TREE MAINTENANCE MANUAL

For Tree Care Professionals

FREMONT, CALIFORNIA

CITY OF Fremont

TABLE OF CONTENTS

LIST OF IMAGES

TREE CARE PROFESSIONAL'S TREE MAINTENANCE MANUAL FOR FREMONT

PURPOSE AND INTENT

PURPOSE

The intent of the City of Fremont Tree Maintenance Manual is to define responsibilities for tree management within the City of Fremont and to provide guidelines and current recommended Best Management Practices to City staff, residents, property owners, tree care professionals, and others who provide services to the urban forest in the City of Fremont. Two versions of the manual are available— one specific to Fremont's residents and property owners and the other is specific to tree care professionals.

INTENT

The Tree Maintenance Manual for Tree Care Professionals is intended for concurrent use with Fremont Municipal Code, Chapter 12.30 Maintenance of Street Trees and Sidewalks and Chapter 18.215 Tree Preservation for Fremont's public and protected trees. This manual may also serve as a resource for the management of unprotected trees on private property to support the goals of a sustainable urban forest benefiting all residents of Fremont. This manual may also be used as a guide for City staff in the planning, design, installation, and maintenance of City projects.

The Tree Maintenance Manuals are intended to support the City's Urban Forest Management Plan ("UFMP" or "Plan") that is anticipated to be adopted in 2023.

Fremont's Urban Forest Management Plan Vision:

Fremont's trees are recognized as integral to the quality of life for all city residents as well as for the city's urban character and natural environments. With a healthy, thriving, and sustainable urban forest, Fremont's trees will be thoughtfully managed in a way to maximize a range of public benefits, including a thriving ecosystem, a vibrant economy, and a livable community shared by all.

Fremont's urban forest is a healthy, dynamic, diverse, and cohesive ecosystem that is valued and cared for by the City and through community stewardship. This vision reflects the community's deep-rooted desire to live in a green and vibrant community. It reinforces the City's responsibility to manage the urban forest in order to preserve and enhance this valuable community resource for the good of the environment, the economy, and the health and well-being of current residents and future generations.

The highest priority the City has is partnering with the community to achieve urban forest goals. This vision will be achieved not just by City resources, but by homeowners, tree and landscape care professionals, neighborhoods, and businesses, all looking not just near term, but 10, 20, 50, and even 100 years into the future. The City cannot achieve the necessary goals to combat climate change separately, only together can Fremont move the needle in protecting the precious environment.

The quality of life of Fremont's community members depends on the urban forest, as trees make a vital and affordable contribution to the sense of community, pedestrian-friendly neighborhoods, energy savings, and air quality. Trees are one of the few infrastructure investments that grow in value over time. Tree canopy is a valuable component of Fremont's urban ecosystem. Trees in urban settings are important to improving urban life, as well as human physical and emotional well-being. Research suggests that human beings have an innate affiliation to natural settings, a concept described as biophilia (Kellert, et al. 1993). Studies link access to living trees, outdoor air, and natural light to increased employee and

student productivity, faster hospital recoveries, less crime, and an overall reduction in stress and anxiety. Thus, expanding the urban forest is part of the solution to Fremont's social, environmental, and economic problems— it is integral to enhancing public health programs, increasing land values and local tax bases, providing job training and employment opportunities, reducing costs of city services, increasing public safety, improving air quality, offsetting carbon emissions, managing stormwater runoff, addressing inequities, mitigating water shortages, and conserving energy.

BENEFITS OF TREES

The quality of life for Fremont's community members depends on the urban forest, as trees make a vital and affordable contribution to the sense of community, pedestrian-friendly neighborhoods, energy savings, and air quality. Trees are one of the few infrastructure investments that grow in value over time. Fremont's public tree population was recently inventoried and analyzed to quantify these benefits.

FREMONT'S PUBLIC TREES PROVIDE:

$6.9 million total annual value of benefits and services

$89 in annual benefits per tree

$28 in annual benefits per capita

$488,377,524 estimated dollar value

$1 : $7.44 annual cost-benefit ratio

Over 77 thousand trees make up Fremont's public tree population. These trees are growing along streets and in our parks and are an important component of our urban forest. In 2022, it was found that these trees provided nearly $7 million annually in benefits and services such as energy savings, air quality, reduced stormwater runoff, and raised property values. These equates to nearly $30 in benefits to each resident in Fremont, annually. The dollar value also known as the structural value of the public tree population equals nearly half a billion dollars. Based on the estimated costs to maintain public trees annually, for every dollar spent, approximately $7.44 is returned on the investment. This manual serves to provide guidance to maximize these benefits, and together, grow a healthy and sustainable urban forest.

COMMUNITY IMPACT

As a tree care professional, the types of trees you plant, and the quality of the tree care performed directly impacts Fremont's urban forest. Properly maintaining trees by adhering to industry standards and best practices ensures this vital resource to the City of Fremont can achieve its maximum benefit and potential. Treating and preventing tree pest and disease issues can help stem the potential for an outbreak and supports growing a healthy and sustainable urban forest. Protecting trees during construction projects ensures investments in those trees are sustained and those trees can benefit the community for years to come. And by choosing the right tree for the site along with considering water-wise species and trees that reduce surface temperatures and mitigate the effects of climate change, you are supporting the City's vision for a healthy, sustainable, and thriving urban forest that benefits current and future generations.

USE OF THE MANUAL

This City of Fremont Tree Maintenance Manual is intended for use by tree care professionals providing services in Fremont relating to planting and care of public street trees adjacent to properties. Sections and content within this manual may be applicable to private trees.

To use this manual, a user may find it beneficial to review the table of contents detailing each section of the resource. Begin by identifying the question or concern you are looking to address. The call-out boxes within sections offer a summary of the content contained within the section and infographics, illustrations, and graphics provide a visual aid to the content.

For questions regarding content or topics relating to public street trees not found within this manual, contact the City Arborist and Urban Forest Program by emailing treepermits@fremont.gov, dialing (510) 494-4730, or visiting www.fremont.gov/trees.

DEFINITIONS

Term	Definition
American Society of Consulting Arborists (ASCA)	American Society of Consulting Arborists. ASCA represents Consulting Arborists—the authoritative experts on trees, and whose objective, comprehensive viewpoint ensures the safety, health, and preservation of trees. Members have an extensive level of knowledge and experience.
ANSI	American National Standards Institute which defines the standards and best practices for arboriculture. Includes but not limited to ANSI A300, ANSI Z60.1, and ANSI Z133.
Arboriculture	The cultivation, management, and study of individual trees, shrubs, vines, and other perennial woody plants. The science of arboriculture studies how these plants grow and respond to cultural practices and to their environment. The practice of arboriculture includes cultural techniques such as selection, planting, training, fertilization, pest and pathogen control, pruning, shaping, and removal.
Arborist (Certified Arborist)	An individual who has demonstrated knowledge and competency through obtainment of the current International Society of Arboriculture (ISA) arborist certification, or a Registered Consulting Arborist (RCA) with the American Society of Consulting Arborists (ASCA). A certified arborist can be found on the Western Chapter of ISA website (www.wcisa.org) or (919) 641-2990. An RCA can be found utilizing ASCA's referral directory on www.asca-consultants.com.
Arborist (City Arborist)	The person designated as such by the City of Fremont.
Arborist	An individual who has demonstrated knowledge and competency through obtainment of the current ISA arborist certification, or an RCA with ASCA.
Backfill	The soil used to fill in around the root ball of the newly planted tree or shrub is called backfill. Your best backfill will be the loosened original soil from the planting hole mixed with 10 to 20 percent compost.
Ball & Burlap (B&B)	Type of tree for planting typically includes larger caliper trees with a partial root system that is field grown.
Bare Root	Type of tree for planting that has a complete root system but no soil, typically smaller caliper trees and seedlings.
Berm (Soil Berm)	A mound of soil and mulch created around a tree to retain what within a tree's drip line. Usually applied to new tree plantings.
Best Management Practices (BMPs)	The practice, or combination of practices, that is determined to be an effective and practicable (including technological, economic, and institutional considerations) means of applying arboriculture and urban forest management techniques.
Biomass	All parts of the tree; leaves, stems, branches, roots, tree trunks make up a tree's biomass.
Branch Bark Ridge	A ridge of bark in a branch that marks where branch and trunk tissues met and often extend down the trunk.
Branch Collar	Trunk tissue 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.
Caliper	Used to measure the dimensions of an object. Caliper is typically used for trees less than 3 inches in diameter. Caliper is measured at 4.5 feet above natural grade for trees greater than 1 inch in diameter and measured at 12" above natural grade for seedlings or trees less than 2 feet in height.

Canopy (Tree Canopy, Tree Canopy Cover, Urban Tree Canopy)	Canopy refers to the leaves and branches of a tree or crown. Tree Canopy Cover or Urban Tree Canopy refers to the layer of tree leaves, branches, and stems that provide tree coverage of the ground when viewed from above.
Chlorophyll	A green pigment, present in all green plants (and in cyanobacteria), responsible for the absorption of light to provide energy for photosynthesis.
Compartment-alization of Decay in Trees (CODIT)	Compartmentalization of Decay in Trees. CODIT occurs when a tree is wounded. The tree reacts and protects itself by slowing or preventing the spread of disease and decay by forming four different types of “walls' around the wounded area.
Co-dominant Stem	A large branch or secondary leader competing with a tree’s leader.
Compaction	Compression of the soil structure or texture by any means that creates an upper layer that is impermeable. Compaction is injurious to roots and the health of a tree.
Condition	Overall health of the tree based on observations of the canopy, stem, and other observable features as determined by an arborist.
Containerized	Type of tree for planting that has a complete root system and soil within a container of varying sizes depending on the tree’s size (height and stem caliper).
Crotch	The angle formed at the attachment between a branch and another branch, leader, or trunk of a woody plant.
Crown	The leaves and branches of a tree or shrub; the upper portion of a tree from the lowest branches on the trunk to the top.
Crown Cleaning	Selective removal of dead, dying, diseased, and weak branches from a tree’s crown. No more than 25% of the live crown should be removed in any one year, even for young trees.
Crown Raising	The practice of removing branches from the bottom of the crown of a tree to provide clearance for pedestrians, vehicles, buildings, lines of site, or to develop a clear stem for timber production.
Crown Reduction	Most often used when a tree has grown too large for its permitted space. This method, sometimes called drop crotch pruning, is preferred to topping because it results in a more natural appearance, increases the time before pruning is needed again, and minimizes stress. Crown reduction pruning, a method of last resort, often results in large pruning wounds.
Crown Thinning	Primarily for hardwoods, thinning is the selective removal of branches to increase light penetration and air movement throughout the crown of a tree.
Curbside Strip	A strip of grass, landscape, plants, and/or trees, located between a roadway and a sidewalk. The land is often public property, with authority usually being a municipal responsibility. For Fremont, it is the adjacent property owner’s responsibility to maintain trees in the curbside strip that is part of a public right-of-way.
Cycling	Timing short watering (irrigations) back to back to provide deep water penetration and minimize runoff for newly planted trees.
Dangerous	See Hazardous (Tree).
Dead Tree	A tree that is dead or that has been damaged beyond repair or is in an advanced state of decline. This definition may include a tree that is “dying”.
Deciduous	A tree or shrub that sheds its leaves annually.

Diameter at Breast Height (DBH)	The diameter of the tree trunk at four and one-half feet (or 54 inches) above natural grade level. The diameter may be calculated by using the following formula: DBH = circumference at 4.5 feet / 3.142 (D=C/Pi). To determine the DBH of multi-trunk trees or measuring trees on slopes, consult the current Guide for Plant Appraisal published by the Council of Tree and Landscape Appraisers.
Disease Triangle Concept	Plant diseases– their occurrence and severity– result from the impact of three factors: the host plant, the pathogen, and the environmental conditions. This is represented with the disease triangle.
Dormant	Having normal physical functions suspended or slowed down for a period of time. During dormancy, plants stop growing and conserve energy until better cultural conditions present themselves. This happens naturally as seasons and weather changes. And it can also be artificially controlled.
Drip Line	The suggested minimum area within a distance from the trunk of a tree in a typical location, measured from the outermost edge of the tree canopy.
Drought Tolerant	The ability to which a plant maintains its biomass production during arid or drought conditions.
Duty of Care	A tree owner must act in a practical and sensible way to manage tree risk.
Ecosystem	A biological community of interacting organisms and their physical environment.
Evergreen	Relating to or denoting a plant that retains green leaves throughout the year.
Fremont Municipal Code (FMC)	The collection of City ordinances that the City Councils have adopted over the years. It is a living document and is continually amended to better reflect the community standards that the citizens have expressed to the City leaders. The City is granted the authority to create these local ordinances that become law through provisions of the California Government Code. View the Fremont Municipal Code electronically at www.codepublishing.com/CA/Fremont/ or in the City Clerk's Office. For more assistance, call (510) 284-4060.
Graft Union (Graft)	A lumpy, raised scar that should be just above the surface of the soil or just under the canopy. It is caused when two trees are combined by uniting the scion and rootstock.
Hazardous (Tree)	A tree that possesses a structural defect which poses an imminent risk if the tree or part of the tree that would fall on someone or something of value (target).
Impervious (Impermeable)	Not allowing fluid to pass through, typically used when referring to stormwater management.
Infrastructure	The basic physical and organizational structures and facilities (e.g. buildings, roads, power supplies, trees) needed for the operation of a society or enterprise.
Integrated Pest Management (IPM)	Integrates cultural (growing) practices, monitoring, threshold and life cycle analysis, and chemical application strategies to effectively manage urban forest pest populations in an ecologically-sound manner.
International Society of Arboriculture (ISA)	International Society of Arboriculture. The organization promotes the professional practice of arboriculture and has a certification program for various levels and practices of arboriculture.
Landmark Trees	Trees designated by Fremont City Council to have cultural, historic, or social value to Fremont that receive protection beyond that of other Protected Trees. The Landmark Trees list is found at www.fremont.gov/landmarktrees. Removal of these trees requires City Council approval. Landmark trees can occur as Private Trees, Street Trees, in parks or anywhere in the City.
Lateral	A branch or twig growing from a parent branch or stem.
Leader	A dominant upright stem, usually the main trunk.

Mitigation	The replacement of a tree authorized for removal by the City of Fremont.
Nursery Stock	The type of tree prepared by a nursery or garden center. All trees, shrubs, ornamental plants, grass sod, foliage plants, or marsh plants grown or propagated for sale or distribution. Trees are typically prepared as containerized, ball & burlap, or bare root.
Pathogen	Any deviation in the normal functioning of a plant caused by some type of persistent agent.
Photosynthesis	The process by which green plants and some other organisms use sunlight to synthesize foods from carbon dioxide and water. Photosynthesis in plants generally involves the green pigment chlorophyll and generates oxygen as a byproduct.
Plant Hardiness Zone	Geographic area defined as having a certain range of annual minimum temperature, a factor relevant to the survival of many plants.
Protected Tree	A tree requiring a permit for removal per the City of Fremont's Municipal Code.
Public Tree	A tree growing within the street right-of-way (outside of private property), public property, or easements. In some cases, property lines lie several feet behind the sidewalks or the edge of the paved street. A City Encroachment Permit and Tree Permit is required prior to any work on or around these trees.
Resilient	Able to withstand or recover quickly from difficult conditions. Referred herein as a tree's ability to withstand tree pests and diseases, the effects of climate change, and other factors.
Right-of-Way ("ROW", public ROW)	The area on, below, or above a public roadway, highway, street, public sidewalk, alley, waterway, or utility easement in which the municipality has an interest.
Risk (Tree Risk)	The likelihood of property damage or personal injury from a hazard tree.
Root Ball	The mass of roots growing from the trunk of a tree, including the surrounding soil.
Root Collar	The junction between the root of a plant and its stem, often indicated by a trunk flare.
Scion	A young shoot or twig of a plant, especially one cut for grafting or rooting. The scion is the variety of the species that produces and performs the best to be grafted to another tree.
Soil Horizon	A layer parallel to the soil surface whose physical, chemical and biological characteristics differ from the layers above and beneath. Horizons are defined in many cases by obvious physical features, mainly color and texture.
Soil Structure	the way individual particles of sand, silt, and clay are assembled. Single particles when assembled appear as larger particles. These are called aggregates . Aggregation of soil particles can occur in different patterns, resulting in different soil structures.
Stormwater (Storm Water)	Surface water in abnormal quantity resulting from heavy falls of rain or snow that is either captured in a city's system or results in runoff. Typically heaviest volumes of stormwater result from impermeable or impervious (paved) surfaces.
Street Tree	A public tree adjacent to roadways within the public right-of-way, adjacent to private streets, and may include trees within medians.
Street Tree Ordinance	The City of Fremont's ordinance regulating public street trees (Chapter 12.30). View the ordinance at www.codepublishing.com/CA/Fremont/html/Fremont12/Fremont1230.html.
Suckers (Sprouts, Sucker Sprouts)	Upright shoots that develop on the trunk and branches of trees (sprouts and shoots) or shoots that grow from roots or the base of the tree (suckers). Typically a result of a tree that is stressed or has suffered some sort of trauma.

Sustainable	Ability to meet current needs without compromising the ability of future generations to meet their own needs.
Topping (Heading Back, Stubbing, Lion-tailing, Pollarding)	Severe types of pruning that involves cutting back large-diameter branches or truncating the main stem. This method of pruning usually produces less desirable results than more moderate pruning with respect to the tree's natural form and which are generally hazardous to the overall health and stability of the tree. Topping of public and protected trees is prohibited and highly discouraged for private trees.
Tree Maintenance Manual	This document.
Tree Protection Ordinance (TPO)	The City of Fremont's ordinance for protecting public and private trees (Chapter 18.215). View the ordinance at www.codepublishing.com/CA/Fremont/html/Fremont18/Fremont18215.html.
Tree Protection Zone (TPZ)	Unless otherwise specified by the City Arborist or hired Certified Arborist, the area of temporary fenced tree enclosure. Within the TPZ, roots that are critical for tree survival are typically found in the upper three foot soil horizon, and may extend beyond the drip line area. Protecting the roots in the TPZ is necessary to ensure the tree's survival. The TPZ is a restricted activity zone where no soil disturbance is permitted, unless otherwise approved. TPZ must be identified for each tree and shown on all applicable plans for a development project. The TPZ is based on the tree's drip line measured at the outermost edge of the tree canopy.
Tree Risk Assessment Qualification	A voluntary qualification program by ISA designed to train and assess candidates in a specialized field of arboriculture, specifically tree risk assessments.
Trenching	Any excavation to provide irrigation, install foundations, utility lines, services, pipe, drainage, or other property improvements above grade. Trenching within the TPZ is injurious to roots and tree health and is prohibited, unless approved.
Urban Forest	A forest or a collection of trees that grow within a city, town, or a suburb. In a wider sense, it may include any kind of woody plant vegetation growing in and around human settlements. Urban forests play an important role in ecology of human habitats in many ways. Aside from the beautification of the urban environment, they offer many benefits like impacting climate and the economy while providing shelter to wildlife and recreational area for city dwellers.
Urban Forester	The individual applying urban forest management and planning.
Urban Forestry	The care and management of single trees and tree populations in urban settings for the purpose of improving the urban environment. Urban forestry involves both planning and management, including the programming of care and maintenance operations of the urban forest. It advocates the role of trees as a critical part of the urban infrastructure. Practitioners plant and maintain trees, support appropriate tree preservation, conduct research and promote the many benefits trees provide. Urban forestry is practiced by municipal and commercial arborists, municipal and utility foresters, environmental policymakers, city planners, consultants, educators, researchers and community activists.
Water Wise	Plants that evolved in regions with lower precipitation, thus requiring less water throughout the growing season than most residential landscape plants.
Wound	An opening that is created when the tree's protective bark is penetrated, cut, or removed, injuring or destroying living tissue. Pruning a live branch creates a wound, even when the cut is properly made. Urban forestry is the study, management, and practice of urban forest management.
Woundwood	Differentiated woody tissue, also referred to as a callus roll, which forms after callus has formed around the margins of a wound. Wounds are closed primarily by woundwood through the compartmentalization of decay process.

KEY POINTS

IMPORTANT PRECAUTIONS

WARNING: To reduce the risk of personal injury or permanent damage to your tree, read and follow these important precautions:

- ☐ Do not dig until you are sure there are no buried utilities. Call the Underground Service Alert at 811.
- ☐ Never prune trees or branches that are within 10 feet of utility lines unless certified. Contact your local utility company if qualifications are not met or a line is in question.
- ☐ Always adhere to industry standards and best practices, specifically the American National Standards Institute's (ANSI) A300, ANSI Z133, and ANSI Z60.1 Standards.
- ☐ Always wear proper protective equipment (PPE) and adhere to ANSI Z133 Safety Standards.
- ☐ Adhere to the City's regulations regarding tree planting, pruning, removal, permitting, and assessments. Consider registering with the City's Approved Tree Contractors list (www.fremont.gov/3730/Tree-Contractor-Certification).
- ☐ Maintain International Society of Arboriculture certifications and related industry accreditations. Participate in trainings, workshops, and other resources related to the industry.
- ☐ Keep lawn mowers and weed whips away from the base of your tree.
- ☐ Do not tie string, ribbon, wire, or pet leashes around the trunk or branches.
- ☐ Do not allow construction activities (digging, repaving, grading, building) within the Tree Protection Zone (i.e., canopy drip line) (pp. 44 and 45).
- ☐ Do not top your tree (pp. 40, 42 and 53).
- ☐ A hired arborist should have general liability insurance of at least $1 million per occurrence and $2 million aggregate.
- ☐ Do not nail or screw anything into trees.

REGULATIONS REQUIRING PROPER CARE

Per Fremont Municipal Code, Chapter 12.30 "Maintenance of Street Trees and Sidewalks" the adjacent property owner to street trees have various responsibilities (referred to as the Street Tree Ordinance). This manual serves to provide guidance to residents and property owners on these responsibilities. Users of this manual should refer to both the Street Tree Ordinance and the Tree Protection Ordinance for a complete listing of regulations and requirements.

Chapter 12.30, Article II. Duty of Property Owners to Maintain Street Trees and Sidewalks

12.30.200 Maintenance of landscaping along or in street right-of-way.

(a) The owner of a lot with frontage along a public street must maintain the street trees and other landscaping growing along the frontage or in the street right-of-way adjacent to the lot, including in any park or parking strip between the property line and the street line.

(b) The owner's obligations under subsection (a) of this section include at a minimum all of the following:

1) Maintaining the street trees and other landscaping in a good and safe condition as will not interfere with the public convenience or safety in the use of the public street and sidewalk, including:
   A) Ensuring sufficient passage of light from any public street light to the street;
   B) Ensuring a clear height of 14 feet above the surface of the street and 8 feet above sidewalk unobstructed by branches;
   C) Ensuring street signs, parking restriction signs, bus stop signs, and other directional and regulatory signs are not obstructed; and
   D) Removing dead, decayed, or broken limbs or branches that overhang the public right-of-way.
2) Deep root watering, root pruning, installing root barriers, fertilizing, and pest control.
3) Clearance, structural, and safety pruning.
4) Removal of fallen leaves, branches and other debris.
5) Replacing any removed or otherwise missing street tree as may be required by Article I of this chapter.
6) Replacing any removed or otherwise missing landscaping if the landscaping was required to be planted by this code or an approved development plan.

(c) An owner owes a duty to members of the public to maintain street trees and other landscaping along the street frontage or in the street right-of-way adjacent to the owner's property in a safe and nondangerous condition.

(d) If an owner fails to maintain street trees and other landscaping in a safe and nondangerous condition as required by this section, and a person suffers damage or injury to person or property, the owner shall be liable to the person for the resulting damages and injuries.

(e) The city of Fremont shall have a cause of action for indemnity against a property owner for any damages it may be required to pay as satisfaction of any judgment or settlement of any claim from injury to persons or property as a legal result of the owner's failure to maintain a street tree in accordance with this section. (Ord. 11-2010 § 6, 5-25-10. 1990 Code § 6-2201.)

