



Los Angeles County Department of Regional Planning

Planning for the Challenges Ahead



Richard J. Bruckner
Director

May 26, 2015

The Honorable Board of Supervisors
County of Los Angeles
383 Kenneth Hahn Hall of Administration
500 West Temple Street
Los Angeles, CA 90012

Dear Supervisors:

**HEARING ON THE TREE PLANTING ORDINANCE
PROJECT NO. R2007-02988-(1-5)
ADVANCE PLANNING CASE NO. 201400003
(ALL SUPERVISORIAL DISTRICTS) (3-VOTES)**

SUBJECT

This action is to adopt an ordinance amending Title 21 (Subdivisions) and Title 22 (Planning and Zoning) of the Los Angeles County Code to repeal the drought tolerant landscaping and green building requirements in Sections 21.24.430 and 21.24.440 and Parts 20 and 21 of Chapter 22.52 that are found in Title 31; and to establish tree planting requirements for new projects. Division 1 of Chapter 22.08 is to be amended to add definitions. Part 20 (Tree Planting Requirements) of Chapter 22.52 is to be added to establish tree planting requirements that provide environmental benefits.

IT IS RECOMMENDED THAT THE BOARD, AFTER THE PUBLIC HEARING:

1. Determine that the project is Categorically Exempt (Class 8) from California Environmental Quality Act (CEQA) reporting requirements because it is an action by a regulatory agency for the protection of the environment.
2. Approve the recommendation of the Regional Planning Commission (Commission) to amend the County Code to repeal green building and drought tolerant requirements from Title 22 and establish new tree planting requirements in Title 22 as reflected in the draft ordinance.
3. Indicate the Board of Supervisor's (Board) intent to approve the Tree Planting Ordinance (Advance Planning Case No. 201400003).
4. Instruct County Counsel to prepare the final ordinance amending the County Code as recommended by the Commission and submit to the Board for its consideration.

PURPOSE/JUSTIFICATION OF RECOMMENDED ACTION

The purpose of this ordinance is to repeal the drought tolerant landscaping and green building requirements from Title 21 (Subdivisions) and Title 22 (Planning and Zoning) that are found in Title 31 (Green Building Standards Code); and to establish tree planting requirements in Part 20 of Chapter 22.52 that provide environmental benefits. Trees planted pursuant to Part 20 will reduce greenhouse gasses that cause global warming by absorbing carbon dioxide, reduce water pollution and recharge groundwater by retaining storm water onsite, and reduce the urban heat island effect by shading impervious surfaces and by transpiration.

Implementation of Strategic Plan Goals

The ordinance promotes Goal 2 (Community Support and Responsiveness) which states, "Enrich lives of Los Angeles County residents by providing enhanced services, and effectively planning and responding to economic, social, and environmental challenges." The ordinance is a response to the environmental challenges of global warming, water pollution, ground water depletion and the urban heat island effect which contributes to air pollution and energy consumption. Trees planted pursuant to the ordinance will reduce greenhouse gasses that cause global warming by absorbing carbon dioxide, reduce water pollution and recharge groundwater by retaining storm water onsite, and reduce the urban heat island effect by shading impervious surfaces and by transpiration.

FISCAL IMPACT/FINANCING

Adoption of the ordinance will not result in significant costs to the County. Implementation of this ordinance is not expected to require additional staff support. Therefore, a request for financing is not requested at this time.

FACTS AND PROVISIONS/LEGAL REQUIREMENTS

A public hearing is required pursuant to Section 22.16.200 of the County Code and Section 65856 of the Government Code. Required notice must be given pursuant to the procedures and requirements set forth in Section 22.60.174 of the County Code. These procedures exceed the minimum standards of Section 6061, 65090, and 65856 of the Government Code relating to notice of public hearing.

Background

On November 18, 2008, the Board adopted the following ordinances:

Ordinance No. 2008-0064 entitled, "An ordinance amending Title 21 - Subdivisions and Title 22 - Planning and Zoning of the Los Angeles County Code to establish drought-tolerant landscaping requirements for projects constructed after January 1, 2009."

Ordinance No. 2008-0065 entitled, "An ordinance amending Title 21 - Subdivisions and Title 22 - Planning and Zoning of the Los Angeles County Code to establish green building development standards for projects constructed after January 1, 2009."

The ordinances took effect December 18, 2008, and became operative January 1, 2009.

On November 23, 2010, the Board adopted Ordinance No. 2010-0058 entitled, "An ordinance adding Title 31 – Green Building Standards Code of the Los Angeles County Code, relating to the adoption of the 2010 California Green Building Code by reference, with certain changes and modifications." The ordinance took effect December 23, 2010, and become operative January 1, 2011.

Since the adoption of Ordinance No. 2010-0058 on November 23, 2010, there have been redundancies and inconsistencies in the County Code because Titles 21 and 22 also have green building and drought tolerant requirements. This ordinance amendment will remove said redundancies and inconsistencies.

On June 25, 2014, the Commission conducted a public hearing that was continued to August 13, 2014, so that the ordinance's impacts to private property rights, small business and public infrastructure could be addressed. There were no testifiers present.

On August 13, 2014, the Commission conducted a public hearing that was continued until December 17, 2014, so that a Tree Planting Guide could be developed. There were no testifiers present.

At the December 17, 2014, public hearing, the Commission expressed a concern that requiring trees in parking lots may reduce the required number of parking spaces, commercial floor area and residential units. The Commission suggested that cool pavement be considered as an alternative in those situations. Accordingly, the modification section of the ordinance was revised to require the use of cool pavement in

uncovered parking areas that would otherwise be shaded by required trees. There being no testifiers present, the Commission closed the public hearing and recommended that the Board adopt the revised ordinance to include a provision for cool pavement.

ENVIRONMENTAL DOCUMENTATION

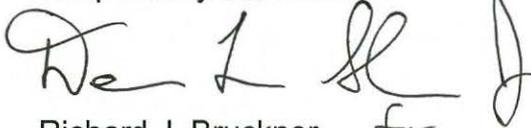
The adoption of the Tree Planting Ordinance is exempt (Class 8) from CEQA pursuant to Sections 15308 (Actions by Regulatory Agencies for Protection of the Environment) of Title 14 of the California Code of Regulations.

IMPACT ON CURRENT SERVICES (OR PROJECTS)

Action on the proposal is not anticipated to have a significant impact on current services or projects.

Should you have any questions, please contact Carmen Sainz via e-mail at csainz@planning.lacounty.gov or Dean Edwards at dedwards@planning.lacounty.gov or at (213) 974-6425.

Respectfully submitted,


Richard J. Bruckner
Director

for
RJB

RJB:MC:CS:de:ems

Attachments:

1. Resolution
2. Draft Tree Planting Ordinance
3. Draft Tree Planting Guide
4. Regional Planning Commission Hearing Packages

c: Executive Office, Board of Supervisors
County Counsel
Chief Executive Office

**RESOLUTION OF THE REGIONAL PLANNING COMMISSION
COUNTY OF LOS ANGELES
TREE PLANTING ORDINANCE**

WHEREAS, the Regional Planning Commission (Commission) of the County of Los Angeles (County) has reviewed the amendments to Title 21 (Subdivisions) and Title 22 (Planning and Zoning) of the Los Angeles County Code that 1) repeal the drought tolerant landscaping and green building requirements in Sections 21.24.430 and 21.24.440 and Parts 20 and 21 of Chapter 22.52 that are now found in Title 31; and 2) establish tree planting requirements for most new projects; collectively the Tree Planting Ordinance (Ordinance). Division 1 of Chapter 22.08 is to be amended to add definitions pertinent to the new tree planting requirements. Part 20 of Chapter 22.52 is to be amended to establish the new tree planting requirements.

WHEREAS, the Commission finds as follows:

1. November 18, 2008: The Board of Supervisors (Board) adopted the following ordinances:

Ordinance No. 2008-0064 entitled, "An ordinance amending Title 21 - Subdivisions and Title 22 - Planning and Zoning of the Los Angeles County Code to establish drought-tolerant landscaping requirements for projects constructed after January 1, 2009."

