S: Canker, Anthracnos, Crown Rot, Mistletoe, Aphids, Beetle Borers, Beetle Leaves, Caterpillars	High BVOC Emitter, Allergen potential
H	>10	100	15–30	S: Leaf Blight, Stem Canker, Crown Rot, Mistletoe, Invasive Shot Hole Borer, Beetle Borers, Scales, Thrips, Anthracnose	Allergen potential
M	5	15–40	30	S: Armillaria, Fire Blight, Root Rot, Rust, Scales R: Deer	Wet fruit
L		35	20–30	S: Root Rot, Rust, Verticillium, Virus	Wet fruit

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Prunus campanulata</i>	Taiwan cherry	BES	Y	L		Fruit, Pollen
<i>Prunus ilicifolia</i>	hollyleaf cherry	BDS	N	L		
<i>Prunus virginiana</i>	Chokecherry	BDS	N	L		Fruit, Pollen
<i>Pseudotsuga macrocarpa</i>	big-cone Douglas fir	CEM	N	L		
<i>Pterocarya fraxinifolia</i>	Caucasian wingnut	BDL	N	H		
<i>Pterocarya stenoptera</i>	Chinese wingnut	BDL	N	H		
<i>Quercus agrifolia</i>	coast live oak	BEL	N	L		
<i>Quercus alba</i>	white oak	BDL	N	L	Y	
<i>Quercus arizonica</i>	Arizona white oak	BDL	N	Information unavailable		Fruit
<i>Quercus x acutidens</i>	Torrey's oak	BES	Information unavailable	Information unavailable		
<i>Quercus berberidifolia</i>	scrub oak	BES	Y	L		
<i>Quercus bicolor</i>	swamp white oak	BEL	N	M		Fruit
<i>Quercus buckleyi</i>	Texas red oak	BDM	N	L		
<i>Quercus cerris</i>	Turkey oak	BDM	N	L		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
M	5	25	25	S: Armillaria, Phytophthora, Root Rot, Rust, Caterpillars R: Deer	
L	5	30	15–20	S: Armillaria, Root Rot, Rust, Sooty Mold, White Flies, Aphids, Caterpillars	Allergen potential
M	5	30	25	S: Armillaria, Phytophthora, Root Rot, Rust, Caterpillars R: Deer	Allergen, Poisonous
M	>10	65	20–40	S: Armillaria	Moderate BVOC Emitter
M	>10	80	50–65		
M	>10	80	30–50	S: Leaf Blight, Phytophthora, Root Rot, Invasive Shot Hole Borer	Allergen potential
L-Moist	35	70	20–70	S: Sudden oak Death, Crown Rot, Mistletoe, Armillaria, Carpenterworm, Invasive Shot Hole Borer, Goldspotted oak Borer, Aphids	High BVOC Emitter
M	>10	100	60–100	S: Armillaria, Canker, Leaf Spot, Leaf Miner, Caterpillars, Borer, Aphids, Anthracnose	
L	>10	60	30	R: Deer	
M	5	20	20	S: Aphids, Powdery mildew	
VL	2	12	8	S: Armillaria, Root Rot, Coddling Moths	High BVOC Emitter, allergen potential
M	>10	70	50	S: Armillaria, Anthracnose, Phytophthora, Root Rot R: Verticillium, Deer	
M	>10	50	30–50	S: Armillaria, Canker, Leaf Spot, Caterpillars, Borer, Aphids, Scales, Anthracnose	
M	>10	50	30–50	S: Armillaria	



## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Quercus chrysolepis</i>	canyon live oak; maul oak; golden cup oak	BEL	N	M		
<i>Quercus coccinea</i>	scarlet oak	BDL	N	M		
<i>Quercus laurifolia</i>	laurel oak	BDL	N	M		
<i>Quercus lobata</i>	valley oak	BDL	N	M		
<i>Quercus macrocarpa</i>	burr oak	BDL	N	M		
<i>Quercus oblongifolia</i>	Mexican blue oak	BEL	N	M		Fruit
<i>Quercus palustris</i>	pin oak	BEL	N	L		Fruit
<i>Quercus pagoda</i>	cherry bark oak	BDL	Information unavailable			
<i>Quercus polymorpha</i>	Mexican white oak	BDL	N	M		Fruit
<i>Quercus rubra</i>	northern red oak	BDL	N	M		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
L	>10	70	30	S: Leaf Blight, Sudden Oak Death, Crown Rot, Mistletoe, Armillaria, Invasive Shot Hole Borer, Goldspotted Oak Borer, Aphids, Caterpillars	High BVOC Emitter, Allergen potential
M	>10	70	50	S: Armillaria, Caterpillars, Scales	High BVOC Emitter, Allergen potential
M	>10	70	35–45	S: Armillaria, Root Rot, Canker, Leaf Spot, Leaf Miner, Borer, Aphids, Caterpillars	
M	>10	70	50	S: Armillaria, Crown Rot, Mistletoe, Root Rot, Invasive Shot Hole Borer, Beetle Borers, Caterpillars, Insect Galls	Moderate BVOC Emitter, Allergen potential
M	10	80	30	S: Armillaria, Aphids, Spider Mites	Allergen potential
M	>10	70		S: Armillaria, Root Rot, Invasive Shot Hole Borer, Coddling Moths, Mistletoe, Spittlebugs R: Powdery Mildew, Sooty Mold, Sudden Oak Death, Verticillium, Aphids	Allergen potential, Poisonous
M	>10	70	30–40	S: Armillaria, Scales R: Verticillium	
M	>10	100	50	S: Oak wilt, Chestnut blight, Shoestring root rot, Anthracnose, Oak leaf blister, Cankers, Leaf spots, Powdery mildew, Scale, oak skeletonizer, leaf miner, galls, oak lace bugs, borers, caterpillars, nut weevils	
M	>10	60	30–40	S: Oak wilt R: Powdery Mildew, Sooty Mold, Sudden Oak Death, Verticillium, Aphids	Allergen potential, poisonous
M	>10	80	50–70	S: Armillaria, Phytophthora, Root Rot, Aphids, Caterpillars, Insect Galls, Anthracnose	High BVOC Emitter, allergen potential

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Quercus rugosa</i>	netleaf oak	BEM	N	L		Fruit
<i>Quercus shumardii</i>	Shumard oak	BDL	N	M		
<i>Quercus suber</i>	cork oak	BEL	N	M		
<i>Quercus virginiana</i>	southern live oak	BEM	N	M		
<i>Quercus wislizeni</i>	interior live oak	BEL	N	M		
<i>Quillaja saponaria</i>	soapbark tree; quillay	BEM	N	L		
<i>Rhodosphaera rhodanthema</i>	yellow wood	BDM	N			
<i>Robinia 'Purple Robe'</i>	Purple Robe locust	BDM	N	H		
<i>Robinsonella cordata</i>	heartleaf robinsonella	BES	N	L		
<i>Salix alba</i>	white willow	BDL	N	H		
<i>Salix gooddingii</i>	Goodding's willow	BDS	Y	M		
<i>Salix laevigata</i>	polished willow; red willow	BDM	N	H		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
M	>10	60	20–40	S: Root Rot, Scales, Spider Mites, Spittlebugs R: Powdery Mildew, Sooty Mold, Sudden Oak Death, Verticillium, Aphids, Mistletoe	
M	>10	70	40	S: Armillaria, Beetle Borers, Beetle Leaves, Caterpillars, Insect Galls	Allergen potential
L	10	70	70	S: Armillaria, Phytophthora, Root Rot, Invasive Shot Hole Borer	High BVOC Emitter, allergen potential
M	10	80	60–100	S: Armillaria, Phytophthora, Root Rot, Insect Galls	High BVOC Emitter, allergen potential
M	>10	70	40–80	S: Armillaria, Crown Rot, Mistletoe, Caterpillars, Coddling Moths, Insect Galls, White Fly, Powdery mildew	High BVOC Emitter, Allergen potential
L	10	45	15–25		
M	Information unavailable	60	20–35		
L	5	40	20–30	S: Fusarium, Armillaria, Root Rot, Canker, Aphids, Borer, Leaf Miner	
M	2	30	15		
H	>10	80	40–70	S: Willow Blight, Armillaria, Phytophthora, Aphids, Beetle Borers, Caterpillars, Spider Mites, Anthracnose	Allergen potential
H	5	25	15–25	S: Willow Blight, Armillaria, Phytophthora, Invasive Shot Hole Borer, Aphids, Beetle Borers, Caterpillars, Anthracnose	Allergen potential
H	>10	50	15–35	S: Willow Blight, Armillaria, Phytophthora, Invasive Shot Hole Borer, Aphids, Beetle Borers, Caterpillars, Anthracnose	High BVOC Emitter, Allergen potential

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Salix lasiolepis</i>	arroyo willow	BDM	N	H		
<i>Sambucus nigra</i> ssp. <i>Cerulea</i>	Mexican elderberry	BDS	Y	L	Y	
<i>Schinus molle</i>	California pepper tree; Peruvian pepper tree	BEM	N	H		
<i>Spathodea campanulata</i>	African tulip tree	BDL	N	M		
<i>Spathodea campanulata</i> 'Lutea'	yellow African tulip tree	BDL	N	Information unavailable		
<i>Stenocarpus sinuatus</i>	firewheel tree	BES	N	L		
<i>Taxodium distichum</i>	bald cypress	CDL	N	M		
<i>Taxodium mucronatum</i>	Montezuma cypress	CEL	N	M		
<i>Tecoma stans</i>	yellow bells	BES	Y	L		
<i>Thuja occidentalis</i>	American arborvitae	CEM	N	M		
<i>Thuja plicata</i>	western red cedar	CEL	N	M		
<i>Tilia americana</i>	American linden	BDM	N	M		
<i>Tilia americana</i> var. <i>heterophylla</i>	American linden	BDM	N	M		
<i>Tilia cordata</i>	little leaf linden	BDM	N	M		Fruit, Pollen
<i>Tipuana tipu</i>	tipu	BDM	N	M		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
H	5	35	15–25	S: Willow Blight, Armillaria, Phytophthora, Invasive Shot Hole Borer, Aphids, Beetle Borers, Caterpillars, Anthracnose	Allergen potential
M	2	20	20	S: Root Rot, Verticillium, Beetle Borers	Allergen potential
L	>10	50	25–40	S: Armillaria, Phytophthora, Root Rot, Sooty Mold, Aphids, Psyllid, Scales, Thrips	Moderate BVOC Emitter, Allergen potential
M	>10	80	30–60		
M	Information unavailable	25–40	15–20		
M	5	30	15		
M	>10	80	25–35	S: Leaf Blight, Phytophthora, Root Rot, Beetle Borers, Beetle Leaves	Allergen potential
M	>10	80	20–40		
M	5	25	15–20		
M	>10	60	15	S: Armillaria, Phytophthora, Root Rot, Leaf Miner, Spider Mites	Allergen potential
M	>10	70	15–25	S: Armillaria, Root Rot, Beetle Borers, Leaf Miner, Spider Mites	
M	>10	65	20–25	S: Leaf Blight, Root Rot, Sooty Mold, Verticillium, Aphids, Spider Mites, Scales	Allergen potential
M	>10	120	30–60		
M	>10	50	15–30	S: Root Rot, Sooty Mold, Verticillium, Aphids	Allergen potential
M	>10	50	25–50		Moderate BVOC Emitter

## TREE PALETTE FOR PARKS (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Toona ciliata</i>	Australian red cedar	BDL	N			
<i>Triadica sebifera</i>	Chinese tallow tree	BDM	N	M		
<i>Tristaniopsis laurina</i>	water gum	BEM	N	L		
<i>Ulmus 'Frontier'</i>	Frontier elm	BDM	N	H		
<i>Ulmus parvifolia</i>	Chinese elm	BDM	N	M		
<i>Umbellularia californica</i>	bay laurel	BEL	N	M		
<i>Vitex lucens</i>	New Zealand chaste tree; puriri	BEM	N	M		
<i>Wollemia nobilis</i>	Wollemi pine	CEL	N	L		
<i>Zelkova serrata</i>	sawleaf zelkova	BDM	N	M		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests, Disease	Other Considerations
M-H	Information unavailable	65-100	65-100		
M	5	40	25-30		allergen potential
M	10	35	15-30		
M	5	25	30		
M	>10	60	50-70	S: Dutch Elm Disease, Armillaria, Phytophthora, Root Rot, Aphids, Beetle Borers, Beetle Leaves, Caterpillars	Allergen potential
M	>10	75	60-75	S: Armillaria, Sudden Oak Death, White Mottled Rot, Beetle Borers, Leaf Miner, Cottony Cushion Scale, Beetle Leaves, Anthracnose	Moderate BVOC Emitter, Allergen potential
M	>10	50	30-50		
H	>10	130	12	S: Leaf Blight, Phytophthora cinnamomi	
M	>10	65	50-65	S: Dutch Elm Disease, Beetle Leaves, Spider Mites	



## TREE LIST OF CLIMATE READY SPECIES

The climate ready tree list was generated using resources from Devil Mountain Wholesale Nursery and University of California Davis (UC Davis, 2023, Devil Mountain Nursery 2022).

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Acacia aneura</i>	mulga	BES	Y	L		
<i>Acacia cognata</i>	river wattle	BES	Y	L		
<i>Angophora costata</i>	rusty gum	BEM	N	M		
<i>Brachychiton discolor</i>	Queensland lacebark	BDL	N	M		
<i>Casuarina glauca</i>	swamp sheoak	CEM	N	Information unavailable		Fruit
<i>Cedrela fissilis</i>	Brazilian cedar wood	BDM	N	M		
<i>Celtis reticulata</i>	Netleaf Hackberry	BDM	N	L		Fruit
<i>Chilopsis linearis 'Bubba'</i>	Bubba desert willow	BDS	Y	L		Fruit
<i>Corymbia aparrerinja</i>	ghost gum	BEM	N	M		
<i>Corymbia citriodora</i>	lemon scented gum	BEL	N	M		
<i>Dalbergia sissoo</i>	Indian rosewood	BDL	N	M		
<i>Eucalyptus cinerea</i>	silver dollar tree; argyle apple	BEM	N	M		
<i>Eucalyptus erythrocorys</i>	red-cap gum	BES	N	L		Fruit
<i>Eucalyptus neglecta</i>	omeo gum	BEM	N	M		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests and Pathogens	Other Considerations
VL	2	20	15–20	S: Root Rot and Invasive Shot Hole Borer R: Armillaria, Deer	Allergen potential
M	5	25	15–25	R: Deer	Allergen potential
L	>10	65	30–50	R: Armillaria, Deer	
M	>10	65	30	S: Root Rot R: Deer	Allergen potential
L	>10	60			Allergen potential
M	>10	65	25–30	R: Deer	
M	5	50		S: Nipple gall R: Deer	
L	2	20	15	S: Root Rot R: Texas Root Rot, Deer	Moderate BVOC emitter, Allergen potential
VL	5	50	20–35	S: Armillaria, Root Rot, Beetle Borers R: Texas Root Rot, Verticillium, Deer	
L	>10	160	50–100	S: Armillaria, Phytophthora, Root Rot, Beetle Borers, Psyllid, Thrips R: Texas Root Rot, Verticillium, Deer	High BVOC emitter
VL	>10	60	30–40	R: Deer	
M	>10	50	20–40	S: Armillaria, Root Rot and Beetle Borers R: Deer	
L	5	30	15–25	S: Armillaria, Phytophthora, Root Rot, Beetle Borers R: Texas Root Rot, Verticillium, Deer	High BVOC emitter
M	>10	60	40–60	S: Armillaria, Gray Mold, Collar Rot, Crown Gall, Stem Galls, White Aphids, Scale Insects, Powdery Mildew R: Deer	

## TREE LIST OF CLIMATE READY SPECIES (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Eucalyptus platypus</i>	platypus gum	BEM	N	L		
<i>Eucalyptus polyanthemos</i>	silver dollar gum	BEL	N	M		
<i>Eucalyptus prava</i>	orange gum	BEL	N	Information unavailable		
<i>Eucalyptus sideroxylon 'Rosea'</i>	pink ironbark	BEL	N	H		Fruit
<i>Eucalyptus spathulata</i>	swamp mallee	BEM	N	L		
<i>Eucalyptus torquata</i>	coral gum	BEM	N	L		Fruit
<i>Ficus religiosa</i>	bo tree, bodhi tree	BEL	N	M		
<i>Hakea drupacea</i>	sweet hakea	BES	Y	L		
<i>Harpephyllum caffrum</i>	African wild plum	BEM	N	H	Y	Fruit
<i>Hesperocyparis forbesii</i>	Tecate cypress	CES	Y	M		Fruit
<i>Lyonothamnus asplenifolius</i>	Catalina Ironwood	BEM	N	M		Fruit
<i>Mariosousa willardiana</i>	palo blanco	BDS	Y	L		
<i>Olea europaea 'Swan Hill'</i>	swan hill olive	BES	N	M		
<i>Parkinsonia x 'Desert Museum'</i>	Desert Museum palo verde	BDS	Y	L		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests and Pathogens	Other Considerations
VL	5	35	15–35	S: Armillaria, Phytophthora, Root Rot, Beetle Borers R: Texas Root Rot, Verticillium, Deer	
L	>10	75	15–45	S: Armillaria, Root Rot, Beetle Borers R: Texas Root Rot, Verticillium, Deer	High BVOC emitter
L, M	Information unavailable	25–75	25–35		
L	5	90	30–60	S: Chlorosis, Armillaria, Phytophthora, Root Rot, Beetle Borers, Thrips R: Texas Root Rot, Verticillium, Deer	High BVOC emitter
L	5	40	20	S: Armillaria, Phytophthora, Root Rot, Beetle Borers R: Texas Root Rot, Verticillium, Deer	
VL	5	35	15–30	S: Armillaria, Phytophthora, Root Rot, Beetle Borers R: Texas Root Rot, Verticillium, Deer	Allergen potential
M	>10	100	60–100	R: Deer	Allergen potential
VL	2	20	15–20	S: Phytophthora, Root Rot R: Deer	
M	5	50	40–50	R: Deer	Moderate BVOC emitter
VL	5	25	20	R: Deer	Moderate BVOC emitter
L	5	50	25		
VL, drought tolerant	2	20	15	R: Deer	Allergen potential
L	5	30	25–30	S: Armillaria, Phytophthora, Root Rot and Scales, Psyllid, Anthracnose R: Texas Root Rot, Deer	
VL	2	20	20–25	R: Texas Root Rot, Deer	Moderate BVOC emitter