TREE BIOLOGY

DECIDUOUS TREES

(loses leaves in the autumn)

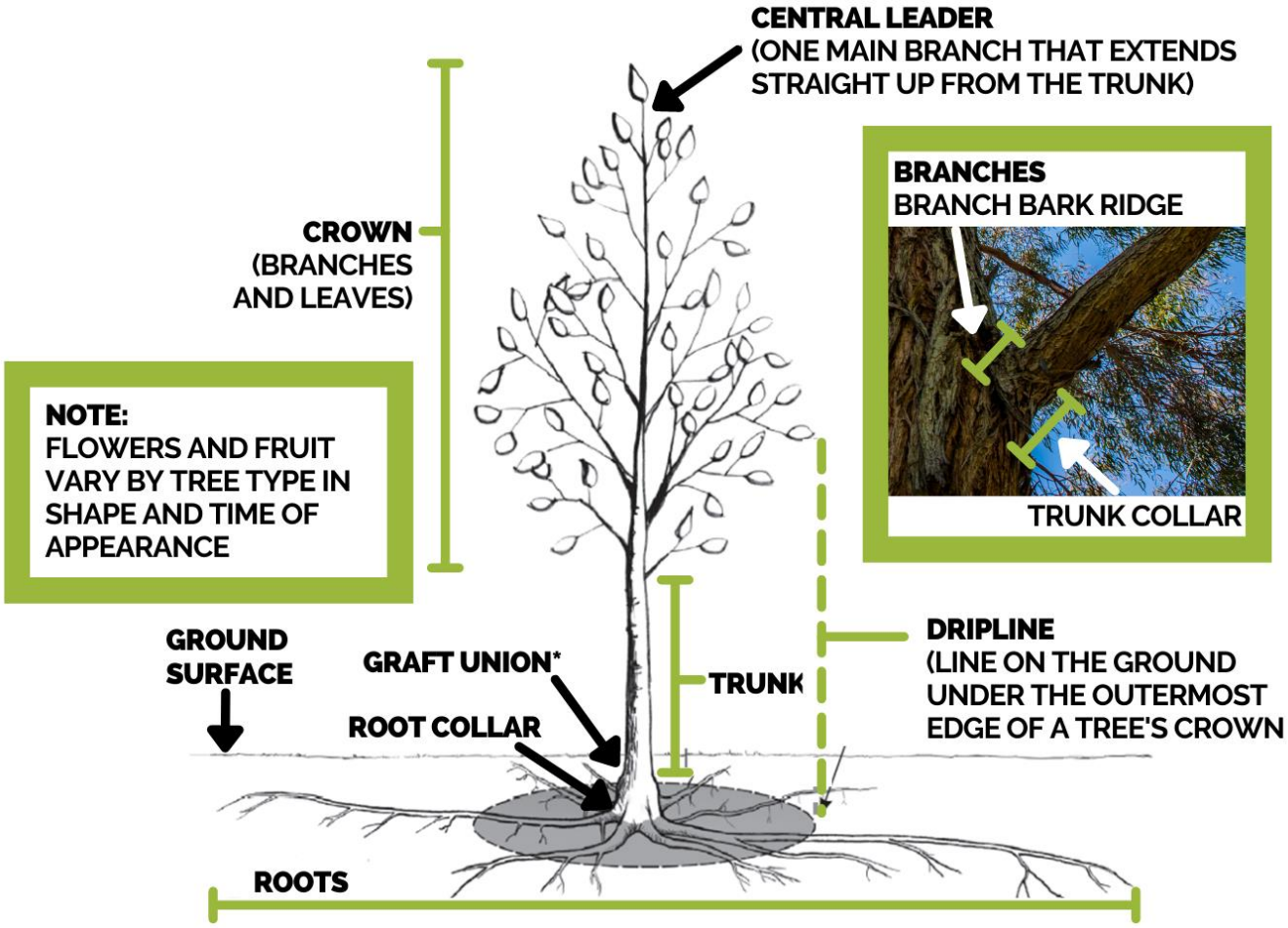


Image Description 1. A diagram of a deciduous tree's form (Source: Tree Owner's Manual, USFS)

EVERGREEN TREES
(keeps leaves all year long)

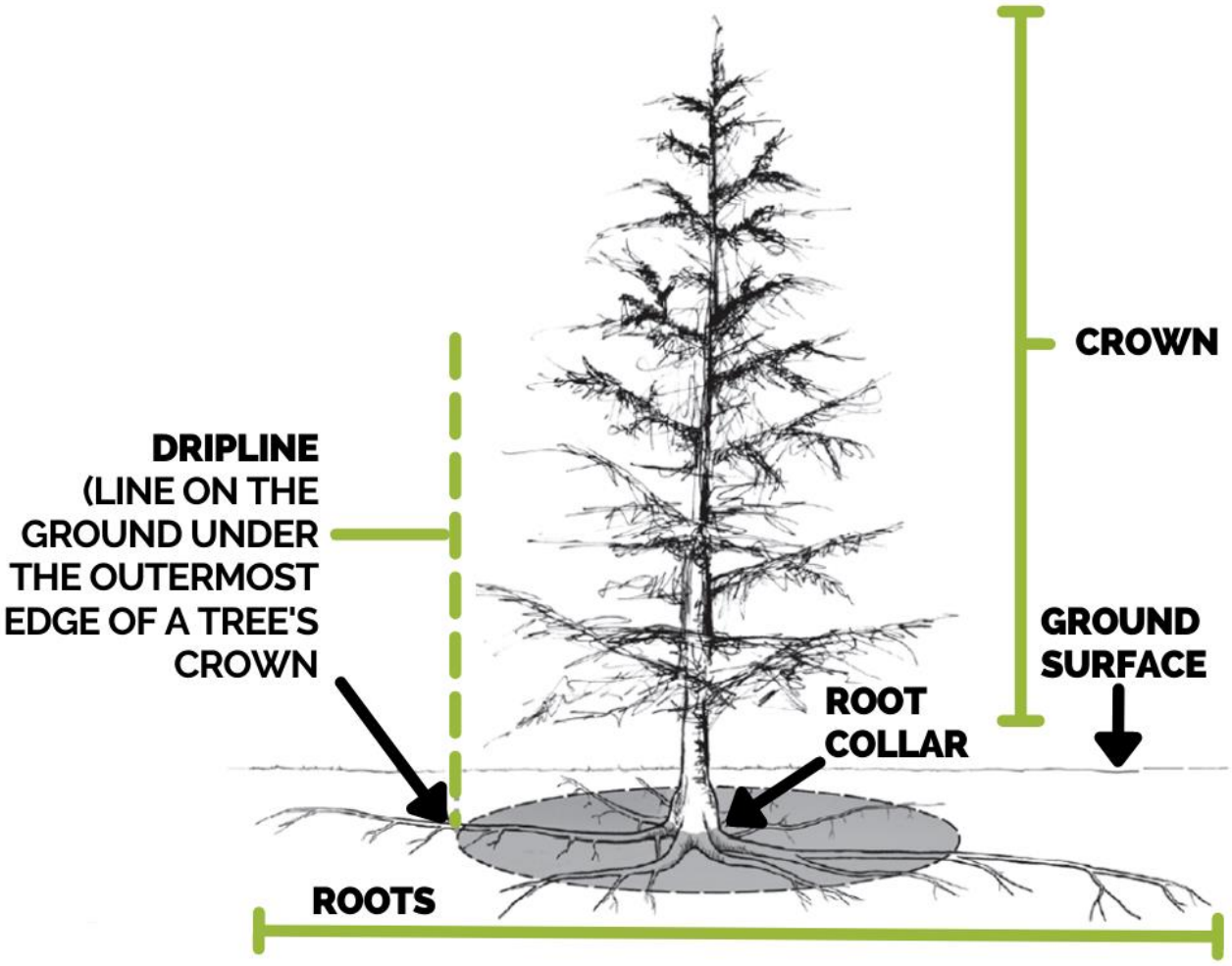


Image Description 2. A diagram of an evergreen tree's form (Source: Tree Owner's Manual, USFS)

TREE PHYSIOLOGY OVERVIEW

The Photosynthesis Process

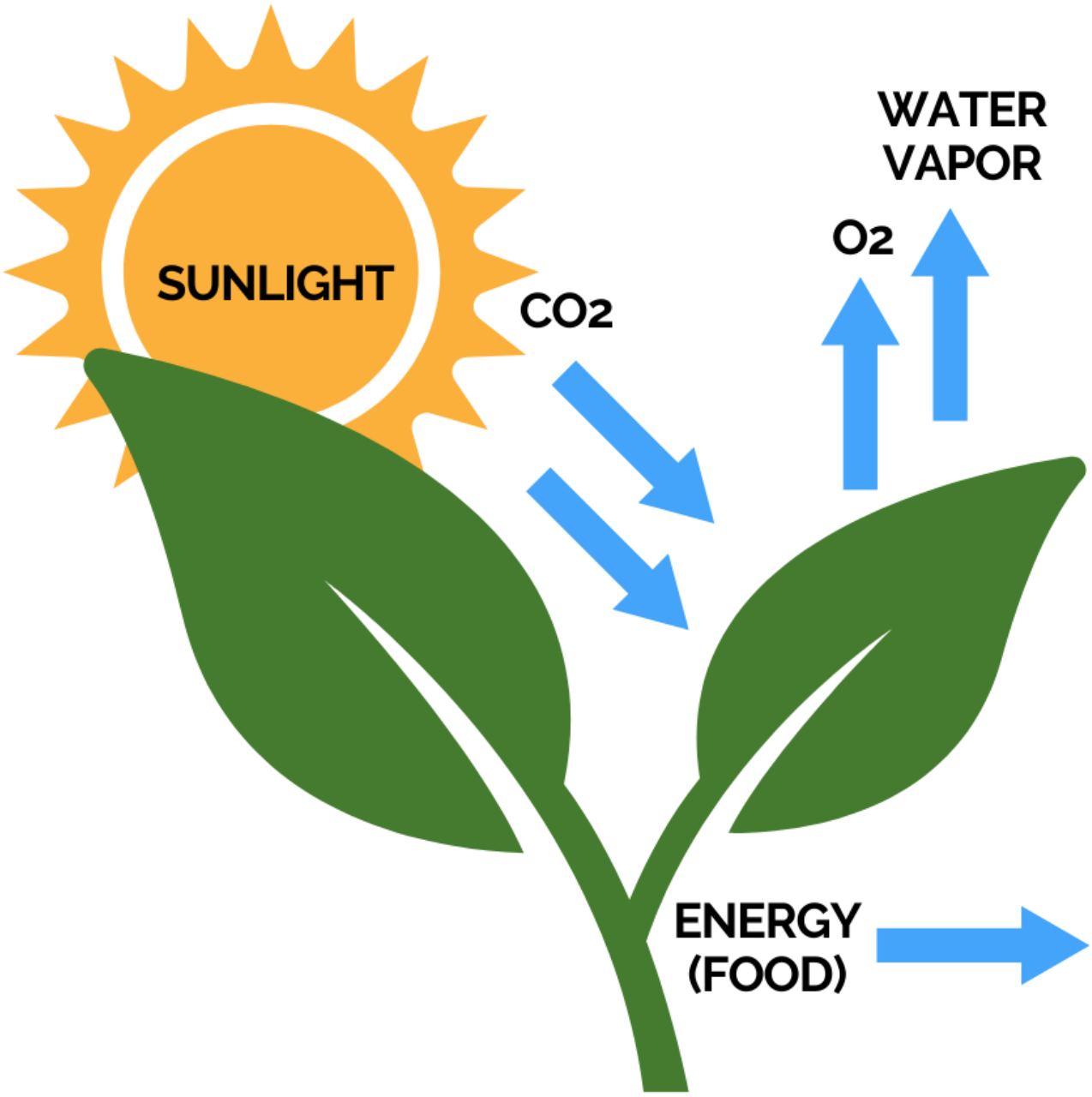


Image Description 3. Overview of the photosynthesis process in trees

The Water Cycle in Woody Plants

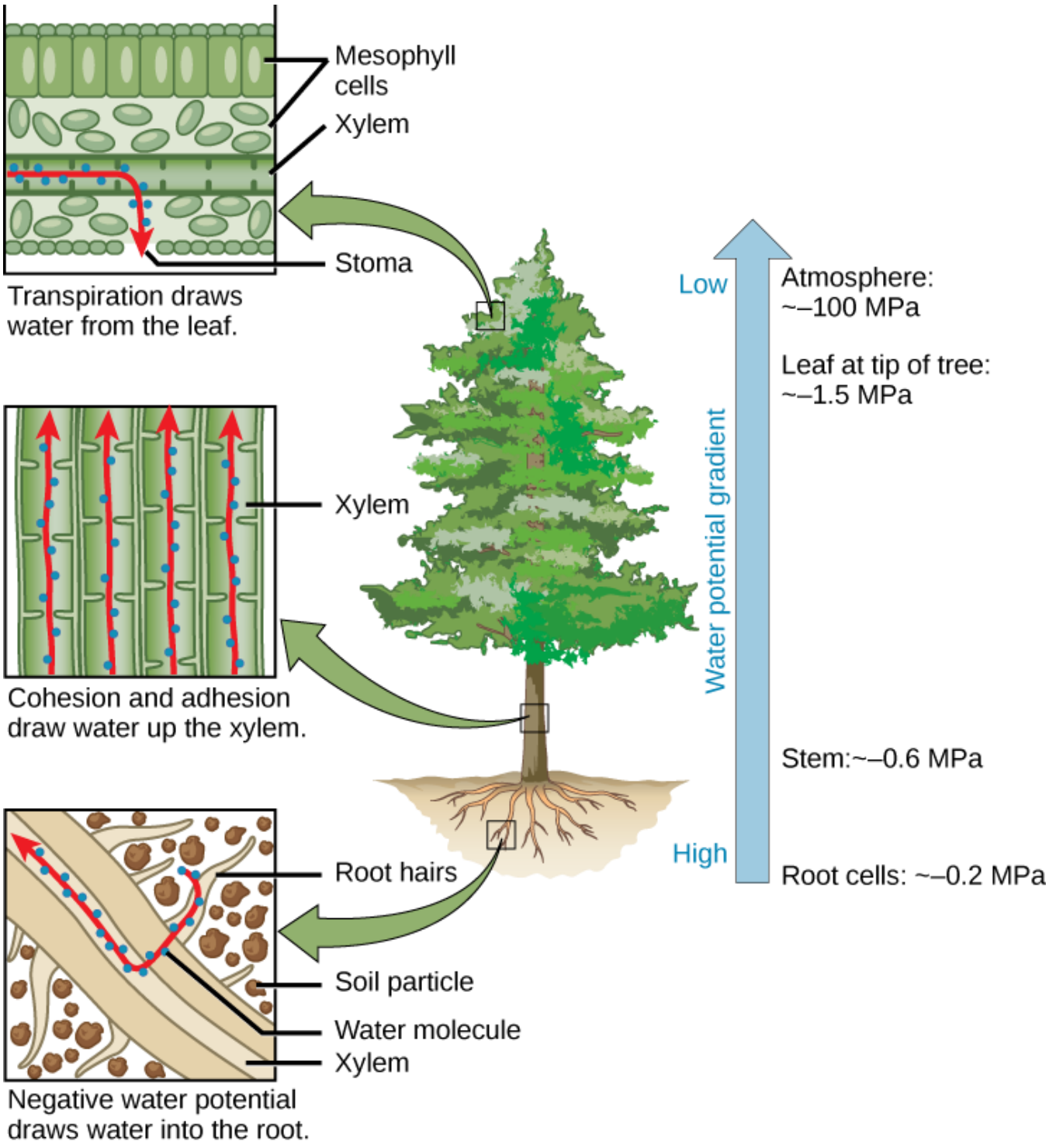


Image Description 4. Overview of the water cycle in woody plants (Source: 2011 Encyclopedia Britannica)

Primary Components of Woody Plant Tissue

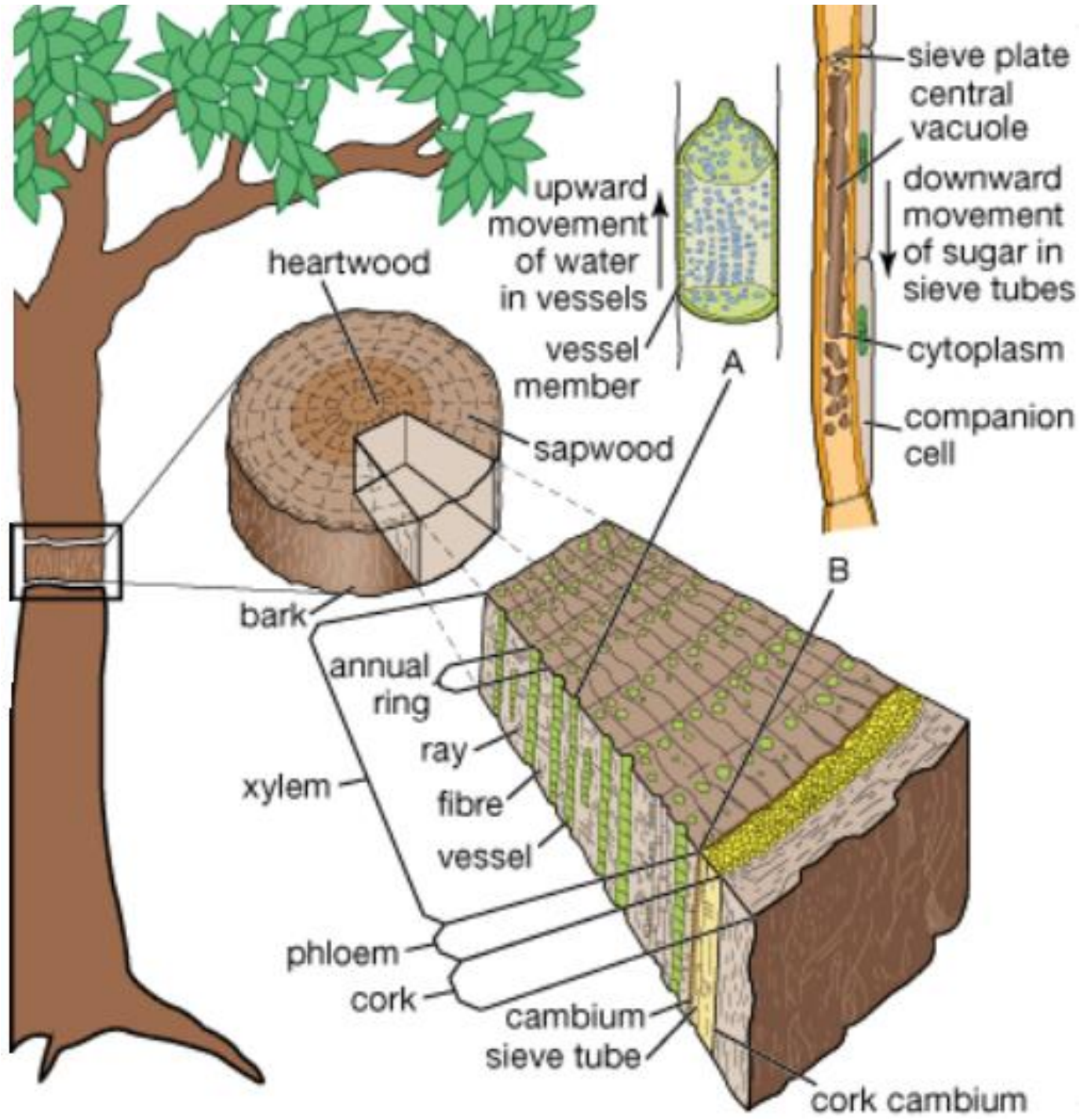


Image Description 5. Primary components of woody plant tissue (Source: 2011 Encyclopedia Britannica)

Compartmentalization of Decay in Trees (CODIT)

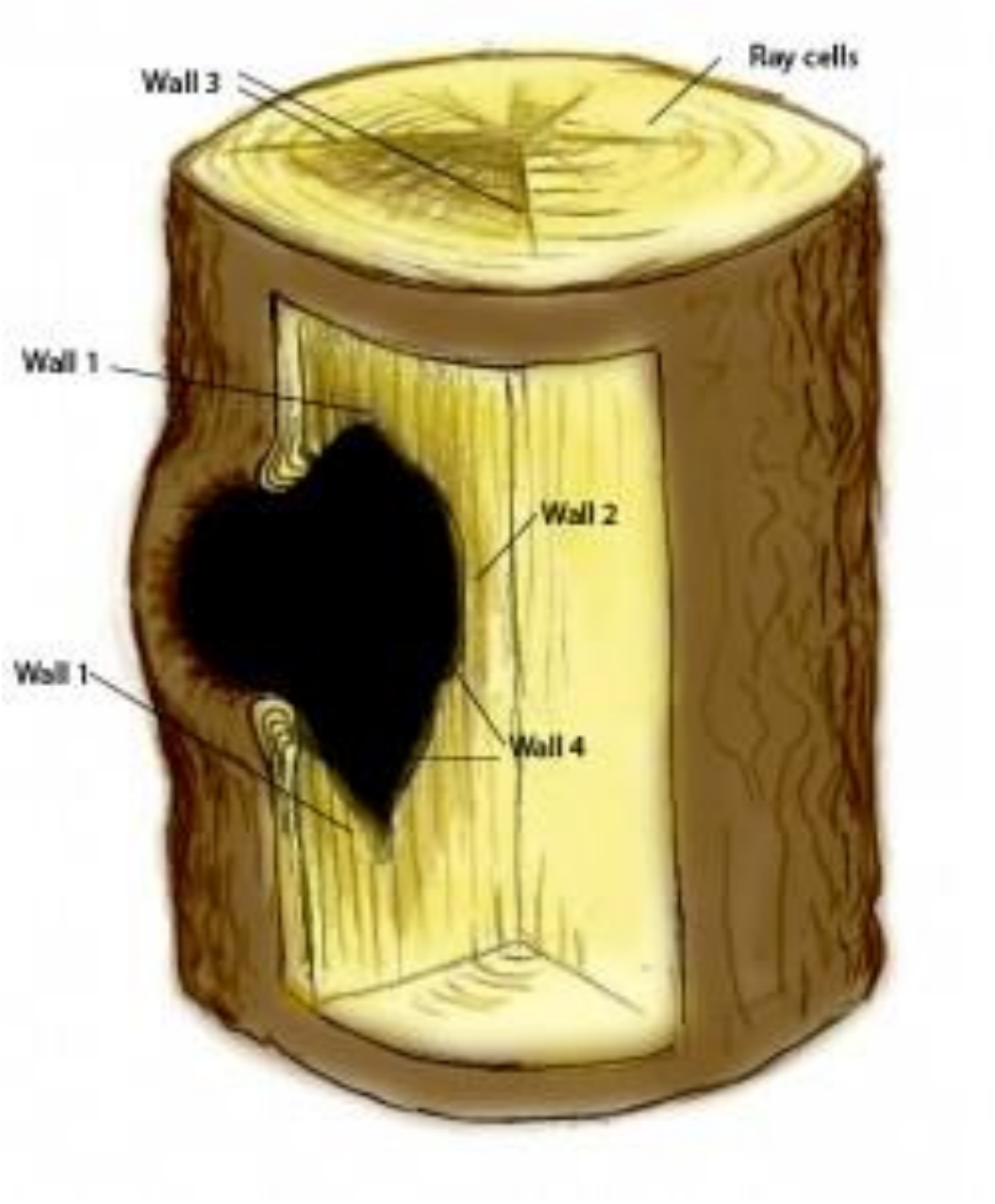


Image Description 6. Illustration of the compartmentalization of decay in trees (CODIT) as a response to injury or pruning (Source: East Side Tree Works)

- **Wall 1** contains the spread of decay throughout the tree trunk, branch or root.
- **Wall 2** works to stop the spread of decay moving inward toward the center of the tree.
- **Wall 3** works to stop the spread of decay from spreading from the point of injury around the trunk.
- **Wall 4** is the wall that forms between the injured tissue and new growth that develops after the injury. This wall is also called the Barrier Zone, Wall 4 physically separates the old wood from the new wood, making a very strong defense against decay.

TREES IN FREMONT

Before working on a tree, determine whether it is a street tree or a private tree. Street trees are planted in city rights-of-way throughout the City. Knowing whether a tree is a street tree or a private tree is important as the Fremont Municipal Code regulates the care of these trees differently.

In Fremont, the public street trees are primarily the responsibility of the adjacent property owner(s).

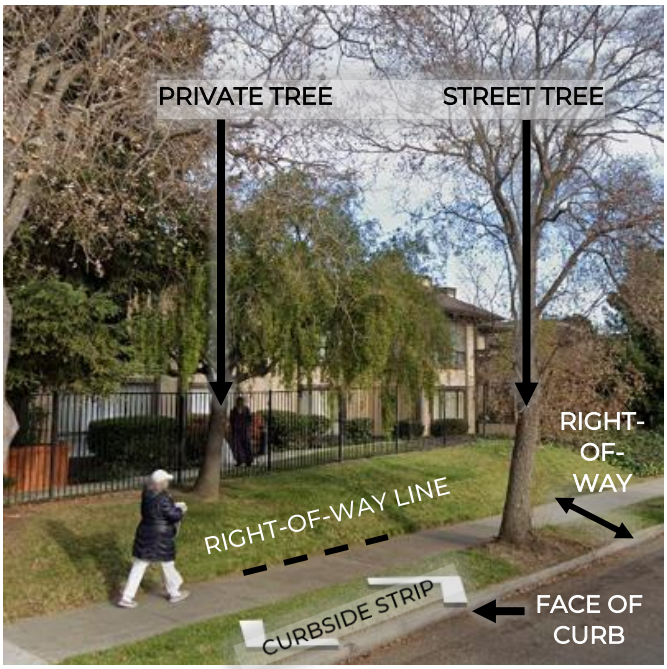
TREE REGULATIONS

Tree ordinances are among the tools used by cities striving to attain a healthy, vigorous, and well-managed urban forest. By themselves, however, tree ordinances cannot assure that the trees in and around a community will be improved or even maintained. Tree ordinances simply provide the authorization and standards for management activities. If these activities are not integrated into an overall management strategy, problems are likely to arise. Without an overall strategy, management will be haphazard, inefficient, and ineffective, and the urban forest will suffer. This section provides an overview of the existing ordinances in Fremont that address trees and the urban forest.

Street Tree or Private Tree?

Image Description 7. Illustration of the types of trees in Fremont

Monolithic Sidewalk – Sidewalk attached to curb



Detached Sidewalk – Sidewalk and curb are separated

Street Trees

The ordinance that regulates street trees is located in section 12.30 “Maintenance of Street Trees and Sidewalks” of Fremont Municipal Code. This ordinance addresses planting and removal of trees within public rights-of-way and contains provisions governing maintenance or removal of private trees which pose a hazard to the traveling public.

The trees regulated under this ordinance are defined along with the requirements to adhere to industry standards and best practices. The ordinance also includes the process, criteria, fees, enforcement, and appeals as part of the tree permitting program. Currently, there is no fee for the street tree permit though a tree that is in question or disputed may require an arborist report at the property owner’s expense.

In addition, Fremont’s street tree ordinance protects public street trees by defining the fees and course of action for interference with City actions and damage to public trees. And lastly, Article II within the ordinance defines the adjacent property owner’s responsibility to maintain public street trees (as well as sidewalks).

Private Property Trees

One factor to developing a sustainable urban forest is the extent to which the City can effectively influence the management of trees on private property as most of the urban forest exists on privately owned land. These trees are managed differently than street trees on public property, and are under the purview of the Community Development Department. The City’s methods by which it can influence tree management on private property are a combination of indirect actions, such as community education campaigns, and direct actions, such as city ordinances, policies, and permits. An attractive quality of a robust community education campaign is voluntary participation from private landowners to contribute to reaching environmental and sustainability goals by implementing city standards for tree management. The impetus for city ordinances, policies, and permit procedures is to further enforce tree management standards on private property.

Private Property Tree Removal

Protected Trees: All street trees and most mature private trees that receive special protection in the Fremont Municipal Code. Any work on these trees requires a permit.

Exempt Trees: There are some privately owned trees that do not receive special protection in the Fremont Municipal Code. No permit is required to perform work on these trees.

Landmark Trees: Trees designated by City Council to have cultural, historic, or social value to Fremont that receive protection beyond that of other Protected Trees. The Landmark Trees list is found at www.fremont.gov/landmarktrees. Removal of these trees requires City Council approval. Landmark trees can occur as Private Trees, Street Trees, in parks or anywhere in the City.

The Tree Preservation Ordinance (TPO) in Chapter 18 of Fremont Municipal Code defines a private tree as any tree growing on private land except street trees as defined by Section 12.30.010 and provides the regulations for tree protection, permitting, and mitigation. These regulations apply to protected trees and define the criteria for the trees to protect. Protected Trees are trees that are protected by City Council. Trees that fall under this category are trees

that grow on public land, heritage trees, significant or landmark trees, and large mature trees even on private land. Protected trees include (prior to ordinance revision recommended in the UFMP):

- A tree on a vacant private land measuring a diameter at breast height (DBH) greater than six inches;
- Trees that were planted to mitigate other trees previously removed;
- A tree on 10,000 square feet or greater private property and measuring a DBH of 18 inches and above;
- Trees that are of native species and have a DBH of 10 inches or above;
- Trees designated as a Landmark Tree.