Ordinance No. 2008-0065 entitled, "An ordinance amending Title 21 - Subdivisions and Title 22 - Planning and Zoning of the Los Angeles County Code to establish green building development standards for projects constructed after January 1, 2009."

The ordinances took effect December 18, 2008, and became operative January 1, 2009.

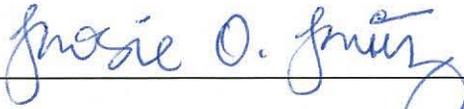
2. November 23, 2010: The Board adopted Ordinance No. 2010-0058 entitled, "An ordinance adding Title 31 – Green Building Standards Code of the Los Angeles County Code, relating to the adoption of the 2010 California Green Building Code by reference, with certain changes and modifications." The ordinance took effect December 23, 2010, and become operative January 1, 2011.
3. November 26, 2013: The Board adopted Ordinance No. 2013-0053 entitled, "An ordinance amending Title 31 - Green Building Standards Code of the Los Angeles County Code, by adopting the 2013 California Green Building Standards Code by reference, with certain changes and modifications, and making other revisions thereto." The ordinance became operative on January 1, 2014.
4. Since the adoption of Ordinance No. 2013-0053 on November 23, 2010, there have been redundancies and inconsistencies in the County Code because Title 22 also has green building and drought tolerant requirements. The Ordinance will remove said redundancies and inconsistencies.
5. The Ordinance establishes new tree planting requirements that provide environmental benefits. Trees planted pursuant to Part 20 will reduce greenhouse gasses that cause global warming by absorbing carbon dioxide, reduce water pollution and recharge groundwater by retaining storm water onsite, and reduce the urban heat island effect by shading impervious surfaces and by transpiration.
6. Excluding certain exemptions as provided by the Ordinance, the tree planting requirements apply to: new buildings; additions with a cumulative floor area of at least 50 percent of the total existing building floor area on the subject property, within any 12-month period; new uncovered surface parking lots with a minimum of 15 parking spaces; and existing uncovered surface parking lots expanded by 15 or more parking spaces.

7. The Ordinance includes Appendix A, which establishes shade plan requirements.
8. The Tree Planting Guide is a supplement to the Ordinance that includes detailed shade plan requirements; a Tree Species List; and recommendations for irrigation, professional services and resources for tree planting and maintenance.
9. The Staff Report prepared by the Department for the Ordinance contains a detailed analysis of applicable General Plan policies as applied to the Ordinance, and concludes that the Ordinance is consistent with such policies. The analysis is hereby adopted and is incorporated herein by this reference.
10. The adoption of the Tree Planting Ordinance is exempt (Class 8) from CEQA pursuant to Sections 15308 (Actions by Regulatory Agencies for Protection of the Environment) of Title 14 of the California Code of Regulations.
11. Two communications regarding the Ordinance were received from the public. One identified concerns about tree impacts to solar facilities. The impacts to solar facilities are covered by the California Solar Shade Control Act (Pub Res C § 25980 et seq.). The other was from the organization TreePeople. The Ordinance was revised to address TreePeople's comments.
12. Pursuant to the provisions of Section 22.60.174 of the County Code, the public hearing notice was published in the *Los Angeles Times* and *La Opinión* newspapers on May 20, 2014.
13. At the December 17, 2014 hearing, the Commission expressed a concern that requiring parking lot trees may reduce parking spaces, commercial space and residential units. The Commission suggested that cool pavement be considered as an alternative in those situations. Accordingly, the modification section of the Ordinance was revised to require the use of cool pavement in uncovered parking areas that would otherwise be shaded by required trees.
14. There was no public testimony for this item.
15. The location of the documents and other materials constituting the record of proceedings upon which the Commission's decision is based in this matter is at the Los Angeles County Department of Regional Planning, 13th Floor, Hall of Records, 320 West Temple Street, Los Angeles, CA 90012. The custodian of such documents and materials shall be the Section Head of the Community Studies East Section, Los Angeles County Department of Regional Planning.

NOW, THEREFORE, BE IT RESOLVED THAT, the Regional Planning Commission recommends to the Los Angeles County Board of Supervisors as follows:

1. That the Board hold a public hearing to consider proposed amendments to Title 21 (Subdivisions) and Title 22 (Planning and Zoning) of the Los Angeles County Code to repeal the drought tolerant landscaping and green building requirements and establish the Tree Planting Ordinance; and
2. That the Board find the adoption of the Tree Planting Ordinance exempt from CEQA guidelines, pursuant to Section 15308 (Actions by Regulatory Agencies for Protection of the Environment) of Title 14 of the California Code of Regulations; and
3. That the Board adopt an ordinance containing amendments Title 21 (Subdivisions) and Title 22 (Planning and Zoning) of the Los Angeles County Code recommended by this Commission, and determine that the amendments are compatible with and supportive of the goals and policies of the Los Angeles County General Plan.

I hereby certify that the foregoing was adopted by a majority of the voting members of the Regional Planning Commission of the County of Los Angeles on December 17, 2014.

By: 

Rosie O. Ruiz, Commission Secretary
Regional Planning Commission
County of Los Angeles

APPROVED AS TO FORM:
OFFICE OF THE COUNTY COUNSEL

By: _____
Lawrence Hafetz
Deputy County Counsel

VOTE

Concurring: Valadez, Shell, Louie, Pedersen, Modugno

Dissenting:

Abstaining:

Absent:

Action Date: December 17, 2014

DRAFT TREE PLANTING ORDINANCE

An ordinance amending Title 21 – (Subdivisions) and Title 22 – (Planning and Zoning) of the Los Angeles County Code to repeal the drought tolerant landscaping and green building requirements; and to establish tree planting requirements for projects constructed after the effective date of this ordinance amendment.

The Board of Supervisors of the County of Los Angeles ordains as follows:

SECTION 1. Section 21.24.430 and 21.24.440 of Title 21 are hereby repealed in their entirety.

SECTION 2. Chapter 22.08 of Title 22 is hereby amended to read as follows:

22.08.030 C.

“Cool pavement” means paving materials that reflect the sun to provide cooler surfaces and increased water evaporation than traditional paving materials.

22.08.040 D.

“Developed area” shall mean the area of the project site where construction or expansion has or will take place.

22.08.190 S.

“Shade Plan” shall mean a landscape plan that depicts and quantifies the amount of tree shade for a project site as set forth in Appendix A.

22.08.200 T.

“Tree Species List” shall mean the list of tree species prepared and maintained pursuant to Section 22.52.2120.B.

22.08.210 U.

“Uncovered Parking Area” shall mean, for the purpose of implementing Part 20 Tree Planting Requirements, uncovered impervious surface areas of a parking lot that includes parking stalls, pedestrian loading areas, driveways within the property line, areas for maneuvering and walkways within the parking lot but excludes: areas covered by solar panels; truck loading, maneuvering and parking areas not connected to and exclusive of any vehicle parking; and display, sales, service and vehicle storage areas associated with uses such as automobile dealerships.

“Utility-scale renewable energy facility, ground-mounted” shall mean a facility affixed to the ground where renewable resources are used to generate energy primarily for off-site use. This definition includes all on-site and off-site equipment and accessory structures related to the facility, including but not limited to solar collector arrays, wind turbines, mounting posts, substations, electrical infrastructure, transmission lines, operations and maintenance buildings, and other accessory structures.

SECTION 3. Part 20 of Chapter 22.52 is hereby repealed in its entirety.

SECTION 4. Part 20 of Chapter 22.52 is hereby added to read as follows:

Part 20

TREE PLANTING REQUIREMENTS

- 22.52.2100 Purpose.
- 22.52.2110 Applicability.
- 22.52.2120 Development Standards.
- 22.52.2130 Plan Requirements.
- 22.52.2140 Modification of Development Standards.