## TREE LIST OF CLIMATE READY SPECIES (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Pistacia chinensis</i> 'Red Push'	red push pistache	BDM	N	L		
<i>Platanus racemosa</i> 'Roberts'	California sycamore 'Roberts'	BDM	N	M		Fruit
<i>Prosopis glandulosa</i> 'Maverick'	Maverick mesquite	BDM	N	L	Y	Fruit
<i>Prunus lyonii</i>	Catalina cherry	BDM	N	L		
<i>Quercus canbyi</i>	Canby's oak	BDM	N	L		
<i>Quercus castaneifolia</i>	Persian oak	BDL	N	L		Fruit
<i>Quercus engelmannii</i>	Engelmann oak; mesa oak	BDL	N	M		Fruit
<i>Quercus fusiformis</i>	escarpment live oak	BEM	N	M		
<i>Quercus gambelii</i>	Gambel oak	BDM	N	M		Fruit
<i>Quercus gravesii</i>	Graves oak	BDM	N	L		
<i>Quercus hypoleucooides</i>	silverleaf oak	BEL	N	M		
<i>Quercus ithaburensis</i>	Mount Tabor oak	BDL	N	M		

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests and Pathogens	Other Considerations
M	5	40	20–40	R: Verticillium, Deer	
M	>10	50	35–40		Allergen potential
L	5	35	25–35	R: Deer	
L	10	35	20–30	S: Root Rot, Rust, Verticillium, Virus	
L	>10	50	30–50	S: Armillaria, Root Rot, Scales, Spider Mites, Anthracnose R: Verticillium, Deer	High BVOC emitter
M	>10	90	30–90	S: Charcoal disease R: Verticillium	
VL	10	65	80–120	S: Armillaria, Crown Rot, Mistletoe, Root Rot, Invasive Shot Hole Borer, Coddling Moths, Insect Galls, Scales	High BVOC emitter
M	10	50	20–40	S: Armillaria, Phytophthora, Live oak Wilt, Root Rot and Insect Galls	High BVOC emitter, Allergen potential
L	5	35	20–30	S: Armillaria, Crown Rot, Mistletoe, Root Rot, Beetle Borers, Caterpillars, Insect Galls, Scales R: Verticillium, Deer	Moderate BVOC emitter, Allergen potential
M	>10	60	35	S: Oak Wilt, Insect Galls	Allergen potential
L	>10	80	20–30	S: Armillaria, Drippy Oak, Root Rot, Scales, Spider Mites, Spittlebugs R: Sooty Mold, Verticillium, Aphids, Mistletoe, Powdery Mildew	Allergen potential
L	>10	60	20–30	S: Root Rot, Mistletoe, Scales, Spider Mites R: Sooty Mold, Sudden Oak Death, Verticillium, Aphids, Powdery Mildew	

## TREE LIST OF CLIMATE READY SPECIES (CONTINUED)

Scientific Name	Common Name	Tree Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Quercus laceyi</i>	lacey Oak	BDM	N	Information unavailable		Fruit, Habitat
<i>Quercus oblongifolia</i>	Mexican blue oak	BEL	N	M		
<i>Quercus rugosa</i>	Mexican netleaf oak; netleaf oak	BEL	N	M		
<i>Quillaja saponaria</i>	soapbark tree	BEM	Information unavailable	Information unavailable		
<i>Quercus tomentella</i>	island live oak	BEM	N	M		
<i>Quercus virginiana</i> 'Skyclimber'	sky climber live oak	BDL	N	M		
<i>Quercus x comptoniae</i>	Compton oak	BDM	N	L		Fruit
<i>x Gordlinia grandiflora</i>	sweet tea	BES	Information unavailable	Information unavailable		Nectar

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests and Pathogens	Other Considerations
L	Information unavailable	30	30	R: Oak Wilt	
M	10	60	20-40	S: Armillaria, Root Rot, Invasive Shot Hole Borer, Coddling Moths, Mistletoe, Spittlebugs R: Sooty Mold, Sudden Oak Death, Verticillium, Aphids, Powdery Mildew	Allergen potential
L	10	60	20-40	R: Powdery Mildew	Allergen potential
L, drought tolerant		25-40	10-15		Poisonous
L	10	50	25-40	S: Armillaria R: Verticillium, Deer	
M	>10	80	60-100	S: Armillaria, Phytophthora, Root Rot, Insect Galls R: Verticillium	High BVOC emitter, Allergen potential
M	5	60	20-40	S: Armillaria R: Verticillium, Deer	
M	Information unavailable	30	15	S: Wilt, Root rot	





## LIST OF PALMS

Scientific Name	Common Name	Palm Type*	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Archontophoenix cunninghamiana</i>	king palm	PEL	N	M		
<i>Brahea aculeata</i>	hesper palm	PEM	Information unavailable	Information unavailable		
<i>Brahea armata</i>	Mexican blue palm	PEM	N	L	Y	
<i>Brahea brandegeei</i>	San Jose hesper palm	PEM	N	M		
<i>Brahea edulis</i>	Guadalupe palm	PES	Y	L	Y	Fruit
<i>Butia capitata</i>	jelly palm	PES	Y	L	Y	Fruit
<i>Butia odorata</i>	pindo palm	PES	Y	L	Y	Fruit
<i>Caryota maxima</i>	fishtail palm; mountain fishtail palm	PEM	N	L		
<i>Caryota urens</i>	fishtail wine palm	PEM	N	L		
<i>Chamaerops humilis</i>	Mediterranean fan palm	PES	Y	L		
<i>Dioon spinulosum</i>	giant dioon	PES	Information unavailable	Information unavailable		
<i>Dypsis decaryi</i>	triangle palm	PES	Y	L		
<i>Jubaea chilensis</i>	Chilean wine palm; syrup palm	PEL	N	M		
<i>Livistona australis</i>	Australian fan palm	PEM	N	M		
<i>Livistona chinensis</i>	Chinese fountain palm	PEM	N	Information unavailable		
<i>Livistona decipiens</i>	ribbon fan palm; weeping cabbage palm	PEM	N	Information unavailable		
<i>Phoenix canariensis</i>	Canary Island date palm	PEM	N	M		

**Palm Type:** PES - Palm Evergreen Small, PEM - Palm Evergreen Medium, PEL - Palm Evergreen Large

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests and Pathogens	Other Considerations
M	5	40–60	8–12	S: Phytophthora, Root Rot, Invasive Shot Hole Borer	
L	Information unavailable	30	15		
L	5	50	15–25	S: Crown Rot R: Texas Root Rot, Deer	
L	>10	50	15–25	R: Texas Root Rot, Deer	
L	5	25	15	R: Texas Root Rot, Deer	
L	5	25	12	S: Root Rot, Scales R: Deer	
L	5	25	15	S: Root Rot, Scales	
H	5	35	16	R: Texas Root Rot, Deer	
H	5	35	16	R: Texas Root Rot, Deer	
L	2	15	15	R: Texas Root Rot, Deer	
M, drought tolerant once established	Information unavailable	7–12	5–7		
M	5	20	15	R: Deer	
L	>10	80	25	R: Texas Root Rot, Deer	
L	>10	50	15	R: Texas Root Rot, Deer	
M	5	40	15	R: Texas Root Rot, Deer	
L		40	20–25		
L	5	60	40	S: Fusarium, Root Rot R: Texas Root Rot, Deer	High BVOC Emmitter, Allergen potential

## PALMS (CONTINUED)

Scientific Name	Common Name	Palm Type	Utility Friendly	Hardscape Damage Potential	Edible Fruit	Wildlife Value
<i>Phoenix dactylifera</i>	date palm	PEL	N	M	Y	Fruit
<i>Phoenix paludosa</i>	Bengal palm	PES	Information unavailable	M	Y	
<i>Phoenix reclinata</i>	Senegal date palm	PEM	N	L		
<i>Phoenix roebelenii</i>	pygmy date palm	PES	Y	L		
<i>Phoenix roebelenii x rupicola</i>	hybrid date palm	PES	Information unavailable	Information unavailable		
<i>Phoenix rupicola</i>	cliff date palm	PEM	Y	L		
<i>Rhapidothymum hystrix</i>	needle palm	PEs	Information unavailable	Information unavailable		
<i>Rhopalostylis baueri</i>	Norfolk Island palm	PEM	N	M		
<i>Roystonea regia</i>	Cuban royal palm	PEL	N	M		
<i>Sabal causiarum</i>	Puerto Rican hat palm; Puerto Rico palmetto	PEM	N	Information unavailable		
<i>Sabal minor</i>	dwarf palmetto	PES	Y	Information unavailable	Y	Fruit
<i>Trachycarpus fortunei</i>	windmill palm	PES	N	L		
<i>Howea forsteriana</i>	Forster sentry palm	PES	Y	L		Fruit

Water Use	Minimum Grow Space	Max Height	Canopy Width	Pests and Pathogens	Other Considerations
L	>10	100	20–40	R: Texas Root Rot, Deer	High BVOC Emmitter, Allergen potential
M–H	Information unavailable	16			
M	5	35	15–20	S: Leaf Spot, Scales R: Deer	
M	2	15	7	S: Leaf Spot, Scales	
H	Information unavailable	13–20	13–28	R: Deer	
M	5	25	15–20		
M	Information unavailable	3–6	3–8		Very hardy
H	>10	50	20	R: Texas Root Rot, Deer	
H	>10	80	15	S: Phytophthora, Root Rot R: Texas Root Rot, Deer	
M	Information unavailable	50	16	S: Leafhoppers, Ganoderma fungus	
M	5	7	10	R: Deer	
L	2	30	10		Allergen potential
M	5	25	10	R: Texas Root Rot, Deer	



## MAINTENANCE FOR NEWLY PLANTED TREES

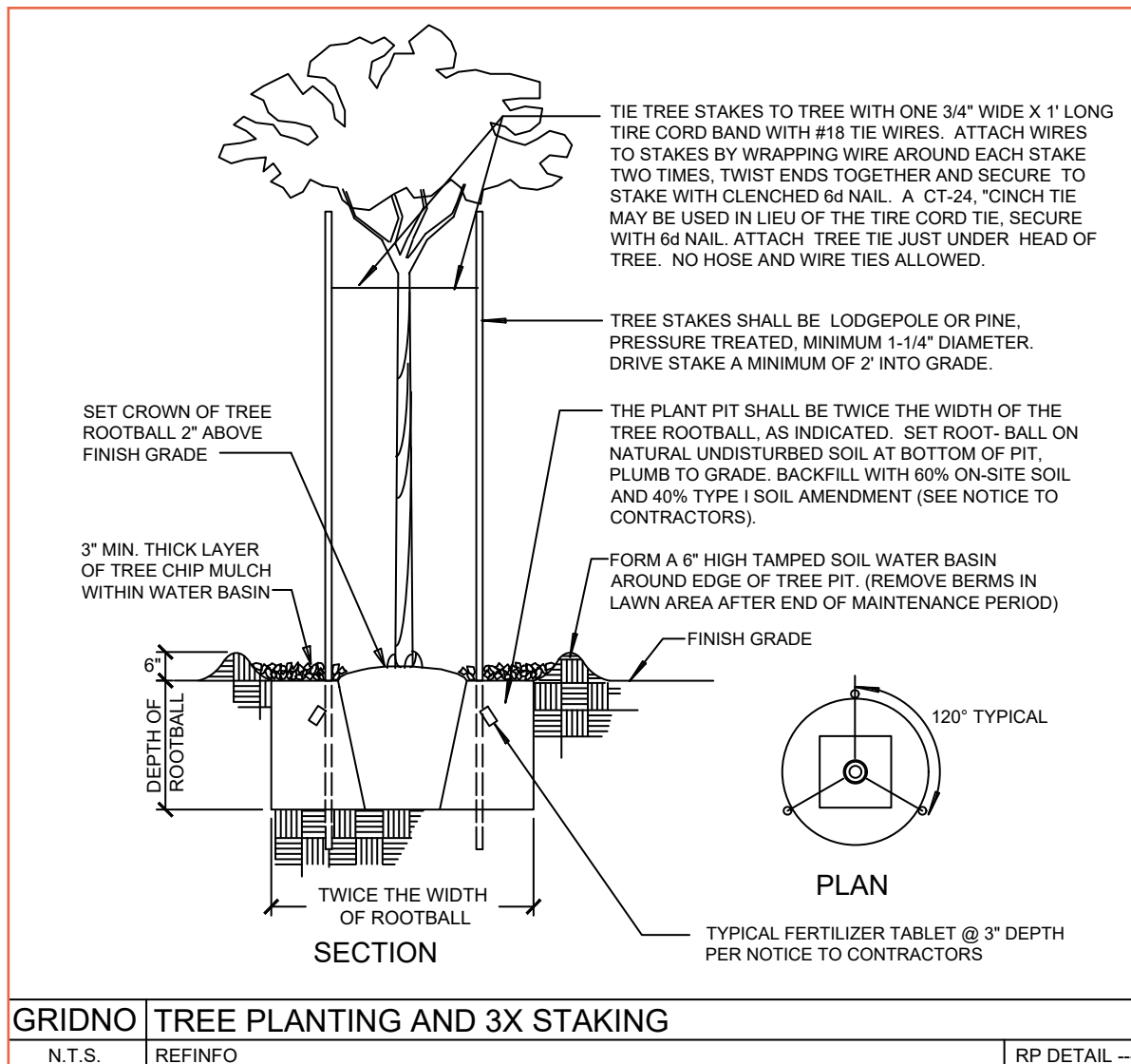
Tree care will include providing trees planted in irrigated areas supplemental deep watering twice a month for the whole three- to five-year period of establishment. The only exception is when we have received normal to high rain for the season. After the season ends, the supplemental watering will resume.

Tree care will also require maintenance of the tree stakes by either adjusting or replacing tree ties, re-staking or removing stakes (because the tree is set) during the tree's establishment period of three years.

Tree care will also include maintaining the mulch and weeds within the tree basin. The mulch shall be maintained at four to six inches of depth over the planted root ball and not mounded against the trunk. Weeds shall be hand pulled and line trimmers shall not be used. Tree guards will be installed at the time of planting to protect the trunk of the young trees and maintained during the establishment period.

Pruning shall only be done by an International Society of Arboriculture Certified Arborist trained in young tree structural pruning standards.

### Tree Planting Specifications





## Appendix M. Nursery Specification for Park Trees for Five-Gallon, 15-Gallon, and 24-Inch Box Container-Grown Trees

### PROPER IDENTIFICATION

All trees shall be true to name as ordered or shown on the planting plans and shall be labeled individually by genus and species and, where appropriate, the cultivar.

### COMPLIANCE

All trees shall comply with federal and state laws and regulations requiring inspection for plant disease, pests, and weeds. Inspection certificates required by law shall accompany each shipment of plants. Clearance from the county agricultural commissioner, if required, shall be obtained before planting trees originating outside the county in which they are to be planted. Even though trees may conform to county, state, and federal laws, the buyer may impose additional requirements.

### TREE CHARACTERISTICS AT THE TIME OF SALE OR DELIVERY

#### Tree Health

As is typical for the species/cultivar, trees shall be healthy and vigorous, as indicated by an inspection for the following:

- Foliar crown density
- Length of shoot growth (throughout crown)
- Size, color, and appearance of leaves
- Uniform distribution of roots in the container media
- Appearance of roots
- Absence of twig and/or branch dieback
- Relative freedom from insects and diseases

**Note:** some of these characteristics cannot be used to determine the health of deciduous trees



RAP employee showing a young tree to volunteers.

during the dormant season.

#### Crown

**Form:** Trees shall have a symmetrical form as is typical for the species/cultivar and growth form.

- **Central Leader:** Trees shall have a single, relatively straight central leader and a tapered trunk, free of codominant stems and vigorous, upright branches that compete with the central leader. Ordinarily, the central leader should not have been headed. However, in cases where the original leader has been headed, an upright branch at least half the diameter of the original leader just below the pruning point shall be present.

**Note:** This section applies to single trunk trees, as typically used for street or landscape planting. These specifications do not apply to plants that have been specifically trained in the nursery (e.g., topiary, espalier, multi-stem, clump, etc. or unique selections, such as contorted varieties).

- **Main Branches (Scaffolds):** Branches should be distributed radially around and vertically along the trunk, forming a generally symmetrical crown typical for the species. Minimum vertical spacing may be specified.
  - » Main branches, for the most part, shall be well-spaced.

- » Branch diameter shall be no larger than half the diameter of the trunk, measured one inch above the branch.
- » The attachment of scaffold branches shall be free of included bark.
- **Temporary Branches:** Unless otherwise specified, small "temporary" branches shall be present along the lower trunk below the lowest main (scaffold) branch, particularly for trees less than one and a half inches in trunk diameter. Temporary branches should be distributed radially around and vertically along the lower trunk. They should be no greater than three eighths of an inch in diameter and no greater than half the diameter of the trunk at the point of attachment. Heading of temporary branches is usually necessary to limit their growth.

### Trunk

Trunk diameter and taper shall be sufficient so that the tree will remain vertical without the support of a nursery stake.

The trunk shall be free of wounds (except properly made pruning cuts), sunburned areas, conks or other fungal fruiting-bodies, wood cracks, bleeding areas, signs of boring insects, galls, cankers, and/or lesions.

Trunk diameter at six inches above the soil surface shall be within the diameter range shown for each container size below:

CONTAINER	TRUNK DIAMETER INCHES	SOIL LEVEL FROM TOP OF CONTAINER INCHES
5 gallon	0.25–0.75	1.25–2
15 gallon	0.75–1.5	1.75–2.75
24-inch box	1.5–2.5	2.25–3

All palm trees shall have a minimum six-foot brown trunk.

### Roots

Long-term root health begins at the nursery. The types of containers that trees are grown in at the nursery can cause circling roots, which can later result in girdling roots and other root issues. Nursery practices such as air pruning can help encourage the branching of roots. In containers such as pioneer pots, roots grow through vertical ribs in the side of the container and are air pruned due to the reduction in humidity outside of the container. Such containerized nursery stock are preferred because research suggests these containers promote greater lateral root growth and result in fewer circling roots (Gilman et al. 2010).

The trunk, root collar (root crown), and large roots shall be free of circling and/or kinked roots. Soil removal near the root collar may be necessary to inspect for circling and/or kinked roots.

The tree shall be well-rooted in the soil mix. When the trunk is carefully lifted, both the trunk and root system shall move as one.

The upper-most roots, or root collar, shall be within one inch above or below the soil surface. The soil level within the container below the rim should be within the distance ranges shown in the table above. When the container is removed, the root ball shall remain intact.

The root ball periphery should be free of large circling and bottom-matted roots. The acceptable diameter of circling peripheral roots depends on species and size of root ball. The maximum acceptable size should be indicated for the species (if necessary).

### Moisture Status

At time of inspection and delivery, the root ball shall be moist throughout, and the tree crown shall show no signs of moisture stress, as indicated by wilt, shriveled or dead leaves, or branch dieback. Roots shall show no signs of being subjected to excess soil moisture conditions, as indicated by root discoloration, distortion, death, or foul odor.