As stated in Chapter 18, a Landmark Tree is a tree that has been so designated by resolution of the City Council as well as any tree that has been designated in the General Plan as a primary historic resource. These are trees that are designated in the City to have certain historic, social, or cultural value to the community. As a result, Landmark Trees can be anywhere from private to public land within the City.

If a protected tree needs to be removed due to its condition or the project cannot be adjusted to accommodate an existing tree, a removal permit may be authorized. In the case where it is requested to remove a tree for development, an application must be submitted to the City. Currently, the fee amounts are established by resolution of the City Council. After receiving an application, the City will review and issue or deny the request. If denied, the applicant may undergo an appeal process. If approved, the tree must be removed according to City guidelines and a replacement tree must be planted. The replacement tree shall be a 15-gallon tree if the removal takes place on single-family residential property or a 24-inch box tree if it is on any other type of land use (i.e., commercial). The TPO includes the procedures and penalties for unlawfully removing or damaging protected trees.

TREE PERMITTING PROCESS

A permit is required to remove, prune, or plant a tree near a sidewalk or street in the public right-of-way. This applies to residents, HOAs, and businesses. The protected trees that require permit include (prior to ordinance revision recommended in the UFMP):

- A tree having a DBH (diameter at breast height) of six inches or more and located on a vacant or underdeveloped lot;
- A tree having a DBH of six inches or more and located on a developed lot which is the subject of a contemplated or pending application for a development project;
- A native tree or tree of exceptional adaptability to the Fremont area having a DBH of 10 inches or more;
- A tree having a DBH of eighteen inches or more;
- A tree that was required by the City to be planted or retained as mitigation for a tree(s) removed;
- A tree planted or retained as a condition of any City-conferred development project approval, including approvals conferred prior to adoption of the ordinance;
- One of six or more trees of the same species that are located on the same lot and each have a DBH of six inches or greater.

A webpage specific to the tree permit application enables property owners and developers to follow the process. The online form begins with the applicant's contact information, a question regarding receipt of a City courtesy notice, and a description of what the applicant is requesting. These radio buttons include "Remove a Tree", "Prune a Tree", "Plant a Tree", and "Something Else". In addition to the type of application, the location of the tree is required, and the options include "Near the sidewalk", "In my front yard", or "Somewhere else". The form also asks for the tree species if it is known along with a yes/no option regarding sidewalk damage associated with the tree(s).

Next, the applicant is required to review the tree removal criteria and select the reason for requesting the removal of a tree(s). Options relate to the tree's associated level of risk, condition, health, space, interference with utilities and property, or damage. The applicant must then verify they have read the tree removal criteria and indicate as to whether they have a pending or contemplated development application with the City.

Lastly, the applicant may submit additional comments and upload up to three photos of the tree in question.

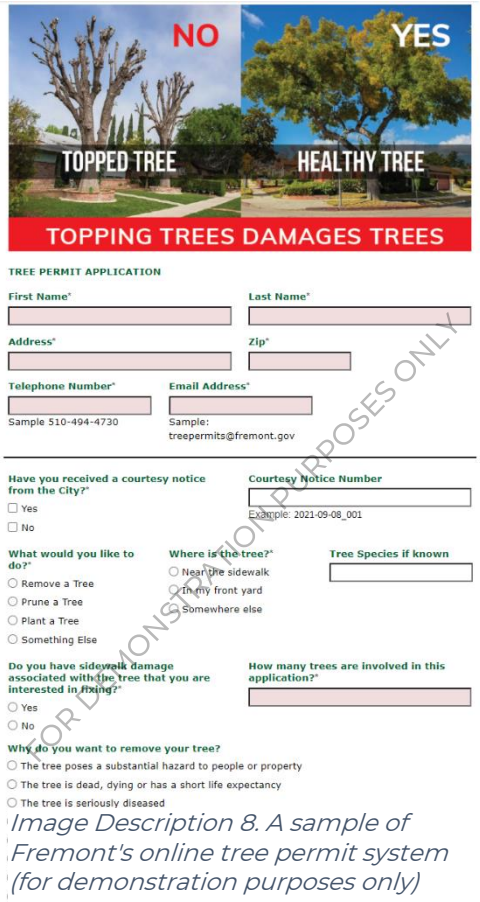
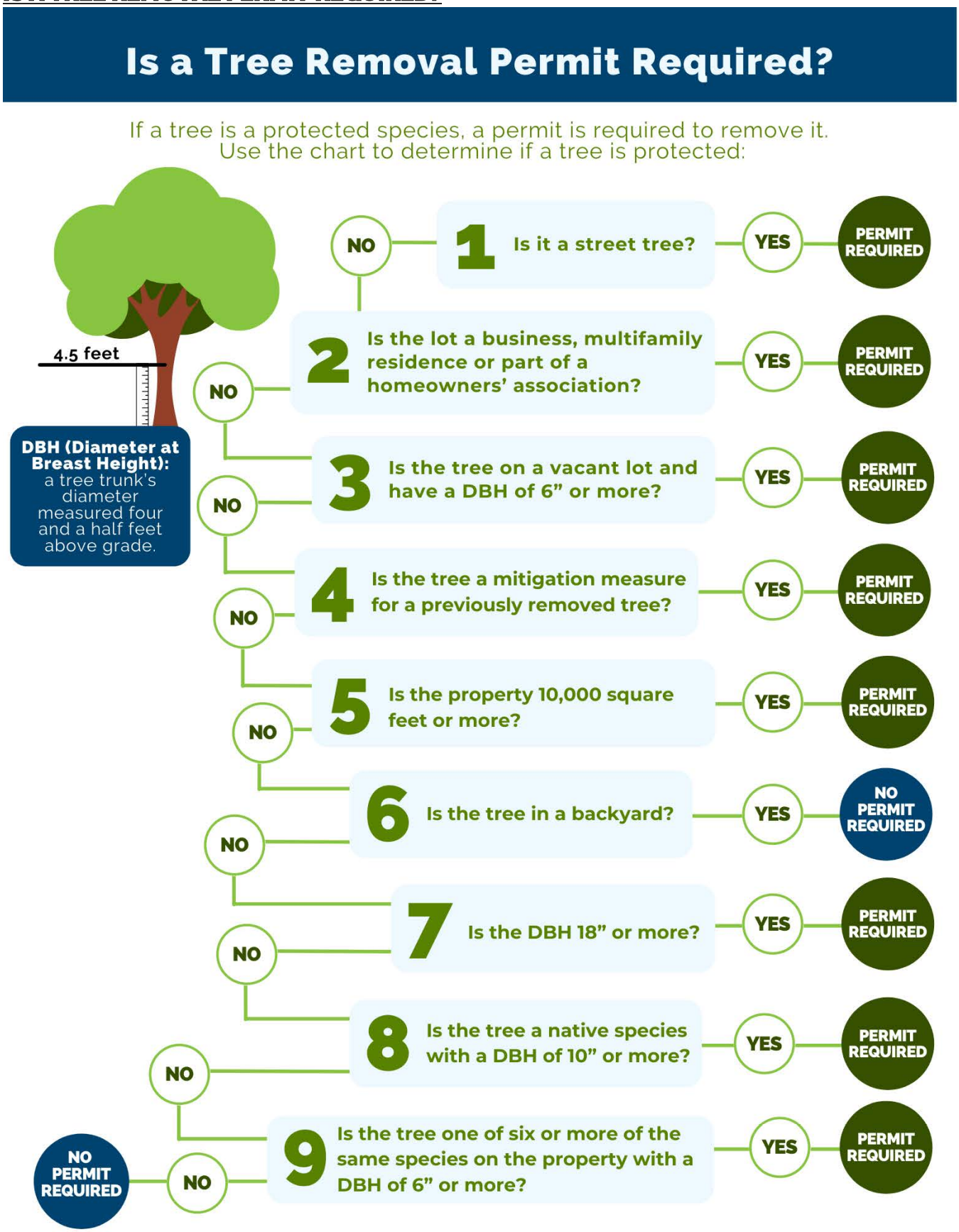


Image Description 8. A sample of Fremont's online tree permit system (for demonstration purposes only)

IS A TREE REMOVAL PERMIT REQUIRED?



REMOVING A PRIVATE PROTECTED TREE

Removing a Private Protected Tree

If you have determined that you have a Private Protected Tree on your property that you'd like to do tree work on, use this chart for the permit process:

1 Is the tree removal or relocation part of a development project?

YES → See the City of Fremont's Planning Department for removal or mitigation of private protected trees at the City's website.

NO

2 Submit your application for tree permit online. Urban Forester will review permit request and make determination

3 Did urban forester approve the permit after inspecting the tree and property owner has received approved permit?

YES → **PLANNED TREE WORK PROCEEDS**

MITIGATION IS REQUIRED

Mitigation for Tree Removal

Each tree must be replaced with:

- 15 Gallon tree for single family residences
- 24" Box tree on all other properties

Mitigation for Tree Relocation

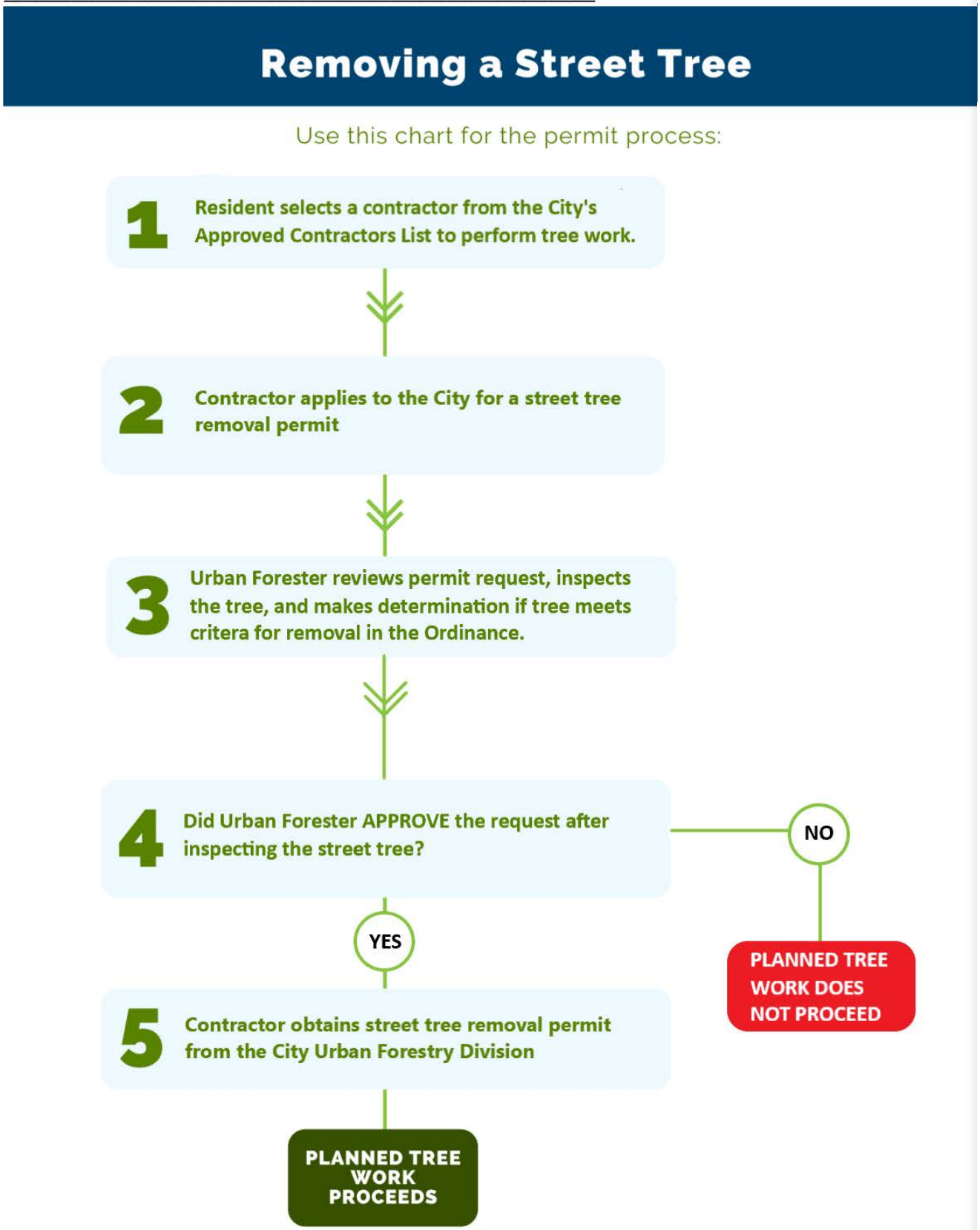
- Permit has conditions ensuring health of tree

NO → **PLANNED TREE WORK DOES NOT PROCEED**

OPTIONAL APPEAL PROCESS

- Appeal application submitted to city clerk within 10 days of permit denial
- Notice of Appeal Hearing mailed to applicant at least 10 days in advance
- Appeal Hearing before Fremont City Council
- City Council denies or grants appeal

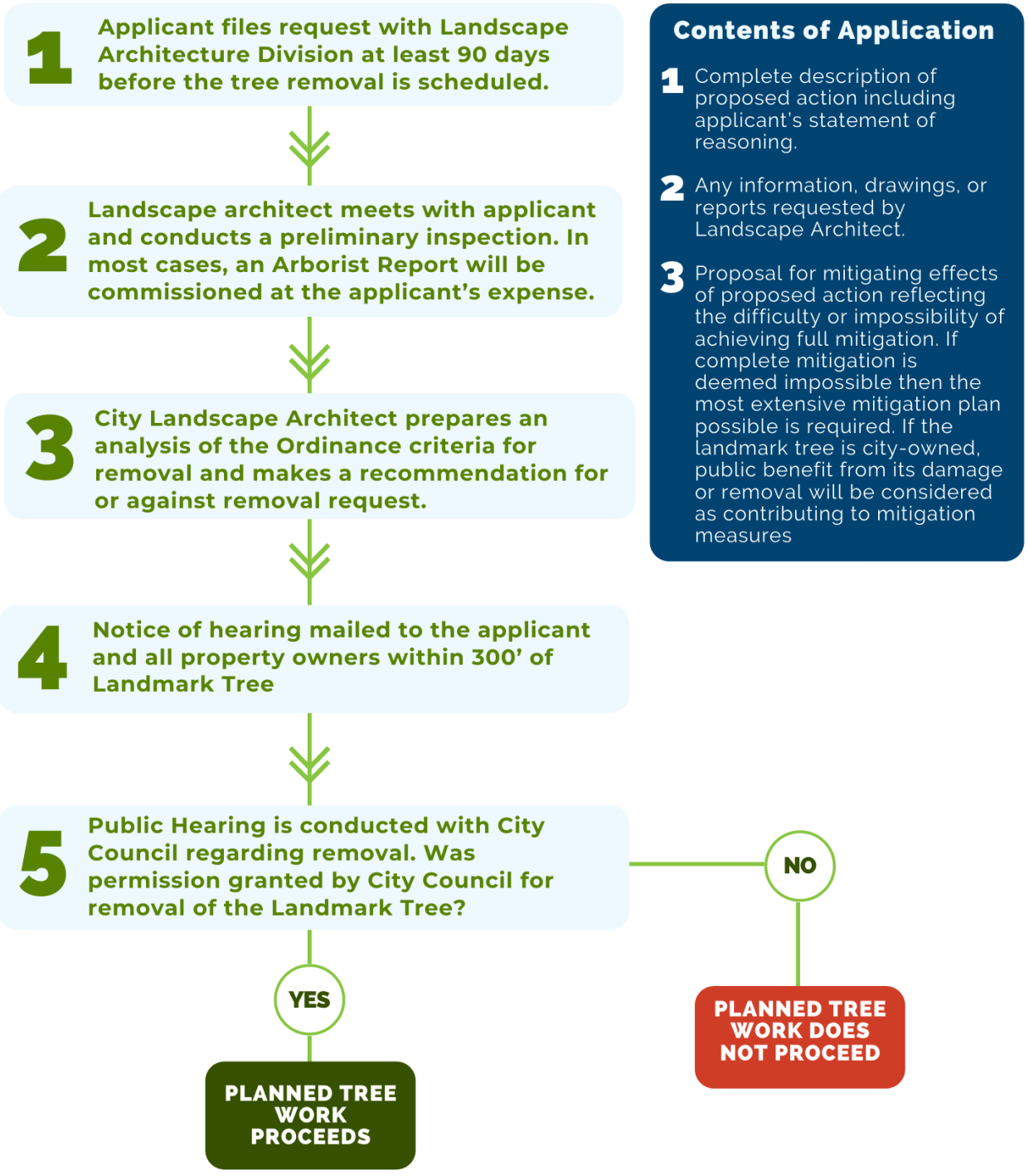
REMOVING A STREET TREE – THE PERMIT PROCESS



REMOVING A LANDMARK TREE – OBTAINING PERMISSION

Removing a Landmark Tree

Use this chart for the permit process:



MAINTENANCE OF STREET TREES – OBTAINING A PERMIT

Maintenance of Street Trees

Maintenance of street trees is the responsibility of the adjacent property owner (FMC 6-2201). To ensure quality care for street trees, Fremont requires permits for any work performed on a street tree other than pruning limbs under 2" in diameter. When a street tree needs pruning, obtain a permit by calling in a work order to the City's Urban Forestry Division before starting work.

1 Resident submits maintenance request to Fremont's Urban Forestry Division (510) 979- 5700 and describes reason for request

2 Urban Forester reviews request, inspects tree, and leaves a letter to the resident informing them of the visit and if their request is approved.

3 Did the Urban Forester APPROVE the request after inspecting the street tree?

- NO → PLANNED TREE WORK DOES NOT PROCEED
- YES

4 Resident selects a contractor from the City's Approved Tree Contractors List at www.fremont.gov to perform the tree maintenance.

5 Contractor obtains street tree removal permit from Landscape Architecture Division.

PLANNED TREE WORK PROCEEDS

Qualifications

All work on street trees must be performed by an approved contractor with the following qualifications:

- Insured
- Bonded
- State of California C-27 Contractor's License
- City of Fremont Business License
- ISA Certified Arborist on staff

Visit www.Fremont.gov/2562/Approved-Tree-Contractors for a list of City-approved tree

ARBORICULTURE SAFETY AND CONSIDERATIONS

Arboriculture, or the cultivation of trees and shrubs, is an inherently dangerous profession which encompasses high risk operations like working at height, handling heavy loads and powerful equipment, and working around natural tree structures that do not have a fixed or well-known safe working load limit. The work of an arborist requires specialized skills and equipment to safely perform work in a hazardous environment.

The hazardous nature of tree work is reflected in statistics that report high rates of fatalities and serious injuries of tree workers. In the United States, federal government agencies like National Institute for Occupation Safety and Health (NIOSH) and Bureau of Labor Statistics (BLS) track and report incident statistics. Analyses of incident data have shown that the annual fatality rate for tree workers has consistently been at 30.0 per 100,000 U.S. workers, almost eight times higher than the national average of 4.0 fatalities per 100,000 U.S. workers for all other industries (Ball et al., 2010[1]).

NIOSH reported that the most common cause for tree worker death is due to electrocutions and falls. Another analysis of the Census of Fatal Occupational Injuries (CFOI) found 1,285 fatalities among tree workers, where 44% were pruning a tree when fatally injured and the top three most common causes of death in tree work was being struck by or against an object (42%), falls to lower level (34%) and electrocutions (14%) (CDC[2]).

To address the danger of arboricultural work, safety standards have been developed by the industry to guide work safety and reduce the likelihood of work injuries. Safety standards are standardized work procedures which are necessary or reasonable to provide a safe and healthful work environment. Safety standards can also be used as a benchmark for an industry's work quality and to increase professionalism. Arboriculture safety standards are developed from a unanimous consensus of various parties involved in the industry such as arborists, arboriculture associations or societies, insurance agencies, government, manufacturers, and any other interested professionals in the field.

Consensus safety standards are endorsed by nationally recognized but private standards accreditation bodies like the American National Standards Institute (ANSI).

The Arboriculture Safety Standard:

The American National Standard for Arboricultural Operations - Safety Requirements, also known as the ANSI Z133 or just Z133, was created in 1972 and updated throughout the years with the most recent update in 2017. The Z133 was developed by the Accredited Standards Committee ASC Z133. This version provides the most current and comprehensive safety guidance for arborists in the United States.

Although compliance with this standard is voluntary, Z133 carries the force of law in many instances in the U.S. When the Occupational Safety and Health Administration (OSHA) cannot find language in its own standards to guide safe work practices in a particular situation they will typically cite a section of Z133 as what the employer "should have known or done" to create a safe work environment for its employees.

---

[1] Ball, J., and S. Vosberg. 2010. A Survey of United States Tree Care Companies: Part I -Safety Training and Fatal Accidents. Journal of Arboriculture 36(5):224-229.

[2] Centers for Disease Control and Prevention, Work-Related Fatalities Associated with Tree Care Operations --- United States, 1992—2007. CDC.gov, accessed March 15, 2022.

ASSESS THE SITE AND TREE

Precaution:

The following is not intended to serve as a replacement for any city, state, or federal regulations and recommendations.

If any portion of the site, tree, or planting space appear to be an observable hazard or a risk, one should consult with a professional trained to properly assess and mitigate risk.

Examples of qualified professionals for hazardous situations may include ISA Certified Arborist®, ISA Tree Risk Assessment Qualification, ISA Certified Arborist Utility Specialist™ Tree Care Industry Association (TCIA) Utility Contractor Accreditation, and American Society of Consulting Arborists' (ASCA) Registered Consulting Arborist.

It is a tree owner's responsibility to ensure the safety of others when around trees on their property. For public rights-of-way adjacent to private property, property owners must apply for a City permit to prune, remove, or plant a street tree.

For any tree activity, whether it be planting or pruning, one should approach trees, the growing space, and their surroundings by making observations. Observations should identify any obvious signs of concern or notable changes from previous conditions.

Before approaching the tree or planting space, a big picture observation should be made that looks at all present and potential features and obstacles within proximity and on site. Look for power lines, animal and insect nests, standing water, presence of wildlife, signs of recent site disturbance (e.g., new sidewalks, curbs, or driveways), changes in grade, attached hardware (e.g., staples, nails), frequency of pedestrians, vehicle traffic among others that can exist in an urban setting.

Following a broad overview of the work site, one should look for major signs of concern as they approach the tree(s) or planting space(s) intended for work. For trees, things that are easier to spot on approach include broken or hanging branches, branch tip dieback, sparse canopy foliage, or excessive sprouts along major branches. Be aware that signs on the trunk or in the canopy may indicate root problems and consequently a loss of structural stability. Know the signs of poor or weak branch attachment, like codominant stems or narrowly angled branch unions. Develop a keen eye for dead or broken limbs, large cavities or cankers, or the absence of a visible trunk flare at the ground line. If there is no trunk flare, then there is a good chance the site has seen a change in grade, potentially causing damage to the root system and a loss of structural integrity.

Evaluating the seriousness of tree defects and site concerns is best done by a professional arborist. Regular tree care performed by an ISA Certified Arborist will provide an opportunity to identify trees that have defects and unacceptable risk levels. Once the risk is identified, steps may be taken to reduce the likelihood of an incident or damage.

The online resource, Trees Are Good provides a general checklist regarding the safety of a tree to prune or approach. This checklist can be used for property owners looking to maintain a tree on their property or to prune a few small branches on an established tree for clearance or a newly planted tree for structure. It should be noted, ISA Certified Arborists are trained in ISA Level 2 Risk Assessments and ISA Tree Risk Assessment Qualification accredited individuals are the professionals for the most comprehensive and industry-accepted form of risk assessment.

Consider these questions when assessing a tree:

- ☐ Are there large dead branches?
- ☐ Are there detached, hanging branches?
- ☐ Have any branches fallen from the tree?
- ☐ Is there loose bark on the trunk?
- ☐ Are there cracks or splits in the trunk or where branches are attached?
- ☐ Has the trunk developed unusually?
- ☐ Are there cavities or rotten wood along the trunk or in major branches?
- ☐ Are mushrooms present at the base of or under the tree?
- ☐ Has the area recently been altered by construction, changes in soil level, or installations of lawns or pavement?
- ☐ Have the leaves developed an unusual yellow color or do they seem smaller in size?
- ☐ Has the tree been topped or heavily pruned?

