

Attachment A: Minor amendments, technical details, and the codification of practices

Measuring replacement of existing on-site trees

For private-tree removals, Pasadena has been using the net area of existing tree-canopy coverage to determine the amount of replacement canopy that needs to be planted on site. Canopy coverage is, however, not an arboricultural standard for evaluating trees nor is it clearly defined within the ordinance (e.g., volume of the canopy or footprint on ground plane). Coverage calculations require a degree of expertise that most single-family residents do not have, and as a result applicants are required to hire consulting arborists or landscape architects, thus raising the cost of removal and replacement significantly for homeowners.

Requiring replacement based on the total number of trees with a certain DBH (diameter-at-breast height) is the more widely accepted standard and is much easier to use. This method assumes that the larger the DBH, the larger the canopy. Most jurisdictions throughout California employ some form of a replacement ratio that is paired with DBH standards (for example, a tree with 12" DBH may have a replacement ratio of 1:3 – for every one tree removed, three must be planted). DBH measurements are very precise and commonly used throughout the arboricultural industry.

The proposed replacement matrix (below), to be included in the administrative guidelines, would be structured to ensure that the number and species of replacement trees are sufficient to sustain and enhance the City's long-term tree canopy. It would also give owners clear direction on what type of replacement would be required based on the number and size of protected trees on their property.

Trunk of Removed Tree	Replacement Trees	
	Number	Size
8-12 inches	4	15 gallon, or,
	2	24 inch box
13-18 inches	8	15 gallon, or,
	4	24 inch box, or,
	2	36 inch box
19-36 inches	8	24 inch box, or,
	4	36 inch box
37+ inches	12	24 inch box, or,
	8	36 inch box

Protected native trees must be replaced with native trees on the list of protected native and specimen trees.

Protected specimen trees must be replaced with specimen or native trees on the list of protected native and specimen trees.

Non-protected trees with a DBH of 18 inches or greater must be replaced at 1/2 the corresponding ratio (the species is not restricted).

Trunk of Removed Palm Tree		Replacement Trees	
Brown Trunk Height (if replacing with palm species)	Brown Trunk Height (if replacing with non-palm species)	Number	Size
One for one replacement.	8-12 feet	4	15 gallon, or;
		2	24 inch box
Aggregate height of replacement trees must meet or exceed height of palm to be removed	Greater than 12 feet - 18 feet	8	15 gallon, or;
		4	24 inch box, or;
		2	36 inch box
	Greater than 18 feet - 40 feet	8	24 inch box or.
		4	36 inch box
	Greater than 40 feet	12	24 inch box, or,
		8	36 inch box

Note: To better calibrate the required number of replacement trees, Korn Randolph Landscape Architects were engaged to analyze tree coverage at full maturity using the replacement matrix and the former method of project future growth. After this exercise and based on a recommendation from Korn Randolph, the replacement matrix was modified to reduce the number of replacement trees in the 8-12 inch category by two 15-gallon and one 24-inch box to alleviate concerns about overcrowding. Due to the many variables of species, water needs, sunlight, maintenance, etc., it is difficult to determine how many or which trees will survive in the long term but there is always a bit of attrition over time. While the estimates of the canopy size are imprecise, they still offer a good indication about the canopy coverage and spacing of trees. For future projects, when evaluating the placement and spacing of new trees on landscape plans, staff will consider the canopy coverage of trees at full maturity. This review will ensure that replacement trees grow to full maturity without encroaching on each other.

Alternative replacement fee (additional background)

In arriving at the recommendation of an alternative replacement fee, staff researched practices in other jurisdictions with similar fees for replacement trees. Many cities allow payments for off-site replacement trees. Most charge a modest fee for the cost to purchase a new tree and maintain it for five years. A few cities use the appraisal value in *Guide for Plant Appraisal* published by International Society of Arboriculture. The recommendation to cap off-site replacement at 50% balances the goal of retaining trees on a site with new development with an understanding that requirements such as code-mandated parking often conflict with on-site retention of trees. In some cases, off-site replacement of trees may be a better option than planting new trees on a podium over subterranean parking.

Each protected tree has a replacement requirement (specified in the matrix), and the owner is responsible for replacing the specified number of specimen or native trees on-

site. The appraisal value is currently used by the Public Works Department to assess the value of public street tree removal requests. For public tree removal requests, City staff completes the appraisals; for private tree removals, the applicant would hire an arborist or landscape architect and City staff would review and approve the assessment. The fee would be referenced in the General Fee Schedule and revised administrative guidelines.

Staff conducted exhaustive research on other jurisdiction's policies for replacement fees. Many cities allow for such fees; most charge a modest fee for what it costs to purchase a new tree and maintain it for five years. A few cities use the appraisal value in the most recent edition of the *Guide for Plant Appraisal*, published by International Society of Arboriculture (ISA).

Please note that trees that meet landmark criteria (discussed below) cannot be removed using the replacement finding and thus are not eligible for alternative replacement fee consideration.

Long-term monitoring of on-site replacement and/or retained trees

After surveying completed projects that involved the protection of existing trees or planting of new trees, staff found that additional monitoring was required to ensure compliance. The suggestion of performance bonds was offered at one of the public meetings but with additional investigation, staff determined that requiring performance bonds for every project with protected and/or replacement trees is unmanageable. A more viable alternative is to require property owners with protected trees and/or replacement trees replacing protected trees to pay for condition monitoring to ensure that trees are properly established and maintained for three years. The Code Compliance Division of the Planning and Development Department is responsible for monitoring these types of conditions, and applicants pay fees to the City for this service.