## INSPECTION

The City reserves the right to reject trees that do not meet specifications as set forth in these guidelines or as adopted by the buyer. If a particular defect or sub-standard element or characteristic can be easily corrected, appropriate remedies shall be required. If destructive inspection of root balls cannot be avoided, the buyer and seller should have a prior agreement as to the time and place of inspection, including the minimum number of trees to be inspected (or the percentage of a species or cultivar) and financial responsibility for the inspected trees.

### Guarantee

The successful bidder shall guarantee that the trees meet all of the specifications included in this contract. If a particular defect or sub-standard element or characteristic can be easily corrected, appropriate remedies shall be required. If destructive inspection of root balls is to be done, the City and seller should have a prior agreement as to the time and place of inspection, including the minimum number of trees to be inspected (or the percentage of a species or cultivar) and financial responsibility for the inspected trees.

### Rejection

The City reserves the right to reject trees that do not meet specifications as set forth in this contract or as adopted by the buyer at the time of delivery. The successful vendor shall be responsible for picking up the rejected trees at no cost to the City.

## Appendix N. Training Topics

**Topic 1.** "Understanding the Protected Tree & Shrub Ordinance"

**Topic 2.** "Tree Wounds"

**Topic 3.** "Tree and Turf Association"

**Topic 4.** "Watering Practices"

**Topic 5.** "Mulch and It's Benefits"

**Topic 6.** "Tree Staking"

**Topic 7.** "Maintaining Young Trees"

## UNDERSTANDING THE PROTECTED TREE & SHRUB ORDINANCE

### What Does the City of Los Angeles Ordinance Do?

The Ordinance, as adopted by RAP, states that no protected tree or shrub on RAP property may be relocated or removed without permission from the RAP Board of Commissioners. The term "removal" shall include any act that will cause a protected tree or shrub to die, including, but not limited to, acts that inflict damage upon the root system or other part of the tree or shrub by fire, application of toxic substances, operation of equipment or machinery, or by changing the natural grade of land by excavation or filling the dripline area around the trunk.

### Defining Protected Trees

A protected tree or shrub is any of the following Southern California indigenous tree species, that measures four inches or more in cumulative diameter, four and a half feet above the ground level at the base of the tree, or any of the following Southern California indigenous shrub species that measures four inches or more in cumulative diameter, four and a half feet above the ground level at the base of the shrub.

## Protected Trees:

- Oak tree including valley oak (*Quercus lobata*) and California live oak (*Quercus agrifolia*), or any other tree of the oak genus indigenous to Southern California but excluding the scrub oak (*Quercus berberidifolia*).
- Southern California black walnut (*Juglans californica*)
- Western sycamore (*Platanus racemosa*)
- California Bay (*Umeellularia californica*)

## Protected shrubs:

- Mexican Elderberry (*Sambucus mexicana*)
- Toyon (*Heteromeles arbutifolia*)

The definition shall not include any tree or shrub grown or held for sale by a licensed nursery or trees planted or grown as part of a tree planting program.



Large oak tree with a hollow base.

## TREE WOUNDS

### What Is a Tree Wound?

A wound is a cut or breach in living tissue due to external intrusion. Wounds destroy the cambium layer, which is responsible for tree growth. Cambium, by division, forms new cells on both sides. These new cells are the duct system of trees. Xylem, the inside cells, conduct water and

nutrients from the soil up the stems, and phloem, the outside cells near the bark, conduct organic substances responsible for physiological processes of trees from regions of higher to lower concentration in the tree. Wounds often close but do not heal. When wounds close and do not heal, the wood inside the tree will decay in what appears on the outside a sound tree trunk. Decayed wood loses conductive and storage capabilities.

### Why Do Trees Die from Starvation and Not a Wound?

Trees, like other living things, starve when water, nutrients, and organic substances (food) become limited. Trees also starve when space for storing energy reserves begins to decrease. Decayed wood means no storage.

### How Many Times Can You Wound a Tree Before It Dies?

Trees have a defense system that is called CODIT (Compartmentalization of Decay in Trees). This system develops “internal barriers” that limit the spread of pathogens in trees vertically and horizontally. Trees do not heal, they compartmentalize. Any treatment that breaks the internal boundaries will destroy the tree’s defense system, and the pathogens will spread rapidly. Trees survive as long as they can form new parts in new positions faster than old parts are breaking down. Many wounds create many entries for pathogens; additional strains mean less vigor in developing the defense system. Trees will die if the CODIT does not develop in only one wound thus multiple wounds dramatically increase the potential of trees to die.

### What Are the Pathogens?

Pathogens are microorganisms that cause diseases. Fungi, bacteria, viruses and nematodes are the most common pathogens.

### What Causes Stress and Strain?

Injuries, cuts, burn, soil compaction around roots, over-watering, under-watering, or insect damage are factors that cause stress. Stress is a reversible process. Stress is a condition resulting from disruption, breakage, drain, or shunt of energy. When stress is chronic, the tissues become strained. Strain is an irreversible condition resulting from excessive stress.

### How Do Wounds Occur?

Wounds may occur naturally through self-pruning or can be made inadvertently in the course of normal tree care. The bark of the trunk is the tissue of trees most often subject to mechanical damage, especially in spring and early summer when the cambium is active and the bark is “slipping.” Mowers, string trimmers, rubbing tree stakes and ties, aerating and other equipment bumping into trees, and intentional knife carving debarks trees at any season. Hot coals, chains, and even ropes left tied on tree trunks over time will injure trees.

### How to Prevent Wounds?

The best way to prevent injuries is to place mulch around tree basins to provide distance between operating machinery and tree trunks. Stakes and ties need to be removed before they rub against the bark and girdle the tree. For surfacing roots, place soil over exposed areas.

## TREE AND TURF ASSOCIATIONS

The common association of trees and turf in landscaped areas is a complex competition for resources, such as water, nutrients, and sunlight. Trees and turf grass are commonly grown together in human-made landscapes because of the desire to have both lush, green lawns and the shelter of large shade trees. Grassy lawns with trees are an unnatural ecosystem.

**Tree habitat:** Trees are native to forests, wooded savannas, and riparian areas. Forests provide dense shade that prevents grasses and understory plants from becoming established and competing for available nutrients. Undisturbed topsoils are moist and fertile from the constant decomposition of leaf litter and other organic matter. The soil is porous and loose; conditions are highly favorable for tree root growth. Water and nutrient-absorbing roots occupy the top 12 to 18 inches of topsoil.

**Turf habitat:** Grasses are native to dry and arid prairie settings. They adapt to low water availability by developing dense, aggressive root systems and have the ability to go dormant in periods of drought. The absence of an over-story allows grasses to capture plenty of light to fuel their aggressive growth. Healthy turf requires morning sunlight to optimize growth, health, and stand density. Roots occupy the top 12 inches of topsoil.

### Competition Problems and Maintenance Conflicts

Trees block sun exposure from turf. Therefore, in areas where trees are already well established, grass is often sparse and unhealthy due to lack of sunlight. Some shade-tolerant types are able to get by with less light than others; however, all perform poorly in the heavy shade of a densely canopied tree. Heavy shade conditions can also create temperature and moist conditions that are favorable to turf disease organisms. Some grasses have the ability to produce chemicals that can retard the growth of tree roots, stunting the growth and development of young trees.

Trees that have grass growing up to their trunks will invariably have wounds at the base of the trunk caused by lawnmowers and string-line trimmers. Exposed tree roots that run along the surface of the ground also fall victim to scalping by these machines. Mechanical wounds make a tree more susceptible to decay and insects, which can eventually compromise its health and

structural integrity. Wounds to the trunk remove not only the bark but also tissue just inside of the bark, which is responsible for diameter growth and food transport. When wounds destroy enough of the trunk, the tree is girdled—cut off from its food supply and the tree dies.

Frequent irrigation required to maintain turf in the hot summer months is detrimental to some trees. Water that strikes the tree trunk and collects at the base can cause root and stem rot. High-pressure sprinklers set too close to the trunk will peel off the bark and create wounds that never close.

### Finding Solutions

Instead of struggling to keep your competing trees and turfgrass healthy with heavy inputs of water and fertilizer, the best approach is to eliminate or reduce the competition and conflicts by mimicking the conditions under which these plants grow best in nature. The result will be fewer insect and disease problems, less time and expense in maintenance, and a more attractive, longer-lasting landscape. Here are a few of the ways to accomplish these objectives:

- Designate turf-free areas under the canopies of trees. Turf outside of the tree's canopy area will have ample sunlight, and competition for rooting space within a major portion of the tree's root zone will be eliminated. Remember to establish boundaries according to the ultimate size of the tree, or plan to enlarge the turf-free zone, as the young tree gets larger.
- Mulch with wood chips, bark, or pine straw within the turf-free zone surrounding the trees. The larger the mulched area, the better for the tree. Apply mulch up to six inches deep but avoid piling it directly against tree trunk, which can create moist conditions that can lead to rot or insect invasion of the

tree trunk.

- Before mulching, use herbicides cautiously around trees to kill any dense patches of grass. If grass growth is already suppressed by shade conditions, then mulching alone will most likely eliminate it, much like a tree would in its native environment. Many herbicides used to control weeds in turf are absorbed by tree roots and can severely injure or kill trees.
- Plant shade-tolerant shrubs and ground covers in mulched areas if more "green" is desired under tree canopies. Although these plants also compete with the tree, their root systems are much less aggressive than that of turfgrass. They also are better adapted to living within the shade of trees. Ideally, these plantings should be done while a tree is young. However, if you must plant around mature trees, be careful not to cut large roots or disturb any of the finer feeder roots in the top four to six inches of the soil. Tilling the planting area is not recommended, as it will sever a large portion of those finer roots. Instead, dig individual planting holes using hand tools.
- Supplement water and nutrients to reduce the effects of competition in areas where trees and turfgrass must grow together. You may irrigate turf with sprinklers during dry periods, but avoid wetting the base of tree trunks. Young trees will respond better to occasional deep soakings rather than to the more frequent light watering for turf.

## WATERING PRACTICES

Poor water management is probably the biggest problem suffered by landscape trees. Each species has a different range of maximum and minimum water necessary for survival. An optimal watering should simulate natural climatic patterns of the tree's origin and should follow seasonal changes. Unfortunately, the park trees grow in conflicting environments. Trees and turf are mutually exclusive in nature.

It is rare to see trees growing in grasslands, and grass is not common on the forest floor. Grassy lawns with trees are an unnatural ecosystem as they compete for water and nutrients. They also compete for sunlight and root space underground. However, watering brings the biggest challenge in maintaining a healthy environment for both. This topic will provide tree facts and watering do's and don'ts, which should help to apply attractive and accommodating alternatives in our parks.

### Keeping Roots Healthy

Healthy roots are vital to a tree's survival. Trees absorb water, nutrients, and oxygen through root tips (also called fine roots), of which 85 percent are in the top 18 inches of soil surrounding trees. Roots typically extend beyond the tree canopy dripline, and the majority of trees have a root system extending twice the tree height. Roots eliminate waste carbon dioxide, store food, reduce erosion, produce compounds essential to the plant, and support the above-ground structure.

Damage appearing on the above-ground structure often occurs because roots have been improperly cared for. Roots are often neglected because they grow underground and are not seen. Most healthy trees have beneficial fungi (mycorrhizae or mycorrhizal root tips) growing in or on their roots. Trees need more water in the growing season and warm/hot months when

evapotranspiration is increased. Trees "transpire" water through stomates—small openings mostly occurring in leaves. One isolated tree with a canopy spread of 36 feet may transpire 525 gallons of water per summer day.

Water stress symptoms exhibited by broadleaf trees include wilting of leaves and normally shiny green foliage that becomes faded, dull, or grayish. Growing tips may wilt in the afternoon and recover as evening approaches. Stress is a reversible condition; the sooner the condition is eliminated the better chance for total recovery. Native and drought-tolerant trees benefit from deep, supplemental water at one- or two-month intervals during summer.

### Tree Watering Do's

Water trees around and beyond the dripline, not near the trunk. Water infrequently and deep to encourage a deep root system. Examine trees regularly for symptoms of water stress. For young trees and mature trees showing drought stress, form a basin by creating a berm of soil several inches high that encompasses the dripline of the tree and fill basin with water. Probe the soil to a depth of three feet to monitor soil moisture within the dripline—daily and weekly for young trees and monthly to bimonthly for mature trees. Irrigate trees early morning or just before dawn. Install sprinklers outside the dripline and direct sprinklers away from trunks and canopy.

### Tree Watering Don'ts

Do not underwater, which leads to drought stress. Do not overwater, which is a more common problem in our parks due to trees growing in turf. Excess water excludes oxygen from soil, a vital factor for healthy roots. Excessive water increases probability of soil compaction by closing soil pores essential for root survival. Excessive water in the root zone, especially near the root collar, is a primary cause of root and crown diseases, such as Armillaria, Phytophthora, and Rosellinia.

These fungi-causing diseases are present in many soils but activate damaging effects in moist and/or warm conditions. Do not install sprinklers within the dripline. Avoid sprinklers wetting tree trunks and canopies, especially trees susceptible to fungal diseases.

### Finding an Attractive and Accommodating Alternative

Plant shrubs near trees that have the same water requirements. Mulch trees in groups and individually as far from tree trunks as possible.

Mulch within the tree's dripline is perhaps the most important maintenance recommendation. It will minimize competition with turf, improve moisture content in the soil, and enhance tree health. Learn how to properly apply mulch in the next training topic "Mulch and Its Benefits."

## MULCH AND ITS BENEFITS

Mulching enriches and protects soil, helping to provide a better growing environment for trees. Mulch is simply a protective layer of material that is spread on top of the soil. Mulches can either be organic, such as grass clippings, straw, shredded wood, bark chips, and similar materials or inorganic, such as stones, brick chips, gravel, and plastic. Properly applied mulches, both organic and inorganic, have numerous benefits, including:

- Protecting the soil from erosion.
- Reducing compaction from the impact of heavy rains.
- Conserving moisture, reducing the need for frequent watering.
- Maintaining a more even soil temperature.
- Preventing weed growth.
- Providing a protection zone for trees against accidental equipment damage.

Organic mulches also improve the condition of the soil. As these mulches slowly decompose, they provide organic matter, which helps keep the soil loose. This improves root growth, increases the infiltration of water and also improves the water-holding capacity of the soil. Organic matter is a source of plant nutrients and provides an ideal environment for earthworms and other beneficial soil organisms. In poor soils, organic mulch may cause a nitrogen deficiency caused by wood-decomposing bacteria. In that case, apply nitrogen fertilizer at the minimized rate.

Inorganic mulches have their place in certain landscapes; however, they lack the soil-improving properties of organic mulches. Inorganic mulches, because of their permanence, may be difficult to remove if you decide to change your garden plans at a later date.

### When to Apply Mulch?

Mulch may be applied at any time in our Southern California climate. Mulches moderate the soil temperature by providing an insulating barrier between the soil and the air. This means that a mulched soil in the summer will be cooler than the adjacent unmulched soil while in the winter, the mulched soil may not cool off as deeply. Since mulches slowly decompose, they need to be replenished every two to three years to maintain an effective layer.

### How Much Mulch to Apply?

Mulch groups of trees, trees in planters, individual trees, and all young trees for at least three to five years after planting. Mulch is measured in cubic feet. As an example, if you have an area ten feet by ten feet and you wish to apply six inches of mulch, you would need 50 cubic feet.

### How to Apply Mulch?

Do not apply mulch directly in contact with plants and especially tree trunks. Leave an inch or so of space next to plants and six inches away from tree trunks to help prevent diseases from flourishing from excessive humidity. Remove weeds before spreading mulch. Spread mulch evenly at a thickness of six inches.

Griffith Park's Green Waste Facility produces shredded tree trimming mulch continually, which is always available for distribution throughout city parks. Call 213.485.4826 to request a mulch delivery to your park.

### TREE STAKING

Newly planted trees may need artificial support to prevent excessive swaying in the wind, to promote upright growth, or to guard against mechanical damage.

### Why to Stake Park Trees?

Staking is not always necessary for many trees and can have negative effects on the young trees being planted. Research has shown that staked trees develop smaller root systems and decreased trunk taper. The young trees are often injured by leaving the tree ties on too long or by using metal wire and other unsuitable material for securing the tree to the stake. The decision to stake or not should be determined by the strength of the trunk of the tree being planted, wind conditions, traffic patterns, and maintenance requirements. The proper use of stakes on young trees can lessen or prevent problems that may occur as the tree matures.

Trees with strong trunks may need stakes only to prevent mechanical damage, such as weed eater line girdling, being run into by lawnmowers, and park patron vandalism. The stakes are there to provide stability for the young tree until its roots can expand and grow into the surrounding soil, anchoring it securely.

### How to Stake Park Trees?

The Forestry Division recommends that at least three stakes be used when staking a tree. Stakes should be at least nine to 12 inches from the trunk of the tree. Stake ties should be loose enough to allow the tree to sway with the wind to help develop trunk strength. If the ties are too tight, they will cause weak spots in the trunk that will eventually lead to trunk failure.

The materials used during staking can be either metal or wood. RAP recommends wooden peeler poles that are biodegradable and easily removed when needed. The material used for tying the trees to the stakes should never be metal or wire.

There are many new products on the market that do not damage the tree's bark and can expand with the developing trunk structure. The ties should make a "figure eight" pattern around the trunk and back to the stake, and then nailed to the stake. The ties should be spaced along the trunk of the tree at different heights, not all at one height at the same place on the trunk of the tree.

### How Long to Keep Tree Stakes?

Trees should be staked no longer than two to three years. If the tree is unable to support itself after that time, it should be evaluated for removal and replacement. Tree stakes are for protection—not for support of the tree.

## MAINTAINING YOUNG TREES

Mulching, pruning, watering, staking, and fertilizing affect the growth and development of young trees.



**Park tree casting shade over an empty chair.**

### Why is Mulching Important?

Mulching is the most important post-planting practice that you can do to improve the health and vitality of your landscape plant. Research has shown that wood chip mulch can nearly double plant growth in the first few years after planting. Mulching conserves moisture and insulates roots from heat and cold extremes. Proper mulching provides a well-groomed appearance, eliminates grass or weed competition, and prevents mechanical damage from mowers and weed trimmers. Mechanical damage is one of the leading causes of injury and death to landscape plants.

Mulch groups of trees, trees in planters, young trees for at least three to five years after planting. Mulch is measured in cubic feet. As an example, if you have an area ten feet by ten feet and you wish to apply six inches of mulch, you would need 50 cubic feet. Do not apply mulch directly in contact with plants and especially tree trunks. Leave six inches away from tree trunks to help prevent diseases flourishing from excessive humidity. Remove weeds before spreading mulch. Spread mulch evenly at a thickness of six inches.

Caution must be used when applying mulch since heavy mulching can also be a problem in poorly drained or wet sites where moisture can remain at high levels for extended periods and cause root dieback. In addition, heavy mulch layers encourage tree roots to grow up into the mulch material, which may dry out during long dry periods and cause these roots to die.