Precautions: To reduce the risk of personal injury or permanent damage to your tree, read and follow these important precautions:

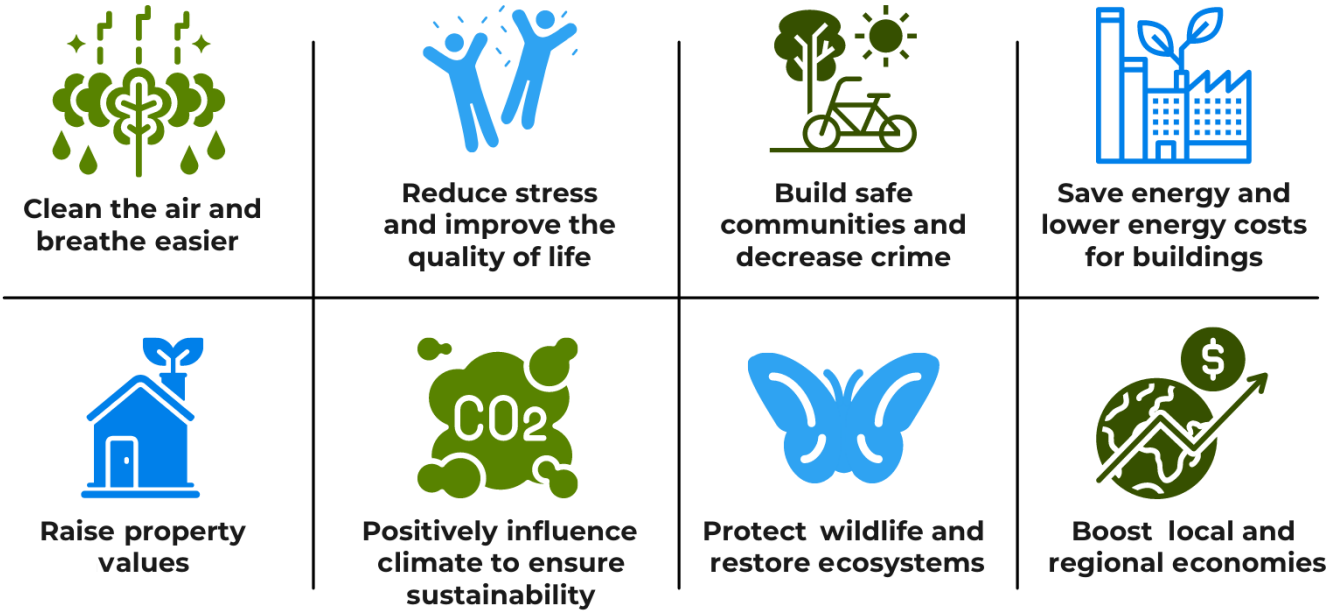
- ☐ Do not dig until you are sure there are no buried utilities. Call the Underground Service Alert at 811.
- ☐ Never prune trees or branches that are within 10 feet of utility lines unless certified. Contact your local utility company if qualifications are not met or a line is in question.
- ☐ Always adhere to industry standards and best practices, specifically the American National Standards Institute's (ANSI) A300, ANSI Z133, and ANSI Z60.1 Standards.
- ☐ Always wear proper protective equipment (PPE) and adhere to ANSI Z133 Safety Standards.
- ☐ Adhere to the City's regulations regarding tree planting, pruning, removal, permitting, and assessments. Consider registering with the City's Approved Tree Contractors list (www.fremont.gov/3730/Tree-Contractor-Certification).
- ☐ Maintain International Society of Arboriculture certifications and related industry accreditations. Participate in trainings, workshops, and other resources related to the industry.
- ☐ Keep lawn mowers and weed whips away from the base of trees.
- ☐ Do not tie string, ribbon, or wire.
- ☐ Do not allow construction activities (digging, repaving, grading, building) within the Tree Protection Zone (i.e., canopy drip line) (pp. 44 and 45).
- ☐ Do not top your tree (pp. 40, 42 and 53).
- ☐ A hired arborist should have general liability insurance of at least $1 million per occurrence and $2 million aggregate.
- ☐ Adhere to the City's regulations regarding planting and pruning.
- ☐ Do not nail or screw anything into trees.
- ☐ Refer to the Tree Risk Management section (p. 50) for more details.

TREE PLANTING BEST PRACTICES

WHY PLANT TREES?

The urban forest plays an important role in supporting and improving the quality of life in communities. A tree's shade and beauty contribute to a community's quality of life and soften the often hard appearance of urban landscapes and streetscapes. When properly maintained, trees provide communities with abundant environmental, economic, and social benefits that far exceed the time and money invested in planting, pruning, protection, and removal.

The trees growing along the public streets constitute a valuable community resource. They provide numerous tangible and intangible benefits such as pollution control, energy reduction, stormwater management, property value increases, wildlife habitat, education opportunities, human health and well-being, and aesthetics.



Fremont's Public Trees: $7.44 return for every dollar spent

Image Description 9. Illustration of the benefits and services provided by public trees

As a tree care professional, the types of trees you plant, and the quality of the work performed directly impacts Fremont's urban forest. By choosing the right tree for the site along with considering water-wise species and trees that reduce surface temperatures and mitigate the effects of climate change you are supporting the City's vision for a healthy, sustainable, and thriving urban forest that benefits current and future generations.

CONSIDERATIONS BEFORE PLANTING

Before applying best practices to tree planting, the site and soil must be considered to identify the appropriate tree species for the site. Consider the following:

- Is it a City-recommended tree? View Fremont's recommended street trees here: www.fremont.gov/2397/Approved-Street-Trees (to be updated as part of the UFMP)
- Is it non-invasive? View the CA Invasive Plant Council's list here: www.invasive.org/species/list.cfm?id=64
- How much growing space is available both above ground and below ground? Be sure you know how large the tree can get at maturity and identify any hardscape or infrastructure that may be in conflict.

Common Invasive Trees

Black Acacia (*Acacia melanoxylon*)

Tree-of-Heaven (*Ailanthus altissima*)

Blue Gum tree (*Eucalyptus globulus*)

Chinese Tallow Tree (*Sapium sebiferum*)

Tamarisk (*Tamarisk ramosissima*)

Russian-olive (*Elaeagnus angustifolia*)

- What is the intended purpose of the tree to be planted? Examples include flowers, shade, fruit, wildlife, design, replacement, screen, among others.
- What is the soil structure of the site to be planted? Local box stores and garden centers often have soil test kits to measure soil pH and levels of nitrogen, phosphorus, and potassium— often the limiting factor for selecting a tree species.
- What is the drainage of the site, and will there be water readily available if needed? It is recommended to generally plant drought tolerant and "water wise" tree species to be conscious of sustainability and water resources. The City's website has great resources and information relating to water wise landscaping, www.fremont.gov/2461/Water-Wise-Gardens. Often times, native trees to CA are well suited or highly adaptive to limited or infrequent watering. Check out the list at the California Native Plant Society's website: www.calscape.org and Cal Poly's SelecTree site: www.selectree.calpoly.edu

Examples of Native Drought Tolerant Tree Species

Blue Oak (*Quercus douglasii*)

Engelmann Oak (*Quercus engelmannii*)

Image Description 10. Examples of native drought tolerant tree species (Source: Cal Poly SelecTree)

CONSIDERATIONS CONTINUED

- When will you plant your tree(s)? Consider planting in late fall or early spring. The Alameda County Master Gardener Program provides a guide for tree planting as well as gardening tips: www.acmg.ucanr.edu/Your_Garden_Month-by-Month.
- What type of nursery stock will your new tree be? Is it containerized, ball & burlap (B&B), or bare root? View the table and images below (Image 11) for a description of each.
- Can you plant a tree that will have a large canopy at maturity? The City encourages the selection of trees appropriate for a particular urban site, but also encourages planting the largest possible canopy tree to maximize the benefits associated with the tree.
- Does the tree species you selected support the City's tree diversity goals? Diversity ensures an urban forest is sustainable and resilient to climate change as well as tree pests and diseases. Currently, the five most common tree species in Fremont's public tree population are Chinese pistache, crapemyrtles, liquidambars, Raywood ash, and coast live oaks. Consider planting trees not in the City's top five.
- For other considerations or questions, contact the City or the Master Gardener Program of Alameda County.
- Once you have addressed these and other questions, review the following section for tree planting best practices.

Image Description 11. Comparison of nursery stock for tree planting

A) Containerized	B) Ball & Burlap (B&B)	C) Bare Root
Complete root system. Look for girdling roots	Partial root system (field grown)	Complete root system, no soil. Look for kinked roots
Can be planted any time of year (avoid hot/dry periods)	Best planted during dormant season	Must be dormant, plant immediately after receipt
Small to medium caliper trees	Large caliper trees	Small trees or seedlings
More sensitive to drought or limited water after planting	Heavy material; takes more equipment to handle and plant	Good for reforestation projects and street tree volunteer events

TREE PLANTING CHECKLIST

With the considerations in mind, use the following checklist and review ANSI A300 Part 6 – Planting and Transporting Standards. Be sure to select the right tree for the right spot!

☐ Did you ask a professional?
- Check with the City's Urban Forestry Program for preferred tree species information. Your county extension agent can also help with selecting the right tree.

☐ Did you look up?
- Do not plant directly beneath overhead wires. Trees planted beneath wires tend to be pruned irregularly.
- Large trees should be planted at least 25 feet from utility lines.

☐ Do you know your plant hardiness zone?
- The USDA plant hardiness zones are based on average minimum temperatures.
- Fremont is primarily in the 10a and 9b zones. Select a tree suitable for your zone.

☐ Have you checked your soil?
- Have your soil tested for pH and nutrient content.
- Is the soil compacted? Tree roots don't grow well in compacted soils; you may need to break it up and add organic matter.

☐ Do you know how much sun the site will get?
- Select full sun, partial sun, or shade species.

☐ Are there known insects or diseases in your area?
- Select plants with low insect and disease susceptibility.

☐ Did you look around for nearby structures and pavement?
- Plant a minimum of 3 feet from driveways and 15 feet from buildings. For a street tree, apply for a permit to determine if the curbside strip adjacent to your property is appropriate for a tree. You need to provide enough room for the tree to grow to its mature size.

☐ Have you thought about what size or shape tree you want?
- Different species grow to different height and spread at maturity (broad, narrow, columnar, v-shaped).

☐ Do you want your tree to provide a certain benefit or function?
- Trees can provide shade to reduce cooling costs, slow stormwater runoff, increase property value, provide visual screen or wind break, attract wildlife.

☐ Do you prefer specific types of flowers, fruit, or fall color?

☐ Do you have a post-planting care plan in place?
- Newly planted trees need to be monitored and cared for by applying mulch, possibly stake and ties for stability, and watering depending on the site and needs of the tree species.

CHOOSING THE RIGHT TREE

Choosing a healthy tree at the nursery or garden center is just as important as deciding on the species to plant. Nurseries and garden centers should be adhering to ANSI Z60.1 American Standard for Nursery Stock but you should also inspect the tree and root system for any signs of poor management, poor condition, and future issues. Use the images below to help select a healthy tree that will grow to its full potential and maximize the associated benefits.

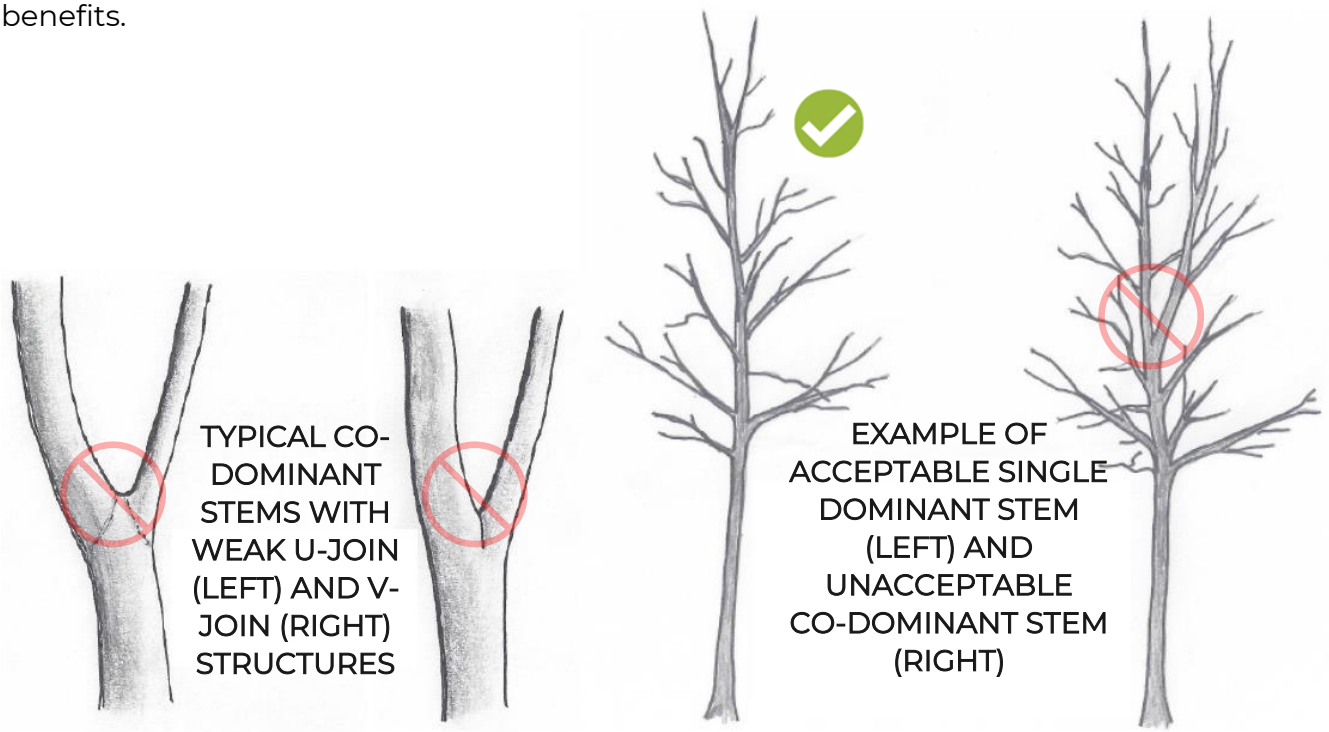


Image Description 12. Branch attachment (left) and structure (right) considerations when choosing a new tree (Source: ANSI Z60.1)

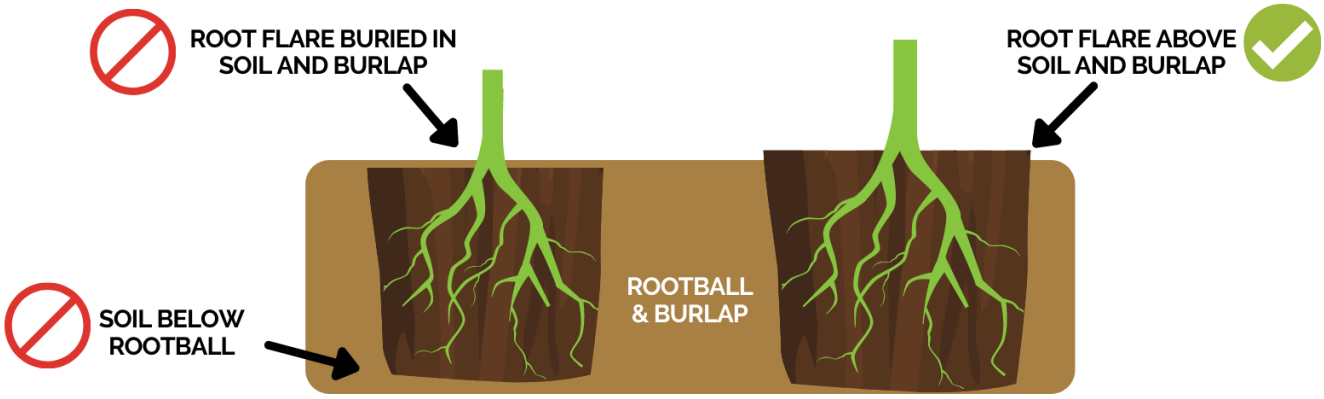
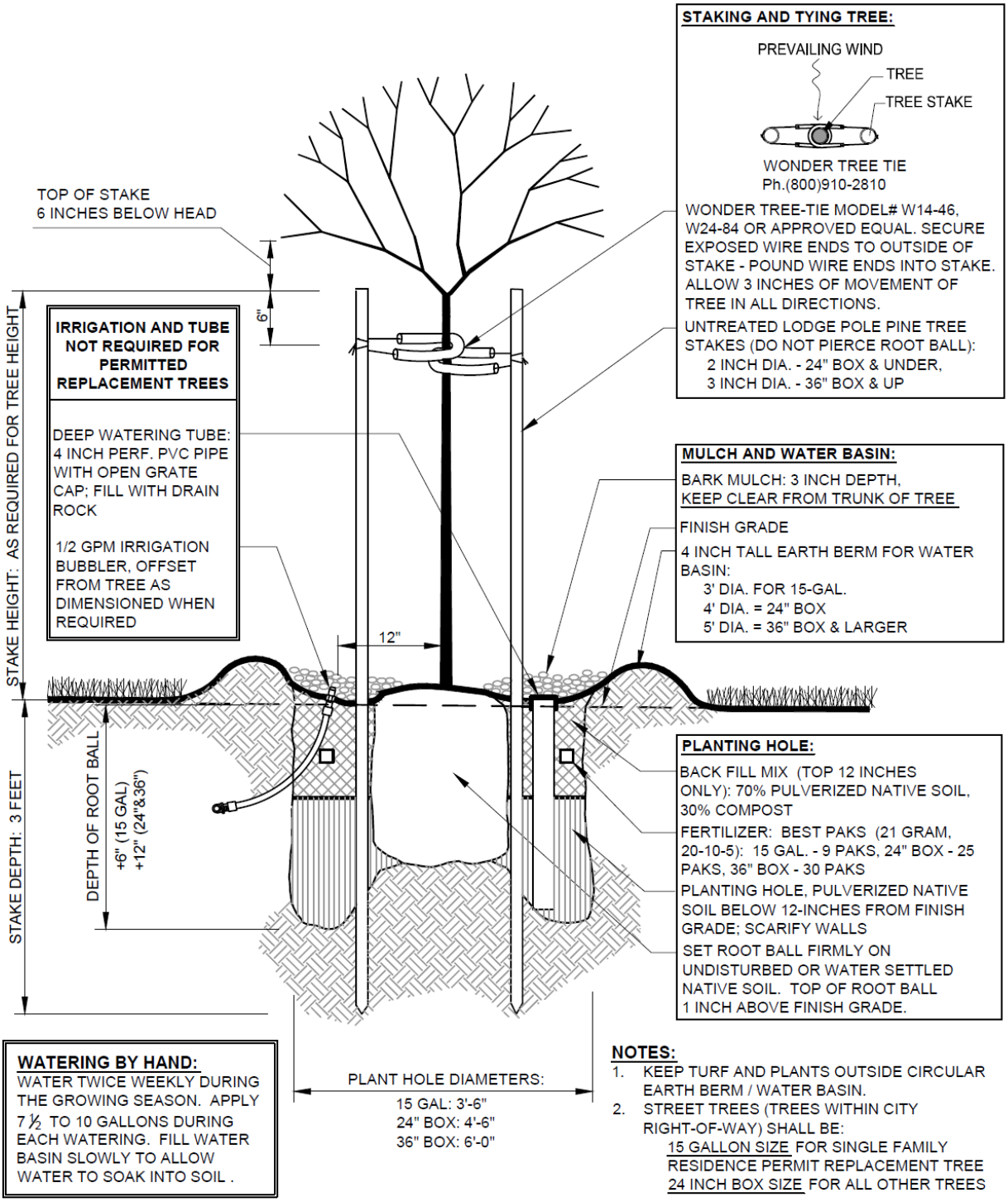


Image Description 13. Incorrect (left) and correct (right) balled and burlapped tree roots

Inspect the tree for any signs of weak branch attachments (Image 7), disease or insects, damage or decay, and presence of root flare in ball and burlap (Image 8). If the tree is deciduous, inspect the branching habit to determine if the tree was sheered to encourage more branches and fuller canopy. This is an incorrect practice and a tree that was sheered should be avoided.

CITY OF FREMONT TREE PLANTING & STAKING CITY STANDARD



NO.	REVISED	DATE
	General Revision	04/15/19
	Council Revision	12/13/11
	General Revision	02/08/10

REVISIONS

CITY OF FREMONT
STANDARD DETAILS

CITY STANDARD
TREE PLANTING & STAKING

DATE APPROVED BY CITY COUNCIL 12/13/11
RESOLUTION NO. 2006-31
CITY ENGINEER

FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.	
LSD-1.DWG	3/4" = 1'-0"	PM/MM	RER	APRIL 2019	LSD - 1	1 of 1

Image Description 14. City of Fremont tree planting and staking standard details

Tree Planting Best Practices

Use this 5-Step Tree Planting guide when planting a new tree,

1 Measure the Root Ball

- The root ball contains the root system's core. It starts at the root collar and extends to the bottom of the root system.
- Measure the diameter and depth of the root ball.

2 Prepare the Space

- Dig a hole two and a half times wider than the root ball.
- For example, the hole for a tree with a root ball 20" across should be dug 50".
- The depth of this hole should be 1" less than the depth of the root ball. Thus, a 18" high root ball would be placed in a 1" deep hole.

3 Place the Tree

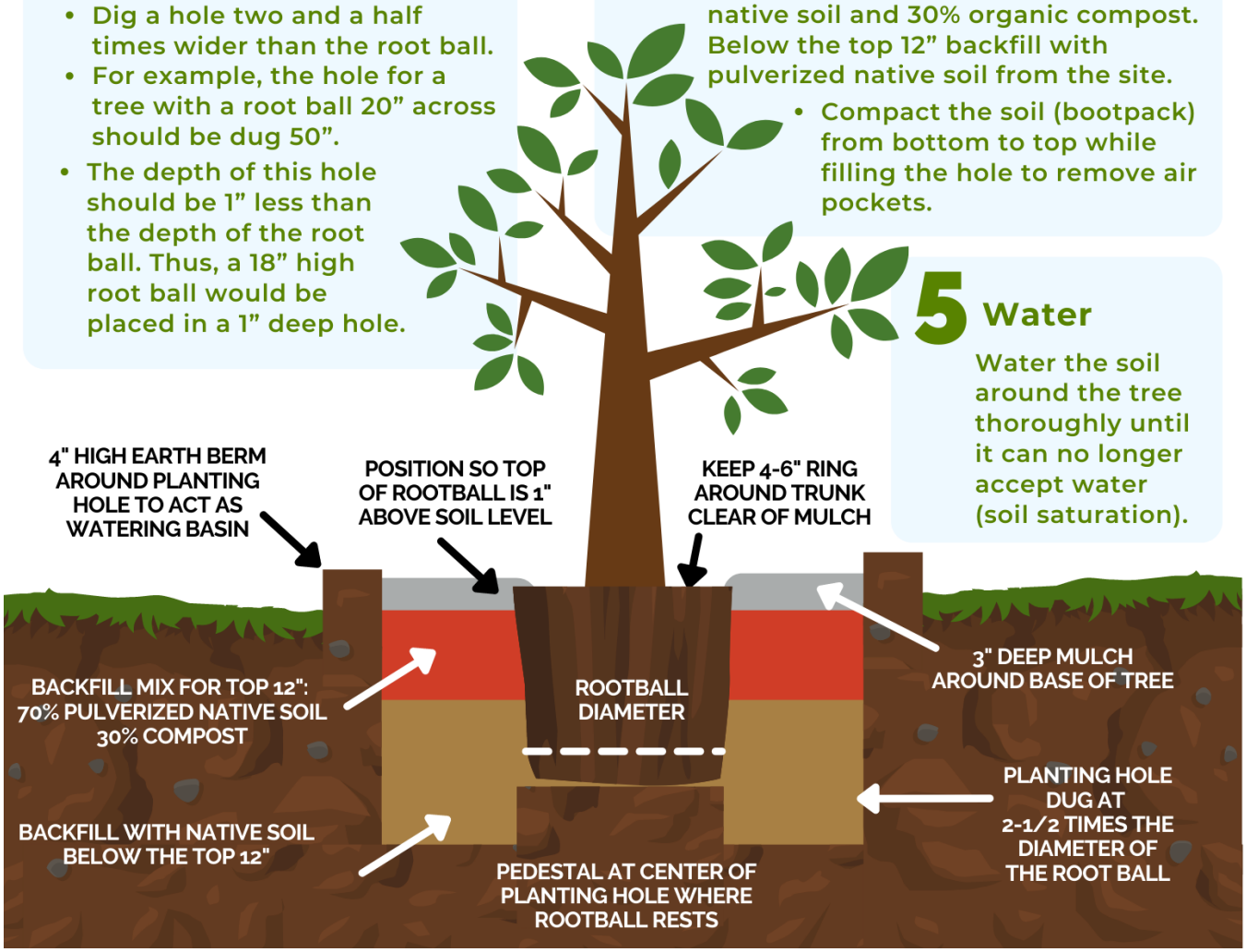
- Spread out the roots so that they are radiating out from the rootball and not circling or girdling each other.
- Gently lower the tree into the hole until the rootball comes to rest at the bottom.
- Support the rootball as it is lowered to prevent damage.

4 Backfill

- Backfill the top 12" of the planting hole with a mixture of 70% pulverized native soil and 30% organic compost. Below the top 12" backfill with pulverized native soil from the site.
- Compact the soil (bootpack) from bottom to top while filling the hole to remove air pockets.

5 Water

Water the soil around the tree thoroughly until it can no longer accept water (soil saturation).



POST PLANTING CARE

Proper pruning is essential in developing a tree with a strong structure and desirable form but little to no pruning should be done immediately after planting. Trees that receive the appropriate pruning while they are young will require less corrective pruning as they mature.

YOUNG TREE MAINTENANCE TECHNIQUES

1. *Consider the Natural Form and Desired Growth*
   Accentuate the natural branching habit of a tree and correct any structural problems over time, if needed, to not stress the tree.

2. *Pruning in 1-2 Years after Planting*
   Prune as little as possible after planting to ensure there are enough temporary branches to produce food for new growth of roots, trunk, and branches. Prune only dead, broken, malformed, or diseased branches. Remove codominant leaders to maintain one dominant trunk. Prune for clearance if absolutely necessary. Keep size of branch removed to less than one inch in diameter.

3. *Pruning 2-3 Years after Planting*
   Prune any dead, broken, malformed, or diseased branches. Remove any suckers from the base of the tree. Next, determine the permanent branch structure. Apply the following:
   - ❖ Remove, thin, or cut back any competing leaders.
   - ❖ Remove crossing or rubbing branches, keep the branch that maintains the natural form.
   - ❖ Thin excessively crowded branches but do not lions-tail.
   - ❖ Remove branches with narrow angles between the branch and trunk (consider species).
   - ❖ Remove branches to maintain well-spaced branches along the trunk. Ideal mature trees will have lateral branches that are 18-24 inches apart (depending on species).
   - ❖ Avoid pruning near time of bud break.
   - ❖ Prune flowering trees after flowering.

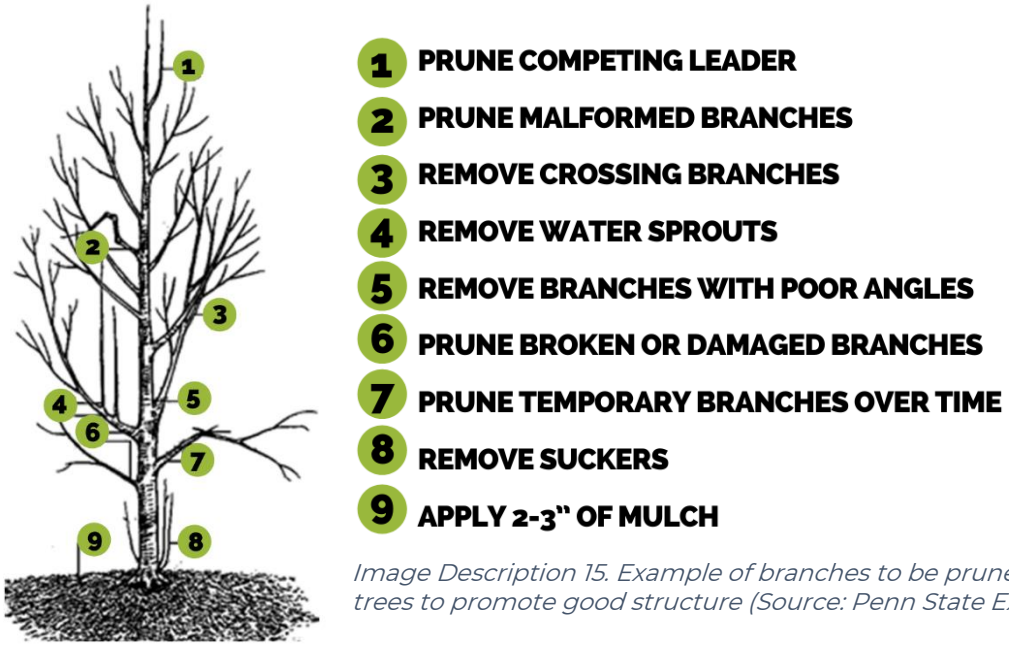


Image Description 15. Example of branches to be pruned for newly planted trees to promote good structure (Source: Penn State Extension)

PROPER MULCHING PRACTICES

There are many benefits to placing a layer of wood chip mulch on the soil under woody trees and shrubs. Mulch can provide significant water savings during the summer months. The wood chip mulch over the bare soil helps to prevent the surface of the soil from "crusting," which often occurs when irrigation water evaporates too quickly. When the soil surface is crusty, water does not penetrate well and runs off the soil surface and into the gutter.