22.52.2100 Purpose.

The purpose of this Part 20 is to establish tree planting requirements that provide environmental benefits. Trees planted pursuant to this Part 20 will reduce greenhouse gasses by absorbing carbon dioxide, water pollution by retaining storm water onsite and the urban heat island effect by shading impervious surfaces.

22.52.2110 Applicability.

- A. This Part 20 shall apply to projects that include:
 - 1. New buildings as defined in Section 22.08.020 of the Los Angeles County Code;
 - 2. Additions with a cumulative floor area of at least 50 percent of the total existing building floor area on the subject property, within any 12 month period.
 - 3. New uncovered surface parking lots with a minimum of 15 parking spaces and existing uncovered surface parking lots expanded to have 15 or more parking spaces.
- B. The following projects are exempt from the requirements of this Part 20:
 - 1. Any project where a complete application was filed with the Department prior to the effective date of this ordinance;
 - 2. Accessory structures and buildings;
 - 3. Utility-scale renewable energy facilities, ground-mounted.
- C. Trees required by this Part 20 are minimum requirements; however, they may contribute to fulfilling all other landscaping required in this Title 22, including any such requirements in a Community Standards District.

22.52.2120 Development Standards.

A. Number of Trees.

1. Projects subject to Sections 22.52.2110.A.1 and 22.52.2110.A.2 shall comply with the following requirements:

a. For three or fewer residential units per lot, a minimum of two trees shall be planted.

b. For four or more residential units per lot, a minimum of one tree shall be planted for every 5,000 square feet of developed area.

c. For non-residential or mixed-use developments, a minimum of three trees shall be planted for every 10,000 square feet of developed area per lot.

2. Any existing tree located on the project site with a minimum trunk diameter of .75 inches, as measured six inches above the soil line, may count towards meeting the requirement of Section 22.52.2120.A.1.

3. For projects subject to Section 22.52.2110.A.3, at least 50 percent of uncovered parking areas, as defined in Section 22.08.140, shall be shaded with trees within 15 years of planting, consistent with the shade plan requirements of Appendix A. Trees planted pursuant to this requirement may count towards the requirements of Sections 22.52.2120.A.1.b and 22.52.2120.A.1.c.

B. Species. The tree species planted shall be those that provide adequate shade, are not invasive, are resistant to local pest and diseases, are adaptable to the local climate, and are appropriate for the planting location. The Director shall prepare and maintain the Tree Species List, which shall contain a list of tree species which the Director has determined satisfy the criteria set forth in this subsection.

C. Planting Size. Required trees shall be a minimum size of 15 gallons and shall have a trunk diameter of .75 to 1.5 inches as measured six inches above the soil line.

D. Location.

1. Trees shall be in planted in locations that maintain the required lines of sight for safe pedestrian and vehicular movement and will not cause root damage to the sidewalk or other public infrastructure, to the satisfaction of the Department of Public Works.

2. Trees planted near buildings or fire lanes shall not be in locations that adversely impact Fire Department operations or response times, to the satisfaction of the Fire Department.

E. Maintenance.

1. Trees shall be supported with staking and ties, made of soft and mold resistant material (such as rubber), until the trees are able to support themselves.
2. Trees subject to Sections 22.52.2120.1.b, 22.52.2120.1.c and 22.52.2120.3, and not planted in turf shall require an irrigation system.
3. Trees failing to survive shall be replaced.

22.52.2130 Plan Requirements.

- A. For projects subject to Sections 22.52.2110.A.1 and 22.52.2110.A.2, required trees shall be depicted on the site plan and the species labeled.
- B. For projects subject to Section 22.52.2110.A.3, a shade plan that is consistent with the requirements of Appendix A is required.
- C. For projects located in a Fire Hazard Severity Zone, required site and/or shade plans shall be routed to the Fire Department's Fuel Modification Unit for review and approval in order to ensure proposed tree locations are in compliance with Title 32 of the County Fire Code.

22.52.2140 Modification of Development Standards.

The requirements of Section 22.52.2120.A may be modified by the Director, without additional fees where:

- A. The soil type would prevent tree survival as documented in a notarized letter by a certified arborist and submitted to the Director.
- B. The requirement would conflict with other provisions set forth in the County Code. When the Director reduces the required shade area for a project subject to Section 22.52.2120.A.3 in order to comply with parking requirements, the Director may require cool pavement, preferably permeable, to be used in Uncovered Parking Areas which would otherwise be shaded by required trees; or
- C. The parking lot subject to Subsection 22.52.2120.3 is retrofitted with solar panels.

APPENDIX A – SHADE PLAN REQUIREMENTS

In addition to site plan requirements, the shade plan shall comply with the following requirements:

1. Depict and label drainage features such as drop inlets, catch basins and swales.
2. Indicate landscape details such as soil preparation and tree staking, where appropriate.

3. Depict and label heights of any power lines, lighting, signage or other above ground infrastructure.
4. Depict planters in parking lots with concrete curbs that are a minimum of six (6) inches high/wide. Label the inside planter width that conforms to the minimum size identified in the Tree Species List.
5. Depict location and canopy of existing trees that shade the uncovered parking area. Label tree "To Remain" or "To Be Removed". Canopies of trees to remain shall be drawn to scale at the size of 15 years maturity as indicated in the Species List.
6. Depict location and canopy of proposed trees. Canopies shall be drawn to scale at the size of 15 years maturity.
7. Label trees with symbols keyed to the shade calculation table to identify species. For trees planted under power lines, signage or other above ground infrastructure, the species shall not have a maximum height that exceeds the height of the lowest point of above ground infrastructure that the tree is planted under.
8. Label trees with shade credit. Shade credit is the percent of parking area directly beneath the canopy or drip line that will be shaded by the tree at 15 years of maturity and shall be estimated at 25, 50, 75 or 100 percent. Areas where canopies overlap shall not be counted twice.
9. Depict any proposed cool pavement and label square footage and pavement type.
10. Include a shade calculation table (table). If a site has two or more unconnected parking areas, shade shall be calculated separately for each area using a separate calculation table. The table shall include the following:
 - a. Uncovered parking area.
 - b. Required shade area.
 - c. Tree symbols keyed to the shade plan.
 - d. Botanical and common name for proposed trees and existing trees.
 - e. Tree canopy diameter at 15 years maturity for each species
 - f. Tree canopy area at 15 years maturity for each species.
 - g. Tree quantity per species and shade credit (100%, 75%, 50% or 25%).
 - h. Shade area (square feet) per species and shade credit.
 - i. Provided shade area per species.
 - j. Total provided shade area.
 - k. Percent Shade Coverage.

SECTION 5. Part 21 of Chapter 22.52 is hereby repealed in its entirety.

DRAFT TREE PLANTING GUIDE

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I. INTRODUCTION

To implement Part 20 Tree Planting Requirements (Requirements) of Title 22, this document, the Tree Planting Guide (Guide) was developed as a guide for planting trees. It includes detailed shade plan requirements; a list of approved tree species (Tree Species List); and recommendations for irrigation, professional services and resources for tree planting and maintenance.

II. PROFESSIONAL SERVICES

Since the full [benefits](#) of trees are not realized until the trees mature, the planting of trees is both an investment in the future and a financial investment. To protect this investment and to maximize the benefits that trees provide, proper placement, species selection, planting and maintenance is necessary. Qualified professionals are available to provide assistance in these matters. Their services and expertise are described below.

Part 20 of Title 22 requires shade plans for new uncovered surface parking lots. Shade plans should be prepared by professional landscape architects. To locate a licensed landscape architect, contact the [American Society of Landscape Architect \(ASLA\)](#).

Three professional organizations, [The International Society of Arboriculture \(ISA\)](#), [Tree Care Industry Association \(TCIA\)](#), and [American Society of Consulting Arborists \(ASCA\)](#) certify arborists to provide critical tree care services such as planting, soil modification and aeration, pruning, pest and disease diagnosis and treatment, and tree removal.

Part 20 of Title 22 requires irrigation systems for certain projects. Irrigation systems should be designed, installed and programmed by a certified irrigation professional. To locate a certified irrigation professional, contact the [Irrigation Association](#).