A landscape bond is, however, appropriate for relocated trees. If recommended by an arborist or landscape architect and approved by decision-making body, relocated trees would no longer be considered removed trees if the applicant posts a performance bond in an amount equal to 100% of the appraised value of relocated trees, calculated using the most recent edition of the *Guide for Plant Appraisal* published by the International Society of Arboriculture) to ensure that the relocated trees are properly established and maintained for three years. (Landmark trees are not eligible for relocation.)

Administrative Guidelines

The current TPO refers to tree protection guidelines, administered by the City Manager, as the standards and specifications for the protection of trees. In an effort to more effectively encourage retention of the City's protected trees and add clarity to the review

process, these guidelines will be expanded to include administrative procedures that further define the city's priorities on a sustainable long-term canopy. Adoption of and amendments to the administrative guidelines would require approval by the City Manager, with advisory review by the Design Commission and the Urban Forestry Advisory Committee.

Technical changes

- a. Change measurement of multi-trunk trees (in §8.52.020 Definitions) from an aggregate of diameters to an aggregate of areas.
- b. In sections on designation of landmark trees and removal of landmark tree, change references to Historic Preservation Commission (instead of "Cultural Heritage Commission") and change and update references to historic-preservation chapter in the code (Ch.17.62 instead of Ch. 2.75)
- c. Amend references to "protected" trees to include any tree with an 18" DBH or greater in any zoning district other than RS or RM-12.
- d. Modify prohibition against relocated trees.

Attachment B: *Purposes of the Tree Protection Ordinance*

PMC § 8.52.015

- A. Preserve and grow Pasadena's canopy cover by protecting landmark, native and specimen trees on specified areas of private property and expanding the protection of street trees and trees on public property.
- B. Safeguard the City's urban forest by providing for the regulation of the protection, planting, maintenance and removal of trees in the city.
- C. Protect the visual and aesthetic character of the city.
- D. Improve and enhance property values by conserving and adding to the distinctive and unique aesthetic character of the many areas of Pasadena.
- E. Improve the quality of life for residents, visitors and wildlife.
- F. Create favorable conditions for the protection of designated landmark, native and specimen trees, for the benefit of current and future residents of Pasadena.
- G. Maintain and enhance the general health, safety and welfare of the city and its residents by assisting in counteracting air pollution and in minimizing soil erosion and other related environmental damage.
- H. Protect and maintain healthy trees in the land use planning processes as set forth herein.
- I. Establish procedures and practices for fulfilling the purposes of this city tree and tree protection ordinance.

Attachment C: Recommended findings

1. Recommended findings for development waivers

Design Commission or decision maker shall approve no more than two waivers after making all of the following findings:

- a. Applicant investigated alternative site designs and building footprints using existing development standards;
- b. Tree/s to be preserved is/are in good health and condition (taking into account species and longevity) as determined by a certified arborist;
- c. Project includes a well integrated and thoughtful design solution that enhances the property and its surroundings;
- d. Project is not injurious to adjacent properties or uses, or detrimental to environmental quality, quality of life, or the health, safety, and welfare of the public; and
- e. Project is consistent with the objectives and policies of the applicable Design Guidelines and the Citywide Design Principles in the General Plan.

2. Recommended findings for alternative replacement fee

Design Commission or decision maker may approve a request for an alternative replacement fee (to meet finding #6 for private tree removal) after making all of the following findings:

- i. Applicant investigated alternative site designs and building footprints using existing development standards and waivers;
- ii. Placing the required number of replacement trees on site with existing plan is not conducive to a sustainable landscape plan (e.g., overcrowding with existing or new trees, occluding important view corridors, disrupting the configuration of existing open space or a landscape design which has historic or aesthetic importance, interfering with existing site features—walls, driveways, berms, planting beds, pergolas—which have historic or aesthetic importance);
- iii. A minimum of 50% of the required replacement trees are on-site and the spacing and selection of proposed landscaping contributes to the City's

long-term goals of a sustainable urban forest (approved by the City's arborist);

- iv. Project includes a well integrated and thoughtful building design solution that enhances the property and its surroundings;
- v. Project is not injurious to adjacent properties or uses, or detrimental to environmental quality, quality of life, or the health, safety, and welfare of the public;
- vi. Project is consistent with the objectives and policies of the Multi-family Residential Design Guidelines and the Citywide Design Principles in the General Plan.

Note: Because these provisions are in Title 8 as opposed to Title 17, the required findings and percentages are not subject to a variance under the zoning code.

Attachment D: Examples of development waivers

Staff recommends allowing a waiver for the following standards (no more than two per project):

- modifying the parking requirements to allow at-grade parking in the rear 60% (instead of the rear 40%) of the lot;
- reducing the minimum size for main gardens (courtyards) up to 50%;
- specifications for garden locations; planting and paving standards;
- eliminating the third-story setback from the main garden and allowing three stories⁹ in the rear 60% (instead of the rear 40%) of the site;
- waiving the required architectural elements and/or modulation requirements.
- building height limits; and
- reducing guest parking requirements;

While the code language in §17.22.080.C is explicitly for multi-family developments (“City of Gardens”) and many of the development standards mentioned are specific to properties zoned RM, staff is recommending development waivers to retain existing trees apply to all development projects on private property, with the exception of single-family houses subject to the RS development standards or duplexes subject to the RM-12 development standards.

⁹ This does not affect the height and/or encroachment plane limitations when an RM (multi-family) district abuts an RS (single-family) zoning district.