Wood mulch also helps woody plants by protecting the roots that grow just under the soil surface. This surface soil can reach high temperatures quickly in the hot summer months. The temperature increases and the lack of water as the soil dries out kills the roots growing in the top few inches of soil. Organic mulch provides an insulated layer which prevents the soil from heating and drying out.

As wood chip mulch decomposes it provides organic nutrients to woody plants that are not available in most fertilizers.

Finally, a mulch layer makes the landscape look neat, attractive, and complete.

Proper Mulching

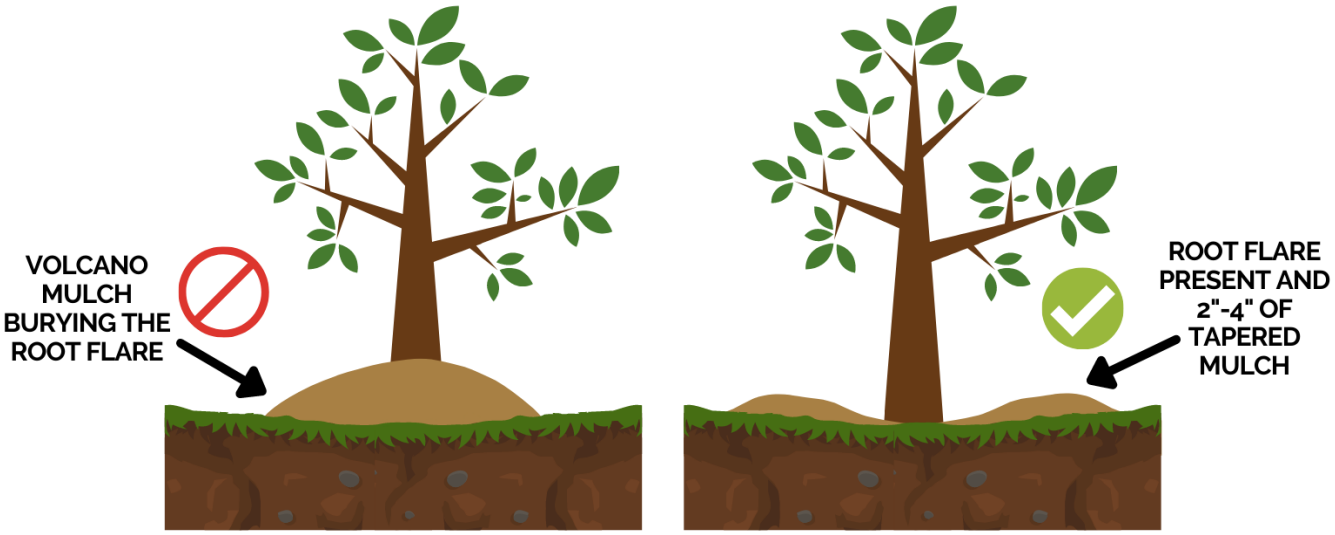


Image Description 16. Illustration of the improper (left) and proper (right) mulching technique

Potential Results of Improper Mulching

Moisture buildup causing decay

Girdling roots exposed after removing mulch

Image Description 17. Potential results of improper mulching

WATERING

Once the tree is planted, keep it well watered for the first two to three years to help establish a deep root system. Water requirements will be greater and more frequent during hot summer days; less often if the tree is planted near turf or other groundcover that is watered frequently. Water requirements during the winter depend on rainfall, irrigation of adjacent plantings, the tree species, and the soil type.

Most standard irrigation systems apply water much too rapidly to allow deep water penetration. Instead, water runoff occurs well before the end of the irrigation cycle. The irrigation ends up in the wrong place - puddled on the surface or as runoff onto the concrete instead of in the plants.

A finely textured soil holds water tightly and accepts water very slowly. For example, a clay loam soil will hold about two inches of water per one foot depth of soil whereas a sandy loam holds about one inch of water. The infiltration rate (rate at which the soil will accept water) for the sandy loam is about 0.40 inches per hour, but the clay loam soil can accept only 0.15 inches per hour.

It is important to apply water slowly so that it does not to exceed the infiltration rate. This can be accomplished by 1) changing irrigation heads to types that apply reduced gallons per minute and 2) by "cycling" the irrigations. The point is that the irrigation system must supply water very slowly on more finely textures soils. Applying water too fast increases the tendency for water to puddle on the surface or run off the top resulting in little or no deep water.

"Cycling" irrigations involves timing short irrigations back to back to provide deep water penetration and minimize run off. First, the irrigations system is run just until run-off begins. When run off starts, the water should be turned off for 1 -2 hours to give time for drainage and until any puddles dissipate. The irrigation cycle should then be repeated. Most new timers have the ability to run this type of cycling irrigations.

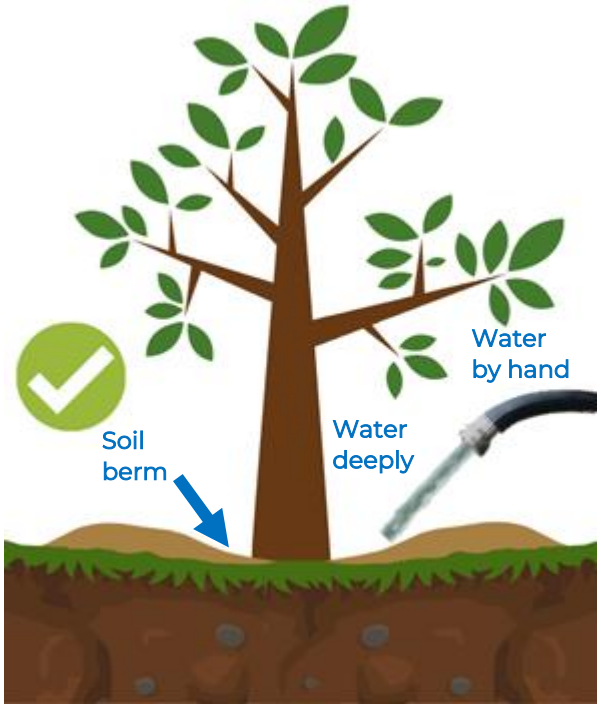


Image Description 18. Considerations for watering your newly planted tree

When a clay soil is overly dry it is often necessary to provide remedial irrigations to re-wet the soil. Extremely dry clay soil has a tendency to become hydrophobic. That is, it loses the ability to absorb water. Water applied to extremely dry soil will often move through cracks in the soil or will puddle on the surface rather than absorbed into the clay particles. To irrigate extremely dry clay soils it is often necessary to re-wet the soil before turning on the automatic sprinklers. These soils can be most easily re-wet by applying water very slowly through a soaker hose or similar device.

PRUNING ESTABLISHED TREES

Most pruning of established and mature trees should be done by an ISA Certified Arborist. The main purpose of this section is to provide education on the best practices so that you can be sure the arborist is doing the right thing to your tree(s).

Visit the following website— www.Fremont.gov/2562/Approved-Tree-Contractors —for a list of City-approved contractors to consider when hiring an arborist for the care of your private tree or street tree. The following provides an overview of tree maintenance (pruning) best practices. With any pruning, be sure to determine whether the timing of making branch cuts would be harmful to the tree due to potential pests and diseases and their life cycle stage. For example, it is typically best to prune in the winter or dormant season and to avoid bud break/leaf flush. The following section is not intended to be an extensive or comprehensive summary of best practices. All tree maintenance practices should follow the American National Standards Institute's (ANSI) A300 Standards Part 1 – Pruning.

Reasons for Tree Pruning

1. *Pruning for Safety*
   Involves removing branches that could fall and cause injury or property damage, trimming branches that interfere with lines of sight on streets or driveways, and removing branches that grow into utility lines. Safety pruning can be largely avoided by carefully choosing species that will not grow beyond the space available to them and have strength and form characteristics that are suited to the site.
2. *Pruning for Health*
   Involves removing diseased or insect-infested wood, thinning the crown to increase airflow and reduce some pest problems, and removing crossing and rubbing branches. Pruning can best be used to encourage trees to develop a strong structure and reduce the likelihood of damage during severe weather. Removing broken or damaged limbs encourages wound closure.
3. *Pruning for Clearance and Visibility*
   Clearance pruning raises the canopy of trees over streets and sidewalks by removing the lower growth using proper pruning cuts. Clearance pruning may also be done for line of site, utility lines, and traffic signs and signals. Per Fremont Municipal Code (12.30.200), street trees must be pruned for 8 feet of clearance over a sidewalk and 14 feet of clearance over a street. Clearance pruning minimizes the hazard to passing traffic and minimizes further damage to the tree from insect or disease infestation that may occur due to a limb break caused by a passing vehicle.
4. *Pruning for Form*
   Improves the structure of trees and removes branches that are more likely to fail. Branches that are poorly attached may be broken off by wind and accumulation of snow and ice. Branches removed by such natural forces often result in large, ragged wounds that rarely seal.
5. *Pruning for Aesthetics*
   Involves enhancing the natural form and character of trees or stimulating flower production. To reduce the need for pruning it is best to consider a tree's natural form. It is very difficult to impose an unnatural form on a tree without a commitment to constant care.

Common Types of Tree Pruning

1. *Crown Cleaning*
   Consists of the selective removal of dead, dying, diseased, and weak branches from a tree's crown. No more than 25 percent of the live crown should be removed in any one year, even for young trees.

2. *Crown Thinning*
   Primarily for hardwoods, thinning is the selective removal of branches to increase light penetration and air movement throughout the crown of a tree. The intent is to maintain or develop a tree's structure and form. To avoid unnecessary stress and prevent excessive production of epicormic sprouts, no more than one-quarter of the living crown should be removed at a time. If it is necessary to remove more, it should be done over successive years. Branches with strong U-shaped angles of attachment should be retained. Branches with narrow, V-shaped angles of attachment often form included bark and should be removed.

3. *Crown Raising*
   The practice of removing branches from the bottom of the crown of a tree to provide clearance for pedestrians, vehicles, buildings, lines of site, or to develop a clear stem for timber production. After pruning, the ratio of the living crown to total tree height should be at least two-thirds. On young trees temporary branches may be retained along the stem to encourage taper and protect trees from vandalism and sunscald.

4. Crown Reduction
   Most often used when a tree has grown too large for its permitted space. This method, sometimes called drop crotch pruning, is preferred to topping because it results in a more natural appearance, increases the time before pruning is needed again, and minimizes stress. Crown reduction pruning, a method of last resort, often results in large pruning wounds.

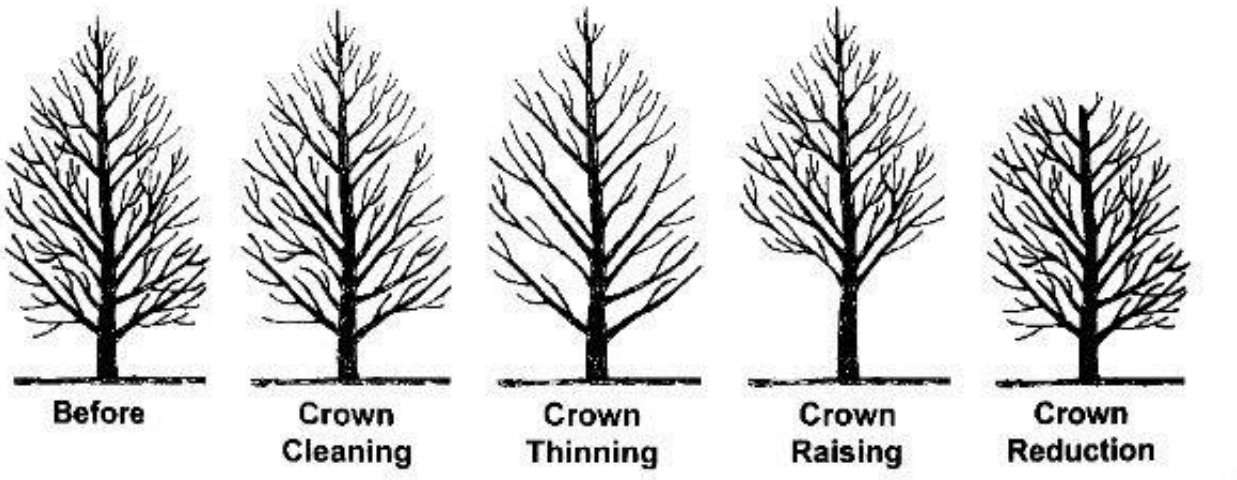


Image Description 19. Examples of the types of tree pruning (Source: Arbor Day Foundation)

Tree Pruning Cuts

Pruning cuts should be made so that only branch tissue is removed, and stem tissue is not damaged. To find the proper place to cut a branch, look for the branch collar that grows from the stem tissue at the underside of the base of the branch. On the upper surface, there is usually a branch bark ridge that runs parallel to the branch angle, along the stem of the tree. A proper pruning cut does not damage either the branch bark ridge or the branch collar. A proper cut begins just outside the branch bark ridge and angles down away from the stem of the tree, avoiding injury to the branch collar.

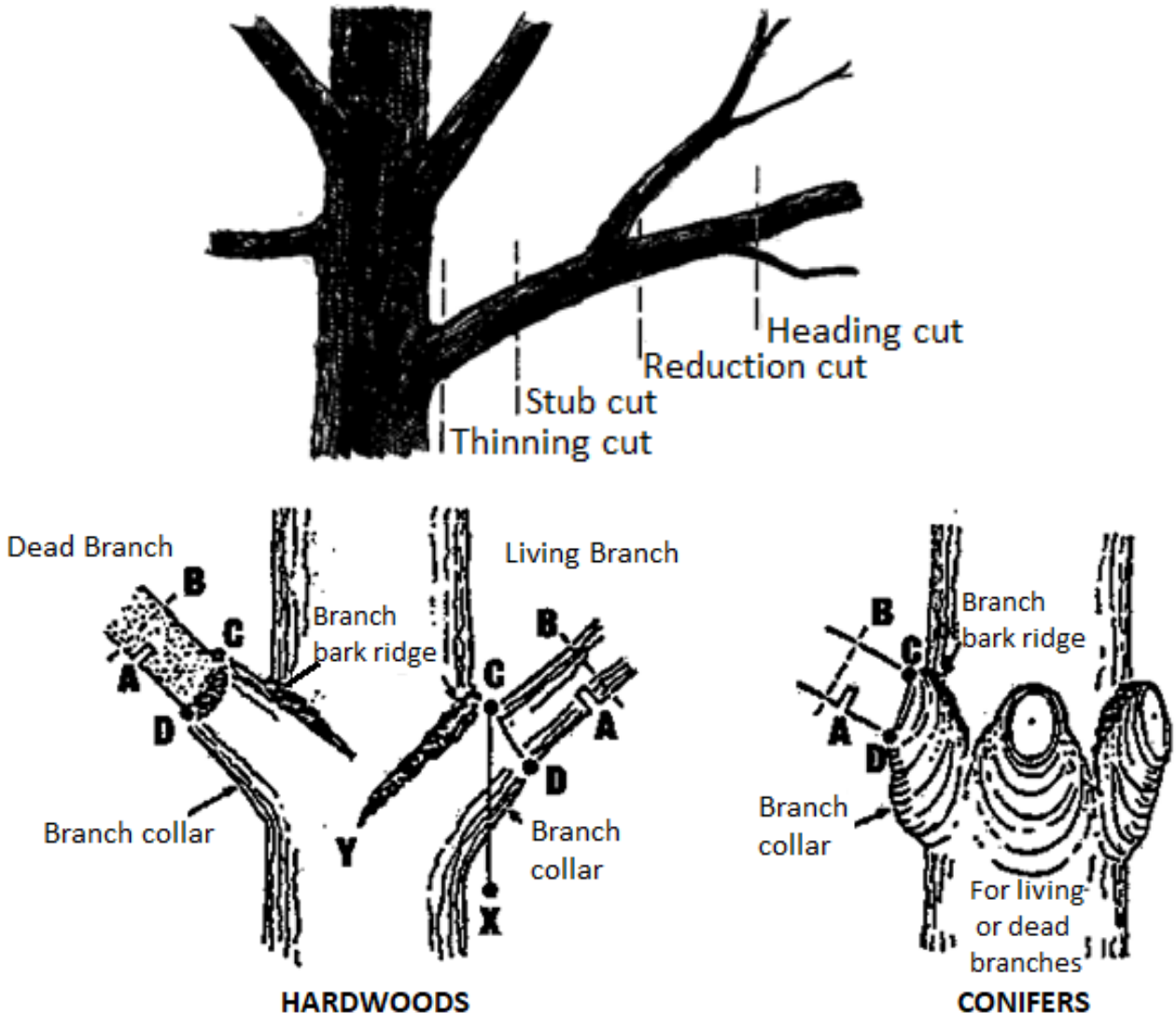


Image Description 20. Types of pruning cuts (above) and proper branch cutting technique (below) (Source: Penn State Extension)

In most cases “topping” a tree is strongly discouraged and even prohibited on street trees in Fremont. The following illustration provides more details on reasons not to prune but one should also be sure not to overly raise lower branches, make flush cuts, leave stubs, conduct excessive pruning, or prune a branch that results in bark tearing.

Pruning a Tree

6 Tenants of Pruning

1 Never Top a Tree

Topping: inappropriate pruning technique to reduce tree size. Cutting back a tree to a predetermined crown limit, often at internodes.

Disadvantages of topping:

1. Creates weak branch attachments resulting in future hazards
2. Causes irreversible damage
3. Increases risk of deadly infections
4. Ruins aesthetic quality of trees
5. A topped tree will require more long term maintenance than a properly pruned tree

2 Establish & Maintain a Central Leader

Central Leader: the main stem of a tree.

A central leader directs growth and determines if the tree will be structurally sound long term.

3 Direct Growth Up and Out from Trunk

A tree should spread outward horizontally and vertically from the trunk. Avoid losing branches that promote this type of growth when pruning.

Pruning a Tree

6 Tenants of Pruning

4 Eliminate Crossing

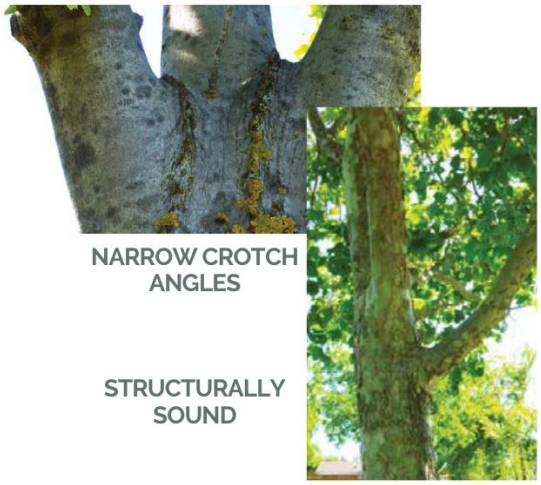
Crossing branches increase the risk of structural injury and waste a tree's energy supply.

If crossing branches are found determine which is more valuable to the tree and remove the other.

5 Eliminate Narrow Crotch Angles

Crotch: The angle at which two branches meet

The crotch at top left is far too narrow and is structurally unsound as illustrated by the excess included bark denoting very weak branch attachment. The crotch angle at right is structurally sound and is conducive to healthy growth.



6 Eliminate Waterspouts and Suckers

Watersprouts: Vigorous, upright shoot from an adventitious bud above the ground plane

Watersuckers: Vigorous, upright shoot from the roots or base of the trunk at or below grade

PROTECTING TREES

Now that you've planted a tree or you have an existing tree that needs proper care and protection, best management practices are essential to long-term tree health. Construction projects in proximity to your tree should follow the ANSI Standards A300 Part 5 – Management. These standards address the planning and design phases as well as all phases of construction. This section serves to provide an overview of the considerations for tree protection for a professional involved or observing a construction project near trees.

Careful tree protection will help to avoid the expense and heartache of later repairing or removing trees that were located too close to construction activities. Depending on the type of construction and proximity to trees, you may be able to protect the trees yourself, or it may be best to consult with another arborist to design, implement, and enforce a tree protection plan. The City of Fremont has specific regulations regarding tree protection (see the Trees in Fremont section). To minimize costs and increase the likelihood of successful tree preservation, start tree protection planning as soon as possible.

The activities listed below all negatively impact tree roots. To protect your trees, define the Tree Protection Zone (TPZ), or often referred to as the Root Protection Zone (RPZ) or Protected Root Zone (PRZ). Keep these activities away from this area, at a minimum. Refer to the City's tree protection standard on the next page for specific requirements.

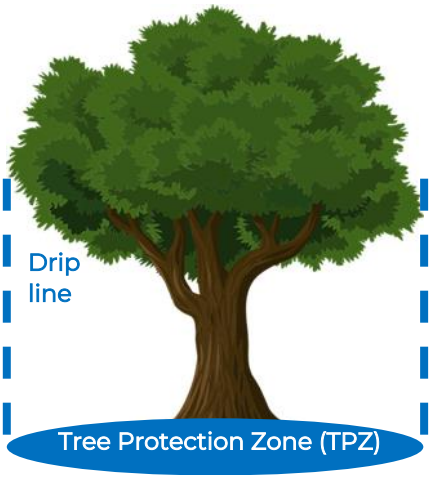


Image Description 21. Illustration of the tree protection zone to prevent damage during construction

Storing Materials and Moving Equipment

Soil compaction is one of the main killers of urban trees. Stockpiling building materials, using heavy machinery, and excessive foot traffic all compact the soil. To minimize damage, install fencing and signage around the TPZ of the trees you plan to save. Check the fence often to be sure that it is still intact and serving as a barrier.

Changing the Grade

Adding or removing as little as 2 inches of soil in the TPZ can kill a tree. To minimize damage, consult an arborist about methods to protect the roots if fill needs to be added or soil needs to be removed within the TPZ.

Excavating

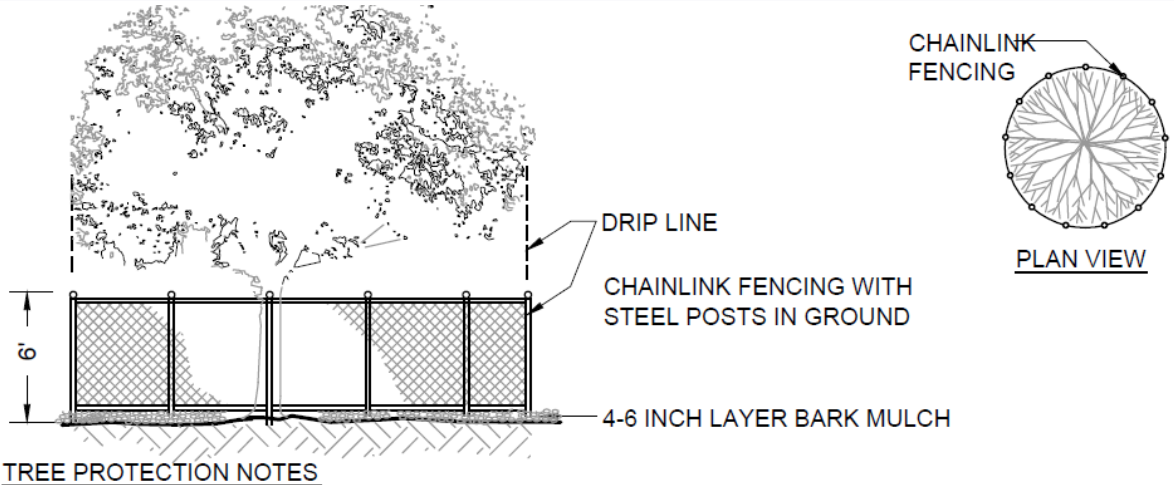
If utility or irrigation lines cannot be relocated outside the tree's TPZ, reduce root damage by requiring tunneling under the tree's root system (instead of trenching through it). Specialized equipment that blows soil away from the roots allows utilities to be placed with very little root damage. Otherwise soil tunneling equipment can be used.

For all digging operations, insist that exposed roots be cut cleanly to promote quick wound closure and regeneration. Vibratory plows, chain trenchers, stump grinders, and hand tools do a better job at this than bulldozers and backhoes. Avoid excavating during hot, dry weather; keep the plants well watered before and after digging; and cover exposed roots with soil, mulch, or damp burlap as soon as possible.

Paving

To minimize damage, keep walkways at least 3 feet from the anticipated mature trunk.