III. TREE SPECIES

The species of planted trees must meet certain criteria set forth in Part 20 of Title 22. The attached Tree Species List identifies shade tree species that have been deemed suitable for planting in developed areas. Additionally, invasiveness, climate change, and tree pest and diseases in the region were considered in the preparation of the list. The Tree Species List includes both botanical and common names, and also the following associated information to aid in the selection of suitable species for a particular location: canopy diameter, height, type (evergreen, deciduous or semi deciduous), Sunset Magazine Climate Zone, sun requirement, water requirement, planter size requirement, root damage potential, growth rate, California native and notes regarding the species. The Tree Species List includes a key on a separate sheet that describes the fields and abbreviations used in the list.

When planting in locations where root damage to structures or infrastructure is a concern, it is recommended that species from the Tree Species List with low root damage potential be chosen. Additionally, it is recommended that underground root barriers be installed to deflect roots downward.

Title 31 of the County Code states that, "Non-Invasive drought-tolerant plant and tree species appropriate for the climate zone region shall be utilized in at least 75 percent of the total landscaped area." Species identified in the Tree Species List with a water requirement of very low (VL) to moderately low (M/L) are considered drought-tolerant.

Large tree species provide greater benefits than smaller species trees. It is therefore recommended that the largest tree species that is appropriate for the planting location be selected whenever possible. For further information, please see the US Forest Service's [Large Tree Argument](#) publication.

IV. SHADE PLANS

All projects subject to Part 20 of Title 22 of the Los Angeles County Code that include a new uncovered surface parking lot, require submittal of a shade plan to the Department of Regional Planning for review and approval to ensure the parking lot is designed to result in at least 50 percent shading of uncovered parking areas by trees within 15 years. See Figure A for an example of a shade plan. In addition to items required for site plans, the shade plan shall comply with the following:

1. Depict and label drainage features such as drop inlets, catch basins and swales. The parking lot should be designed so that the trees benefit by the drainage.
2. Indicate landscape details (i.e., soil preparation, tree staking, etc.) where appropriate.
3. Depict and label heights of any power lines, lighting, signage or other above ground infrastructure. Parking lot lighting should not conflict with tree locations and growth. Light standards no greater than 16 feet in height are strongly encouraged.
4. Depict planters in parking lots with minimum six (6) inch high/wide concrete curbs for protection. Label inside planter width that conforms to the minimum size identified in the

Tree Species List. Continuous planting islands are encouraged to allow for multiple tree plantings to increase soil area available for roots.

5. Depict location and canopy of existing trees that shade the parking area. Label tree “To Remain” or “To Be Removed”. Canopies of trees to remain shall be drawn to scale at the size of 15 years maturity as indicated in the Tree Species List.
6. Depict location and canopy of proposed trees. Canopies shall be drawn to scale at the size of 15 years maturity as indicated in the Tree Species List.
7. Label trees with symbols keyed to the shade calculation table (below) to identify species. It is recommended that the species of trees be varied throughout the parking lot. For trees planted under power lines, signage or other above ground infrastructure, the species shall not have a height identified in the Tree Species List that exceeds the height of the lowest point of above ground infrastructure that the tree is planted under. Trees located within storm water runoff areas should be species with a moderate to very high water requirement.
8. Label trees with shade credit. Shade credit is the percent of parking area directly beneath the canopy or drip line that will be shaded by the tree at 15 years of maturity and shall be estimated at 25, 50, 75 or 100 percent. Areas where canopies overlap shall not be counted twice.
9. Depict any proposed [cool pavement](#) and label square footage and pavement type. Cool pavement can only be used in lieu of trees when the Director has determined that it is necessary to reduce the amount of required shade area to meet parking requirements.
10. Shade calculation table (table). See Figure B for example of a completed table. Include any existing trees that will remain. If a site has two or more unconnected parking areas, shade shall be calculated separately for each area using a separate calculation table. A spreadsheet that calculates tree shade for parking lots (Shade Calculator) is on the Department of Regional Planning’s website. The table shall include the following:
 - a. Uncovered parking area. Uncovered impervious surface area of the parking lot that includes parking stalls, pedestrian loading areas, driveways within the property line, areas for maneuvering and walkways within the parking lot. Excludes: areas covered by solar panels, truck loading areas in front of overhead doors; truck maneuvering and parking areas unconnected to and exclusive of any vehicle parking; and display, sales, service, and vehicle storage areas associated with uses such as automobile dealerships or lumber yards.
 - b. Required shade area. The total area required to be shaded by trees. This field is calculated by the Shade Calculator.
 - c. Tree symbols keyed to the shade plan. A unique identifier for each tree species. Example: “T1”.
 - d. Botanical and common name for proposed trees and existing trees.
 - e. Tree canopy diameter at 15 years maturity for each species. Diameters shall be from the Tree Species List.

- f. Tree canopy area at 15 years maturity for each species. This field is calculated by the Shade Calculator
- g. Tree quantity per species and shade credit (100%, 75%, 50% or 25%). This is number of provided trees per species and shade coverage.
- h. Shade area (square feet) per species and shade credit. The area of provided shade for each species and shade credit. This field is calculated by the Shade Calculator.
- i. Provided shade area per species. The total provided shade area for each species. This field is calculated by the Shade Calculator.
- j. Total provided shade area. The total provided shade area for all species. This field is calculated by the Shade Calculator.
- k. Percent Shade Coverage. Percentage of the parking area to be shaded by trees. This field is calculated by the Shade Calculator.

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Figure A. Shade Plan Example