### How Much to Prune?

Trees and shrubs should be pruned at planting time to remove branches damaged during handling and transplanting. The main leader on a single-stemmed tree should not be pruned unless it has been damaged. Lower branches should not be removed because they manufacture critically needed food and help to develop a strong trunk caliper. All planted and transplanted trees should be inspected during the first fall and winter after planting and pruned to remove any dead or crossing branches or to improve structure. This pruning period is also an excellent time to inspect the trees for other problems.



### How to Water Young Trees?

Water is critical to the success of any tree or shrub planting. Tree roots, especially the small, water-absorbing roots, are easily damaged during original planting and transplanting. For sufficient water uptake to occur, the root ball of a newly planted tree must be kept moist, but not saturated. Monitor the moisture in the root ball daily, and water as needed so that the root ball does not dry out. The area outside of the root ball also should be watered to encourage root growth into the surrounding soil. Avoid over-watering, which is a major cause of tree failure. Heavy clay soils that have been compacted during construction activities severely restrict the movement of water and commonly lead to saturated conditions.

In areas with fine textured soils, such as those containing high levels of clay or silt, newly planted trees should receive no more than an inch of surface water per week during the growing season. Supplemental watering may not be necessary during periods of adequate rainfall. Water no more than two or three times per week for a total of one inch. Operating automatic lawn irrigation systems for 20 to 30 minutes per day often results in a continuously saturated soil condition, which, in turn, causes severe root damage and tree death.

In sandy soils, water drains more easily, and up to two inches of water per week may be necessary to keep the soil moist. Carefully monitor the moisture level in the root ball of container trees planted in sandy soils. Water does not drain easily from the fine textured soil of the root ball into the surrounding sandy soil, and saturated conditions in the root ball may develop. Use a typical two-foot soil probe to monitor soil moisture in no more than seven-day intervals.

### How to Stake, Tie, and Why to Install Tree Guards?

The purpose of most staking and tying is to prevent the newly planted tree from tipping over in the wind. If at all possible, staking and guying systems should not be used. In windy, exposed areas, this practice is sometimes appropriate. Excessive movement will dislodge the small, fibrous roots from their new footing in the soil before they are firmly established. However, many trees are girdled and killed because guying materials are not removed or are improperly installed.

Staking and guying materials should be strong enough to provide support but flexible enough to allow some movement. Ties should have a broad surface to prevent damage from rubbing. Do not use a wire in a hose. All guying materials should be loosened or removed at the end of the first growing season to prevent trunk girdling. Trees with strong trunks need stakes only to prevent mechanical damage such as weed eater line girdling, being run into by lawnmowers, and park patron vandalism.

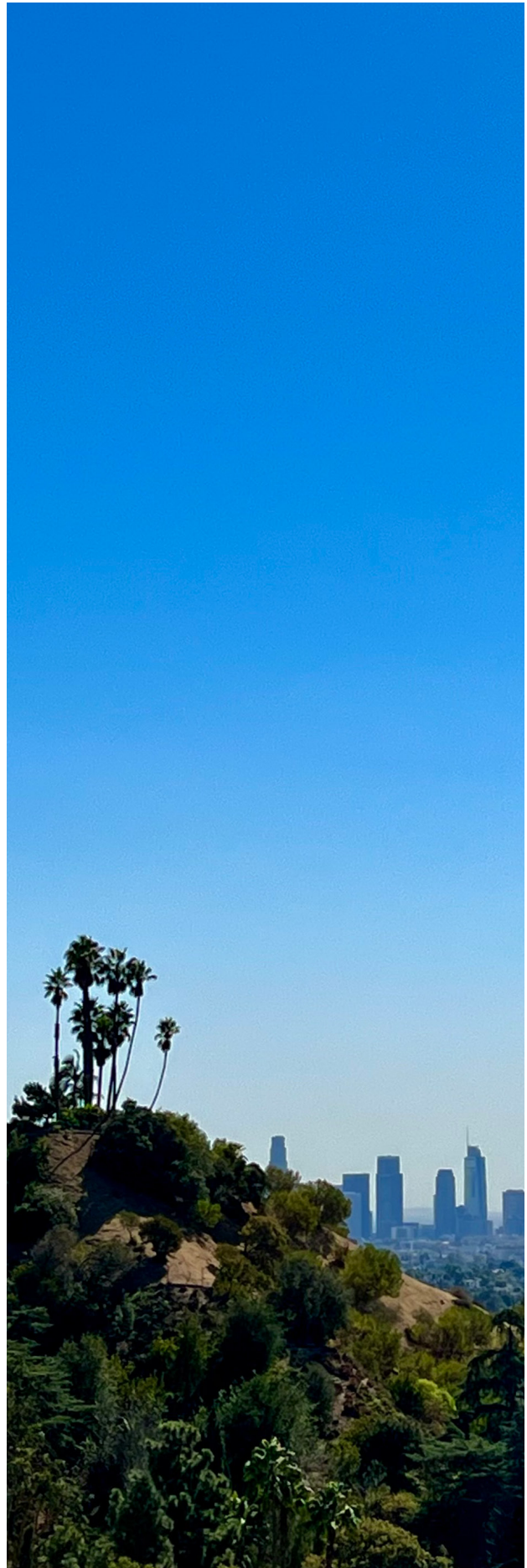
The Forestry Division recommends that at least three stakes be used when staking a tree. They should be at least nine to 12 inches from the trunk of the tree. Stakes should be removed after two to three years. If the tree is unable to support itself after that time, it should be evaluated for removal and replacement. Plastic tree guards can prevent trunk damage from rodents, mowers and weed trimmers. They should be monitored regularly and removed before rubbing or girdling problems occur.

### Should the Young Trees Be Fertilized?

Fertilizers are generally not recommended at planting time since most soils contain sufficient levels of available nutrients to supply the requirements of newly planted landscape trees. Nitrogen fertilizers, in particular, should be avoided because the nitrogen promotes shoot growth over root growth, and re-establishment of the root system is required before a newly planted tree can adequately support new top growth.

Sites with very poor soil, or where construction activities have altered the soil composition, may be deficient in certain nutrients and especially mycorrhizae, which are fungal organisms that have beneficial association with tree roots. They are present in all native soils. Although they do not directly provide nutrients, they greatly increase effective surface area for root absorption of nutrients and water from the soil.

If a tree grows in poor urban soil, shows stress symptoms, and all other tree's requirements are met, most likely this is an indicator of a fungi-sterile soil. Analysis of existing tree roots for the presence of native mycorrhizae fungi may be advisable prior to deciding about the application of mycorrhizal fungal inoculants. If fertilizing applications are needed, fertilizing formula should be slow release. Complete fertilizing with chelate trace of elements and mix at label rates not to exceed four pounds of nitrogen per 100 gallons of water.



## Appendix O. Supplemental Tree Care and Biodiversity

Depending on the sensitivity of the habitat, it may need to be evaluated by a wildlife expert. This will allow RAP to establish an appropriate buffer zone based on the species of wildlife and location. RAP uses discretion when determining the buffer zone. For example, a bird species nesting in a riparian area that is difficult to access would require a larger distance than one adjacent to a path. A "Notice of Exemption" is used when RAP does work around trees during the nesting season.


### LA BUREAU OF ENGINEERING SPECIFICATIONS

In compliance with the Migratory Bird Treaty Act and California Fish and Game Code Sections 3503 and 3503.5, tree removal activities would take place outside of the nesting bird season (February 1 to September 1) to the extent feasible. In accordance with these regulatory requirements, efforts would be made to schedule removal of mature trees between September 2 and January 31 to avoid the nesting bird season. If activities were to occur during the nesting bird season, all suitable habitats would be thoroughly surveyed for the presence of nesting birds by a qualified biologist (or a qualified arborist) within three days prior to any tree removal. If any active nests are detected, the area will be flagged, and a minimum 250 foot (500 foot for raptors) non-disturbance buffer would be established (a modification of this buffer would be determined by the monitoring biologist and in consultation with US Fish and Wildlife Service and California Department of Fish and Wildlife) and would be avoided until the nesting cycle has been completed and the monitoring biologist determines that the nest has fledged.

## TRAINING MATERIALS

### "Why hire a wildlife-trained arborist?"

1




TREE CARE FOR BIRDS  
AND OTHER WILDLIFE

#### Why hire a wildlife-trained arborist?

- Wildlife-trained arborists are familiar with Federal, State and local laws that protect birds, nests, and other wildlife. They are trained to honor these regulations while caring for your trees, and to spare you negative public relations problems.
- Wildlife-trained arborists recognize that wildlife provide vital ecological services to the planet. Their tree care practices and landscape guidance can protect and may even enhance habitat on your property.
- By making your property more beneficial to wildlife, you enrich your city's overall urban forest, and add enjoyment to your life.
- Practices used by wildlife-trained arborists are often better both for the health of your trees as well as your own. Trees on your property, if properly located and managed, by a trained arborist, provide many unseen services. They not only have a lower risk of failure, but save you energy costs, make the air you breath healthier, and contribute to ground water reserves.
- Managing trees for wildlife may save costs.

**DID YOU KNOW**

**BIRDS NEST IN ALL THESE LOCATIONS?**




**YOU CAN HELP WILDLIFE**

- Be especially watchful for nests between February and August, and keep a safe distance from them.
- Use climate-appropriate and wildlife friendly trees and plants.
- Remember that some leaf litter and dead wood is wildlife friendly.
- Keep trees watered during drought.
- Avoid chemicals that reduce helpful insects and other prey, and may harm wildlife.
- Keep cats indoors.


TreeCareForBirds.com

2

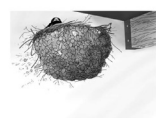
#### Not all nests are the same




Orioles may nest behind palm fronds.




Hummingbirds' nests are about 2".




Mud and stick nests can be found under eaves.



Holes in dead trees become nurseries.



Hawks build large stick nests.



Some eggs are laid in mere scrapes in the ground.

**To learn about laws protecting birds and nests:**  
[www.fws.gov/cno/conservation/MigratoryBirds/BirdNests-final.pdf](http://www.fws.gov/cno/conservation/MigratoryBirds/BirdNests-final.pdf)

**How to find a license arborist in your region:**  
[www.isa-arbor.com/findanarborist/findanarborist.aspx](http://www.isa-arbor.com/findanarborist/findanarborist.aspx)

**Where to learn about climate-suitable plants:**  
[www.nps.org](http://www.nps.org)

**What to do when you find a baby bird or injured animal:**  
[www.songbirdcareandeducation.org/foundababybird.html](http://www.songbirdcareandeducation.org/foundababybird.html)

**Wildlife Protection:**  
[www.tws-west.org](http://www.tws-west.org)

# “Preventing Harm to Wildlife During Tree Care”

1



## Preventing Harm To Wildlife During Tree Care

Almost all bird nests are protected by law. The tree care worker can reduce harm to wildlife, comply with bird regulations, and know how to protect wildlife habitat. Become familiar with the Best Management Practices and other materials at: [www.treecareforbirds.com](http://www.treecareforbirds.com).

### Job Steps Affected by this Topic

- Working during the nesting season vs the non-nesting season.
- Preparation before work begins.
- Actions when safety concerns conflict with wildlife regulations.
- Action when wildlife are accidentally impacted.

### Potential Risks

- Harming wildlife unnecessarily.
- Violation of bird regulations and possible fines.
- Negative public relations.

### Why are Wildlife Important?

Wildlife contribute to the environment. They also rely on trees for their food and homes.

Many laws and regulations exist to protect wildlife. The Federal Migratory Bird Treaty Act of 1918 states that it is against the law to kill or injure native birds, fledglings, eggs or active nests. This includes putting them at risk by scaring parents away from eggs or young.



Immature songbird by Four Oaks

### WILDLIFE EMERGENCIES

If you find injured wildlife or an immature bird out of its nest, call a Wildlife Rehabilitation Center before intervening. Parents are highly likely to continue caring for immature birds when they have fallen out of the nest. It is against the law to take a wild bird home as a pet.



Immature Red-tailed Hawk by David Watkins

Tree Care For Birds and Other Wildlife - [treecareforbirds.com](http://treecareforbirds.com)

Thank you to the primary project funders: The Britton Fund and CAL FIRE Urban and Community Forestry

2

### Project preparation

Be prepared with contact information for a Wildlife Trained Arborist, Wildlife Biologist (with training and experience in ornithology), and a Wildlife Rehabilitation Center.

- Know if work is to be done during the nesting season (Feb.-Aug.) when most birds nest, or outside the nesting season (Sep.- Jan.)
- Consider the quality of the habitat in which work is to occur. High habitat value areas and riparian areas are more likely to have wildlife present. (Figure 1-3)



Figure 1 High habitat value

Riparian areas with or without water all year.



Egrets commonly nest in riparian areas.

Photo by Tom Grey



Figure 2 High habitat value

Large areas with mature trees, some dead trees, and understory vegetation.



Owls are found in high quality habitats where there is good canopy cover.

Photo by Peggy Honda



Figure 3 Low Habitat Value

Areas with large hard surfaces.

Tree Care For Birds and Other Wildlife - [treecareforbirds.com](http://treecareforbirds.com)

Thank you to the primary project funders: The Britton Fund and CAL FIRE Urban and Community Forestry

3

### KNOW WHAT TO LOOK FOR AND WHERE TO LOOK



Figure 5



Figure 6

### Fieldwork

Conduct a pre-work inspection prior to starting work or in the days before the work is scheduled but not more than a week before the work is planned to begin. Look for signs of wildlife and nesting birds in likely locations. (Figure 5 and 6).

If a nest is found, determine whether it has eggs or immature birds (active nest), is an old, abandoned nest, or if it is a large, stick nest which may have special protection law all year.

If an active nest is present, it is best to delay work until the immature wildlife have left the nest. (Wildlife continue to rely on parents in the first few weeks after they have left the nest.) If it is not possible to delay work, consult a Wildlife Trained Arborist or Wildlife Biologist for instructions.

If a nest/wildlife is accidentally injured, contact a Wildlife Rehabilitation Center or Wildlife Biologist. Keep the bird in view, but keep away from it. Avoid handling or relocating it unless directed to do so. It is against the law to take a bird home.

It is illegal for anyone to keep a nest, or any part of a native bird (including feathers) without a permit from the U.S. Fish and Wildlife Service.

For further information about bird nests and permits, contact: U.S. Fish and Wildlife Service Pacific Southwest Region Division of Migratory Birds and Habitat by emailing: [permitsr@mb@fws.gov](mailto:permitsr@mb@fws.gov)

Tree Care For Birds and Other Wildlife - [treecareforbirds.com](http://treecareforbirds.com)

Thank you to the primary project funders: The Britton Fund and CAL FIRE Urban and Community Forestry

4

Look closely for these three hard-to-spot nests



Under palm fronds



Hummingbird nest about 2" in diameter



Holes in dead trunks and limbs

Most nests are protected. Degree of protection depends on the species and location.

To learn more:

<https://www.fws.gov/endangered>



Small, old/abandoned nests can often be removed but should be left in place if possible.



Large stick nests usually have special protection even if abandoned or unoccupied.

Tree Care For Birds and Other Wildlife - [treecareforbirds.com](http://treecareforbirds.com)

Thank you to the primary project funders: The Britton Fund and CAL FIRE Urban and Community Forestry

## Appendix P. Brush Clearance Requirements

Ordinance No. 185789 is followed by RAP and guides maintenance operations in the WUI to prevent fires in sensitive areas. The ordinance prohibits the use of certain metal-cutting blades for brush clearance to prevent sparks and sets penalties for violations with a multi-strike system.

Use the following link to access the ordinance:

[Ordinance No. 185789](#)





## 9.0 Assumptions

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The City of Los Angeles Recreation and Parks Department assumes no responsibility for matters legal in character regarding the Tree Care Manual (see chapter 3). The manual was created to conform to current standards of care, best management practices, established technical specifications, evaluation and appraisal procedures, and sound arboricultural practices as recommended by the sources listed in the “References” section.







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URBAN FOREST  
MANUAL



**2023**  
UPDATE

CITY OF LOS ANGELES  
DEPARTMENT OF RECREATION AND PARKS  
FACILITY REPAIR AND MAINTENANCE COMMISSION TASK FORCE BRIEFING  
December 7, 2023

Park Fee Ordinance Implementation Update

Ordinance 184,505 (Parks Dedication and Fee Update Ordinance) became effective on January 11, 2017. Ordinance 184,505 requires most residential projects that create new dwelling units or joint living and work quarters to dedicate land or to pay a fee in-lieu (Park Fee) for the purpose of developing park and recreational facilities. Residential projects that propose one or more additional dwelling units are subject to these requirements unless they meet one of the exceptions listed in LAMC Section 12.33 C.3 (e.g. certain affordable housing units and secondary dwelling units may be exempt from any requirement to pay a fee).

Pursuant to LAMC Section 12.33 D.1, applicants of residential Subdivision projects with more than fifty (50) residential dwelling units are required to meet with RAP and City Planning prior to submitting a tract map application to City Planning. Per LAMC Section 12.33 D.1, "[t]he purpose of this early consultation is to discuss whether the City requires land dedication for the project and/or to discuss credits available to the applicant, if any."

Applicants of residential subdivision projects of more than 50 units are required to fill out the Early Consultation Meeting Request Form (Attachment 1), and return the completed form to the Department of Recreation and Parks. Following the Early Consultation Meeting, the Department of Recreation and Parks (RAP) will provide written verification of the consultation to the project applicant within 10 days of the meeting. This requirement of verification is mandated by the Los Angeles Municipal Code. Once staff generates a verification letter proving that the applicant has satisfied the Early Consultation meeting requirement, Department of City Planning (DCP) staff can accept an application for a tentative tract map.

LAMC Section 17.03 (Advisory Agency) states in part that, "[t]he Advisory Agency is charged with the duty of making investigations and reports on the design and improvement of proposed subdivisions, of requiring the dedication of land, the payment of fees in lieu thereof, or a combination of both, for the acquisition and development of park and recreation sites and facilities...". The Director of the City Planning Department (City Planning) is designated as the Advisory Agency for the City of Los Angeles and is authorized to act in such capacity through one or more deputies appointed by him or her for that purpose.

Following the filing of a subdivision map and the application being deemed completed by DCP, the proposed map is distributed to the various development departments for review and recommendation proposed conditions that will be included in the subdivision map's Letter of Determination.

LAMC Section 17.04 (Subdivision Committee) states that RAP is to submit a Report to the Advisory Agency for each application for subdivision map approval and that report "shall contain recommendations, approved by the Board of Recreation and Parks Commissioners, specifying the land to be dedicated, the payment of fees in lieu thereof, or a combination of both for the acquisition and development of park or recreational sites and facilities to serve the future inhabitants of such subdivision... "

Once the RAP Board approves the board report, the recommended condition language is forwarded to DCP and included in the staff report for the proposed subdivision. A public Subdivision Committee Hearing is held and the deputized Advisory Agency renders a decision regarding the proposed

subdivision and related staff report. The Advisory Agency may choose to uphold or revise recommended condition language in accordance with the LAMC.