City of Fremont Tree Protection



TREE PROTECTION NOTES

1. CURRENT STANDARD DETAIL AT CITY ENGINEERING DIVISION SHALL PREVAIL.
2. TREE PROTECTION MEASURES MUST BE IN PLACE BEFORE CONSTRUCTION, DEMOLITION AND/OR GRADING ACTIVITIES COMMENCE. CITY OF FREMONT WILL STOP CONSTRUCTION IF TREE PROTECTION MEASURES ARE NOT IN PLACE AND MAINTAINED THROUGHOUT THE CONSTRUCTION PERIOD.
3. TREES CALLED OUT FOR PRESERVATION SHALL BE FENCED AT THE DRIPLINE. FENCING MAY OCCUR AT THE COMBINED DRIPLINES OF GROVES OF TREES. PLACE 4-6 INCH BARK MULCH BENEATH DRIPLINES OF TREES TO BE PRESERVED. KEEP BARK 2-3 FEET FROM TREE TRUNK.
4. FENCING SHALL BE 6 FEET TALL CHAIN LINK FENCING WITH STEEL POSTS EMBEDDED IN THE GROUND.
5. NO GRADING SHALL OCCUR WITHIN THE DRIPLINES/FENCED AREA OF EXISTING TREES.
6. NO CONSTRUCTION MATERIALS OR CONSTRUCTION VEHICLES MAY BE STORED WITHIN THE DRIPLINES/FENCED AREA OF EXISTING TREES.
7. CONSTRUCTION VEHICLES OR MACHINERY MAY NOT PASS BETWEEN TWO OR MORE EXISTING TREES IDENTIFIED FOR PRESERVATION IF THEIR CANOPIES ARE WITHIN 10 FEET OF TOUCHING. ADDITIONAL FENCING MAY BE REQUIRED BY THE CITY AS NEEDED.
8. THE CONTRACTOR IS REQUIRED TO HAVE AN ARBORIST CERTIFIED BY THE INTERNATIONAL SOCIETY OF ARBORICULTURE (ISA), APPROVED BY THE CITY, ON SITE IF SITE CONSTRUCTION EFFORTS REQUIRE REMOVAL OF EXISTING ROOTS OR BRANCH PRUNING. ROOTS APPROVED FOR CUTTING MUST BE CUT CLEANLY WITH A SAW. RIPPING OR SHREADING ROOTS SUBJECT TO FINE/PENALTY.
9. UNAUTHORIZED TREE REMOVAL IS SUBJECT TO REPLACEMENT EQUAL TO THE APPRAISED VALUE OF THE TREE LOST PER FMC 4-5108.
10. THE CONTRACTOR IS REQUIRED TO WATER, FERTILIZE AND ATTEND TO OTHER MAINTENANCE NEEDS OF EXISTING TREES TO MAINTAIN HEALTHY GROWTH THROUGHOUT THE CONSTRUCTION PERIOD. AN EARTH BERM MEASURING MINIMUM 6 FEET IN DIAMETER, AND 6 INCHES IN HEIGHT SHALL BE CONSTRUCTED AT THE BASE OF EACH TREE TO FUNCTION AS A TEMPORARY WATERING BASIN DURING THE CONSTRUCTION PERIOD. TREES SHALL BE WATERED ACCORDING TO WEATHER AND TREE SPECIES REQUIREMENTS.
11. IF TREES ARE BEING RELOCATED: RELOCATION OF EXISTING TREES SHALL OCCUR UNDER THE OBSERVATION AND DIRECTION OF A CERTIFIED ARBORIST APPROVED BY THE CITY OF FREMONT.
12. TRUNK WRAP PROTECTION SHALL OCCUR FOR TREES SITUATED IN SMALL TREE WELLS OR SIDEWALK PLANTERS. THIS FORM OF PROTECTION WILL BE ALLOWED BY APPROVAL FROM SENIOR LANDSCAPE ARCHITECT ONLY. REFER TO LSD-10.

APPR	REVISED	DATE
	Council Revision	12/13/11
REVISIONS		

CITY OF FREMONT
STANDARD DETAILS
CITY STANDARD
TREE PROTECTION FENCING

DATE APPROVED BY CITY COUNCIL 12/13/11
RESOLUTION NO. 2006-31
CITY ENGINEER

FILE NO.	SCALE	DRAWN	CHECKED	DATE	DWG NO.	
LSD-9.DWG	1/8" = 1'-0"	PM/MM	RER	DEC. 2011	LSD-9	1 of 1

Image Description 22. City of Fremont's tree protection fencing standard detail

SOIL MANAGEMENT: SOIL HEALTH = TREE HEALTH

Trees need soil, but not all soils are created equal. Soils—particularly in developed urban areas—can be degraded by activities such as construction, and soil health may need to be restored to promote tree health. Soils can be restored to benefit trees by:

- Reducing soil compaction
- Improving drainage and grading
- Mulching and other soil amendments

The soil in which trees grow is an ecosystem of micro and macro organisms sharing and transferring nutrients, elements, compounds, and space. A healthy soil grows a healthy tree if both are properly managed. Standards and best practices relating to soil management should adhere to ANSI Standards A300 Part 2 – Soil Management. The following provides an overview of considerations and practices.

Soil Compaction

What is Soil Compaction?

Soils in areas of heavy foot or vehicle traffic, or that have been subjected to construction impacts, may be too densely packed—or **compacted**—to allow water and air to be absorbed or for tree roots to grow. These soils may need to be decompacted before new trees are planted, or to protect existing trees from long-term damage. Clay soils and soils that are frequently wet are more susceptible to compaction than more coarsely textured soils, such as sands and loams.

Testing for Soil Compaction

Soil compaction is most effectively assessed by engineers or agronomists using specialized tools and equipment, including laboratory analysis. However, residents can also check for soil compaction using basic visual and sampling methods.

Visual cues of areas with high soil compaction may include limited or absent vegetation growth (such as bare patches on a lawn), tire ruts, regularly ponding water or areas that alternate between muddy when wet and dusty when dry (indicating poor drainage), or shallow or exposed tree roots.

Digging with a shovel, preferably when soils are moist but not wet, can reveal compaction. Compacted soils will appear platy or crusty, and may be dug up as large clods that resist breaking apart.

Compaction can also be tested using a **wire flag** (such as an irrigation marker) or similar stiff metal wire. This involves manually pushing the wire into the soil and noting areas where it is easier or more difficult to push the wire in, and where it enters deeper into the soil. If the wire can be pushed with ease to a depth of 12 inches, soil can be considered uncompacted. If the wire can be pushed to a depth of 4 to 12 inches without difficulty or much bending, soils can be considered lightly compacted. If the wire cannot be pushed to a depth of 4 inches without difficulty or bending, soils are likely to be heavily compacted. A more accurate means of testing soil compaction in the field is by using a **cone penetrometer** tool, which may be available from a local landscaper or arborist.

Reducing Soil Compaction

Soil compaction can be very **difficult to remediate**, especially around existing mature trees. It is always preferable to prevent compaction by protecting soils and tree root zones against

foot or vehicle traffic, materials or equipment storage, or other impacts that place high pressures on soil.

In areas without trees, and where trees may be planted in the future, shallow and light-to-moderate soil compaction can be reduced by **rototilling**. When rototilling, it is important to not pulverize the soil, which may increase susceptibility to re-compaction. Soil should be broken into small clumps, and, if necessary, soil amendments may also be tilled in (see below). Take care to avoid trampling freshly rototilled soil.

Other methods of reducing soil compaction over larger and more heavily compacted non-treed areas include subsoiling and backhoe turning. These methods require specialized and heavy equipment, and should only be undertaken by qualified professionals.

Near existing trees, light soil compaction can be reduced by applying up to 4 inches of wood chip mulch over as large an area as possible around the tree. Over time, mulch will break down and reduce light soil compaction. Soils near trees may also be decompacted by tilling in organic matter and coarse-grained horticultural sand into the compacted sand layer using pneumatic excavation tools, such as an Air Spade. These specialized tools must be operated by a qualified arborist and are not generally available to the homeowner.

Preventing and Managing Compacted Soil

- Choose the right species for the site
- Prevent and protect soil by adhering to the tree protection zone and fence protection
- Till the soil
- Add organic amendments (mulch, compost, wood chips)
- Divert or capture water
- Increase fertility with inorganic fertilizers or organic amendments

Radial Trenching | Soil Drilling | Air Spade | Core Aeration

Image Description 23. Methods for remediating compacted soils

Drainage and Grading

What Are Grading and Drainage?

Drainage refers to the rate at which water moves down through the soil and out of a tree's rooting zone. Soils with fast drainage, such as sandy soils, may require frequent watering to meet a tree's moisture needs. Soils with poor drainage, such as clays, may be too wet for some species of trees, especially if frequently irrigated. Soils with medium drainage rates, such as loam or clay loam, may be appropriate for many tree species.

Grading refers to the slope of land, and affects site drainage. Poor grading may direct too much water towards trees and potentially drown them (especially in poorly drained soils), or may direct water away before it can infiltrate the ground and be absorbed by tree roots. Grading may need to be corrected before new trees are planted to supply sufficient soil moisture, prevent excessively wet soils, and prevent too much water run-off.

Assessing Soil Drainage

Soil drainage can be assessed using basic hand tools, including a trowel or shovel, a measuring tape, and a watch. To assess soil drainage:

- Excavate an 18" to 24" deep, minimum 6" wide hole in the assessment area(s). If rain has fallen recently, wait at least three days after rainfall to conduct the test.
- Fill the hole(s) with water and let stand for at least two hours hour to pre-wet the soil.
- Refill the hole to the top or to a measured point, without allowing water to spill over the top.
- Allow water to drain for 1 hour or more (2 hours is preferable).
- Measure the distance between the starting water level and the ending water level to determine the drainage rate. For example, if water has drained 1 ½" in 2 hours, the drainage rate is 1.5 ÷ 2 = 0.75, or ¾" per hour.

Drainage of less than one inch per hour is considered poor and may be challenging for many tree species. Drainage between one to two inches per hour is moderate, and suitable for most tree species. Drainage exceeding four inches per hour may be excessive for some tree species, and planted trees may require frequent supplemental irrigation or other site amendments to successfully establish.

Improving Drainage and Grading

In many cases, soil drainage is directly related to soil texture (sand, loam or clay), and cannot be changed or improved without significant site disturbance and expense. When planting new trees, it is better to assess site drainage and select compatible tree species instead of attempting to change soil drainage rates. Mature trees will have developed along with historic site drainage patterns, so it is important to prevent drastic changes to soil drainage by protecting against soil compaction in tree root zones and avoiding significant grade changes near established trees.

If site drainage must be modified to increase drainage rates, a good first step is to attempt soil decompaction (see above). Amending poorly drained soils with coarse grained horticultural sand may also increase surface drainage rates, but success is usually limited.

If drainage cannot be sufficiently improved by soil decompaction or amendments, it may be necessary to apply other methods. These may include installation of perimeter, trench, or

sub-drains connected to a stormwater system or other appropriate outlet, or re-grading land to slope away from the tree and channel excess water away from the rooting zone. These drainage improvements must be planned and undertaken on site-specific basis by a qualified landscape architect or engineer working in concert with an arborist.

Soil Amendments

Organic and mineral soil amendments may improve soil health for trees. However, soil amendments are not always necessary and may sometimes be harmful to soil and tree health. It is always advisable to conduct a soil analysis before undertaking any soil amendments, except mulch. Soil amendments may include:

- Organic compost: Compost can improve soil fertility, structure and moisture retention, and is usually spread over or tilled into planting soil. Mature yard waste or shredded bark mulch are good sources of organic matter for tree soils. Too much organic compost can be detrimental to soil drainage and fertility—soil organic matter should not exceed 15% by volume.
- Biochar is made from pyrolysis (heating in the absence of oxygen) of organic materials, such as wood. Biochar may provide many benefits for soil and tree health by increasing soil fertility, water retention, and beneficial microbes. To be properly applied on-site, biochar must be worked into to existing soils by a qualified arborist using pneumatic tools, such as an AirSpade.
- Mineral amendment: Mineral amendment involves the incorporation of minerals such as coarse-grained horticultural sand; lava sand; or expanded shale, clay, and slate (ESCS) into the soil, usually to improve drainage. Mineral amendment must be directed by a soil test and only applied with consideration of broader site characteristics, such as soil type, drainage rates, and grading patterns.
- Mulch: Regular topdressing of organic mulch, preferably sourced from arboricultural waste (wood and bark chips) is an effective and inexpensive way to improve soil and tree health. Mulch should be spread at a maximum depth of 4 inches over a large area at the base of trees and kept regularly maintained and topped-up. All trees will benefit from mulch beds.

IMPORTANT: When planting new trees, DO NOT add any organic amendments to "backfill" soil (soil that is taken out of, and then placed back into, a tree planting hole). Biochar may be acceptable in small quantities. Backfill soil should not be amended with organic matter to avoid creating a "bathtub" situation where excessive soil moisture is retained in the planting hole, potentially drowning the newly planted tree. It is almost always preferable to backfill planting holes with the original unamended site soils.

TREE RISK MANAGEMENT

TREES AND RISK OVERVIEW

Trees provide a wide variety of benefits to society. However, as living organisms that naturally lose branches or fall, trees may pose some level of risk to people or property around them. Some level of risk must be accepted to experience the benefits that trees provide. Trees only pose risk if people or property are, or are likely to be, present around them and may be affected at the time of branch of tree failure.

Tree owners have a responsibility to maintain their trees and take reasonable measures to avoid their trees causing personal injury or property damage. This responsibility, known as the **Duty of Care**, means that tree owners must act in a practical and sensible way to manage tree risk.

An effective way for tree owners to fulfill their Duty of Care is to be aware of potential signs of tree risk and take steps to assess and, if necessary, reduce risk.

Managing tree risk is a core focus for the City though the responsibility to maintain public street trees is primarily the adjacent property owner. It is recommended any activity relating to risk (assessment, action, monitoring, etc.) be conducted by an ISA Certified Arborist and Tree Risk Assessment Qualification (TRAQ) professional. The following provides an overview of the considerations in tree risk management though a comprehensive guide is provided in the ANSI Standards A300 Part 9 – Tree Risk Assessment. This standard addresses tree structure assessment practices, levels of tree risk assessments, and risk analysis and reporting.

SIGNS OF POTENTIAL RISK

Trees may show advanced signs of potential for branch or whole-tree failure, and should be inspected accordingly. Common signs may include:

- Dead or dying parts
- Broken or hanging branches
- Tight (V-shaped) branch unions
- Co-dominant or multiple stems (two or more stems of similar size originating from the same point)
- Over-extended limbs
- Unbalanced crown
- Cracks (vertical or horizontal)
- Cavities (holes) on the trunk or base
- Flat spots on the trunk
- Lean (especially if recent or with cracking soil)
- Sprouting branches
- Fungi (mushrooms)
- Oozing
- Carpenter ant or termite frass (droppings)
- Cut, decayed, or missing roots

Image Description 24. Defects potentially impacting risk. From left: V-shaped branch unions, co-dominant stems, cavities and decay, sprouting (sucker) branches, and fungi (Armillaria root rot). Note: photos are not of Fremont trees

Some trees may not show any signs of potential risk, and even healthy trees can shed branches or fall down (especially in strong winds).

Trees can also respond (adapt) to weaknesses that could otherwise cause branch or whole-tree failure by growing new wood to strengthen the tree. Signs of response growth may include localized increases in wood growth (bulges or ribs), a wide trunk base, or lighter-colored and rapidly growing bark. A tree risk assessment should look for signs of adaptive growth.

ASSESSING RISK

Tree owners should familiarize themselves with their tree(s) and regularly look for changes in health, condition, and overall appearance. Minor occurrences, such as small broken branches, may not always require a complete tree risk assessment. However, other signs of potential branch or whole-tree failure, as listed above, should be inspected by a competent tree risk assessor to inform further action.

Hiring a Tree Risk Assessor

Tree risk should be assessed by a competent tree risk assessor. At minimum, the tree risk assessor should be certified or qualified as:

- an International Society of Arboriculture (ISA) Certified Arborist® or Board Certified Master Arborist® (BCMA),
- an American Society of Consulting Arborists (ASCA) Member or Registered Consulting Arborist® (RCA), or
- a California Licensed Foresters Association Registered Professional Forester (RPF).

Image Description 25. Sounding for dead wood or decay (above) and observing the tree canopy for defects (below)

Preferably, the tree risk assessor should also hold a valid **ISA Tree Risk Assessment Qualification (TRAQ)**. This qualification demonstrates the assessor's proficiency in applying a standardized, systematic process for assessing tree risk and providing information to tree owners and risk managers when making decisions that will promote the safety of people and property and enhance tree benefits, health, and longevity.

Any tree service contractor undertaking tree risk mitigation work, such as pruning, cabling, or tree removal, should possess a valid **California Contractor's License, classification C-61 Limited Specialty/D-49 Tree Service**, issued by the State of California Department of Consumer Affairs Contractors State License Board (1-800-321-2752 or 1-916-255-3900, or www.cslb.ca.gov) and be approved by the City of Fremont (www.Fremont.gov/2562/Approved-Tree-Contractors).

A **detailed written contract should be obtained** for any tree risk assessment or mitigation work. An insurance certificate, issued in the tree or property owner's name, for both General Liability and Workers Compensation coverage should be provided. The potential for property damage, injuries and other liabilities is an important consideration. Hiring unlicensed, uninsured, or underinsured contractors may result in significant liability for the tree or property owner.

Risk Assessment Standards and Methods

Tree risk assessment is guided by American National Standard *ANSI A300 (Part 9)-2017 Tree Risk Assessment a. Tree Failure*. Application of this standard is further guided the

International Society of Arboriculture (ISA) *Best Management Practices – Tree Risk Assessment, Second Edition (2017).*

Application of both the tree risk assessment standard and Best Management Practices (BMPs) by tree risk assessors is voluntary, but highly recommended. **Tree owners should only hire a tree risk assessor who is familiar with the tree risk assessment standard and Best Management Practices.**

Depending upon the nature of the tree risk assessment required, in accordance with the tree risk assessment standard and Best Management Practices, the tree risk assessor may employ assessment methods and tools according to one of three levels of tree risk assessment, including:

- Level 1 Limited Visual – Focusing on identifying trees with an imminent likelihood of failure due to obvious indicators of potential risk, a Level 1 assessment is usually undertaken visually from ground level and used for large groups of trees to identify trees for further assessment.
- Level 2 Basic – A more detailed ground-based inspection of an entire tree and its surroundings, a Level 2 assessment is the most common type of tree risk assessment. This assessment may employ basic tools such as binoculars, a mallet (to investigate internal decay), a probe, or hand digging tools. This level of risk assessment combines the findings of the tree investigation with an assessment of potential targets and consequences of failure to derive a risk rating, which can be communicated to the tree owner verbally or in writing.
- Level 3 Advanced – Advanced assessments are undertaken to provide detailed information about specific tree parts, targets, or site conditions, and can provide additional information that may make the difference between recommending tree or branch retention or removal. Level 3 assessments may require specialized skills or equipment not available to many tree risk assessors, and are therefore generally more time intensive and costly. They are typically reserved for high-value trees or where the management decisions may be highly scrutinized. Examples of Level 3 assessments include, among others, aerial inspection (climbing), internal decay assessment, tree stability testing, detailed target and site analysis, or root excavation.

Where possible, tree owners should **obtain a written report** that describes the tree risk assessment methods and levels, explains the assessment results, and provides recommendations for reducing risk, if necessary.

MANAGING RISK

In many cases, tree risk can be managed at an acceptable level without removing the tree. As part of a complete tree risk assessment, the assessor should recommend appropriate options to reduce tree risk (if available). Ultimately, it is up to the tree owner to decide what level of risk is tolerable to them. **Most tree risk mitigation actions should be undertaken by a qualified arborist** with knowledge of tree care industry standards and best management practices.

Failure to properly implement risk mitigation may fail to reduce risk or may even increase risk.

Actions to manage tree risk may include:

- **Keeping trees healthy:** Healthy trees are better able to respond and adapt to structural weaknesses that might cause branch or whole-tree failure, and can grow new wood more quickly where it is needed to strengthen weakened or compromised branches or trunks. Tree risk can be proactively managed by watering and mulching trees, proactively pruning to promote good structure, and regularly inspecting trees for signs of potential risk.
- **Pruning:** Regular, proactive pruning by a qualified arborist can help trees develop good, strong structure that will reduce the chance of branch breakage or stem failure. Mature trees should be assessed and, if necessary, pruned every five years or so, or more frequently if the tree is a fast-growing species. Trees may also need pruning after windstorms if branches have been broken. Over-extended limbs can be more prone to breakage and can often be reduced in length instead of removed, which can be beneficial for tree health. Over-extended limbs should never be "lion's tailed" or topped (see 'What not to do', below). Branch reduction pruning should only be undertaken by a qualified arborist in accordance with industry standards and best management practices.
- **Cabling:** Poorly-attached branches or stems can be strengthened by installing one or more cables that limit their motion and reduce the likelihood of failure. Cabling systems may be made of steel (wire) or high-strength synthetic materials. Selecting the appropriate system depends on the tree's structural issues, and any cabling system must be installed by a qualified arborist in accordance with applicable standards.
- **Bracing (bolting):** Bracing rods, also known as bolts, may be installed close to or though weak or split unions or sections of a branch or stem. Bracing may be installed in conjunction with a cabling system, and must be installed by a qualified arborist in accordance with applicable standards.
- **Target relocation or exclusion:** Instead of or in addition to managing a tree through arboricultural methods, it may be preferable to relocate targets (persons or property) away from the potential zone of impact in the event of branch or whole-tree failure, or to exclude people from the impact zone by installing signage or fencing.
- **Tree removal:** Sometimes, it may be necessary to remove a tree to effectively manage risk. Removing such trees may pose more danger than regular tree removals, and any such tree removal must be done by a qualified arborist. When a tree is removed, its stump should be removed or ground down to a minimum of 8" below grade (though deeper is better) to prevent re-sprouting.

WHAT NOT TO DO

Some types of tree pruning may actually increase tree risk in the long-term, and require costly maintenance in the long run. These include topping and lion's tailing. **A qualified arborist should never recommend tree topping or lion's tailing. If your tree service worker recommends either of these practices, hire someone else.**

- **Topping** (sometimes called tipping, heading, rounding-over, etc.): Topping is the indiscriminate removal of branch ends. Topped trees will look awkward and will be cut back to branch stubs. These stubs will quickly resprout, and these sprouts may be

poorly attached and start to fail, increasing risk. A topped tree will also regain its original height quickly, so it is not an effective way to control tree height.

- **Lion's tailing:** Lion's tailing is the removal of all internal growth (branches, leaves) on the interior of a branch, leaving only a small part of the live canopy on the end. A branch pruned in this way resembles a lion's tail, with a tuft of "fur" (leaves) on the end. Branches pruned in this manner are more likely to break in strong winds, as they are more prone to swaying.
- **"DIY" tree risk management:** Tree risk management is a discipline that requires specialized training, knowledge, and experience. Many signs of potential branch or whole-tree failure may be difficult to observe with the untrained eye, and many factors must be considered in assessing tree risk. It may be tempting to approach tree risk management as a Do-It-Yourself homeowner project, but tree owners should hire a qualified arborist to assess and manage tree risk due to the potential liability and risks to persons and property involved.

Image Description 26. Example of a damaged tree due to "topping" (left) compared to a healthy maintained tree (right) (Source: City of Fremont, CA)

Tree Topping | Overly Pruned/Thinned Tree | Lion's Tailed Pruning

Image Description 27. Examples of what not to do to trees. From left: topping, over thinning, lion's tailing. Note: photos are not of Fremont's trees

TREE PEST AND DISEASE MANAGEMENT

Most trees and other plant material that are genetically well-suited to their environment will thrive once planted but plant disease organisms and other plant pests are common and widespread. A few of the more common pest problems found in Fremont are described briefly in the following section. Detailed information on common pests of trees and landscape plants in California can be obtained from the UC Cooperative Extension IPM website: www.ipm.ucanr.edu/index.html. Check with the City's Urban Forestry Program regarding tree species and pest/disease vulnerability.

The "Disease Triangle Concept" is one of the primary tools to discuss the relationship between plants, pest, and disease organisms and the environment. In its simplest form the plant disease concept states that "all three control factors must be present for disease to occur". This simple statement implies that each of the three factors has equal influence on whether disease will occur but this is not the case in the natural environment and/or urban setting. While there may be little control over the nearby presence of a pest or disease organism, control of the tree species factor of the triangle is possible and necessary to prevent plant disease. This can be done by selecting a suitable tree species. Control of the environment is possible and necessary to prevent plant disease by providing and maintaining healthy soil and adequate water around the tree.

Image Description 28. Disease Triangle Concept

In Fremont, insect problems and diseases of trees that commonly occur can be avoided by ensuring that the environment is properly maintained for the tree and by selecting pest and disease resistant trees. Many tree diseases can be avoided by applying the correct amount of water. Fungal diseases, like wood decay, are encouraged by excessive irrigation. Many insect pests are encouraged to attack when a tree is stressed by lack of water.

In any case, trees on your property should be routinely monitored and the City should conduct public tree inventories regularly to identify existing pest and disease concerns and potentially stem newly emerging concerns. You can assist the City by being observant of the potential signs and symptoms of tree pests and diseases on public trees.

Common Signs and Symptoms of Tree Pests and Diseases

- Leaf spot – spots of dead tissue on foliage: size, shape, color depends on causal agent.
- Leaf blotch – dead areas on leaves on foliage: larger than leaf spots.
- Scorch – browning and death of areas along leaf margins & between veins.
- Canker – localized dead stem tissue.
- Stunting – abnormally small plant growth.
- Gummosis – exudation of sap or gum from wounds.
- Rust – orange/reddish brown pustules on leaves.
- Gall – swollen plant tissue.
- Chlorosis – yellowing of green leaves due to lack of chlorophyll.
- Necrosis – death of tissue.
- Die back – dead portions of the tree (commonly seen on tips).
- Powdery mildew – white or greyish fungal growth on the surface of the leaves.
- Vascular discoloration – darkening of wood vascular elements, often along growth rings.
- Witch's broom – abnormal development of multiple shoots.

Common Bay Area Tree Pests

- Aphids – small sucking insects that attach to stems and suck out juices and excrete a sticky chemical called frass.
- California oakworm – caterpillars that skeletonize oak trees, predominantly coast live oaks.
- Lace bugs – black shiny insects much like aphids, remove nutrients from leaves that cause white splotching.
- Tussock moth – caterpillars that defoliate trees quickly and affects all tree species.

Image Description 29. California oakworm caterpillar (above) and moth (below) (Source: University of California)

Common Bay Area Tree Diseases

- Chinese elm anthracnose – dieback on tips, black spots on leaves and cankers form at the base of the tree.
- Fireblight – a very contagious bacteria disease, causes a burned look on stems, leaves and branches. Mostly affects pears and apples.
- Powdery mildew – white fungi that forms on leaves of plants.
- Shot hole disease – caused by a fungus that creates holes and browning of leaves, as well as yellowing of stems. Affects Prunus species including stone fruit and almond trees.
- Sooty mold – furry black mold on leaves, and yellowing of leaves. Common on fruit trees and attracts aphids.
- Sudden oak death – caused by the water mold pathogen Phytophthora. Signs include cankers, twig dieback and black/brown leaf spots.
- Foamy bark canker disease – a fungal disease (*Geosmithia pallida*) spread by the western oak bark beetle affecting live oaks.
- Sycamore anthracnose – erratic branching, cankers, dieback, and defoliation. It is a fungal disease that affects most sycamores and maple trees.