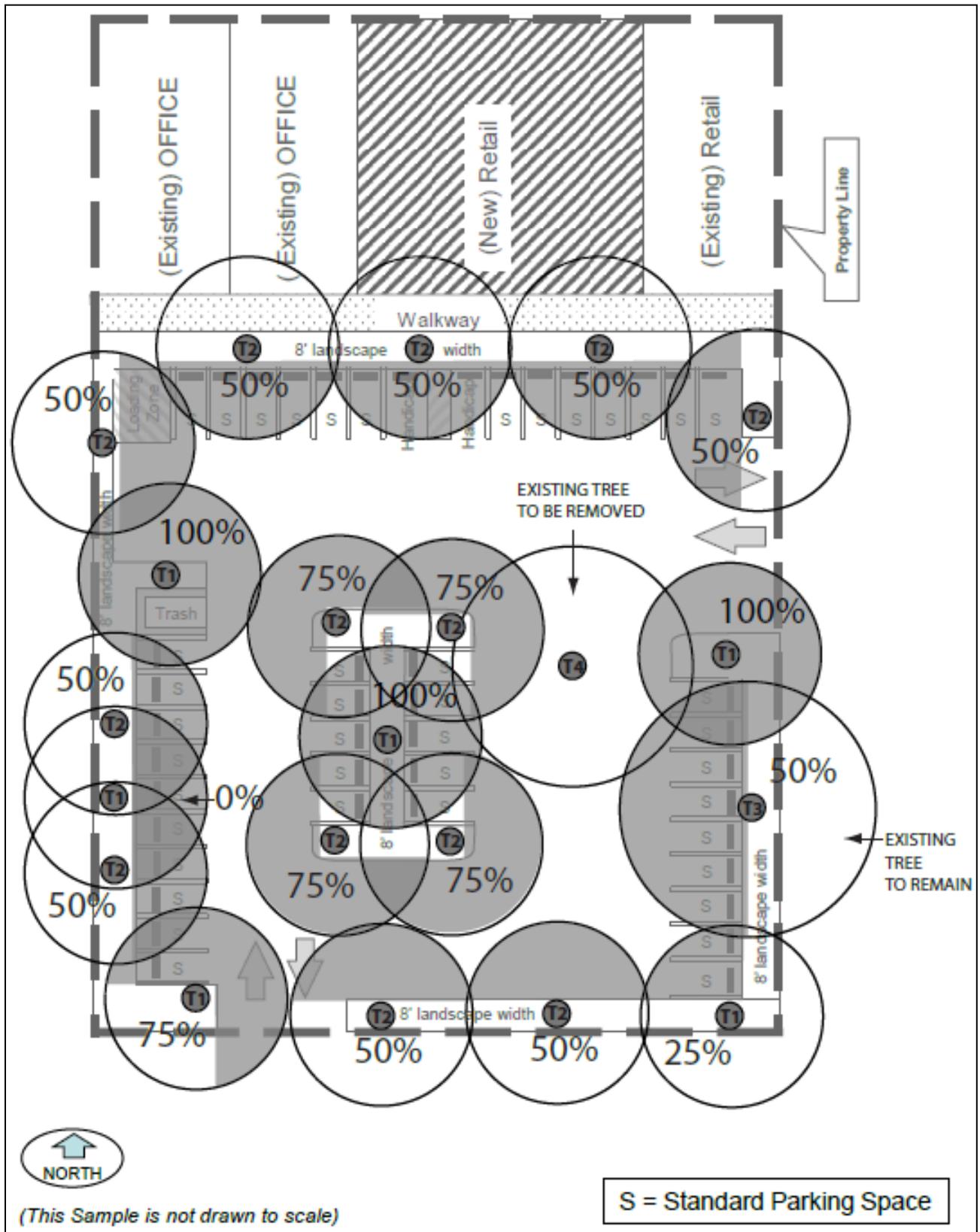


Figure B. Shade Calculation Table Example

| PARKING LOT SHADE CALCULATION TABLE | | | | | | | | | | | | | | Uncovered Parking Area: | |
|-------------------------------------|--------------------------|------------------|-----------------|-------------|-------------------|------|------------------|------|------------------|------|------------------|-------|---------------------|-------------------------|--|
| Symbol | Species Name | | Canopy Diameter | Canopy Area | 100% Shade Credit | | 75% Shade Credit | | 50% Shade Credit | | 25% Shade Credit | | Provided Shade Area | | |
| | Botanical | Common | | | Quantity | Area | Quantity | Area | Quantity | Area | Quantity | Area | | | |
| T1 | Pistacia chinensis | Chinese Pistache | 30 | 707 | 3 | 2121 | 1 | 530 | 0 | 0 | 1 | 177 | 2,827 | | |
| T2 | x Chitalpa tashkentensis | Chitalpa | 30 | 707 | 0 | 0 | 4 | 2121 | 9 | 3181 | 0 | 0 | 5,301 | | |
| T3 | Quercus agrifolia | Coast Live Oak | 35 | 962 | 0 | 0 | 0 | 0 | 1 | 481 | 0 | 0 | 481 | | |
| T4 | Ficus benjamina | Weeping Fig | 35 | 962 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | - | | |
| | | | | | | | | | | | | | - | | |
| | | | | | | | | | | | | | - | | |
| | | | | | | | | | | | | | - | | |
| | | | | | | | | | | | | | - | | |
| Total Provided Shade Area : | | | | | | | | | | | | 8,610 | | | |
| Percent Shade Coverage: | | | | | | | | | | | | 54% | | | |

Diameters are in feet and areas are in square feet.
 Complete white cells only. Grey cells are calculated.

V. IRRIGATION

On average, trees need the equivalent of one inch of rain every 7 to 10 days, which is less than the normal rainfall in Los Angeles County. Generally it will take one full year per inch of trunk diameter for a tree to get established (e.g. It will take 3 years for a 3 inch caliper/diameter tree to establish itself). To ensure that newly planted trees, which have a limited root system, survive until they are established, Title 22 Part 20 requires that trees, for certain projects, not planted in turf have irrigation systems. To ensure that required trees are irrigated appropriately, it is recommended that irrigation systems be designed, installed and programmed by a certified irrigation professional.

Following, is a recommended watering schedule for a newly planted 15 gallon tree:

- Month 1: Twice a week.
- Months 2–3: Once a week.
- Months 4–7: Once every two weeks.
- Months 8–12: Once every three weeks.
- Years 1-3: Once every four to five weeks.
- Years 4–5: Once every five to six weeks.

Fifteen gallons of water per tree is generally recommended for each watering. However, actual watering requirements vary based on the trees species. The Tree Species List indicates water requirements for each species.

It is recommended that both newly planted trees and mature trees be watered until water stops soaking in the ground because the soil has become saturated and reached its water-holding capacity. Sandy soils will drain quicker than soils with clay. It is best to check the soil for moisture about four inches down before watering. If it's really wet, don't water, even though the schedule says to.

In drought conditions, even older trees will start to show symptoms of drought stress and will need supplemental water although less frequently than younger trees. Established drought tolerant species may also need supplemental watering with continued drought.

VI. RESOURCES

Following, are online resources that include helpful information about tree planting such as: benefits, placement, species selection, planting techniques and maintenance (including pruning and care). Also, websites for relevant professional organizations are provided.

Miscellaneous

These resources are ordered by potential usefulness.

Trees Are Good: <http://www.treesaregood.com/treeowner/treeownerinformation.aspx>

TreePeople: <http://www.treepeople.org/>

US Forest Service's Large Tree Argument

http://www.fs.fed.us/psw/programs/uesd/uep/products/cufr_511_large_tree_argument.pdf

Smart Landscaping and Energy Efficiency

https://www.firstenergycorp.com/content/customer/help/saving_energy/trees.html

Tree Benefit Calculator: www.treebenefits.com

Adverse Effects of Topping (over pruning crowns): <http://www.urbantree.org/topping.asp>

Dig Alert (for underground utilities): <http://www.digalert.org/home.html>

Cal Poly San Luis Obispo, Urban Forest Ecosystems Institute: <http://selectree.calpoly.edu/>

EPA Cool Pavement: <http://www.epa.gov/heatland/mitigation/pavements.htm>

Professional Organizations

American Society of Landscape Architects: <http://www.asla.org/>.

American Society of Consulting Arborists (ASCA): <http://www.asca-consultants.org/>