The Early Consultation Tracking Spreadsheet (Attachment 2) exists for RAP staff to track the progress and determinations for subdivision cases that are required to participate in the Early Consultation meeting. The tracking sheet includes proposed project information, the Early Consultation meeting date and other key dates, nearby RAP parks, in-lieu Park Fee payment and land dedication estimates based on when the Early Consultation application was submitted to RAP, RAP Board recommendations, and the Advisory Agency's final determination.

#### LIST OF ATTACHMENTS

- 1) *Early Consultation Application*
- 2) *Early Consultation Spreadsheet*



**APPLICATION**

**DEPARTMENT OF RECREATION AND PARKS  
EARLY CONSULTATION MEETING REQUEST FORM**

*THIS BOX FOR RECREATION AND PARKS STAFF USE ONLY*

Case Number \_\_\_\_\_

Date Application Received \_\_\_\_\_ CD \_\_\_\_\_

Date Meeting Scheduled \_\_\_\_\_ Meeting Held \_\_\_\_\_ DCP Staff \_\_\_\_\_

Application proposes:

- Public Land Dedication       Improvements to Dedicated Land       Private Amenities       Publicly Accessible Amenities
- CD Contacted       RAP Mgmt Review       Verification Letter Sent \_\_\_\_\_ (Staff add letter to file)

***THIS APPLICATION FOR EARLY CONSULTATION IS ONLY FOR DEVELOPMENTS SUBDIVIDING 50 OR MORE UNITS.  
Provide all information requested. Missing, incomplete or inconsistent information will cause delays.  
All terms in this document are applicable to the singular as well as the plural forms of such terms.***

**1. Project Location**

Street Address<sup>1</sup> \_\_\_\_\_ Zip Code \_\_\_\_\_

Legal Description<sup>2</sup> (Lot, Block, Tract) \_\_\_\_\_

Assessor Parcel Number \_\_\_\_\_ Council District \_\_\_\_\_

Project Name (if applicable) \_\_\_\_\_

Existing Zone \_\_\_\_\_ Proposed/Future Zone (if applicable) \_\_\_\_\_

**Type of Subdivision Map:**  Tract     Parcel     None    Map Number (if known) \_\_\_\_\_

**2. Project Description**

Present Use \_\_\_\_\_

Proposed Use \_\_\_\_\_

Project Name (if applicable) \_\_\_\_\_

Describe in detail the characteristics, scope and/or operation of the proposed project \_\_\_\_\_

\_\_\_\_\_

Additional information attached:       YES       NO

Complete and check all that apply:

Proposed Project Information

- Site is undeveloped or unimproved (i.e. vacant)       Site has special designation (e.g. National Historic Register)
  - Site has existing buildings proposed for adaptive reuse
  - Site is located within 2640 ft (1/2 mile) of existing public park(s)       Project will have a Development Agreement
- Park Name(s): \_\_\_\_\_

<sup>1</sup> Street Addresses must include all addresses on the subject/application site (as identified in ZIMAS—<http://zimas.lacity.org>)

<sup>2</sup> Legal Description must include all contiguously owned properties (even if they are not a part of the proposed project site)



Number of Proposed New Market Rate Units	Number of Proposed New Affordable Units	Number of Accessory/Secondary Dwelling Unit	Number of Units to be Demolished as part of this project <sup>3</sup>	Number of Existing Units to Remain

Mixed Use Projects, Amount of Non-Residential Floor Area: \_\_\_\_\_ square feet

Tract Area

Tract area: \_\_\_\_\_ net acres within tract border; \_\_\_\_\_ gross acres. \_\_\_\_\_ net acres after required dedication

**Project Type:**  Condominium  Community Apartment<sup>4</sup>  Stock Cooperative  Apartment  Other \_\_\_\_\_

**3. Applicant Information**

**Applicant<sup>5</sup> name** \_\_\_\_\_

Company/Firm \_\_\_\_\_

Address: \_\_\_\_\_ Unit/Space Number \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code: \_\_\_\_\_

Telephone \_\_\_\_\_ E-mail: \_\_\_\_\_

Are you in escrow to purchase the subject property?  YES  NO

**Property Owner of Record**  Same as applicant  Different from applicant

Name (if different from applicant) \_\_\_\_\_

Address \_\_\_\_\_ Unit/Space Number \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip Code \_\_\_\_\_

Telephone \_\_\_\_\_ E-mail \_\_\_\_\_

**Agent/Representative name** \_\_\_\_\_

Company/Firm \_\_\_\_\_

Address \_\_\_\_\_ Unit/Space Number \_\_\_\_\_

City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_

Telephone \_\_\_\_\_ E-mail \_\_\_\_\_

**Primary Contact for Project Information** Name \_\_\_\_\_ E-mail \_\_\_\_\_

Phone \_\_\_\_\_

**4. Land Dedication Requirements**

As this project has more than 50 units, the **City can require the dedication of land (On-site OR Off-site) for park and recreational purposes.** (LAMC 12.33 C.1)

If a land dedication is required, how does the project propose to meet the requirement:

a. On-site. If on-site, please provide an exhibit showing the proposed location of the on-site land dedication.

b. Off-site

If yes to 4b, has the applicant identified potential off-site locations for a land dedication?

YES  NO

Please provide map showing the potential off-site locations and location addresses

<sup>3</sup> And/or the number of units for which a demolition permit was issued within a year prior to the filing of the project application.

<sup>4</sup>As defined by California Civil Code Section 4105

<sup>5</sup>An applicant is a person with a lasting interest in the completed project such as the property owner or a lessee/user of a project. An applicant is not someone filing the case on behalf of a client (i.e. usually not the agent or representative).

**5. Proposed Park and Recreational Amenities**

- a. Does the proposed project include making improvements to existing public parks?  YES  NO
- b. Does the proposed project include non-publically accessible, privately maintained park or recreational amenities?  YES  NO
- c. Does the proposed project include publicly accessible, privately maintained park or recreational amenities?  YES  NO

**If yes to Question 5. Please describe below.**

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**6. Required Attachments**

- Vicinity Map - A map showing the surrounding area with the project site highlighted from an internet mapping website (ie. Google Maps, MapQuest, etc.)
- Aerial Photograph(s)
- A **County Assessor's Map** or **City Clerk's District Map** or **ZIMAS Map** indicating the property that belongs to the property owner.
- A map showing the proposed on-site land dedication OR a map showing the potential off-site land dedication locations with location addresses

**7. Optional Attachments (if available)**

- Plot Plan
- Proposed Tract Map
- Subdivider Statement
- Topographic Map

- 8. Attachment Size and Number of Copies:** For the Early Consultation Meeting, the applicant must bring the appropriate size and number of copies for staff, as follows:
- a. All attachments must be on 8 1/2 "x11" paper. Any plans provided should include graphic scale and be readable.
  - b. Number of Copies: Three (3) copies shall be provided.

- 9. Additional Information.** If there are circumstances which may further a more complete understanding of the project, do not hesitate to submit additional information, as this is the applicant's primary opportunity to clarify and define the project.

Following the review of this application, the Department of Recreation and Parks will contact the applicant to set up an early consultant with the Department of Recreation and Parks and the Department of City Planning, per LAMC 12.33, Section D.1.



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**APPLICANT INSTRUCTIONS**

**APPLICANT DECLARATION.** A signature from the applicant, whether they are the property owner or not, attesting to the following, is required before the application can be accepted.

- A. I hereby certify that the information provided in this application, including plans and other attachments, is accurate and correct to the best of my knowledge. Furthermore, should the stated information be found false or insufficient to fulfill the requirements of the Department of Recreation and Parks, I agree to revise the information as appropriate and resubmit the application if required.
- B. I understand and agree that any report, study, map or other information submitted to the City in furtherance of this application will be treated by the City as public records which may be reviewed by any person and, if requested, that a copy will be provided by the City to any person upon the payment of its direct costs of duplication.
- C. I understand that the burden of proof to substantiate this request is the responsibility of the applicant.
- D. I understand that there is no guarantee, expressed or implied, that any application will be approved. I understand that each matter must be carefully evaluated and that the resulting recommendation or decision may be contrary to a position taken or implied in any preliminary discussions.
- E. I understand that any requests for credit may only be approved by the Department of Recreation and Parks prior to the approval of the Final Map or prior to the date of final inspection, or the date of the Certificate of Occupancy, whichever is earliest and applicable, and prior to the dedication of land or payment of any park fee. (LAMC 12.33, Section H.4)
- F. I understand that if Park Fees are paid prior to the completion of the recreational credit process, I am not entitled to a refund in Park Fees. (LAMC 12.33, Section H.4)
- G. By my signature below, I declare under penalty of perjury, under the laws of the State of California, that all statements contained in this application and any accompanying documents are true and correct, with full knowledge that all statements made in this application are subject to investigation and that any false or dishonest answer to any question may be grounds for denial of this application.

**Application Filing Process:**

- a. In-person: Applications and additional attachments can be submitted at the Department Public Counter, located at 221 N. Figueroa Street, 4th Floor, Los Angeles, CA 90012.
- b. Via Mail: Applications and additional attachments can be mailed to the following address  
Department of Recreation and Parks  
ATTN: Park Fees  
221 N. Figueroa Street  
4th Floor, Suite 400  
Los Angeles, CA 90012.
- c. Electronically: Applications and additional attachments can be submitted electronically to rap.parkfees@lacity.org.

*The City requires an original signature from the applicant. The applicant's signature below does not need to be notarized.*

Signature: \_\_\_\_\_

Date: \_\_\_\_\_

Print Name: \_\_\_\_\_



#	Applicant	Agent/Representative	Project Case Number	Council District	Community	Project Address	Project Site Size (Acres)	Calculation Assuming Exempt Units Qualify				Calculation Assuming Total Units			Project Description	Number of Proposed Parcels	Nearby Parks (within 1/2 mile)	Early Consultation Meeting						RAP Board Action(s)				Advisory Agency Action (s)		New Residents That Would Be Served by a Park at Project Location (at Improved Std)	On-Hold per DCP (Y/N)	Notes/Comments	
								Non-Exempt Residential Units	Exempt Units (Affordable Housing, Existing Units, etc)	Land Dedication based on Projected Non-Exempt Units (Acres)	Max Potential Park Fee based on Projected Non-Exempt Units (Calculated with the fee rate in effect at the time of EC meeting)	Total Residential Units	Land Dedication (Acres)	Max Potential Park Fee (Calculated with the fee rate effective time of EC application filing)				Date EC Application Received by RAP	Did Applicant file case or DCP prior to EC Meeting? Y/N	Pre-Early Consultation Meeting Date	Date RAP Applied to Set Meeting	EC Meeting Date (scheduled/hold)	Date Verification Letter Sent to Project Applicant	Board Meeting (scheduled/hold)	Approved Board Recommendation	Board Report Number	Advisory Agency Meeting Date	Advisory Agency Recommendation	Date Fees Paid/Land Dedicated				
20	LLJ Adler WCCIL LLC & LLJ Adler Realty Investments, Inc.	Rosenheim & Associates	VTT-74891		Woodland Hills	20920-21051 Warner Center Land & 20931-20971 Burbank Boulevard	23.92	1029	0	7.44	\$12,972,603.00	1029	7.44	\$12,972,603.00		Warner Park	7/6/2017	Yes	N/A	8/15/2017	8/1/2017	8/1/2017	9/6/2017	Land	17-192		2/11/2020	Fees			422	N	
21	TF Shatto, Inc	Irvine & Associates, Inc.	VTT-82171		Koreatown	522-550 South Shatto Place, 3119 West 6th Street	1.17	225	33	1.63	\$2,836,575.00	258	1.87	\$3,252,606.00		Shatto Recreation Center, Lafayette Recreation Center	9/21/2017	No	N/A	9/21/2017	9/25/2017	9/25/2017	8/8/2017	Land or Combination of Land and Fees	18-180		6/26/2019	Fees			0		
22	TF Broadway	Irvine & Associates, Inc.	VTT-82227		Chinatown	942 North Broadway Boulevard	0.29	160	7	1.16	\$2,017,120.00	167	1.21	\$2,105,369.00		Los Angeles State Historic Park	9/21/2017	No	N/A	9/21/2017	9/25/2017	9/25/2017	9/5/2018	Original: Land or Combination of Land and Fees Revised: Fees & Voluntary Easement	18-194, 19-071		1/16/2019	Fees			0	N	Has revised board report # 19-071 (previously 18-194).
23	Forest City Southpark Two, LLC	DLA Piper	VTT-78252		Downtown	949 South Hope Street	3.66	236				236				Grand Hope Park	10/16/2017	Yes	N/A	11/14/2017	11/21/2017	11/21/2017	N/A	This project will no longer be filing a Tract Map with City Planning. Per LAMC 12.33, Projects that do not have Tract Maps cannot be required to a land dedication and, therefore, do not require a report or recommendation from RAP.	N/A	N/A	N/A	N/A	N/A	N/A	0	N	
24	CGI Strategies	Jerome Buckmelter Associates, Inc.	VTT-78212		Koreatown	826 South Mariposa Avenue	0.70	86	12	0.62	\$1,084,202.00	98	0.71	\$1,235,486.00		Seoul International Park, Robert F Kennedy Inspirational Park	11/28/2017	Yes	N/A	12/12/2017	12/19/2017	12/19/2017	2/7/2018	No recommendation approved	18-023		2/20/2018	Fees			0	Y	
25	CGI Strategies	Jerome Buckmelter Associates, Inc.	VTT-78211		Koreatown	837-851 1/2 Fedora Street	0.60	68	7	0.49	\$857,276.00	75	0.54	\$945,525.00		Seoul International Park, Robert F Kennedy Inspirational Park	11/28/2017	Yes	N/A	12/12/2017	12/19/2017	12/19/2017	2/7/2018	No recommendation approved	18-022		3/28/2018	Fees			0		
26	K-1, LLC	Jeremy Chan			Koreatown	2938 West 7th Street	2.01	165	15	1.19	\$2,080,155.00	180	1.30	\$2,269,260.00		Lafayette Recreation Center, Shatto Recreation Center, Macarthur Park, Liberty Park, Normandie Recreation Center	12/6/2017	No	N/A	12/12/2017	12/19/2017	12/19/2017		No recommendation approved							0		
27	1111 Sunset Boulevard, LLC	Brian Falls	VTT-80315		Victor Heights (btw Chinatown and Echo Park)	1111 West Sunset Boulevard	6.27	702	76	5.07	\$8,850,114.00	778	5.62	\$9,808,246.00		Los Angeles State Historic Park, Everett Park, Manion Park, Grand Park	12/6/2017	No	N/A	12/15/2017	12/20/2017	12/20/2017	5/16/2018	Land or Combination of Land and Fees	18-095		12/15/21	Combo Land and Fees or Fees			324	Y	
28	Chris Jones	KPFF	VTT-77149		Koreatown	3800 West 6th Street	1.63	122	0	0.88	\$15,328,054.00	122	0.88	\$15,328,054.00		Shatto Recreation Center, Lafayette Recreation Center	1/8/2018	Yes	2/15/2018	2/23/2018	3/7/2018	3/7/2018	4/4/2018	Land	18-063		12/19/2018	Fees			16,669	N	
29	Joseph Lin	LA Gateway, LLC	VTT-74868		Downtown	911-955 South Georgia Street	3.26	1367	0	9.88	\$17,233,769.00	1367	9.88	\$17,233,769.00		3 Towers for a total of up to 1,367 units and 40,000 sf of commercial uses (Option 1). Option 2 would provide up to 879 units, 1,000 hotel rooms, and 40,000 sf of commercial space	1/25/2018	Yes	2/15/2018	2/15/2018	2/28/2018	2/28/2018	4/4/2018	Fees	18-062		12/19/2018	Fees			272	N	
30	Crown South Hill, LLC	Anne Williams, PSOMAS	VTT-82178		Downtown/South Park	1101-1111 South Hill Street	0.63	494	0	3.57	\$6,227,858.00	494	3.57	\$6,227,858.00		Grand Hope Park	1/31/2018	No	2/15/2018	2/15/2018	2/27/2018	2/27/2018	8/6/2020	Fees	20-158		3/24/2022	Fees			585	Y	
31	three6ixty	Dana Sayles	VTT-78270		West Adams	3101 West Exposition Boulevard	2.20	68	0	0.49	\$857,276.00	68	0.49	\$857,276.00		Leslie Shaw Park, Rancho Cienega	2/9/2018	Yes	2/15/2018	2/16/2018	2/20/2018	2/20/2018	4/4/2018	Fees	18-064		7/26/2018	Fees			5,729	N	
32	Naini Associate	Harvey Goodman	VTT-74933		Montecito Heights	3800 North Pasadena Avenue	1.08	86	15	0.62	\$1,084,202.00	101	0.73	\$1,273,307.00		Greayers Oak Mini Park	2/14/2018	No	3/7/2018	3/14/2018	3/21/2018	3/21/2018	11/7/2018	Fees	18-237		2/19/2020	Fees			0	Y	
33	Lee Consulting Group, LLC	Mee Semcken	TT-82048		Downtown	1150 Wilshire	1.44	140	0	1.01	\$1,819,720.00	140	0	\$1,819,720.00		Valencia Triangle	2/23/2018	Yes	4/11/2018	4/11/2018	4/19/2018	4/19/2018	7/11/2018	Land or Combination of Land and Fees	18-147		11/14/2018	Land or Combination of Land and Fees			917	N	
34	DTLA South Park Properties Propco I & II	Kevin Lindquist	VTT-82109		South Park	1100-1130 South Olive Street	1.90	536	0	3.87	\$6,757,352.00	536	3.87	\$6,757,352.00		Pershing Square	3/20/2018	No	4/11/2018	4/11/2018	4/19/2018	4/20/2018	10/15/2020	Fees	20-204					1,932	Y		
35	DTLA South Park Properties Propco I & II	Kevin Lindquist	VTT-82141		South Park	1100-1130 South Olive Street	1.90	713	0	5.15	\$8,988,791.00	713	5.15	\$8,988,791.00		Pershing Square	3/20/2018	No	4/11/2018	4/11/2018	4/19/2018	4/20/2018							1,932	Y			
36	Belmont Village Senior Living	Mark Armbruster/Todd Neilson	VTT-82107		Westwood	10822 Wilshire Boulevard	1.60	54	0	0.39	\$680,778.00	54	0.39	\$680,778.00		Westwood Recreation Center, Holmby Park	4/11/2018	No	5/23/2018	5/23/2018	5/24/2018	5/25/2018	4/2/2020	Fees	20-053		6/9/2021	Fees			2,049		
37	Berendo Apartments	Sean Mo			Koreatown	950 South Berendo Street	0.41	68	7	0.49	\$857,276.00	75	0.54	\$945,525.00		None	4/12/2018	No	5/10/2018	5/8/2018	5/15/2018	5/15/2018							866		Subdivision map was never filed. a 77 unit project was approved under DIR-2021-9706-TOC-HCA		
38	TF, LLC	Jim Ries	AA-2018-2768; DIR-2018-2770		La Brea	6300 West 3rd Street	7.66	331	0	2.39	\$4,172,917.00	331	2.39	\$4,172,917.00		Carthay Circle Park, Pan Pacific Park	4/16/2018	Yes	5/10/2018	5/10/2018	5/22/2018	5/23/2018									Y	Withdrawn on 9/23/21	
39	1237 7th Street Associates, LLC	Paul Garry			Downtown	1330 West Pico Boulevard, 1308-1346 South Albany Street	2.60	497	62	3.59	\$6,265,679.00	559	4.04	\$7,047,313.00		Toberman Recreation Center	4/20/2018	No	5/10/2018	5/9/2018	5/24/2018	5/29/2018									594		
40	New World/Age 1	Rose Fistrovic	VTT-82170		Downtown	333 Figueroa Street	3.84	257	0	1.86	\$3,239,999.00	257	1.86	\$3,239,999.00		Grand Park	4/19/2018	No	5/10/2018	5/9/2018	5/15/2018	5/15/2018									4,038	Y	Case was Terminated per Letter dtd 5/21/21
41	Venice Hope Group, LLC	Alex Irvine	VTT-82213		South Park	1601-1618 South Flower Street, 1601-1623 South Hope Street, and 440-426 West Venice Boulevard	5.03	250	0	1.81	\$3,151,750.00	250	1.81	\$3,151,750.00		Venice Hope Park (non-RAP)	4/24/2018	No	5/10/2018	5/10/2018	5/23/2018	5/23/2018	6/5/2019	Fees	19-120						2,863	Y	
42	Our Lady of Lebanon - St. Peter Maronite Catholic Church - LA Real Estate Trust	Katherine Casey	VTT-82229		Mid City	331-333 South San Vicente Boulevard; 8531-8555 West Burton Way	0.71	136	17	0.98	\$1,714,552.00	153	1.11	\$1,928,871.00		Poinsettia Recreation Center	5/4/2018	No	6/5/2018	6/5/2018	2/19/2019	2/19/2019	6/19/2019	Land or Combination of Land and Fees	19-134		2/16/2022	Land Dedication or Fees			5,210	Y	