Image Description 30. Signs and symptoms of sudden oak death (Source: USDA APHIS)

INTEGRATED PEST MANAGEMENT

A principle to controlling insect pests, invasive plant species, and tree diseases is an innovative strategy known as Integrated Pest Management (IPM), which integrates cultural (growing) practices, monitoring, threshold and life cycle analysis, and chemical application strategies to effectively manage urban forest pest populations in an ecologically-sound manner. Through implementation of Fremont's Urban Forest Management Plan, an IPM program may be strengthened to preserve and enhance urban forest sustainability and resiliency.

Encourage Naturally Occurring Biological Control

Biological control uses living natural enemies, antagonists, or competitors (biological control agents) to control other living organisms. Examples of naturally occurring biological controls include lady beetles, lacewings, parasitic wasps, predatory mites, spiders, earwigs, insectivorous birds, and bats. By using plants that attract the living organism above, chemical use for preventing and treating tree pests and diseases is minimized.

Use Alternate Plant Species

With tree inventory data that describes the composition of tree species in the urban forest, concentrations of susceptible trees and problematic trees can be thoroughly identified and understood. The information can be utilized to update the palette of trees that are planted by the City to reduce the likelihood of tree pest and disease issues. Some well-known alternate tree species that are resistant to tree pests and diseases include the 'Frontier' elm or Asian elm species that are resistant to Dutch Elm Disease and powdery mildew resistant cultivars of crapemyrtle. In addition, the City should consider reducing or eliminating the planting of Chinese or European hackberry trees that are prone to honeydew producing hackberry woolly aphid and oak trees should not be planted where oak root fungus is known to exist or propagate.

Use Cultural Practices

Cultural practices discourage pest invasion and some of the practices include good tool sanitation, removing debris and infested plant material from the site, proper watering and fertilizing, growing competitive plants, or using pest resistant tree species. Expanding on the examples, the City should avoid sprinkler irrigation around trees that are susceptible to anthracnose such as Chinese elms and sycamores and avoid irrigation around the trunks of native oaks in the dry season. Thinning out tree canopy can reduce foliar disease problems and pruning trees at certain times of the year can reduce pest problems. For example, to avoid bark beetle infestations, it is recommended to prune pines and elms in the winter. If a disease or insect is spotted in a tree, it can be removed and properly disposed of to potentially reduce the spread. Another example of a pest and disease best practice is to only fertilize trees when absolutely needed. The use of fertilizers can be reduced or eliminated if the appropriate trees for a given site are planted. Lastly, the habitat can be altered to make a site less suitable or compatible for pest development. Examples include planting trees at or above grade to reduce crown rot problems and frequent monitoring and management of trees near specimen coast live oaks where Sudden Oak Death is an issue.

TREE LIMB AND DEBRIS CLEANUP

One of the cultural practices to prevent or reduce tree pests and diseases is to properly remove fallen leaves, limbs, and other debris. Article II, "Duty of Property Owners to Maintain Street Trees and Sidewalks" in the City of Fremont's Street Tree Ordinance states the removal of fallen leaves, branches, and other debris is the responsibility of the adjacent property owner.

FAQS AND ADDITIONAL RESOURCES

This manual serves to provide a holistic approach to urban forest management from the perspective of city residents and property owners. If a user of this manual has any questions or needs additional information regarding tree care, management, and planting, the City's Urban Forestry Program can be reached at treepermits@fremont.gov, (510) 494-4730, or www.fremont.gov/trees. This section of Frequently Asked Questions (FAQs) is based on call-ins and service requests received from residents in Fremont along with the public feedback received during the development of the City's Urban Forest Management Plan.

FAQS

Who maintains street trees?

Maintaining a street tree is the responsibility of the adjacent property owner.

How do I know if I have a street tree?

Street trees are in the public right of way, which in most cases are located in a planting strip between the sidewalk and the curb. In some neighborhoods there is no planting strip and the sidewalk is located directly adjacent to the curb. In that case, a street tree is located behind the sidewalk, but still usually within 10 feet of the curb.

What if I can't afford to have my street tree pruned?

The City of Fremont does have a cost-share program called 50-50 Street Program. As of 2022, The Fremont City Council authorized money for the 50-50 Street Tree Program to partner with Fremont property owners to help pay for some of the costs of street tree pruning, removal, and replacement. The Program covers 50% of the cost of street tree pruning, removal and replacement up to a maximum contribution of $750 per tree and up to two trees per property. It is only available for street trees growing between the sidewalk and the road in front of a property. It does not cover sidewalk repair, there is a 50-50 Sidewalk Program to assist, nor does it cover trees removed and replaced as part of a development applications or trees on private streets (e.g., roadways ending in "Terrace" or "Common"). Funds are available to all property owners, including commercial and HOAs but you must have an approved Street Tree Permit and hire an approved tree contractor. Be sure to keep your proof of payment (cash payment receipts are not accepted) and include before and after images of tree work. To view more details or apply, visit www.fremont.gov/FormCenter/Landscape-Architecture-13/5050-STREET-TREE-PROGRAM-111.

What are the clearance requirements for street trees?

Street trees maintained by the adjacent property owner must adhere to Fremont's clearance requirements (FMC 12.30.200). Limbs must be pruned to provide 8 feet of clearance over sidewalks and 14 feet of clearance over streets.

How does the City of Fremont prioritize emergency tree work?

If resources are available, the City will prioritize performing tree work in the following order:

1) Safety hazards such as split trees, hanging limbs, uprooting or limbs that block a city right-of-way such as a sidewalk or path of vehicular traffic.
2) Dead, severely diseased or decayed trees.
3) Trees blocking transit infrastructure such as traffic signals, signage and street lights.
4) Street trees making physical contact with property in a way that could cause damage.
5) Limbs that fail to provide an 8' of clearance over sidewalks and 14 feet of clearance over streets.

What is an encroachment permit?

An encroachment permit allows property owners to perform work that affects adjacent sidewalks or roadways. A permit is needed for activities such as repairing sidewalks, installing an off property dumpster, or working on a sewer line underneath a roadway. To obtain an encroachment permit, please visit www.fremont.gov/FAQ.asp?QID=278.

Can I plant a street tree?

The City of Fremont grants permits to plant trees in the public right-of-way. Homeowners who request to plant a tree will have their property inspected to determine if there is a suitable location for a tree to be planted. When a location is determined, the City will approve a specific species to plant.

How do I obtain a permit for tree pruning or removal?

Please refer to page 20 of this document to learn how to obtain a permit.

Can I get a permit for a tree removal if it causes unwanted mess like dropped leaves or fruit?

The Tree Preservation Ordinance does not consider dropped leaves or fruit a valid reason for tree removal.

What if I am concerned or would like to file a complaint about a neighbor's tree?

Conflicts between property owners are usually civil matters and not governed by the Tree Preservation Ordinance. Assuming the tree is not regulated by ordinance, a property owner may choose to refer to Neighbor Law: Fences, Trees, Boundaries & Noise by Cora Jordan. This self-help resource explains state laws involving neighborly conflicts. It advises property owners of what legal action they may pursue independently of the City of Fremont.

How much water should I give my tree?

A tree's water needs depend on the species, annual rainfall in the area, access to underground water sources and the soil in which it is planted. For the first few years of a tree's life it should be watered twice weekly during the growing season. During each watering session apply roughly 7.5 to 10 gallons of supplemental water. This amount should be adjusted accordingly during times of excessive heat or rainfall.

What should be done if there is a tree emergency?

In a tree emergency, the City of Fremont's priority is keeping city rights-of-way free and safe from debris. The City will remove fallen limbs from street trees and sizable limbs from privately owned trees that have created an unsafe situation on a sidewalk or street. Debris from private trees removed from city rights-of-way will be placed on the property from which it came. If debris from a street tree is removed outside of business hours the city may place it on adjacent properties and collect the material at the start of the next business day. Below is information on who to contact during a tree emergency:

8 AM – 5 PM on Normal Business Day:	Outside of Normal Business Hours:
Park Maintenance (510) 979 – 5700	Street Maintenance (510) 791 – 4292

What criteria is used in determining whether a street tree should be removed?

Removal of street trees in Fremont is governed by two separate policies. If it is not a landmark tree, a Permit to Remove may be issued. This permit is typically granted only when a tree is dead, damaged, or diseased beyond the hope of recovery. For questions regarding a street tree contact the Urban Forestry Division at (510) 979-5700. If the tree is a landmark tree it must first be delandmarked by City Council before starting the tree removal permit process. Contact the Landscape Architecture Division at (510) 494-4700 for details.

RESOURCES

Books

- Arboriculture: Integrated Management of Landscape Trees, Shrubs, and Vines by Richard W. Harris, James R. Clark, and Nelda P. Matheny, 2004
- Pests of Landscape Trees and Shrubs: an Integrated Pest Management Guide by Steve H. Dreistadt, 1994
- Tree-Pruning Guidelines by John Britton, 1994

Online Resources

- Fremont Urban Forest Management Plan website: www.FremontUrbanForeset.com
- City of Fremont's Urban Forestry webpage: www.fremont.gov/trees
- City of Fremont's Landmark Trees webpage: www.fremont.gov/landmarktrees
- City of Fremont Approved Tree Contractors list: www.Fremont.gov/2562/Approved-Tree-Contractors
- City of Fremont Approved Street Trees list: www.fremont.gov/2397/Approved-Street-Trees
- Invasive tree species of CA: www.invasive.org/species/list.cfm?id=64
- City of Fremont's water-wise webpage: www.fremont.gov/2461/Water-Wise-Gardens
- Cal Poly's "SelecTree" web portal: www.selectree.calpoly.edu
- Alameda County's guide to tree planting: www.acmg.ucanr.edu/Your_Garden_Month-by-Month
- State of California Department of Consumer Affairs Contractors State License Board: www.cslb.ca.gov
- UC Cooperative Extension IPM website: www.http://ipm.ucanr.edu/index.html
- Encroachment permits: www.fremont.gov/FAQ.asp?QID=278
- City of Fremont's Frequently Asked Questions: Fremont.gov/FAQ
- 8-1-1 Call Before You Dig: www.usanorth.org
- National Urban and Community Forestry Advisory Council: www.fs.fed.us/managing-land/urban-forests/ucf/nucfac
- American Forests: www.americanforests.org
- Urban Forestry Index: www.urbanforestryindex.com
- TreeLink: www.treelink.org
- Trees Are Good: www.treesaregood.org
- Society of Municipal Arborists: www.urban-forestry.com
- Arbor Day Foundation: www.arborday.org
- Alliance for Community Trees: www.arborday.org/programs/alliance-for-community-trees
- Tree Care Industry Association: www.tcia.org
- Western International Society of Arboriculture Chapter: www.wcisa.net
- Urban Forest Strike Teams: www.articles.extension.org/pages/71461/urban-forest-strike-teams

- APA “Hazardous Tree Management and Post-Disaster Tree Management”: www.planning.org/research/treemanagement
- Urban Watershed Forestry Management: www.forestsforwatersheds.org
- EPA Green Infrastructure: www.water.epa.gov/polwaste/green/upload/stormwater2streettrees.pdf
- U.S. Forest Service “Urban Forests and Climate Change”: www.fs.usda.gov/ccrc/topics/urban-forests-and-climate-change
- ANSI A300 Standards: www.tcia.org/TCIA/BUSINESS/ANSI_A300_Standards_/TCIA/BUSINESS/A300_Standards/A300_Standards.aspx?hkey=202ff566-4364-4686-b7c1-2a365af59669
- ANSI A300 Pruning Specification Writing Guide: www.tcia.org/TCIAPdfs/Resources/Arboriculture/A300TreeCareStandards/A300Pruning-SpecificationWritingGuide-20170413.pdf
- ANSI Z60.1 Nursery Standards: www.americanhort.org/page/standards
- Penn State Extension “Questions about Trees and Utilities”: www.extension.psu.edu/questions-about-trees-and-utilities
- Utility Arborist Association “Common Questions about Electric Utility Pruning”: www.uaa.wildapricot.org/page-18073
- VA Cooperative Extension “Trees and Shrubs for Problem Landscape Sites: Overhead Utility Easements” (automatic download): www.urbanforestrysouth.org/resources/library/ttresources/trees-and-shrubs-for-problem-landscape-sites-overhead-utility-easements/at_download/file
- The eXtension Foundation “Trees for Energy Conservation”: www.articles.extension.org/trees_for_energy_conservation
- Arbor Day Foundation “Energy-Saving Trees”: www.energysavingtrees.arborday.org/#About
- Wood utilization: www.ncufc.org/urban_wood_utilization_introduction.php
- U.S. Forest Service i-Tree: www.itreetools.org
- U.S. Forest Service “The Urban Forest and Ecosystem Services”: www.fs.fed.us/psw/publications/mcpherson/psw_2016_mcpherson001_livesley.pdf
- American Forests “Vibrant Cities Lab”: www.vibrantcitieslab.com
- ISA International Dictionary Online: www.isa-arbor.com/education/onlineresources/dictionary
- PlanIT Geo Reports and Plans: www.planitgeo.com/urban-forestry-resource-library

Additional Publications

- “Acidic Precipitation- Sources, Deposition, and Canopy Interactions” by Wu, and Davidson, 1990
- “Benefit-Cost Analysis of Modesto’s Urban Forest” by McPherson, Simpson, Peper, and Xiao, 1999
- “Effect of Aluminum On Plant Growth and Metabolism” by Teresa Mossor-Pietraszewska, 2001 “Effects of individual trees on the solar radiation climate of small buildings” by Gordon M. Heisler, 1986 “Fremont Municipal Code” City of Fremont, 2011
- “Greenprint Tree Guide: For the Greater Sacramento Area” by the Sacramento Tree Foundation, 2009
- “Human Responses to Vegetation and Landscapes” by Roger S. Ulrich, 1986
- “Impact of Urban Forestry Development on Domestic Violence” by Marilyn Simpson-Johnson, 2012
- “Residential Property Values Improved by Landscaping with Trees” by L.M. Anderson and H.K. Cordell, 1975
- “Tree Preservation Ordinance FMC 4-5100” City of Fremont, 2002

CITY OF Fremont

TREE MAINTENANCE MANUAL

For the Tree Care Professionals

FREMONT, CALIFORNIA

MARCH 2022

TREE ORDINANCES

FREMONT, CALIFORNIA

CITY OF Fremont

Chapter 12.30
MAINTENANCE OF STREET TREES AND SIDEWALKS

Sections:

Article I. Regulation of Street Trees

Article I. Regulation of Street Trees

12.30.010 Definitions.

For purposes of this chapter, and unless the context clearly indicates otherwise:

“Arborist” is defined by Section 18.215.030.

“Person” is defined by Section 1.10.180.

“Pruning” includes cutting or trimming of a street tree including its roots for any purpose other than removal of the tree.

“Public right-of-way” means land which by deed, conveyances, agreement, easement, dedication, usage, or process of law is reserved for and dedicated to the use of the general public for street or highway purposes.

“Public street” means the full width of a public right-of-way of any road, street, lane, or alley, and includes any park, parking strip, sidewalk and dedicated planting easement between the adjacent property and the street line.

“Street tree” means any tree the base of which is located wholly or partially within a public street or right-of-way and any tree adjacent to a public street or right-of-way approved by the city to satisfy the requirement to plant street trees under the subdivision ordinance as set forth in Section 17.25.140.

“Street tree permit” means a permit to plant, prune or remove a street tree required by this article.

"Tree" is defined by Section 18.215.030. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2100.)

12.30.020 Scope of regulations.

This article regulates the planting, pruning and removal of street trees by persons or entities other than the city of Fremont. Nothing in this article shall be construed to govern or otherwise limit the city's authority to plant, prune or remove street trees. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2101.)

12.30.030 Street trees regulated.

(a) Street trees may only be planted, pruned, or removed as authorized by this article.

(b) It is unlawful for a person to plant, prune or remove a street tree, or to cause the planting, pruning or removal of a street tree, in a manner inconsistent with this article. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2102.)

12.30.040 Planting – Permit and standards.

(a) A person may not plant a street tree except as authorized by a street tree permit or an approved development plan.

(b) Planting of street trees must comply with the planting standards set forth in standard details adopted by the city council or as expressly authorized in writing by the city manager.

(c) Only species approved in writing by the city manager or shown on an approved development plan may be planted as street trees. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2103.)

12.30.050 Pruning permit.

(a) Except as provided in subsection (b) of this section, a street tree may only be pruned:

(1) By a certified arborist or a person working under the supervision of a certified arborist; and

(2) After obtaining a street tree permit authorizing the pruning.

(b) Any person may perform without a permit:

(1) Incidental pruning of a street tree measuring less than 15 feet in height after planting, and

(2) Pruning of low hanging branches measuring less than two inches in diameter as necessary to maintain the clearance heights over the public right-of-way required by Article II of this chapter. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2104.)

12.30.060 Pruning standards – Topping prohibited.

(a) The pruning of street trees must comply with the pruning standards prescribed by the current version of Tree Pruning Guidelines, published by the International Society of Arboriculture, or such other standards or methods as expressly authorized in writing by the city manager.

(b) Notwithstanding subsection (a) of this section, topping of street trees is prohibited unless specifically authorized in writing by the city manager based on clear evidence of extraordinary circumstances justifying topping in the particular situation. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2105.)

12.30.070 Removal – Replacement.

(a) A person may not remove a street tree except:

(1) When authorized by a street tree permit; or

(2) By an approved development plan; or

(3) When authorized by the city manager in an emergency as provided in Section 12.30.090.

(b) A person removing a street tree must timely grind the stump to 24 inches below grade or remove it, and repair any damage to right-of-way improvements caused by the grinding or removal. A person must obtain an encroachment permit under Chapter 12.05 before making any repairs to right-of-way improvements.

(c) The adjoining property owner must timely replace a street tree removed under the authority of this section. The replacement obligation shall be governed by the rules applicable to mitigation for authorized removal of private protected trees under Section 18.215.080. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2106.)

12.30.080 Criteria for removal permit.

(a) This section applies to the nonemergency removal of street trees except those designated as landmark trees by the city council. The nonemergency removal of a street tree that the city council has designated a landmark tree is governed by the tree preservation ordinance as codified in Chapter 18.215.

(b) The city manager may issue a nonemergency street tree permit to remove a street tree when one or more of the following criteria is clearly met:

(1) The tree poses a substantial hazard to people or property and cannot otherwise be feasibly restored to a safe condition.

(2) The tree is dead, dying or has a short life expectancy.

(3) The tree is seriously diseased and cannot be feasibly restored.

(4) The tree is part of a group that is overcrowded and removal would contribute to the health and vigor of nearby trees whose preservation is more desirable.

(5) The tree has extensively damaged a utility (sewer, water main, power lines, etc.) or is significantly interfering with overhead utilities and the problem cannot be remedied by other reasonable means including appropriate pruning.

(6) The tree has extensively damaged concrete after the tree has been deep-watered and root trimmed.

(7) The tree has been damaged to an extent that it cannot be feasibly restored.

(c) A person desiring to remove a street tree must state in detail the grounds for removal on the permit application.

(d) As used in this section, “feasibly restored” means the use of reasonable preservation or preventive practices not requiring damage to or removal of the tree. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2107.)

12.30.090 Criteria for emergency pruning or removal.

(a) This section applies to the emergency pruning or removal of all street trees including landmark trees.

(b) The city manager may authorize pruning or removal of a street tree when immediate pruning or removal is necessary to protect against an imminent threat of substantial injury to persons or damage to property.

(c) A street tree may not be removed under subsection (b) of this section if the imminent threat can be reasonably alleviated by pruning or other practical means, and must not be pruned more than is necessary to eliminate the imminent threat.

(d) In lieu of submitting the permit application required by Section 12.30.120, a person may request permission for emergency pruning or removal by contacting the maintenance division and obtaining permission from urban forestry staff.

(e) Within two business days of the completion of emergency work under subsection (b) of this section, the adjoining property owner must provide in writing to the maintenance department a full description of the work completed and the exact location where the work was performed.

(f) Removal or pruning exceeding the scope of work allowed by subsection (b) of this section, and pruning sought to be justified by this section when an imminent threat of substantial injury to persons or damage to property did not exist, as determined by the city manager, shall constitute damage to a street tree under this article. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2108.)

12.30.100 Street tree permits.

(a) The city manager shall administer all permits required by this article and shall prescribe all forms necessary for that purpose.

(b) The city manager shall only issue a permit to plant, prune or remove a street tree as authorized by this section and in accordance with this article. A permit issued in nonconformance with this article is void.

(c) The city manager may only issue a permit to plant, prune or remove a street tree to a person who the city manager reasonably believes is authorized under the contractors' state license law to perform the work. This subsection recognizes that the state of California limits who may plant, prune or remove a tree.

(d) The city manager shall collect all applicable street tree permit fees established by the city council before issuing a nonemergency street tree permit.

(e) The city manager is not required to investigate the license status or qualifications of the person applying for the permit or performing the work under the permit. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2109.)

12.30.110 Fees.

The city manager shall propose for adoption by the city council fees and periodic adjustments to fees for the administration of this chapter. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2110.)

12.30.120 Application for street tree permit.

(a) A person desiring to obtain a permit to plant, prune or remove a street tree must submit a complete application in compliance with Section 12.30.130 to the city manager and pay applicable fees as established by the city council.

(b) A person doing business as a public utility, subject to the jurisdiction of the State Public Utilities Commission, and any public agency providing utility service may apply as set forth in subsection (a) of this section for a permit valid for six months from the date of issuance permitting such person to trim, brace, remove, or perform other such acts with respect to trees or shrubs growing adjacent to the public streets of the city or which grow upon private property to the extent that they encroach upon such public streets, as may be necessary to comply with the safety regulations of such commission and as may be necessary to maintain the safe operations of its business. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2111.)

12.30.130 Application requirements.

(a) A street tree permit application must be made on a form or in a manner approved by the city manager.

(b) The application must provide:

(1) The address of the adjacent property;

(2) The name of the adjoining property owner(s), and the adjoining property owner’s address and contact information;

(3) The name and address of the person performing the work;

(4) The state contractor license number of the person performing or supervising the work, or if the person claims to be exempt from or not a contractor under the state contractor licensing law, the basis for the claim;

(5) If the work involves pruning, proof that the person is a certified arborist in good standing or will be performing the work under the supervision of a certified arborist in good standing; and

(6) Identification of each street tree to be planted, pruned or removed by species and location.

(c) The application must be signed under penalty of perjury as to the truth of the information provided by the adjoining property owner and the person performing the work. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2112.)

12.30.140 Attachments to street trees.

No person, without first having obtained express written permission from the city manager, shall attach to or maintain on a street tree or on a guard or stake attached to a street tree any wire, rope, sign, or device whatsoever. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2113.)

12.30.150 Liability for actions.

Nothing contained herein shall be deemed to impose any liability upon the city, its officers, or employees, nor to relieve the owner of any private property from the duty to keep any tree or shrub upon his or her property or under his or her control from constituting a public nuisance. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2114.)

12.30.160 Interference with city operations.

No person shall interfere with city employees while engaged in the planting, mulching, pruning, trimming, spraying, treating, or removing of any tree or shrub in any public street or right-of-way of the city or in the removing of any stones, cement, or other substance about the trunk of any tree or shrub on any public street or right-of-way. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2115.)

12.30.170 Damaging street trees prohibited.

(a) It is unlawful for any person to damage a street tree.

(b) Damaging a street tree includes committing or causing, or permitting another to commit or cause, the following conduct:

(1) Attaching or maintaining any rope, wire, or device to the tree or to the guard or stake intended for the protection of the tree without the city manager’s written permission.

(2) Placing or maintaining concrete, asphalt or brick paving in or otherwise filling up the ground area within four feet of the tree so as to shut off air, light or water from the roots.

(3) Piling or maintaining building material or other material about the tree in any manner that will in any way injure the tree.

(4) Constructing or maintaining any raised planter around the trunk of the tree.

(5) Releasing any substance injurious to trees or soil on any part of:

(A) The tree; or

(B) Soil within the drip line of the tree.

(6) Pruning the tree in a manner substantially inconsistent with the pruning standards identified in Section 12.30.060.

(7) Carving, girdling or injuring the bark of a street tree.

(8) Undertaking an act without authorization under this article or failing to perform an obligation under this chapter that causes:

(A) Substantial decline in the health of the tree; or

(B) Substantial shortening of the tree's life expectancy; or

(C) Substantial change in the aesthetic quality of the tree.

(9) Removing a street tree without authorization under this article. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2116.)

12.30.180 Remedies for violation.

(a) Violation of this chapter may be remedied by any means available to remedy a violation of this code.

(b) The remedies for violation of this chapter are nonexclusive and cumulative.

(c) If a person removes a street tree without authorization, the person and the adjoining property owner shall be jointly and severally liable for restitution. The restitution required by this subsection shall be determined in accordance with the standards for mitigation in Section 18.215.090 for the unauthorized removal of a private protected tree following the process in Section 18.215.190. The city manager may determine the appropriate staff to perform the obligations of the landscape architect under Sections 18.215.090 and 18.215.190.

(d) Notwithstanding Section 1.20.080, the administrative penalty amount that may be imposed for violation of Section 12.30.170 (damaging street trees) shall be as set forth in this subsection.

(1) A person damaging a street tree is subject to a fine in the amount of:

(A) Two hundred fifty dollars for the first offense;

(B) Seven hundred fifty dollars for the second offense; and

(C) One thousand dollars for the third and subsequent offenses; or

(2) A person who damages a street tree either knowingly or with intent to injure a tree is subject to a fine in the amount of $1,000 for each offense. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2117.)

12.30.190 Appeals.

(a) A person wishing to appeal the denial of a permit to remove a street tree or the imposition of restitution for the unauthorized removal of a street tree must do so to the city council as provided in Chapter 1.25.

(b) A person wishing to contest an administrative penalty or an abatement order must do so in accordance with the provisions that govern the procedure for imposing the fine or abatement order.

(c) For all other administrative actions under this chapter not covered by subsections (a) and (b) of this section, a person wishing to appeal the action of a designee of the city manager must file a written appeal to the city manager within 10 days of the action. The city manager shall act upon the appeal promptly. Decisions of the city manager, whether on appeal or made in the first instance, shall be final. (Ord. 11-2010 § 5, 5-25-10. 1990 Code § 6-2118.)