International Society of Arboriculture (ISA): <http://www.isa-arbor.com/>

Irrigation Association: <http://www.irrigation.org/>

Tree Care Industry Association (TCIA): <http://tcia.org/>

ATTACHMENT A – TREE SPECIES LIST

TREE SPECIES LIST

| Botanical Name | Common Name | Canopy Diameter at 15 Years (Feet) | Canopy Diameter at Maturity (Feet) | Height (Feet) | Type | Sunset Climate Zone (Click To Look-up) | Sun | Water | Soil | Planter Size (Width in Feet) | Root Damage Potential | Growth Rate | California Native | Notes |
|---|-----------------------------------|------------------------------------|------------------------------------|---------------|------|--|------|-------|------------|------------------------------|-----------------------|-------------|-------------------|---|
| <i>Afrocarpus falcatus</i> (<i>Podocarpus gracilior</i>) | fern pine | 35 | 45 | 40-60 | E | 18-24 | S-P | M | C,L,S | 6-8 | L | S-M | | 1"-2" narrow leaves, very little leaf litter. Pest/disease-free. Lawn watering ok. |
| <i>Agonis flexuosa</i> | peppermint tree | 20 | 40 | 25-35 | E | 20-24 | S-P | M/L | C,L,S | 4-6 | M | M-F | | Weeping branches. 6" long peppermint scented leaves. White flowers in June. |
| <i>Albizia julibrissin</i> | silk tree | 35 | 50 | 25-40 | D | 18-23 | S-P | M | C,L,S | 4-6 | M | M-F | | Umbrella canopy. Pink, fluffy summer flowers. Ferny leaves fold up at night. |
| <i>Araucaria heterophylla</i> (<i>Araucaria excelsa</i>) | Norfolk Island pine, star pine | 35 | 60 | 60-100 | E | 21-24 | S-P | M | C,L,S | 8+ | M | M | | Not a pine. Large and symmetrical. Cones fall apart as they mature. |
| <i>Arbutus</i> 'Marina' | Marina strawberry tree | 20 | 30 | 20-30 | E | 18-24 | S-P | M/L | C,L,S | 6-8 | L | S-M | | Red peeling bark. Red edible fruit. Pink bell-shaped flowers. Needs part shade in zone 18. |
| <i>Arbutus unedo</i> | strawberry tree | 20 | 35 | 15-35 | E | 18-24 | S-Sh | M/L | C,L,S | 4-6 | L | S-M | | Red peeling bark. Red 1" round, edible fruit. White bell-shaped flowers. Shrubby. |
| <i>Bauhinia variegata</i> (<i>Bauhinia purpurea</i>) | purple orchid tree | 20 | 20 | 25-35 | E | 18-24 | S-P | M | L,S | 3-4 (5) | L | S-M | | Semi-deciduous mid-winter. Lightly fragrant purple/pink flowers Jan-April. Needs more structural pruning in youth. |
| <i>Bauhinia variegata</i> 'Candida' | white orchid tree | 20 | 20 | 25-35 | E | 18-24 | S-P | M | L,S | 3-4 (5) | L | S-M | | Semi-deciduous mid-winter to spring. White, lightly fragrant flowers Jan-April. Needs more structural pruning in youth. |
| <i>Bauhinia x blakeana</i> | Hong Kong orchid | 20 | 30 | 20-25 | E | 19-24 | S-P | M | WD, L,S | 3-4 | L | S-M | | 5-6" magenta flowers winter to spring. No seedpods. Sprawling, needs pruning. |
| <i>Calistemon citrinus</i> | Lemon Bottlebrush | 20 | 25 | 15-20 | | | | | | | | | | See <i>Melaleuca citrina</i> |
| <i>Callistemon salignus</i> | White bottlebrush | 20 | 20 | 15-20 | | | | | | | | | | See <i>Melaleuca saligna</i> |
| <i>Callistemon viminalis</i> | Weeping Bottlebrush | 20 | 20 | 20-25 | | | | | | | | | | See <i>Melaleuca viminalis</i> |
| <i>Cedrus atlantica</i> | blue Atlas cedar | 35 | 35 | 40-60 | E | 18-24 | S-P | M/L | C,L,S | 8+ | M | S-M | | Conifer. Short, stiff needles. 'Glauca' is a blue cultivar. |
| <i>Cedrus deodara</i> | deodar cedar | 35 | 40 | 60-80 | E | 18-24 | S-P | M/L | C,L,S | 8+ | M | F | | Conifer. Long, soft needles. Drooping leader and low sweeping branches. |
| <i>Cedrus libani</i> | cedar of Lebanon | 35 | 40 | 60-80 | E | 18-24 | S-P | M/L | C,L,S | 8+ | L | S | | Conifer. Irregular crown with long branches and short needles. |

TREE SPECIES LIST

| Botanical Name | Common Name | Canopy Diameter at 15 Years (Feet) | Canopy Diameter at Maturity (Feet) | Height (Feet) | Type | Sunset Climate Zone (Click To Look-up) | Sun | Water | Soil | Planter Size (Width in Feet) | Root Damage Potential | Growth Rate | California Native | Notes |
|--|-------------------------|------------------------------------|------------------------------------|---------------|--------|--|------|-------|-----------|------------------------------|-----------------------|-------------|-------------------|--|
| <i>Celtis australis</i> | European Hackberry | 35 | 50 | 30-50 | D | 18-20 | S-Sh | M | C,L,S | 6 | M | M | | Dark green leaves, 2-5" long. Small edible fruit in summer. |
| <i>Cercis canadensis</i> | Eastern Redbud | 20 | 25 | 25-35 | D | 18-24 | S-P | M | C,L,S | 3-4 | L | F | | Rose-pink flowers, yellow fall color. 'Forest Pansy' has red leaves. Part shade in the valley. |
| <i>Cercis occidentalis</i> | Western Redbud | 20 | 20 | 15-25 | D | 18-24 | S-P | M/L | C,L,S | 3-4 | L | M-F | x | Often multi-trunked. Magenta flowers, seed pods. Yellow fall color. Part shade in the valley. |
| <i>Chilopsis linearis</i> | desert willow | 20 | 25 | 15-25 | D | 18-21 | S | M/L | WD, L,S | 4-6 | L | M-F | x | Long-blooming fragrant, pink trumpet flowers. Attracts hummingbirds. |
| <i>Chionanthus retusus</i> | Chinese fringe tree | 20 | 20 | 20-25 | D | 18-24 | S | M | C,L | 4-6 | L | M | | White, fringe flowers June - July. Males, larger flowers. Yellow fall color. Part shade in the valley. |
| <i>Chitalpa tashkentensis</i> | Chitalpa | 30 | 30 | 20-35 | D | 18-24 | S-P | M/L | L,S | 4-6 | L | F | | Pink flowers like <i>Chilopsis</i> but bigger. Staked a long time. Can get aphids. Needs more structural pruning in youth. |
| <i>Cinnamomum camphora</i> | camphor | 35 | 80+ | 30-40 | E | 18-24 | S-P | M | WD, C,L,S | 8+ | H | M | | Camphor scented leaves. New leaves red/lime green. Heavy March leaf-drop. |
| <i>Eriobotrya deflexa</i> | bronze loquat | 20 | 20 | 25-30 | E | 18-24 | S-P | M | C,L,S | 3-4 | L | F | | White fragrant flowers Dec.-March. 5/8" non-edible fruit. Best with moist soil. |
| <i>Geijera parviflora</i> | Australian willow | 20 | 25 | 20-35 | E | 18-24 | S | M/L | WD, C,L,S | 6-8 | L | S-M | | Low maintenance. Deep roots. Pest-free. Willow-like, thick leaves droop. |
| <i>Ginkgo biloba</i> (Male only) | ginkgo, maidenhair tree | 30 | 60 | 35-80 | D | 18-24 | S-P | M | C,L,S | 4-6 | M | S-M | | Smog tolerant. Summer water till 10-20' tall. Yellow fall color. Long-lived. |
| <i>Handroanthus impetiginosus</i> (Tabebuia avellanadae) | pink trumpet tree | 25 | 30 | 30-50 | D | 20-24 | S | M | WD, C,L,S | 4-6 | L | S-M | | Pink trumpet flowers in late winter/early spring before leaves. |
| <i>Heteromeles arbutifolia</i> | toyon | 20 | 20 | 12-25 | E | 18-24 | S-P | M/L | WD, C,L,S | 3-4 | L | S-M | x | Great for wildlife. White flowers in spring-summer turn to red berries in winter. |
| <i>Jacaranda mimosifolia</i> | jacaranda | 25 | 40+ | 25-40 | D to S | 18-24 | S | M | WD, L,S | 6-8 | L | M | | Purple flowers April - Sept. Lots of leaf/flower litter. Poor bloom at coast. |
| <i>Koelreuteria bipinnata</i> | Chinese flame tree | 30 | 40 | 25-45 | D | 18-24 | S-P | M | C,L,S | 6-8 | L | S-M | | Yellow summer flowers. Bright red fall color. Salmon "paper lantern" pods in fall. |