#	Applicant	Agent/Representative	Project Case Number	Council District	Community	Project Address	Project Site Size (Acres)	Calculation Assuming Exempt Units Qualify				Calculation Assuming Total Units				Project Description	Number of Proposed Parcels	Nearby Parks (within 1/2 mile)	Early Consultation Meeting						RAP Board Action(s)				Advisory Agency Action (s)		New Residents That Would Be Served by a Park at Project Location (at Improved Std)	On-Hold per DCP (Y/N)	Notes/Comments				
								Non-Exempt Residential Units	Exempt Units (Affordable Housing, Existing Units, etc)	Land Dedication based on Projected Non-Exempt Units (Acres)	Max Potential Park Fee based on Projected Non-Exempt Units (Calculated with the fee rate in effect at the time of EC meeting)	Total Residential Units	Land Dedication (Acres)	Max Potential Park Fee (Calculated with the fee rate effective time of EC application filing)	Date EC Application Received by RAP				Did Applicant file case of DCP prior to EC Meeting? Y/N	Pre-Early Consultation Meeting Date	Date RAP Applied to Applicant to Set Meeting	EC Meeting Date (scheduled/hold)	Date Verification Letter Sent to Project Applicant	Board Meeting (scheduled/hold)	Approved Board Recommendation	Board Report Number	Advisory Agency Meeting Date	Advisory Agency Recommendation	Date Fees Paid/Land Dedicated								
43	MOB Hotels & Compagnie, LLC c/o Compagnie de Phalsbourg	Kira Teshima	VTT-82191		1 Chinatown	641-675 1/2 North Spring Street	2.30	289	0	2.09	\$3,643,423.00	289	2.09	\$3,643,423.00	Demolition of (e) improvements and construction, use, and maintenance of mixed-use development comprising of 26 stories and an amenity roof deck for a maximum height of 282 feet, 4 inches to the top of the elevator overrun with 294 dwelling units, 149 guest rooms, 10,664 SF of shared amenities, and 15,878 sq ft of commercial floor area	Grand Park		5/2/2018	Yes	6/5/2018	6/7/2018	6/14/2018	6/15/2018	7/11/2018	Land or Combination of Land and Fees	18-145							15	Y			
44	Morrison Hotel, LLC and Morrison Residential	Alfred Fraijo Jr.	VTT-82183		14 South Park/Downtown	1220 South Hope Street	1.29	100	0	0.72	\$1,260,700.00	100	0.72	\$1,260,700.00	Adaptive reuse and expansion of an existing SRO hotel into a 473 guest room hotel with 19,441 square feet of restaurant and retail space, 8,075 square feet of meeting space	Grand Hope Park		5/2/2018	No	6/5/2018	6/7/2018	6/13/2018	6/13/2018	9/1/2022	Fees	22-227							2,234	Y			
45	MCAF Vine LLC	Edgar Khalatian	VTT-82152		13 Hollywood	1720-1770 North Vine Street, 1746-1780 North Hvar Avenue, 1733 and 1741 Argyle Avenue and 6236, 6270, and 6334 West Yucca Street	4.46	872	133	6.30	\$10,993,304.00	1005	7.26	\$12,670,035.00	Construct a mixed-use project consistent with measure JJJ to convert parking lots with 672 market-rate dwelling units and 133 senior affordable housing units	Yucca Community Center, Griffith Park		5/4/2018	Yes	6/5/2018	6/15/2018	6/19/2018	6/26/2018	8/8/2018	Land or Combination of Land and Fees	18-181	8/26/2020						1,120	N			
46	Eco Tower, LLC	Francis Park/Park & Velayos LLP	VTT-82158		14 South Park	1201, 1205, 1215 South Grand Avenue, 410 West 12th Street	0.58	312	0	2.26	\$3,933,384.00	312	2.26	\$3,933,384.00	A 40-story building with 312 residential condominiums - approximately 7,100 sq ft of office floor area, and 6,225 sq ft of retail uses and related parking	Grand Hope Park		5/22/2018	No	6/5/2018	6/7/2018	6/13/2018	6/13/2018	11/18/2021	Land or Fees	21-200							2,240	Y			
47	Ecto Homes, Inc./Carl Steinberg	Rose Fistrovic	VTT-82168		14 Little Tokyo	118-124 S. Astronaut Ellison S. Onizuka Street	0.40	77	0	0.56	\$970,739.00	77	0.56	\$970,739.00	Construction of 8-story, 77 residential condominiums, 4 commercial condominiums and 3 levels of subterranean parking with 80 spaces.	City Hall Park, Spring Street Park, El Pueblo		5/10/2018	No	6/5/2018	6/6/2018	6/13/2018	6/13/2018	7/11/2018	Fees	18-146	10/17/2018	Fees	2/28/2019			847					
48	Fariid & Farahnaz Amid, Amid Family Trust 64%, et al	Andy Simhaee	DIR-2018-6634 -TOC		1 Victor Heights	1251 and 1275 West Sunset Boulevard (separate but adjacent to each other)		68	7	0.49	\$857,276.00	77	0.56	\$970,739.00	77 unit apartment complex with 6 affordable units	Everett Park, Echo Park, Elysian Park		5/23/2018	No	6/5/2018	6/7/2018	6/15/2018: No show. Left VM. No response.															
49	806 West Adams Property, LLC c/o Robert Champion	Andrew Brady/ Kyndra Casper	VTT-82114		9 University Park	806 West Adams Boulevard	2.80	94	5	0.68	\$1,185,058.00	99	0.72	\$1,248,093.00	A residential community with up to 99 units with 495 bedrooms, including 5 very low income affordable units.	St. James Park, Hoover Recreation Center		5/24/2018	No	6/5/2018	6/5/2018	6/6/2018	6/11/2018	8/8/2018	Land or Combination of Land and Fees. Application withdrawn 12/19/2018.	18-182	N/A	N/A	N/A	N/A				0			
50	Charles Hung, WPDOLA	Michael Gonzales	VTT-82167		1 Westlake South	804 Garland Avenue, 1150-1180 West 8th Place	1.74	118	0	0.85	\$1,487,626.00	118	0.85	\$1,487,626.00	Construction of a 14-story mixed-use building with 118 dwelling units, 69,925 sq ft of office floor area, and 6,225 sq ft of commercial space	Valencia Triangle		6/6/2018	No	6/28/2018	6/27/2018	7/9/2018	7/10/2018	12/12/2018	Fees	18-255	5/19/2020	Fees				697					
51	Samuel S. Leung - Seacrest Apartments LP and Seacrest Homes LP	Amy Studarus	VTT-74520		15 Harbor Gateway/Torrance	1309-1311 West Sepulveda Boulevard	5.18	352	0	2.54	\$4,437,664.00	352	2.54	\$4,437,664.00	Vesting Tentative Tract Map for 352 Residential Condominium units with two parking spaces per unit and 1/4 guest parking space per unit. The project will be completed with two lots and each lot will contain 176 units	Normandale Park		6/25/2018	Yes	7/23/2018	7/23/2018	8/1/2018	8/6/2018	1/16/2019	Fees	19-021							1,725	N			
52	Thomas Safran & Associates	three6ty	VTT-83086		10 Koreatown	525-531 South Virgil Avenue	0.97	113	19	0.82	\$1,424,591.00	132	0.95	\$1,664,124.00	Construction of new mixed use building including 55 for-rent apartments, 77 for-sale condos, and approximately 31,000 SF of office/conference space.	Lafayette Recreation Center, Shatoo Recreation Center		7/25/2018	No	8/7/2018	8/7/2018	8/10/2018	8/15/2018	9/3/2020	Fees	20-173	12/2/2020	Fees									
53	K. Geneva @ Venice Development, LLC	Dana Styles	VTT-82336		5 Palms	9900-9914 West Venice Boulevard	0.36	47	5	0.34	\$592,529.00	52	0.38	\$655,564.00	52 apartment units, 3,000 square feet of ground floor retail	Media Park		7/27/2018	No	8/7/2018	8/7/2018	8/10/2018	8/15/2018	10/2/2019									3,374	Y			
54	968 Fedora, LLC	Dale Kim			10 Koreatown	968, 970, & 974 South Fedora Street	not provided	47	6	0.34	\$592,529.00	53	0.38	\$668,171.00	new 53-unit, 5-story apartment - sent email 9/4/18 to formally withdraw application	Seoul International Park		8/6/2018	No	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A					
55	Akeman, LLP	Lisa Kolieb	AA-2018-7264		10 Arlington Heights (South Los Angeles Community Plan)	2341-2345 18th Street, 2300-2360 West Venice Boulevard, 1601-1717 South Western Avenue	7.14	162	18	1.17	\$2,042,334.00	180	1.30	\$2,269,260.00	Vesting Parcel Map to create 2 legal lots (Parcel A (shopping center) & Parcel B (multifamily) up to 180 units via site plan reviews	Normandie Recreation Center		10/23/2018	No	11/8/2018	11/8/2018	11/14/2018	11/14/2018	3/6/2019	Land or Combination of Land and Fees	19-049	7/17/2019	Fees					2,997	N	DCP changed the condition language in the Clarification Letter dtd 10/28/19 and Correction Letter dtd 4/2/20		
56	Frontier Holdings West, LLC; Regal Group LLC; Main Fund Associates, LLC	Irvine & Associates, Inc.	VTT-82463		14 South Park	1123-1161 South Main Street	1.12	363	0	2.62	\$4,576,341.00	363	2.62	\$4,576,341.00	Proposed mixed use residential building with approximately 353 residential units over 12,247 SF of commercial space	Grand Hope Park		11/6/2018	No	12/5/2018	12/5/2018	12/12/2018	12/12/2018	5/21/2020	Fees	20-083	12/8/2021	Fees				690	N				
57	SBLP Century City, LLC	Rosenheim & Associates	VTT-82442		5 Century City	10328-10384 Bellwood Avenue and 10341-10381 Bellwood Avenue	2.16	71 (No Net New Units)	0	0.00	\$0.00	72	0.51	\$922,858.00	Construction, use, and maintenance of an eldercare facility comprised of 71 independent dwelling units, 75 assisted living guest rooms, and approx. 46 memory care guest rooms on site that currently contains 112 multifamily units. The project will not result in a net increase in dwelling units.	Cheviot Hills		11/7/2018	No	11/27/2018	11/28/2018	11/30/2018	11/30/2018	10/23/2019	Fees	19-218							1,679	Y			
58	The Brine, LP	Craig Lawson & Co., LLC	AA-2019-7419-PMLA		14 Lincoln Heights	3000 North Main Street, 3012-3030 North Main Street, and 1815-1839 North Hancock Street	2.92	1	96	0.01	\$12,607.00	97	0.70	\$1,222,879.00	100% affordable housing, mixed use project, 97 dwelling units above grocery store retail, with adjacent medical clinic and surface parking	Lincoln Park, Hazard Park		11/7/2018	No	12/5/2018	12/5/2018	12/13/2018	12/13/2018	1/16/2019	Fees	20-029	3/3/2020	Fees	11/22/2021			305	N				
59	Charles Park & Associates, LLC	Bill Robinson			10 Koreatown	3433-3455 West 8th Street, 744 South Hobart Avenue, 749 South Harward Boulevard	0.42	241	12	1.74	\$3,038,287.00	253	1.83	\$3,189,571.00	New 7-story mixed-use project with approximately 50,000 sf of commercial area and 253 residential units, which include 12 affordable units	Seoul International Park		12/5/2018	No	12/13/2018	12/13/2018	12/20/2018	12/20/2018									6,090					
60	La Brea Bliss, LLC	Dana Sayles	VTT-82618		5 Mid-Wilshire	623-671 South La Brea Avenue	1.08	107	14	0.77	\$1,348,949.00	121	0.87	\$1,525,447.00	121 residential units, 125 hotel guest room, 13,026 sf commercial space, 10,616 sloped space, 201,263 total sf	None		2/26/2019	No	3/4/2019	3/4/2019	3/11/2019	3/11/2019	5/1/2019	Land or Combination of Land and Fees	19-086	10/23/2019	Combination of Land and Fees					6,109	N			
61	Maubert LA VI, LLC	Rosenheim & Associates	VTT-82654		13 Los Feliz	4629 Maubert Avenue	0.76	136	17	0.98	\$1,714,552.00	153	1.11	\$1,928,871.00	Demolition of existing residential units and surface parking area, in order to develop, use, and maintain a +/- 143,785 sf, 153 unit residential development	Barnsdall Park		4/16/2019	No	5/9/2019	5/13/2019	5/23/2019	5/23/2019	11/20/2019	Land or Combination of Land and Fees	19-239	5/19/20	Land or Combination of Land and Fees					3,873	N	Map withdrawn per letter dtd 12/29/21		
62	1149 Gower Street Hollywood, LLC	Craig Lawson & Co., LLC	VTT-82714		13 Hollywood	1121-1149 North Gower Street	3.12	155	14	1.12	\$1,954,085.00	169	1.22	\$2,130,583.00	Construction of 169 dwelling units on land currently occupied by surface parking. The construction will be pursued in two (2) phases, a 6-story first phase building and a 5-story second phase building. The project seeks a Density Bonus and will provide 11% of base density (14 units) as affordable units.	Hollywood Recreation Center		4/24/2019	No	5/9/2019	5/13/2019	5/30/2019	5/30/2019	8/6/2020	Fees	20-159	10/20/21	Fees					2,884	N			
63	Flexible PSH Solutions, Inc.	Craig Lawson & Co., LLC	VTT-82798		13 East Hollywood	312-328 North Juanita Avenue, 3810-3838 West Oakwood Avenue, 317-345 North Madison Avenue	2.09	2	452	0.01	\$25,996.00	454	3.28	\$5,901,092.00	Four new buildings containing a total of 431 residential dwelling units (100% affordable except for manager's units). This project will also include supportive social services on-site and common open-space areas.	Madison West Park		4/27/2019	No	5/9/2019	5/13/2019	5/30/2019	5/30/2019	10/23/2019	Fees	19-219	1/23/2020	Fees	6/30/2023			6,915	N				
64	Walter N Marks III	Craig Lawson & Co., LLC	VTT-82716		5 La Brea/Mid-Wilshire	665 & 671 South Cloverdale Avenue, 5411 Wilshire Blvd	1.32	287	51	2.07	\$3,618,209.00	338	2.44	\$4,261,166.00	The proposed tower is described as featuring a "curvilinear shape," soaring above an Art Deco building at Wilshire and Cloverdale Avenue that will remain in place. Plans call for multiple outdoor amenity areas, including a podium-level deck featuring swimming pools and a rooftop garden. Additionally, the building would feature a gym, a yoga studio, a gold simulator and a two-lane bowling alley.	None		5/23/2019	No	6/10/2019	6/10/2019	6/27/2019	6/27/2019	12/18/2019	Land or Combination of Land and Fees	19-260								5,602	Y		
65	Mark Laderman/Collin Komae	Todd Nelson, Ambruster Goldsmith & Delvac LLP	VTT-82784		13 Hollywood	1520-1542 North Cahuenga; 6350 West Selma Avenue; 1523-1549 North Hvar Avenue	2.01	261	29	1.89	\$3,392,478.00	290	2.10	\$3,769,420.00	Plans call for a new mixed-use multifamily residential high-rise over ground-floor retail. The project will develop a new multi-family residential tower containing up to 292 units over approximately 7,000 sf of new retail uses and parking in subterranean and above-ground levels. Existing retail uses on the project site will be retained. The project proposes 261 market rate units and 29 (revised from original estimate) affordable units.	Selma Park		6/21/2019	No	7/18/2019	7/18/2019	7/24/2019	7/24/2019	10/23/2019	Fees	19-220	8/30/2023	Fees							187	Y	