TREE SPECIES LIST

| Botanical Name | Common Name | Canopy Diameter at 15 Years (Feet) | Canopy Diameter at Maturity (Feet) | Height (Feet) | Type | Sunset Climate Zone (Click To Look-up) | Sun | Water | Soil | Planter Size (Width in Feet) | Root Damage Potential | Growth Rate | California Native | Notes |
|---|--|------------------------------------|------------------------------------|---------------|------|--|-----|-------|---------|------------------------------|-----------------------|-------------|-------------------|---|
| Lagerstroemia indica and cultivars | Crape Myrtle | 20 | 25 | 15-25 | D | 18-21 | S | M | C,L,S | 3-4 | L | M | | Yellow/orange fall color. Many flower colors. Powdery mildew in zones 22-24. Indian Tribe cultivars partly resist mildew. |
| Laurus nobilis | Sweet Bay | 25 | 30 | 40 | E | 18-24 | S-P | M/L | C,L,S | 4-6 | M | S-M | | Leaves for cooking. Multi-trunk. Black scale & psyllids issue. 'Saratoga' is 25', single trunk and psyllid-resistant. |
| Lophostemon confertus (Tristania conferta) | Brisbane box | 25 | 40 | 30-60 | E | 19-24 | S-P | M | C,L,S | 4-6 | M | M-F | | Red, peeling bark. White summer flowers. Not for windy areas. Smog/lawn tolerant. |
| Lyonothamnus floribundus asplenifolius | Ironwood: Santa Cruz island, fernleaf Catalina | 25 | 40 | 30-60 | E | 19-24 | S-P | M/L | WD, L,S | 4-6 | M | M | x | Red, peeling bark. White flowers. Needs excellent drainage. Great near the coast. |
| Macadamia integrifolia | smoothshell macadamia | 20 | 20 | 25-30 | E | 19-24 | S | M | L,S | 4-6 | M | M | | White pendulous flowers. Edible nuts late fall to May. Best near the coast. |
| Melaleuca citrina (Callistemon citrinus) | lemon bottlebrush | 20 | 25 | 15-20 | E | 18-24 | S-P | M/L | C,L,S | 4-6 | L | F | | Showy red flowers spring-summer. Stiff branches. Lemon scented leaves. |
| Melaleuca linariifolia | flaxleaf paperbark | 20 | 30 | 20-30 | E | 18-24 | S-P | M | C,L,S | 4-6 | L | F | | White flaky bark. Small white summer flowers. Small, narrow leaves. |
| Melaleuca quinquenervia | cajeput tree | 25 | 30 | 20-40 | E | 20-24 | S-P | M | C,L,S | 4-6 | L | M | | Weeping tree. White, spongy peeling bark. Summer-fall white bottlebrush flowers. |
| Melaleuca saligna (Callistemon salignus) | white bottle brush | 20 | 20 | 15-20 | E | 18-24 | S-P | M/L | C,L,S | 3-4 | L | F | | Papery peeling bark. Pink new leaves. Cream flowers attract hummingbirds. Dense canopy. |
| Melaleuca viminalis (Callistemon viminalis) | weeping bottle brush | 20 | 20 | 20-25 | E | 18-24 | S-P | M/L | C,L,S | 3-4 | L | F | | Red flowers attract butterflies and hummingbirds. Pendulous branches. |
| Melia azedarach | China berry | 35 | 50 | 30-50 | D | 18-24 | S-P | M/L | L,S | 6-8 | M | F | | Spring-summer lilac flowers. Yellow berries. All parts poisonous. Invasive. |
| Metrosideros excelsus | New Zealand Christmas tree | 20 | 30 | 15-30 | E | 23-24 | S-P | M/L | L,S | 3-4 | M | S | | Red flowers May-July. White leaf underside. Aerial roots. Smog tolerant. |
| Olea europaea 'Swan Hill' | Swan Hill olive | 30 | 35 | 35 | E | 18-24 | S | M/L | C,L,S | 6-8 | M | M | | Swan Hill olive has no fruit or pollen. Grey-green leaves. |
| Parkinsonia 'Desert Museum' | Desert Museum palo verde | 25 | 25 | 20-30 | D | 18-24 | S | M/L | WD, L,S | 4-6 | L | M | | Thornless. Few seedpods. Yellow spring-summer flowers. Light shade. |

TREE SPECIES LIST

| Botanical Name | Common Name | Canopy Diameter at 15 Years (Feet) | Canopy Diameter at Maturity (Feet) | Height (Feet) | Type | Sunset Climate Zone (Click To Look-up) | Sun | Water | Soil | Planter Size (Width in Feet) | Root Damage Potential | Growth Rate | California Native | Notes |
|--|--|------------------------------------|------------------------------------|---------------|------|--|-----|-------|-------|------------------------------|-----------------------|-------------|-------------------|---|
| Photinia x fraseri | photinia, Fraser's photinia | 20 | 20 | 10-15 | E | 18-24 | S | M | C,L,S | 3-4 | L | M-F | | White spring flowers. Red new leaves. No berries. Susceptible to aphids. |
| Pinus canariensis | Canary Island pine | 35 | 40 | 65-80 | E | 18-24 | S-P | M/L | L,S | 6-8 | M | F | | Smog tolerant. Tall narrow pine. 9"-12" weeping needles. 4"-9" cones. |
| Pinus eldarica | eldarica pine, Afghan pine, Mondell pine | 30 | 30 | 65 | E | 18-24 | S-P | M | C,L,S | 6-8 | M | F | | 5"-6" dark green needles. For desert or coast. "Christmas tree" shape. |
| Pinus halepensis | Aleppo pine | 35 | 45 | 30-65 | E | 18-24 | S-P | L/VL | C,L,S | 6-8 | M | M-F | | Light green, 2½"-4" soft needles. Poor soil and heat ok. Susceptible to mites. |
| Pinus muricata | bishop pine | 30 | 35 | 40-50 | E | 22-24 | S-P | L/VL | L,S | 6-8 | M | VF | x | Irregular shape with age. Good wind break. Susceptible to pitch canker. |
| Pinus patula | Jelescote pine, Mexican weeping pine | 30 | 50 | 40-80 | E | 18-24 | S-P | M/L | L,S | 6-8 | M | F-VF | | Graceful, weeping 12" needles. Can become chlorotic. Great at the coast. |
| Pinus pinea | Italian stone pine | 30 | 50 | 40-80 | E | 18-24 | S-P | M/L | L,S | 6-8 | M | M-F | | Massive, broad-canopied tree. Great at the coast/valleys. Edible pine nuts. |
| Pinus torreyana | Torrey pine | 30 | 30 | 40-60 | E | 18-24 | S-P | L/VL | C,L,S | 6-8 | M | F | x | Native to San Diego coast, but ok in high desedrt. 8" - 13" dark gray-green needles. Open habit. |
| Pistacia chinensis | Chinese pistache | 30 | 50 | 60 | D | 18-23 | S | M | C,L,S | 6-8 | L | M | | Scarlet & orange fall color. Fruit is red, then blue. Tolerates lawn watering. |
| Platanus acerifolia 'Yarwood', 'Bloodgood', x hispanica 'Columbia' | London plane tree | 35 | 70 | 40-80 | D | 18-24 | S-P | M | C,L,S | 6-8 | H | F | | Like CA sycamore. Smog tolerant. Disease resistant: Yarwood - powdery mildew, Bloodgood - anthracnose. |
| Platanus racemosa | California sycamore | 35 | 70 | 50-100 | D | 18-24 | S-P | H/M | C,L,S | 6-8 | M | F | x | Very allergenic. Anthracnose and powdery mildew are issues. Likes a lot of water, but survives with less. |
| Podocarpus gracilior | fern pine | 35 | 45 | | | | | | | 6-8 | | | | See Afrocarpus falcatus |
| Podocarpus macrophyllus | yew pine | 30 | 40 | 20-50 | E | 18-24 | P | M | C,L,S | 4-6 | L | M | | Like Afrocapus falcatus, but wider, longer leaves & more drought tolerant. |
| Prosopis alba 'Colorado' | Argentine mesquite | 30 | 40 | 25-40 | S | 18-24 | S | M/L | L,S | 4-6 | L | F | | Thornless. Makes light shade. Best away from the coast. |
| Prosopis hybrid 'Phoenix' | Phoenix mesquite | 30 | 35 | 25-35 | S | 18-24 | S | M/L | L,S | 4-6 | L | F | | Thornless. Deep, strong roots prevent blow-over. Best away from the coast. |