#	Applicant	Agent/Representative	Project Case Number	Council District	Community	Project Address	Project Site Size (Acres)	Calculation Assuming Exempt Units Qualify				Calculation Assuming Total Units				Project Description	Number of Proposed Parcels	Nearby Parks (within 1/2 mile)	Early Consultation Meeting						RAP Board Action(s)		Advisory Agency Action (s)		New Residents That Would Be Served by a Park at Project Location (at Improved Std)	On-Hold per DCP (Y/N)	Notes/Comments			
								Non-Exempt Residential Units	Exempt Units (Affordable Housing, Existing Units, etc)	Land Dedication based on Projected Non-Exempt Units (Acres)	Max Potential Park Fee based on Projected Non-Exempt Units (Calculated with the fee rate in effect at the time of EC meeting)	Total Residential Units	Land Dedication (Acres)	Max Potential Park Fee (Calculated with the fee rate effective time of EC application filing)	Date EC Application Received by RAP				Did Applicant file case as DCP prior to EC Meeting? Y/N	Pre-Early Consultation Meeting Date	Date RAP Applied to Applicant to Set Meeting	EC Meeting Date (scheduled/ held)	Date Verification Letter Sent to Project Applicant	Board Meeting (scheduled/ held)	Approved Board Recommendation	Board Report Number	Advisory Agency Meeting Date	Advisory Agency Recommendation				Date Fees Paid/Land Dedicated		
66	WIP Expo Crenshaw, LLC c/o Jennifer McElyea	Edgar Khalatan, Mayer Brown LLP	VTT-82282		Baldwin Hills/Crenshaw	3606 West Exposition Boulevard; 3510 West Exposition Boulevard; 3630 & 3642 South Crenshaw Boulevard; and 3501 & 3505 West Obama Boulevard	4.18	321	80	2.32	\$4,172,358.00	401	2.90	\$5,212,198.00	The project would provide approximately 45,416 sf of private and publicly accessible open space and recreational amenities, with 22,481 sf for Site A and 22,935 sf for Site B. Site A would include a publicly accessible open space plaza on the ground level along Exposition Boulevard and adjacent to the Expo/Crenshaw Station Metro Line. The publicly accessible open space would also front the project's ground floor commercial uses, including but not limited to a proposed grocery store, retail and restaurant uses. Site A Levels 2 and 4 would include amenity decks (lower and upper) and recreational rooms for residents and guests. The publicly accessible open space plaza would also extend to Site B and similarly front the Expo Line and project's ground floor commercial uses. Site B would also include amenity decks (lower and upper) and recreational rooms on Levels 3 and 4.	None		8/14/2019	No	8/21/2019	8/21/2019	8/29/2019	8/29/2019	9/17/2020	Fees	20-190	7/7/2021	Fees			4,824	N		
67	Erich Nakano, SMV Housing LP	Donna Shen Tripp, Craig Lawson & Co., LLC	VTT-82866		East Hollywood	1013-1041 North Vermont Avenue; 4704-4722 West Santa Monica Boulevard; 1020-1034 North New Hampshire Avenue	1.58	0	187	0.00	\$0.00	187	1.35	\$2,430,626.00	The project would construct a new mixed-use development with 187 units (including 185 affordable units and 2 manager's units), supportive service uses, and ground floor commercial uses.	None		8/27/2019	No	9/5/2019	9/5/2019	9/12/2019	9/12/2019	11/6/2019	Fees	19-229	12/11/2019	Fees		6/9/22	11,077	N		
68	Hollywood Arts Collective LP (c/o Andrew Gross)	Dana A. Sayles, AICP, threeSixty	VTT-82829		Hollywood	1631-1641 North Wilcox Avenue; 1630-1638 North Schrader Boulevard	1.03	117	35	0.85	\$1,520,766.00	152	1.10	\$1,975,696.00	Construction of 152 dwelling units, including 35 affordable units, and 7,000 sf of commercial space on 41,151 sf lot.	Yucca Community Center, Las Palmas Senior Center, De Longpre Park, Selma Park		9/26/2019	No	10/7/2019	10/7/2019	10/10/2019	10/10/2019	12/18/2019	Fees	19-259	1/28/2021	Fees		7/20/2023	0	N		
69	Venice Community Housing Corp	Christopher Murray (Rosenheim & Associates, Inc.)	VTT-82288		Venice	2102-2120 South Pacific Avenue, 116-302 E. North Venice Boulevard, 2105-2116 South Canal Street, E. South Venice Boulevard	2.65	4	136	0.03	\$51,992.00	140	1.01	\$1,819,720.00	Construction of mixed-use affordable housing development with 140 units (136 affordable units and 4 manager's units) and retail, restaurant, office space and parking garage.	Venice Beach		2/11/2020	Yes	3/4/2020	3/6/2020	3/11/2020	3/18/2020	5/7/2020	Fees	20-076	1/13/21	Fees			0			
70	AMCAL Washington Fund, LP	J. Ross	AA-2020-1894-PMLA		South LA	200-206, 214-216 East Washington Street, 1910 South Los Angeles Street	1.42	2	103	0.01	\$25,996.00	105	0.76	\$1,364,790.00	Construction of mixed-use affordable apartments with 105 units and commercial space. Includes the demolition of the existing 31-unit apartment and car repair shop.	Trinity Park		1/2/2020	No	1/15/2020	1/15/2020	2/19/2020	2/19/2020	5/7/2020	Fees	20-078	7/15/20	Fees		2/18/2021	632			
71	Van Nuy Investment Partners, LLC	Shlomi Asiss	TBD		Van Nuys	7644-7658 North Van Nuys Boulevard		110	14	0.80	\$1,429,780.00	124	0.90	\$1,611,752.00	Construction of 124-unit, 5-story apartment over 1-story basement parking garage (project is not intending to file a Map with Planning).	None		2/6/2020	No	3/4/2020	3/4/2020											2,449		
72	Crocker Apartments, LP (c/o Erich Nakano)	Eric Lieberman (OES, Inc.)	VTT-82988		Skid Row	412-428 Crocker Street, 411-426 Towne Avenue	1.12	2	173	0.01	\$25,996.00	175	1.27	\$2,274,650.00	Mixed-use 100% affordable complex with 175 units (2 manager's units), commercial space, 19 parking stalls, and 725 bicycle stalls.	8th and Gladys Park, San Julian Park, Arts District Park		2/21/2020	No	3/4/2020	3/10/2020	3/31/2020	3/31/2020	5/7/2020	Fees	20-077	9/27/2020	Fees		7/10/2023	0	N		
73	NoHo Development Associates, LLC (c/o Greg Ames)	Matt Dzurec (Ambruster Goldsmith & Delvac LLP)	VTT-82868		North Hollywood	5430 North Lankershim Boulevard	12.61	1,216	311	8.79	\$15,805,568.00	1,527	11.04	\$19,847,946.00	Mixed-use development with 1,527 units (311 of which are affordable), commercial, restaurant, retail, and office space. Land is owned by Metro. The project plans to include 3 publicly accessible plazas.	North Hollywood Recreation Center, Valley Village Park		4/16/2020	Yes	5/11/2020	5/13/2020	5/28/2020	5/28/2020	6/18/2020	Fees	20-123	7/26/2023	Fees			3,525	Y		
74	Chandler Village, LLC (c/o Yaron (Jerry) Levy)	Ella Thompson (Ewin, Cohen, & Jessup, LLP)	AA-2020-0461-PMLA		Valley Village	12444 Chandler Boulevard		69	0	0.50	\$896,862.00	69	0.50	\$896,862.00	Lot subdivision (1 ground lot and 3 airspace lots). Construction of 69-unit apartment and 3 commercial airspace lots (UPDATE: MAP TERMINATED 1/6/2021).	None		6/25/2020	No	7/20/2020	7/20/2020	7/30/2020	8/5/20	8/20/20	Fees	20-167					6,629			
75	Weintraub Real Estate Group (c/o Jake Jesson)	Alicia Bartley (Gaines & Stacey LLP)	AA-2019-7098-PMLA		Reseda	7650 North Balboa Boulevard	6.47	75	75	0.54	\$1,020,675.00	150	1.08	\$2,041,350.00	Partial closure of existing mobile home park and the construction, use, and maintenance of a multiresidential apartment building with 150 affordable units, 75 of which are affordable housing.	None		8/3/2020	Yes	email sent 8/4/2020	8/10/20	8/14/2020	8/14/2020	9/3/20	Fees	20-174					2,346	N		
76	Core OZ Figueroa LLC	Andrew Brady (DLA Piper LLP)	VTT-83024		South LA	2714-2724 South Figueroa Street; 2727 Flower Street; 511-525 West 28th Street	1.02	133	24	0.96	\$1,809,997.00	157	1.13	\$2,136,613.00	Mixed-use project that consists of the demolition of two existing restaurant buildings and one existing office building to construct a 157-unit apartment building (33 affordable units) with commercial space and one level of subterranean parking.	Orthopedic Hospital UAP, Hoover Pedestrian Mall, Saint James Park		9/15/2020	Yes	Email sent 9/15/2020	9/21/2020	9/23/2020	9/24/2020	10/15/2020	Fees	20-205	1/5/2021	Fees			90			
77	TF Shatto, Inc	Timothy Moran (Irvine & Associates, Inc.)	VTT-83213		Koreatown	514-550 South Shatto Place; 3119 West 6th Street	1.17	325	42	2.35	\$4,422,925.00	367	2.65	\$4,994,503.00	Remove 4 existing structures and surface parking lot to construct mixed-use high-rise that will consist of 367 units and commercial/restaurant space. Existing church building and basketball court will be repurposed for restaurant uses (formerly VTT-82171).	Shatto Recreation Center, Lafayette Recreation Center		9/23/2020	Yes	Email sent 10/1/2020	10/5/2020	10/9/2020	10/13/2020	1/21/2021	Fees	21-012	2/17/21	Fees			0			
78	DHS Investment Company, LLC	Craig Lawson & Co., LLC (c/o Aimee Luan)	VTT-83227		Westlake South	905-923 South Beacon Street; 1720 James M. Wood Boulevard	0.77	130	15	0.94	\$1,769,170.00	145	1.05	\$1,973,305.00	The construction of a new 7-story mixed use development with 145 apartment units (15 affordable units) and 2,000 sq ft of ground floor commercial space.	Hope and Peace Park, MacArthur Park		1/21/2020	No	Email sent 10/22/2020	10/26/2020	10/29/2020	10/29/2020	3/18/2021	Fees	21-044	8/25/2022	Fees			221	N		
79	ONNI Violet Development LP	Ambruster Goldsmith & Delvac LLP (c/o Matt Dzurec)	VTT-74890		Central City	2117-2147 East Violet Street; 2118-2142 East 7th Place	2.21	290	57	2.10	\$3,946,610.00	347	2.51	\$4,722,323.00	Construction of 2 buildings with 347 live-work units, along with commercial, office, and restaurant uses. Retention of 6 existing live-work units and 56,000 sq ft of commercial space.	none		10/29/20	Yes	Email sent 11/2/2020	11/4/2020	11/9/2020	11/9/2020	12/17	Fees	20-243	12/23/2020	Fees			481			
80	BRIDGE Housing	BRIDGE Housing (c/o Van Scott)	VTT-82619		Southeast LA	9800 South Grape Street	14.08	164	417	1.19	\$2,231,876.00	581	4.20	\$7,906,829.00	Part of Jordan Down Specific Plan project. Demolition of 255 apt units. Construction of 581 dwelling units (506 rental units and 75 townhomes). Also includes two new parks.	Jordan Downs Recreation Center, Watts Senior Center		11/4/2020	Yes	Email sent 11/16/2020	11/18/2020	11/30/2020	12/2/2020	12/17/2020	Waiver	20-244	1/6/2021	Waiver	N/A					Part of the Jordan Downs Specific Plan
81	Kaplan Woodland Hills Property Company, LLC	Ambruster Goldsmith & Delvac LLP (c/o Matt Dzurec)	AA-2020-5375-PMLA		Warner Center	6100 North Canoga Avenue	8.82	880	0	6.36	\$11,975,920.00	880	6.36	\$11,975,920.00	Park of the Warner Center Specific Plan. Mixed-use development with 880 units (347 live-work units and 533 apartment units) and 204 hotel guest rooms. Also includes retail and amenity spaces, along with approx. 1,500 parking spaces and additional bicycle parking.	3 Warner Ranch Park		11/12/2020	Yes	Email sent 11/16/2020	11/18/2020	12/10/2020	12/15/2020	1/21/2021	Fees	21-013	12/7/2022	Fees			2,423			
82	Chandler Village, LLC (c/o Yaron (Jerry) Levy)	Ella Thompson (Ewin, Cohen, & Jessup, LLP)	VTT-83014		Valley Village	12444 Chandler Boulevard	0.64	69	0	0.50	\$896,862.00	69	0.50	\$896,862.00	VTT TO ALLOW A MERGER OF 10 LOTS TO 1 AND A SUBDIVISION OF 69 RESIDENTIAL CONDOMINIUM UNITS AND 3 COMMERCIAL CONDOMINIUM UNITS. (Previously AA-2020-461-PMLA. Parcel map was terminated 1/6/2021.)	None		2/16/2021	Yes	email sent 3/5/2021	3/24/2021	3/31/2021	4/5/2021	6/3/2021	Combination of Land and Fees	21-118	12/14/2021	Fees			6,629	Yes	Case taken under advisement due to dispute of RAP's condition. RAP staff has been in contact with DCP staff regarding the issue. (2/24/2022)	
83	Angels Landing Partners, LLC (c/o Kevin M. Roberts)	James E. Pugh (Sheppard Mullin Richter & Hampton, LLP)	VTT-82936		Bunker Hill	326-358 South Olive Street; 351-361 South Hill Street; 417-425 West 4th Street	2.26	419	13	3.02	\$5,702,171.00	432	3.12	\$5,879,088.00	New mixed use development containing 180 condos, 252 apartments, 515 hotel guest rooms, and approx. 72,091 sq ft in commercial space.	Pershing Square, Spring Street Park, City Hall Park		2/11/2021	No	email sent 2/23/2021	3/1/2021	3/8/2021	3/11/2021	5/20/2021	Fees	21-093	6/23/2021	Fees			0			
84	Wilshire Springs, LLC (c/o Moshe Sassover)	Jamie Poster (Craig Lawson & Co., LLC)	VTT-83358		Brookside	5001 Wilshire Boulevard; 671-677 South Highland Avenue; 668 South Citrus Avenue	1.68	218	25	1.58	\$2,966,762.00	243	1.76	\$3,306,987.00	New 8-story, mixed-use building with up to 243 dwelling units and approximately 10,900 square feet of ground floor commercial. Carling Way to be merged to the project site through a vesting tentative tract map and developed as privately maintained, publicly accessible open space.	none		2/19/2021	No	email sent 2/25/21	3/2/21	3/10/21	3/11/2021	7/1/2021	Combination of Land and Fees	21-128	9/21/22	Fees			4,035	No		
85	639 Commonwealth, LP (c/o Jason Friedman, threeSixty)	Dana A. Sayles, AICP, threeSixty	TBD		MacArthur Park	639 South Commonwealth Avenue; 2955-2969 Wilshire Boulevard	1.85	1	142	0.01	\$13,609.00	143	1.03	\$1,946,087.00	Construction of a new 143-unit apartment building (142 affordable units and 1 market-rate managers unit)	Lafayette Recreation Center, MacArthur Park, Francis Avenue Community Garden		3/8/2021	No	email sent 3/15/2021	3/18/2021	3/30/2021	4/5/2021	9/15/22	Fees	22-249					0			