TREE SPECIES LIST

| Botanical Name | Common Name | Canopy Diameter at 15 Years (Feet) | Canopy Diameter at Maturity (Feet) | Height (Feet) | Type | Sunset Climate Zone (Click To Look-up) | Sun | Water | Soil | Planter Size (Width in Feet) | Root Damage Potential | Growth Rate | California Native | Notes |
|---|--|------------------------------------|------------------------------------|---------------|------|--|-----|-------|-----------|------------------------------|-----------------------|-------------|-------------------|--|
| <i>Prunus caroliniana</i> | Carolina laurel cherry | 30 | 40 | 40 | E | 18-24 | S-P | M | C,L,S | 4-6 | L | F | | White spring flowers. Messy, poison 1/2" fruit & leaves. Often multi-trunked. Dense. |
| <i>Prunus ilicifolia</i> ssp <i>lyonii</i> (<i>Prunus lyonii</i>) | Catalina cherry | 25 | 35 | 20-40 | E | 5-9, 12-24 | S-P | M/L | C,L,S | 4-6 | L | M | x | White spring flowers. Edible cherries. <i>P. ilicifolia</i> is too shrubby - use <i>P.i.lyonii</i> . |
| <i>Pyrus calleryana</i> 'Aristocrat' | Aristocrat flowering pear | 25 | 35 | 35-44 | D | 18-21 | S | M | C,L,S | 3-4 | M | M | | White spring flowers. Dark red-purple fall color. Fairly resistant to fireblight. Good branch spacing and crotches. |
| <i>Pyrus calleryana</i> 'Chanticleer' | Chanticleer flowering pear | 25 | 25 | 40 | D | 18-21 | S | M | C,L,S | 3-4 | M | M | | Upright-pyramidal tree. Red fall color. Resistant to limb breakage, fireblight & smog. White flowers. |
| <i>Quercus agrifolia</i> | coast live oak | 35 | 85 | 20-70 | E | 18-24 | S-P | M/L | WD, C,L,S | 8+ | M-H | M | x | No lawn watering. The most widely used oak for southern CA. |
| <i>Quercus coccinea</i> | Scarlet Oak | 35 | 60 | 60-75 | D | 18-24 | S-P | M | C,L,S | 8+ | L | M-F | | High, light, open-branching. Bright green leaves turn bright scarlet in cold autumn nights (Zones 18-20), but color less in zones 21-24. Deep roots. Prefers moist acidic soils. Native to the eastern US where it likes drier sandy soils, but in southern CA is prefers clay to loam soils that are moist. |
| <i>Quercus engelmannii</i> | Engelmann oak, mesa oak | 35 | 40 | 50 | E, S | 18-21 | S-P | M/L | C,L,S | 8+ | M | S-M | x | Drought-deciduous 2" grey-green oblong leaves. Likes some water. |
| <i>Quercus frainetto</i> 'Schmidt' | Forest Green Hungarian Oak; Forest Green Oak | 35 | 40 | 50 | D | 2-12, 14-21 | S-P | M/L | C,L,S | 8+ | L | F | | Tall tree with large, glossy deep green leaves (up to 8"x 4") with deeply cut lobes. Erect, shapely; takes aridity once established. Drought-tolerant, acorns. |
| <i>Quercus ilex</i> | holly oak | 35 | 50 | 30-65 | E | 18-24 | S-P | M/L | C,L,S | 6-8 | L | M | | Narrow leaves are dark green above and white underneath. |
| <i>Quercus kelloggii</i> | California Black Oak | 35 | 40 | 30-80 | D | 5-7,15,16,18-21 | S-P | M/L | L,S | 8+ | M | M | x | Dark , furrowed and checked bark. New leaves are soft pink or dusty rose, becoming glossy green and turning yellow or yellow orange in the fall. |

TREE SPECIES LIST

| Botanical Name | Common Name | Canopy Diameter at 15 Years (Feet) | Canopy Diameter at Maturity (Feet) | Height (Feet) | Type | Sunset Climate Zone (Click To Look-up) | Sun | Water | Soil | Planter Size (Width in Feet) | Root Damage Potential | Growth Rate | California Native | Notes |
|---|---------------------------------------|------------------------------------|------------------------------------|---------------|------|--|-----|-------|-----------|------------------------------|-----------------------|-------------|-------------------|--|
| Quercus lobata | valley oak | 35 | 80 | 70+ | D | 18-24 | S-P | M/L | L,S | 8+ | M | M-F | x | Largest U.S. oak. Native to CA interior valleys away from direct ocean influence. Likes heat and deep soils. |
| Quercus suber | cork oak | 35 | 100 | 70-100 | E | 18-23 | S-P | M/L | WD, C,L,S | 6-8 | M | M-F | | White leaf underside. Bark is source of commercial cork. Best inland. |
| Quercus virginiana | southern live oak | 35 | 100 | 60 | E | 18-24 | S-P | M | C,L,S | 6-8 | M | M-F | | Best oak for lawns. Huge spreading tree. 1½-5" leaves are white beneath. |
| Quillaja saponaria | soapbark tree | 30 | 35 | 25-60 | E | 18-24 | S-P | M/L | WD, C,L,S | 6-8 | L | S | | May-June small, white flowers. Bark toxic if eaten. Weeping branches. |
| Rhus lancea | African sumac | 30 | 30 | 30 | E | 18-24 | S-P | M/L | C,L,S | 4-6 | L | M | | Rough cinnamon bark. Heat/wind tolerant. Suckers in youth. No pests. |
| Tabebuia avellanedae Tabebuia impetiginosa | pink trumpet tree lavender trumpet | | | | | | | | | | | | | See Handroanthus impetigosus |
| Tipuana tipu | tipu | 35 | 50+ | 50 | S | 18-24 | S-P | M | C,L,S | 8+ | M | F | | Yellow-orange flowers June-July. Best with heat. Semi-deciduous mid-winter to spring. Early structural pruning needed. |
| Tristania conferta | Brisbane box | | | | | | | | | | | | | See Lophostemon confertus |

TREE SPECIES LIST

KEY

Species

The Director may approve other species that comply with Section 22.52.2120.B of the County Code.

Canopy Diameter at 15 Years

Canopy diameter used for shade calculations.

Canopy Diameter at Maturity

Canopy diameter at maturity should be considered when selecting planting location and to ensure that trees aren't crowded.

Height: Tree height at maturity (not necessarily at 15 years).

Type

E = Evergreen. The tree has leaves year-round.

D = Deciduous. The tree loses all its leaves in one season.

S = Semi-deciduous. The tree loses most of its leaves, but not all in a season. The amount of leaf loss often depends on the coldness of the winter or

Sunset Climate Zone

Climate zones that trees thrive in from the latest publication of the Sunset Western Garden Book. Zone 24 is the immediate coast, zones 21 - 23 are the L.A. Basin, zones 18 - 20 are the Valley. Find your Sunset Western Climate Zone at: <http://plantfinder.sunset.com/climatezone.jsp>

Sun: The amount of sun required for the tree to thrive.

S = Full Sun

P = Part Sun/Shade

SH = Shade

Continued on next page.

TREE SPECIES LIST

Watering

Water requirement ratings from Landscape Plants for California Gardens book by Bob Perry. Plants with two ratings divided by a "/", such as "M/L" are climate appropriate plants with a lower water use (the second letter) during the summer.

VL = Very low. Trees should not need water other than natural rainfall. Prolonged drought may require a deep watering once or twice if severe wilting

L = Low. One deep watering per summer month, or every other month in dry season if needed.

M = Moderate. Two deep waterings per summer month. Perhaps one deep watering in spring and fall.

H = High. One deep watering per week in summer months. One deep watering every other dry season month.

VH = Very High. The soil needs to be kept moist. These trees naturally occur in riparian zones - stream or lake-side.

Soil: Soil types required for the tree to thrive.

C = Clay

L = Loam

S = Sand

WD = Well Drained

Planter Size

The width of the inside of the planter. For provided ranges (example: "4-6"), the lower number ("4") is the minimum planter width required for the tree to survive, and the larger number ("6") is the width that will allow maximum growth of the tree.

Root Damage Potential

The potential that tree roots may damage surrounding infrastructure. Ratings obtained from the Cal Poly Web site: <http://selectree.calpoly.edu>.

L = Low

M = Moderate

H = High

Growth Rate

S = Slow - up to 12"/year

M = Moderate - 24"/year

F = Fast - 36"/year

VF = Very fast - more than 36"/year