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								Non-Exempt Residential Units	Exempt Units (Affordable Housing, Existing Units, etc)	Land Dedication based on Projected Non-Exempt Units (Acres)	Max Potential Park Fee based on Projected Non-Exempt Units (Calculated with the fee rate in effect at the time of EC meeting)	Total Residential Units	Land Dedication (Acres)	Max Potential Park Fee (Calculated with the fee rate in effect at the time of EC application filing)	Date EC Application Received by RAP				Did Applicant file case or DCP prior to EC Meeting? Y/N	Pre-Early Consultation Meeting Date	Date RAP Applied to Applicant to Set Meeting	EC Meeting Date (scheduled/hold)	Date Verification Letter Sent to Project Applicant	Board Meeting (scheduled/hold)	Approved Board Recommendation	Board Report Number	Advisory Agency Meeting Date	Advisory Agency Recommendation	Date Fees Paid/Land Dedicated																			
86	CP LA Cold Storage Land, LLC (c/o Mark Falcone, Roger Pecsok)	Edgar Khalatian (Mayer Brown, LLP)	VTT-82974		14	Skid Row	364, 400-464, 425-433 South Central Avenue, 717, 730 East 4th Street	7.65	997	190	7.21	\$13,568,173.00	1187	8.58	\$16,153,883.00	Mixed-use development with 1,167 apartment units (190 affordable units), 75 guest rooms, and retail and office spaces		Arts District Park, 6th & Gladys Street Park, San Julian Park	3/9/2021	No		3/15/2021	3/18/2021	3/30/2021	3/31/2021									401		Increased to 1521 Residential Units												
87	CBG University Gardens, LP (c/o Joseph P. Seager)	Edgar Khalatian (Mayer Brown, LLP)	TBD		8	University Park	1200-1270 West Jefferson Boulevard, 3403-3449 Vermont Avenue, 1135-1153 West 35th Street	5.70	1141	201	8.25	\$15,527,869.00	1342	9.70	\$18,263,278.00	Project includes the demolition of existing 113 dwelling units and construction of a mixed use project. 6 buildings with 1342 residential units (201 affordable), 243 hotel rooms, office, commercial, studio, community assembly, and education spaces over 3 levels of subterranean parking		Richardson Family Park	3/10/2021	No		3/16/2021	3/18/2021	3/25/2021	3/31/2021											3970												
88	Little Tokyo Service Center (c/o Debbie Chen)	Alfred Fraijo Jr (Sheppard, Mullin, Richter, and Hampton, LLP)	VTT-83441		14	Little Tokyo	120-230 North Judge John Also Street, 200 North Central Avenue	2.66	4	224	0.03	\$54,436.00	228	1.65	\$3,102,852.00	Development of a 100% affordable apartment building with 228 units (224 affordable and 4 manager's units), on-site social services, and approx. 42,000 sq ft of ground floor commercial, restaurant, and philanthropic institution spaces		City Hall Park, El Pueblo	3/30/2021	No		4/13/2021	4/15/2021	4/19/2021	4/22/2021	12/16/2021	Fees	21-213	12/8/2021	Fees	10/31/2023						468											
89	Champion Echo Park, LLC (c/o Greg Beck & Garrett Champion)	John M. Bowman (Elkins Kait Weintraub Reuben Gartside LLP)	2021-4593		13	Echo Park	1483-1503 West Sunset Boulevard, 1314 North McDuff Street	0.95	121	15	0.87	\$1,846,889.00	136	0.98	\$1,850,824.00	Mixed-use project with 136 dwelling units (15 affordable units), ground floor commercial and amenity spaces and parking		Echo Park	3/31/2021	Yes		4/13/2021	4/15/2021	5/11/2021	5/12/2021	8/19/2021	Fees	21-147										0										
90	BE BH ADJ, LLC	Dana Sayles (ThreeSixty)	83436		5	Carthay Circle	6435 West Wilshire Boulevard	0.41	61	7	0.44	\$830,149.00	68	0.49	\$925,412.00	Construction of 3-story, 68-unit building (7 affordable units) with 2 levels of subterranean parking		Carthay Circle Park	4/7/2021	No		4/15/2021	4/19/2021	4/26/2021	4/29/2021	3/17/2022	Fees	22-062	11/2/2022	Fees								451										
91	La Cienega Owner LLC	Fernando Villa, Margaret R. Akerblom (Allen Matkins, Leck, Gamble Mallory & Natsis LLP)	VTT-83550		10	Baldwin Hills	3401 South La Cienega Boulevard	3.53	238	22	1.72	\$3,520,734.00	260	1.88	\$3,846,180.00	Project includes the demolition of the existing buildings and construction of a mixed-use residential apartment building with 260 units (22 affordable units)		Westside Neighborhood Park, Baldwin Hills Recreation Center	6/7/2021	No		6/14/2021	6/22/2021	7/1/2021	7/12/2021	12/16/2021	Fees	21-215	2/24/2022	Fees									1023	Applicant is currently requesting Recreation Credit								
92	Cahuenga Vine Properties II, LLC	Edgar Khalatian (Mayer Brown, LLP)	83501		13	Hollywood	1736, 1742, 1750, 1754-1758, 1754 1/2, 1762, & 1768 North Cahuenga Boulevard, 1755-1763 & 1755-1761 1/2 North Ivar Avenue	1.80	498	45	3.60	\$7,366,914.00	543	3.93	\$8,032,599.00	Project includes the demolition of the existing vehicle rental facility and parking lot to construct a mixed-use project with 543 units (45 affordable units), commercial space, open space, and associated parking.		Frankline-Ivar Park, Las Palmas Senior Citizen Center, Yucca Community Center, Selma Park	6/23/2021	No		6/24/2021	7/6/2021	7/20/2021	7/22/2021															0								
93	Vineland Family Community LP (c/o Fariba Alighechi)	Dustin Go (The Santa Maria Group)	83123		6	Sun Valley	8011, 8025, 8027 North Vineland Avenue	0.64	1	134	0.01	\$14,793.00	135	0.97	\$1,962,262.00	New construction of 6-story development with 135 apartment units (134 affordable units), commercial space, and subterranean parking		Sun Valley Park	6/28/2021	No		7/6/2021	7/6/2021	7/8/2021	7/12/2021	5/5/2022	Fees	22-128											680									
94	Vineland Senior Community LP (c/o Fariba Alighechi)	Dustin Go (The Santa Maria Group)	TBD		6	Sun Valley	11039, 11041 West Strathern Street	Not Provided	1	96	0.01	\$14,793.00	97	0.70	\$1,434,921.00	New construction of a 5-story senior apartment building with 1 level of subterranean parking		Sun Valley Park	6/28/2021	No		7/6/2021	7/6/2021	7/8/2021	7/12/2021														680									
95	333 South Hope Co., LLC	James E. Pugh (Sheppard Mullin Richter & Hampton, LLP)	83538		14	Bunker Hill	333 South Hope Street	4.21	366	0	2.65	\$5,414,238.00	366	2.65	\$5,414,238.00	Addition of a multifamily residential tower to an existing commercial building.		Pershing Square City Hall Park Spring Street Park Miguel Contreras Learning Center Pool	7/14/2021	No		7/21/2021	7/27/2021	8/9/2021	8/26/2021	3/3/2022	Fees	22-048											644									
96	4750 Wilshire Blvd (LA) Owner, LLC	Michael Gonzalez (Gonzalez Law Group)	AA-2021-6412-PMLA-HCA		5	Brookside	4750-4780 West Wilshire Boulevard; 715-729 South Hudson Avenue	2.27	62	6	0.45	\$917,166.00	68	0.49	\$1,005,924.00	Convert existing office building into 68 residential units (6 affordable units)		LA High Memorial Park	7/14/2021	No		7/21/2021	7/27/2021	8/5/2021	8/10/2021	12/16/2021	Fees	21-204	7/13/2022	Fees									1,804	Possibly terminated. Applicant needs to confirm termination with records from City Planning								
97	1717 Bronson LLC	Michael Gonzalez (Gonzalez Law Group)	83510		13	Hollywood	1715-1739 North Bronson Avenue	0.83	116	12	0.84	\$1,715,988.00	128	0.93	\$1,893,504.00	New 128-unit residential building (12 affordable units). An existing 4-unit building is to remain		5 Carlton Way Park	7/8/2021	No		7/21/2021	7/27/2021	8/4/2021	8/10/2021	12/16/2021	Fees	21-217	3/23/2023	Fees									1,502									
98	West LA Commons, LLC	Edgar Khalatian (Mayer Brown, LLP)	TBD		11	West LA	11332 West Santa Monica Boulevard	4.60	365	127	2.64	\$5,399,445.00	492	3.56	\$7,278,156.00	Redevelopment of the West LA Civic Center site and West LA Courthouse site. The project includes 492 residential units, 127 of which will be affordable, along with restaurant and retail space, municipal uses, a parking lot, and approximately 100,255 square feet of open space and recreational amenities.		Felicia Mahood Multipurpose Center Stoner Recreation Center Westwood Recreation Center	7/23/2021	No		7/28/2021	8/6/2021	8/19/2021	9/1/2021																	148						
99	SRM Studio City, LLC (c/o James D. Rivard)	Jessica Pakdaman (Rosenheim & Associates, Inc.)	VTT-83460		4	Studio City	11611-11695 Ventura Boulevard; 4010-4028 Cottle Avenue	3.61	145	0	1.05	\$2,144,985.00	145	1.05	\$2,144,985.00	Demolition of existing buildings for the construction of 145 dwelling unit eldercare facility, 129 ALJL dwelling units and 16 townhomes.		None	9/7/2021	No		9/21/2021	9/27/2021	10/4/2021	10/15/2021	2/17/2022	Fees	22-035												2,094								
100	Mullen Wilshire Blvd. (LA) Owners, LLC	Michael Gonzales (Gonzales Law Group)	73895		5	Brookside	4680 West Wilshire Boulevard; 706, 720 South Rimpau Boulevard	2.20	65	0	0.47	\$961,545.00	65	0.47	\$961,545.00	Adaptive reuse of a portion of an existing office building into 65 residential condominiums. Existing office space is to remain as 1 commercial condominium.		L.A. High Memorial Park Harold A. Henry Park	10/7/2021	No		10/18/2021	10/21/2021	11/4/2021	11/10/2021	12/16/2021	Fees	21-205	8/25/2022	Fees											830							
101	Todd Kindberg, NREA-TRC 700, LLC	Andie Adame (Craig Lawson & Co. LLC)	83482		14	Central City	700 South Flower Street, 700 West 7th Street, 711, 775 South Hope Street	4.29	466	0	3.37	\$6,893,538.00	466	3.37	\$6,893,538.00	Development of a 53-story high rise building with 466 units. There is an existing 9-story building encompassed within the project. The project also contains 1 rooftop parking level		Pershing Square Grand Hope Park	10/22/2021	No		11/15/2021	11/16/2021	11/29/2021	11/29/2021	8/4/2022	Land Dedication or Combination of Land and Fees	22-204													916							
102	1415 Cahuenga, LLC	Edgar Khalatian (Mayer Brown, LLP)	83669		13	Hollywood	1415 North Cahuenga Boulevard	0.55	72	10	0.52	\$1,065,096.00	82	0.59	\$1,213,026.00	A mixed use development with 82 residential units (10 of which are affordable), hotel units, and retail uses.		DeLongre Park, Hollywood Recreation Center, Selma Park	10/27/2021	No		11/15/2021	11/16/2021	12/1/2021	12/1/2021	3/3/2022	Fees	22-049													354							
103	Arturo Snieder, Primestor Development Inc.	Alfred Fraijo, Jr. (Sheppard Mullin Richter and Hampton LLP)	74897		6	Panorama City	8389-8443 North Van Nuys Boulevard	17.00	3542	0	25.60	\$52,396,806.00	3542	25.60	\$52,396,806.00	Demolition of a shopping center and parking lot for the construction of a new mixed use community. According to the applicant, this project is a proposed specific plan and the units listed represent the maximum build out, but not necessarily the final numbers for the project		Panorama City Recreation Center	11/23/2021	No		12/22/2021	1/4/2022	1/18/2022	1/26/2022																	8,492						
104	Samir Srivastava, ABS Properties, Inc.	Ambruster Goldsmith & Delvac LLP (c/o Matt Dzurec)	82118		13	Hollywood	5645 West Fernwood Avenue; 5636 West De Longpre Avenue	0.63	5	494	0.03	\$73,965.00	499	3.61	\$7,381,707.00	Construction of a 26-story affordable housing building with 499 dwelling units (includes 5 manager units).		Selly Rodriguez Park, Lexington Avenue Pocket Park, La Mirada	3/22/2022	No		4/5/2022	4/7/2022	4/20/2022	5/3/2022	9/15/22	Fees	22-243														2,584						
105	TRG San Pedro Collaborative Member, LLC	Craig Lawson & Co., LLC (c/o Jim Ries)	83500		15	San Pedro	275 West 1st Street	19.96	512	1041	3.70	\$8,520,704.00	1553	8.89	\$25,845,026.00	Creation of a new Specific Plan for the demolition of existing structures and the construction of up to 1,600 residential units, 85,000 sqft of community services, and 45,000 sqft of commercial/retail uses. Unit count is not final.		LA Maritime Museum, John S. Gibson Jr. Park, San Pedro Plaza Park, Anderson Memorial Senior Citizen Center	4/8/2022	No		5/2/2022	5/3/2022	5/23/2022	6/3/2022	7/20/2023	Fees	23-135															1,979					
106	Hengli 17, LLC	Urban Axis (c/o Eduardo Hernandez)	83145		14	Monterey Hills	4101 Barrett Road, 5161 East Wadena Street	10.90	71	8	0.51	\$1,050,303.00	79	0.57	\$1,168,647.00	Construction of a 10.9 acre development with 32 SFD and 47 townhomes (8 affordable units)		Guardia Park, El Sereno Community Garden	4/19/2022	No		4/28/2022	5/3/2022	5/17/2022	5/18/2022																		1,341					
107	Rossano de Colis, Onni 5350 Wilshire LLC	Matt Dzurec (Ambruster Goldsmith & Delvac LLP)	TBD		5	Brookside	5350-5378 Wilshire Boulevard; 706-716 South Cloverdale Avenue; 716-725 Detroit Street	1.30	372	47	2.69	\$5,502,996.00	419	3.03	\$6,198,267.00	Construction of a 42 story mixed-use building with 419 dwelling units, including 47 affordable units, and 2,781 square feet of commercial space.		none	4/28/2022	No		5/5/2022	5/9/2022	5/18/2022	6/2/2022																		6,027					
108	Tony Yeh, Century Investment, LLC	Matt Dzurec (Ambruster Goldsmith & Delvac LLP)	VTT-83835		11	Brentwood	11701-11721 West Wilshire Boulevard; 1171 South Barrington Avenue	0.78	136	16	0.98	\$2,011,848.00	152	1.10	\$1,849,125.00	Construction of a 23-story mixed use building with 152 dwelling units (16 affordable units), 67,063 SF of office space, and 7,174 SF of retail space.		1 none	5/5/2022	No		5/9/2022	5/12/2022	7/6/2022	7/7/2022	12/15/2022	Land or Land and Fees	22-308																		10,004		



#	Applicant	Agent/Representative	Project Case Number	Council District	Community	Project Address	Project Site Size (Acres)	Calculation Assuming Exempt Units Qualify				Calculation Assuming Total Units			Project Description	Number of Proposed Parcels	Nearby Parks (within 1/2 mile)	Early Consultation Meeting					RAP Board Action(s)		Advisory Agency Action (s)		New Residents That Would Be Served by a Park at Project Location (at Improved Std)	On-Hold per DCP (Y/N)	Notes/Comments					
								Non-Exempt Residential Units	Exempt Units (Affordable Housing, Existing Units, etc)	Land Dedication based on Projected Non-Exempt Units (Acres)	Max Potential Park Fee based on Projected Non-Exempt Units (Calculated with the fee rate in effect at the time of EC meeting)	Total Residential Units	Land Dedication (Acres)	Max Potential Park Fee (Calculated with the fee rate effective at time of EC application filing)				Date EC Application Received by RAP	Did Applicant file case of DCP prior to EC Meeting? Y/N	Pre-Early Consultation Meeting Date	Date RAP Applied to Applicant to Set Meeting	EC Meeting Date (scheduled/ held)	Date Verification Letter Sent to Project Applicant	Board Meeting (scheduled/ held)	Approved Board Recommendation	Board Report Number				Advisory Agency Meeting Date	Advisory Agency Recommendation	Date Fees Paid/Land Dedicated		
109	Noel Chi LP	Edgar Khalatian (Mayer Brown, LLP)	83830	4	Universal City	3361-3429 North Cahuenga Boulevard West	1.07	64	8	0.46	\$1,065,088.00	72	0.52	\$1,198,224.00	3	El Paseo de Cahuenga Park	7/11/2022	No	7/18/2022	9/23/22	10/3/2022	10/6/2022										0		
110	Samir Srivastava, ABS Properties, Inc.	Olivia Joncich (Rand Paster & Nelson LLP)	83376	13	Brookside	5500-5510 West Hollywood Boulevard; 1675-1683 Western Avenue	0.43	1	94	0.01	\$16,642.00	95	0.69	\$1,580,990.00	6	Griffith Park	7/13/2022	No	7/18/2022	7/28/2022	8/1/2022	8/4/22	10/6/22	Fees	22-257	7/12/2023	Fees					4,503		
111	Ken Kahan, California Landmark Group	Jessica Pakdaman (Rosenheim & Associates, Inc.)	83939	3	Woodland Hills	21241-21243 Ventura Boulevard, 5436 Comercio Way, 21200 - 21240 Clarendon Street	4.99	111	0	0.80	\$1,847,262.00	111	0.80	\$1,847,262.00	2	Costanso Fire Station 84 Park	8/5/2022	No	9/14/2022	9/14/2022	9/19/2022	9/23/22	11/2/2023	Land or Land and Fees	23-185								1,632	
112	Ken Kahan, California Landmark Group	Matt Dzurec (Ambruster Goldsmith & Delvec LLP)	83873	11	West LA	11430 West Exposition Boulevard, 11434 West Pico Boulevard, 11460-11488 West Gateway Boulevard, 2426 South Colby Avenue, 2425 South Butler Avenue	1.60	250	28	1.81	\$4,160,500.00	278	2.01	\$4,626,476.00	3	none	10/20/2022	No	11/1/2022	11/2/2022	11/21/2022	12/5/22	6/1/2023	Fees	23-109							4,283		
113	Retail Branches LLC	Karen Hallock	83822	13	Spaulding Square	7800 Sunset Boulevard, Los Angeles, CA 90046	0.94	75	0	0.54	\$1,248,150.00	75	0.54	\$1,248,150.00	5	Wattles Garden Park	11/9/2022	Yes	11/16/2022	11/16/2022	11/28/2022	12/8/2022											1,811	
114	Adam Tartakovsky, 3100 Wilshire LLC	Katherine Casey	83914	10	Wilshire Center	3100, 3102, 3014, 3018 West Wilshire Boulevard, 659, 633 South Westmoreland Avenue	0.75	284	33	1.91	\$4,393,488.00	297	2.15	\$4,942,674.00	3	Robert F. Kennedy Inspiration Park, Shatto Park Recreation Center & Outdoor basketball Courts, Lafayette Park, Golden Age Park	11/14/2022	No	12/5/2022	12/5/2022	12/12/2022	12/16/2022	7/20/2023	Land or Land and Fees	23-134	10/25/2023							0	
115	6000 Hollywood Boulevard Associates, LLC	Spencer B. Kallick	83987	13	Hollywood	6000 Hollywood Boulevard	3.75	306	44	2.21	\$5,092,452.00	350	2.53	\$5,824,700.00	8	Carlton Pocket Park	1/5/2023	No	1/10/2023	1/11/2023	1/26/2023	1/30/2023	8/17/2023	Fees	23-151								1,445	
116	College Street Owner LLC (C/O Jordan Lang and Kelly Holzkamp)	Sarah Golden	83924	1	Chinatown	766-788 West College Street, 855-875 North Figueroa Terrace	1.16	153	17	1.11	\$2,546,226.00	170	1.23	\$2,829,140.00	9	Everret Park and Alpine Recreation Center, Ord and Yale Street Park	1/23/2023	No	1/26/2023	1/26/2023	2/1/2023	2/2/2023	4/6/2023	Fees	22-069								540	
117	950 Stadium Way Buyer LLC (C/O Jordan Lang and Kelly Holzkamp)	Sarah Golden	83866	1	Chinatown	1640 Stadium Way	0.51	57	8	0.41	\$948,594.00	65	0.47	\$1,081,730.00	1	Elysian Park Aboretum, Alpine Recreation Center, Everett Park, Ord and Yale Street Park	1/23/2023	No	1/31/2023	1/31/2023	2/6/2023	2/9/2023	4/20/2023	Fees	23-084								399	
118	959 Stadium Way Buyer LLC (C/O Jordan Lang and Kelly Holzkamp)	Sarah Golden	83887	1	Chinatown	959 Stadium Way	1.43	237	30	1.71	\$3,944,154.00	267	1.93	\$4,443,414.00	1	Elysian Park Aboretum, Alpine Recreation Center, Everett Park, Ord and Yale Street Park	1/23/2023	No	2/1/2023	2/1/2023	2/6/2023	2/9/2023	4/20/2023	Fees	23-079								399	
119	FIVE POINTS, LP c/o Jack Kurchian	Edgar Khalatian	TBD	2	North Hollywood	6201 North Laurel Canyon Boulevard (also has multiple other addresses per grant deed)	12.90	825	103	5.96	\$13,825,350.00	928.00	6.71	\$15,551,424.00	21	Laurel Grove Park, Valley Plaza Park	7/6/2023	No																Applicant was asked to further elaborate amenities for common open space and to ensure Alexandria Park is not being developed as part of this project. Applicant has yet to return to RAP staff with corrections, so application is being put on hold.
120	Los Angeles County Metropolitan Transportation Authority, Queenstown Holdings IDJ LLC, Walter and Aeshea Jayasinghe Family Trust, Walter J Company	William Lowery (Talo Management Group) / Francis Y. Park (Park & Velayos LLP)	TBD	1	Westlake	650-686 South Alvarado Street, 657-693 Westlake Avenue, 2001-2015 West 7th Street, 2009-2032 Wilshire Boulevard	3.43	434	234	3.14	\$7,272,972.00	668.00	4.83	\$11,194,344.00	3	MacArthur Park, Hope and Peace Park	11/1/2023	No	11/13/2023	11/8/2023	11/15/2023	11/17/2023											0	

  Updates since the last RAP Task Force Meeting  
  Completed Projects  
  Projects that have cancelled Tract Map  
  Received Distribution Notice, Waiting on EC App