Article II. Duty of Property Owners to Maintain Street Trees and Sidewalks

12.30.200 Maintenance of landscaping along or in street right-of-way.

(a) The owner of a lot with frontage along a public street must maintain the street trees and other landscaping growing along the frontage or in the street right-of-way adjacent to the lot, including in any park or parking strip between the property line and the street line.

(b) The owner’s obligations under subsection (a) of this section include at a minimum all of the following:

(1) Maintaining the street trees and other landscaping in a good and safe condition as will not interfere with the public convenience or safety in the use of the public street and sidewalk, including:

(A) Ensuring sufficient passage of light from any public street light to the street;

(B) Ensuring a clear height of 10 feet above the surface of the street or sidewalk unobstructed by branches;

(C) Ensuring street signs, parking restriction signs, bus stop signs, and other directional and regulatory signs are not obstructed; and

(D) Removing dead, decayed, or broken limbs or branches that overhang the public right-of-way.

(2) Deep root watering, root pruning, installing root barriers, fertilizing, and pest control.

(3) Clearance, structural, and safety pruning.

(4) Removal of fallen leaves, branches and other debris.

(5) Replacing any removed or otherwise missing street tree as may be required by Article I of this chapter.

(6) Replacing any removed or otherwise missing landscaping if the landscaping was required to be planted by this code or an approved development plan.

(c) An owner owes a duty to members of the public to maintain street trees and other landscaping along the street frontage or in the street right-of-way adjacent to the owner's property in a safe and nondangerous condition.

(d) If an owner fails to maintain street trees and other landscaping in a safe and nondangerous condition as required by this section, and a person suffers damage or injury to person or property, the owner shall be liable to the person for the resulting damages and injuries.

(e) The city of Fremont shall have a cause of action for indemnity against a property owner for any damages it may be required to pay as satisfaction of any judgment or settlement of any claim from injury to persons or property as a legal result of the owner's failure to maintain a street tree in accordance with this section. (Ord. 11-2010 § 6, 5-25-10. 1990 Code § 6-2201.)

12.30.210 Maintenance of sidewalks.

(a) As used in this section, "sidewalk area" includes the sidewalk, any park or parking strip maintained in the area between the property line and the street line, and the curbing, gutter, driveway, bulkheads, retaining walls or other works for the protection of any sidewalk or of any park or parking strip.

(b) The owner of a lot fronting on or adjacent to a public street must maintain any sidewalk area in good repair and condition. This duty includes but is not limited to maintenance and repair of surfaces including performance of grinding, removal and replacement of sidewalks, and repair and maintenance of curb and gutters, so that the sidewalk area will remain in a condition that is not dangerous to property or to persons using the sidewalk area in a reasonable manner and will be in a condition which will not interfere with the public convenience in the use of the sidewalk area.

(c) An owner required by this section to maintain a sidewalk area shall owe a duty to members of the public to keep and maintain the sidewalk area in a safe and nondangerous condition.

(d) If, as a result an owner's failure to maintain a sidewalk area in a safe and nondangerous condition, any person suffers injury or damage to person or property, the owner shall be liable to the person for the resulting damages or injury.

(e) The city of Fremont shall have a cause of action for indemnity against a property owner for any damages it may be required to pay as satisfaction of any judgment or settlement of any claim that results from injury to persons or property as a legal result of the owner's failure to maintain a sidewalk area in accordance with this section.

(f) Failure of the owner to maintain a sidewalk area as set forth in this section shall constitute a public nuisance. (Ord. 11-2010 § 6, 5-25-10. 1990 Code § 6-2202.)

12.30.220 Duty of property owners to notify city of damages occurring from trees.

Every property owner, tenant, lessee, or other possessor of real property shall notify the office of the city manager, or designated department, when any tree or shrub in a public street or right-of-way adjacent to or fronting upon her or his property is injuring or damaging any public right-of-way. (Ord. 11-2010 § 6, 5-25-10. 1990 Code § 6-2203.)

12.30.230 No mandatory duty of city created.

Nothing in this chapter is intended to create a mandatory duty on the part of the city manager or the city to protect persons or property from a violation of the provisions of this chapter. (Ord. 11-2010 § 6, 5-25-10. 1990 Code § 6-2204.)

Home **<** **>**

Chapter 18.215
TREE PRESERVATION

Sections:

Editor's Note: Pursuant to Cal. Pub. Res. Code § 25985, the city, by Ord. 1316, adopted March 27, 1979, declared the city of Fremont exempt from Cal. Pub. Res. Code Division 15, Chapter 12, also known as the Solar Shade Control Act.

18.215.010 Title.

This chapter shall be known as the "tree preservation ordinance." (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5100.)

18.215.020 Legislative findings.

This chapter is enacted in recognition of the following facts:

(a) Among the features that contribute to the attractiveness and livability of the city of Fremont are its trees, both indigenous and introduced, growing as single specimens, in clusters, or in woodland situations. These trees have significant psychological and tangible benefits for both residents and visitors to the city.

(b) Trees contribute to the visual framework of the city by providing scale, color, silhouette and mass. Trees contribute beneficially to the climate of the city by reducing heat buildup and providing shade, moisture, and wind control. Trees contribute to the protection of other natural resources by providing erosion control for the soil, oxygen for the air and habitat for wildlife. Trees contribute to the economy of the city by increasing and sustaining property values. Trees reduce the cost of stormwater systems by increasing the water retention capacity of soils. Trees provide screens and buffers to separate land uses, are often landmarks of the city's history, and are a critical element of nature in the midst of an urban setting.

(c) The city's trees collectively constitute an urban forest, and removals or additions of even a single tree can negatively or positively affect the urban forest and the city as a whole. The loss or removal of a tree from one location in the city's urban forest can often be at least partially mitigated by planting a replacement tree or replacement trees in the same or a different location. However, the negative effect of the loss or removal of a mature tree may in some cases take generations to fully mitigate by the planting of immature replacement trees.

(d) For all these reasons, it is the purpose of this chapter, and in the interest of the public health, safety and welfare of the people of the city of Fremont, while recognizing private rights to develop and use property in a manner not prejudicial to the public interest, to protect and preserve trees by regulating their removal and damage to them; to prevent unnecessary tree loss and damage; to minimize environmental damage from improper tree removal or pruning; to encourage or, when appropriate, to require tree replacement plantings; to effectively enforce tree preservation regulations; and to promote the appreciation and understanding of trees. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5101.)

18.215.030 Definitions.

"Arborist" means a person with at least three years' experience in the practice of arboricultural analysis, and certified by and in good standing with the International Society of Arboriculture (ISA).

"Container tree" means any tree whose roots are entirely contained in an aboveground container.

"Contemplated development project application" means an application for development project approval that an applicant intends to file and for which he or she has already done preparatory planning. Development project applications filed within 120 days after removal of a tree from a lot which is the subject of the application shall be presumed in any city enforcement action to have been contemplated at the time of tree removal.

"Cutting" means the detaching or separating from a tree any limb, branch or root. Cutting shall include pruning and trimming.

"Damage" means any action taken which causes or may cause death or significant injury to a tree or its roots, or which places the tree in an irreversible state of decline. This includes, but is not limited to, cutting, topping (i.e., cutting of the main leader branch), removal or stubbing of major scaffold branches, girdling, carving, poisoning, and trenching, excavating, compaction, paving, or storing materials on soil within the drip line. Normal pruning, as prescribed by currently adopted standards of the International Society of Arboriculture, which are on file and available for review in the engineering division of the city, does not constitute damage.

"DBH" means diameter at breast height, which in turn means trunk diameter measured at four and one-half feet above a tree's natural grade. For multi-trunked trees, "DBH" means the DBH of all individual trunks added together.

"Developed lot" means a lot which is neither an underdeveloped lot nor a vacant lot as these terms are defined in this section.

"Development project" has the meaning given this term by Section 18.25.800, except that, for the purposes of this chapter, removing, damaging or relocating any tree shall not in itself constitute a development project.

"Drip line" means the outermost edge of a tree's canopy. When depicted on a map, the drip line will appear as a line that follows the contour of the tree's branches as seen from overhead. At a minimum, the drip line is a circle whose diameter is 15 times a tree's DBH.

"Landmark tree" means a tree that has been so designated by resolution of the city council as well as any tree that has been designated in the general plan as a primary historic resource.

"Landscape architect" means the city's landscape architect or his or her or the city manager's designee.

"Native tree" means any of the following trees native to the San Francisco Bay area: oak, redwood, buckeye, madrone, sycamore, big-leaf maple, red-bud, and bay.

"Person" means any natural person, partnership, firm, corporation, governmental agency or other legal entity.

"Private tree" means any tree growing on private land except street trees as defined by Section 12.30.010.

"Protected tree" means any tree which under Section 18.215.050 may be removed, damaged or relocated only subject to a permit or other authorization conferred pursuant to the provisions of this chapter; except for landmark trees, which are protected by special regulations set out in this chapter.

"Removal" means the physical removal of a tree; causing the death of a tree through damaging, poisoning or other direct or indirect action; or severely damaging a tree.

"Severely damage" means any action constituting damage as defined in this chapter that destroys the natural character of a tree to such an extent that the tree has irreparably lost most of the beauty

characteristic of its species or other valuable attributes referenced in the above-stated legislative findings.

“Tree” means a perennial plant having a self-supporting, woody main stem or trunk usually characterized by the ability to grow to considerable height and size, and the development of woody branches at some distance above the ground. Usually distinguished from a bush or shrub by size, manner of growth, and usual botanical nomenclature. Perennial shrubs are not classified as trees in this chapter.

“Tree of exceptional adaptability to the Fremont area” means, but is not limited to, a tree of the following species: Fremont cottonwood, California pepper, European olive, black walnut, and Deodar cedar. A list of other trees of exceptional adaptability to the Fremont area is on file and available for review in the engineering division of the city.

“Tree protection zone” means the limit of undisturbed space that is required to be maintained around an existing tree or grove of trees to ensure a tree or its roots are not damaged during grading or construction. The city may require that a tree protection zone be fenced or marked to further its protective purpose.

“Underdeveloped lot” means any lot that:

(1) Is currently lawfully used for commercial agriculture or arboriculture;

(2) If subject to floor area ratio regulations, is not built out to the maximum building floor area allowed by those regulations; or

(3) Is zoned to allow residential use and can lawfully accommodate an additional dwelling, other than an accessory dwelling as this term is defined in Section 18.25.983 and used in Section 18.190.005.

“Vacant lot” means a lot that is not occupied by a principal building as this term is defined in Section 18.25.380. (Ord. 2481 § 1, 7-23-02; Ord. 11-2010 § 7, 5-25-10; Ord. 16-2015 § 53, 6-2-15; Ord. 01-2017 § 18, 1-3-17; Ord. 09-2020 § 12, 10-6-20. 1990 Code § 4-5102.)

18.215.040 Prohibition on removal of or damage to trees except when expressly permitted.
No person shall remove, damage or relocate a private tree or any landmark tree, whether publicly or privately owned, except as follows:

(a) When authorized by a permit issued by the landscape architect, which permit shall, while any person is removing or damaging the subject tree, be posted on the lot by the applicant so as to be prominently visible from the street;

(b) When removal, damage or relocation is allowed without permit under Section 18.215.050;

(c) When expressly authorized as part of a city-issued entitlement or permit for a development project; or

(d) In the case of a landmark tree, when authorized by the city council in accordance with this chapter. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5103.)

18.215.050 Trees subject to or exempt from permit requirements.

(a) Permit or Other Authorization Required for Private Trees Other Than Landmark Trees. A permit or other authorization conferred in accordance with this chapter is required to remove, damage or relocate a private tree if it is:

(1) A tree having a DBH of six inches or more and located on a vacant or underdeveloped lot;

(2) A tree having a DBH of six inches or more and located on a developed lot which is the subject of a contemplated or pending application for a development project;

(3) A native tree or tree of exceptional adaptability to the Fremont area having a DBH of 10 inches or more;

(4) A tree having a DBH of 18 inches or more;

(5) A tree that was required by the city to be planted or retained as mitigation for the removal of a tree;

(6) A tree planted or retained as a condition of any city-conferred development project approval, including approvals conferred prior to adoption of this chapter; or

(7) One of six or more trees of the same species that are located on the same lot and that each have six or more inches in DBH.

(b) Permit or Other Authorization Required for All Landmark Trees. Authorization conferred in accordance with this chapter is required to remove, damage or relocate any landmark tree, whether privately or publicly owned.

(c) Trees Exempt from Permit Requirements. Except as provided in this subsection (c), no permit or other authorization conferred in accordance with this chapter and no mitigation is required to remove, damage or relocate a private tree if it is:

(1) A tree on a developed lot not greater than 10,000 square feet in area and zoned either R-1 or single-family detached planned district, when the tree is behind the forward-most face of the front of the principal building. Any architectural feature that is allowed to project into a required front yard under Section 18.170.060 shall not constitute any part of the face of a building for the purposes of this subsection. This exemption shall not apply to any landmark tree or to any tree planted or retained in accordance with any city-imposed requirement;

(2) A container tree;

(3) A fruit or nut tree of a species grown for commercial food production, except a black walnut or olive tree; or

(4) A private tree or a landmark tree removed or damaged under emergency circumstances as follows:

(A) The tree has been damaged by storms, floods, earthquakes, or by any other cause; and a city official has determined that its immediate removal or further damage is necessary to protect persons from imminent personal injury or to prevent imminent and substantial damage to property;

(B) When immediate removal or damage is determined to be necessary by fire department personnel actively engaged in fighting a fire; or

(C) When immediate removal or damage is determined by the landscape architect to be necessary to protect persons from imminent personal injury or to prevent imminent and substantial damage to property; or

(5) A tree, other than a landmark tree, removed or damaged by a public utility to the extent that such removal or damage is necessary for building or maintaining the public utility's facilities. (Ord. 2481 § 1, 7-23-02; Ord. 11-2010 § 8, 5-25-10. 1990 Code § 4-5104.)

18.215.060 Status of retained, added, replaced or relocated trees.

Any decision made under this chapter, or as part of a development project approval, which requires the retention, addition, replacement or relocation of any tree shall confer on such tree the status of a tree which, under Section 18.215.050, may not be damaged or removed except in accordance with

this chapter. Further, all such trees shall be maintained in a healthy condition and, except for landmark trees, shall be replaced by the then-current owner of the lot in accordance with the standards set out in Section 18.215.090 if they die or are removed substantially before expiration of their normal life span. Replacement requirements for landmark trees shall be established on a case-by-case basis and shall reflect the special quality and importance of any such tree. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5105.)

18.215.070 Standards for evaluation of applications to remove, damage or relocate private protected trees.

An application for authorization to remove, damage or relocate a private protected tree shall be approved, denied or conditionally approved so as to further the public welfare and based upon a balancing of the following criteria in light of the above-stated legislative findings. Applicability of any of the criteria set out under subsection (a) of this section supports authorization of a tree's removal or damage, while the applicability of any of the criteria set out under subsection (b) of this section supports denial of such authorization.

(a) Criteria Supporting Authorized Removal or Damage.

(1) Because of disease, age or damage, the tree or a part of the tree is in danger of falling and injuring persons or causing substantial damage to property; and the tree cannot otherwise be returned to a safe condition through reasonable preservation or preventive practices not requiring damage to or removal of the tree.

(2) The tree has a relatively short life expectancy.

(3) The tree is a host to a plant, insect, or other parasitic organism, which condition endangers other healthy trees; and reasonable treatment to rid the tree of the infestation would not eliminate an unacceptable level of endangerment to other trees.

(4) The portion of the lot on which the tree is located is overcrowded with trees in that the number of healthy trees that can be supported is exceeded, and the subject tree contributes to this condition of overcrowding so that its removal would contribute to the health and vigor of nearby trees whose preservation is more desirable under the above stated legislative findings and under a balancing the applicable criteria of this section.

(5) Development project plans currently filed for the lot indicate that it is necessary to damage, remove or relocate the tree to enable reasonable and conforming use of the property or to achieve a superior project; and the tree cannot be preserved or left undamaged by a reasonably required redesign of the project.

(6) The tree substantially interferes with full enjoyment of an existing structure, with utility services, or with other uses of real property; and this interference cannot be adequately remedied through reasonable measures not requiring damage to or removal of the tree.

(7) The tree has lost most of the aesthetic value generally possessed by trees of the same size and species, which value cannot be feasibly restored.

(b) Criteria Supporting Denial of Authorization to Remove.

(1) The tree is an important asset to the community based on such factors as its service as part of a windbreak system, its assistance in drainage or in the avoidance of soil erosion, its service as a component of a wildlife habitat, its role in maintaining the existing urban forest or its contribution to reducing reflective glare from buildings and pavement.

(2) The tree contributes substantially to the aesthetic beauty of an area, and its removal would adversely affect the appearance of the area. The tree's potential, or lack thereof, for a long life and for a substantial increase over time of its contribution to the city's urban forest shall be taken into consideration in making this determination.

(3) The tree is located on a vacant or undeveloped lot and, if left undisturbed, has the potential for becoming a community asset of substantial aesthetic value.

(4) The tree is a member of a group of trees mutually dependent on each other for survival, structural integrity or aesthetics. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5106.)

18.215.080 Standards for mitigation of authorized removal of private protected trees.

(a) When a private protected tree's removal is authorized in accordance with this chapter, mitigation shall be required as follows:

(1) Required mitigation for each tree removed shall be the planting of one 24-inch box replacement tree, except for a single-family home a 15-gallon replacement tree shall be planted, of a species and in a location approved by the person or entity imposing mitigation requirements under this chapter. When, because of lot size, configuration or development, the property cannot fully accommodate the mitigation that would otherwise be required under this subsection (a)(1), the applicant shall pay the city a fee in lieu of on-site replacement for each tree that is not replaced on site. The amount of the fee shall be equal to the per unit cost to the city for a planted 24-inch box tree as established by the city's last award of a contract following a competitive bid for such work.

(2) Replacement requirements for trees removed from a lot which is the subject of a development project application shall be imposed in addition to any requirement for planting trees that would otherwise be imposed as a condition of project approval.

(3) Replacement trees shall be planted in accordance with standard details that are on file with the engineering division of the city.

(b) The mitigation required by this section may be waived or reduced in the following circumstances:

(1) Removal of the tree has a beneficial effect on the city's urban forest; or

(2) The cost of mitigation is disproportionately large when contrasted to the loss to the city's urban forest caused by tree removal. (Ord. 2481 § 1, 7-23-02; Ord. 11-2010 § 9, 5-25-10. 1990 Code § 4-5107.)

18.215.090 Standards for mitigation of unauthorized removal of private protected trees.
Requirements for mitigation of unauthorized removal of private protected trees shall be imposed in accordance with the following policies and standards:

(a) Replacements for trees removed shall, if reasonably possible, provide total beneficial attributes at least equivalent to those of the tree(s) to be replaced. For example, when replacing a tree whose principal beneficial attribute is aesthetic, the replacement tree(s) should provide equivalent aesthetic quality in terms of size, height, location and other beneficial aesthetic attributes.

(b) Replacement requirements for trees removed from a lot that is the subject of a development project application shall be imposed in addition to any requirement for planting trees that would otherwise be required or imposed as a condition of project approval.

(c) Subject to the provisions of subsection (e) of this section, replacement trees shall generally be planted on the same lot as were the trees removed, and the species and location of the replacement tree(s) shall be approved by the city.

(d) When the value of a tree must be established to apply the provisions of this section, such value shall be calculated by the landscape architect in accordance with the latest edition of the Guide for Plant Appraisal as prepared by the Council of Tree and Landscape Appraisers or a similar successor resource.

(e) When, because of lot size, configuration or development, or size, age or other characteristics of the tree to be replaced, it is not reasonably possible to provide an equivalent on-site replacement tree

or trees, replacement equivalency may be established, at the discretion of the city, using one or a combination of the following standards:

(1) The total DBH of the replacement tree(s) is at least equal to the DBH of the tree(s) to be replaced, and the replacement tree(s) will at maturity be similar in size and character to the tree(s) to be replaced.

(2) The total value of the replacement tree(s), or cash payment to the city in lieu of replacement, or a combination of the total value of the replacement tree(s) plus such cash payment is at least equal to the value of the tree(s) to be replaced.

(f) Notwithstanding any other provision of this section, in the case of removal of a tree from a vacant or underdeveloped lot, the city may require mitigation to be made entirely by cash payment. In such cases, if an application for a development project for the lot is filed within 120 days of the date of such payment and if the project is completed within two years of such date, the cash payment may be used to reimburse the project applicant for on-site tree replacement meeting the requirements of this section.

(g) Replacement trees shall be planted in accordance with standard details that are on file and available for review in the engineering division of the city.

(h) The mitigation required by this section may be waived or reduced in the following circumstances:

(1) Removal of the tree has a beneficial effect on the city's urban forest;

(2) The cost of mitigation is disproportionately large when contrasted to the loss to the city's urban forest caused by tree removal; or

(3) Following an unauthorized tree removal, the landscape architect determines that removal would have been authorized had timely application been made. The burden of proving that removal would have been authorized is on the person(s) responsible for mitigation. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5108.)

18.215.100 Use of cash payments.

When a cash payment is received in accordance with Section 18.215.080 or 18.215.090, the city shall use the proceeds as follows:

(a) To plant or upgrade street trees throughout the city;

(b) To beautify or enhance public places, including parks and open spaces, by the planting of trees;

(c) To fund any administrative activity directly related to the advertising, promotion and execution of the provisions of this chapter as well as any other activities that will benefit the city's urban forest; or

(d) In accordance with Section 18.215.090(f). (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5109.)

18.215.110 Procedure for applications to remove, damage or relocate private protected trees when no development project application is contemplated or pending.

(a) Application. A person desiring to remove, damage or relocate a private protected tree when no development project application is contemplated or pending for the lot shall apply for a permit from the landscape architect.

(1) Fee for Application. There shall be no fee charged for the application except for the cost of any required arborist's report, for which an advance deposit of the estimated cost shall be made.

(2) Time for Application. Applications shall be made at least 15 days prior to the proposed date of tree removal, damage or relocation.

(3) Contents of Application. Applications shall be made on a form provided by the city or shall otherwise contain the following information:

(A) The number, location(s), size(s), quality and species of the protected tree(s) proposed to be removed, damaged or relocated;

(B) A written explanation of why authorization is sought to remove, damage or relocate the protected tree(s);

(C) A time schedule for the proposed work;

(D) Any other information the landscape architect deems necessary including, when appropriate, a report by an arborist selected by the city and a tree survey prepared by a civil engineer or landscape architect indicating buildings, paved areas, the size and species of all existing protected trees on the subject lot and those protected trees which are proposed to be removed, damaged, relocated or retained;

(E) A written proposal for mitigating the proposed removal of or damage to the protected tree(s) in accordance with Section 18.215.080, indicating the size, species and location of

any proposed replacement tree(s) and the amount of any payment proposed in lieu of replacement; and

(F) The applicant's written authorization for city staff or persons retained by the city to enter the subject property to conduct an on-site inspection of trees.

(b) Action on Application.

(1) When Decision Is That Removal, Damage or Relocation Should Not Be Authorized. When the landscape architect decides that all or some part of the application should not be approved, it shall be denied in whole or in part.

(2) When Decision Is That Removal, Damage or Relocation Should Be Authorized. When the landscape architect decides that a tree's removal, damage or relocation should be authorized, a permit shall be granted subject to conditions that mitigation for removal of trees be provided in accordance with Section 18.215.080. If relocation of a tree is approved, the landscape architect may impose conditions to assure its health and survival.

(3) Decision Must Be in Writing. The landscape architect's decision and the reasons supporting it shall be written.

(4) Notice of Decision and Appeal Rights. The landscape architect's decision and a notification that it is appealable under this section shall be mailed to the applicant.

(c) Appeal of Landscape Architect's Decision.

(1) Landscape Architect's Decision Appealable. The landscape architect's decision is appealable to the city council only by the applicant and is final and conclusive as to other persons.

(2) Form and Time of Appeal. The appeal shall be made in writing and filed in the office of the city clerk no later than 10 days after mailing of the decision of the landscape architect. The basis of the appeal shall be completely stated. The city council may refuse to consider matters not set forth in the written appeal.

(3) Notice of Appeal Hearing. At least 10 days' mailed notice of the hearing of an appeal shall be given to the applicant and to all owners of real property as shown on the latest equalized assessment roll whose properties are contiguous to or directly across the street from the subject

lot. In lieu of utilizing the assessment roll, the city may utilize records of the county assessor or tax collector which contain more recent information than the assessment roll.

(4) Hearing on Appeal. The appeal hearing shall be conducted de novo and generally in accordance with Chapter 1.25 as supplemented by this section.

(5) Notice of Decision on Appeal. Notice of the decision on appeal and reasons supporting it shall be in writing and shall be mailed to the appellant and to persons who have requested copies. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5110.)

18.215.120 Procedure for applications to remove, damage, relocate or retain private protected trees when a development project application is contemplated or pending.

(a) Applications. A person desiring to remove, damage, relocate or retain a private protected tree in connection with a development project for which an application is contemplated or pending shall submit an application to the landscape architect. The application shall meet the following requirements:

(1) Application an Essential Part of a Development Project Application. Applications proposing removal, damage, relocation or retention of protected trees shall be required as essential components of applications for development project approval, which shall not be deemed complete until the requirements of this subsection (a) have been satisfied.

(2) Fees and Costs. All fees and other costs associated with applications made under this section shall be charged as components of the fees and costs charged for the entire development project application. The cost of any inspection or report required under this section shall be borne by the applicant.

(3) Contents of Application. Applications shall include, but not be limited to, the following:

(A) The number, location(s), size(s), quality and species of the protected tree(s) proposed to be removed, damaged, relocated or retained;

(B) A written explanation of why authorization is sought to remove, damage or relocate any protected tree;

(C) A time schedule for the proposed work;

(D) A tree survey in the same scale as the development plans prepared by a civil engineer or landscape architect indicating:

(i) The size and species of all existing protected trees on the subject lot;

(ii) Those protected trees which are proposed to be removed, damaged, relocated or retained in place;

(iii) Protective measures (including designated protection zones) proposed for any tree to be relocated or for protection of any protected tree that is to remain in place during grading or construction operations; and

(iv) The locations of all proposed or existing buildings, paved areas, and utilities;

(E) When required by the landscape architect, a report by an arborist selected by the city;

(F) A written proposal for mitigating the removal of any protected tree(s) in accordance with Section 18.215.080, indicating the proposed size, species and location of the replacement tree(s) and the amount of any payment proposed in lieu of replacement; and

(G) The applicant's written authorization for city staff or persons retained by the city to enter the subject property to conduct on-site inspections of trees.

(b) Landscape Architect's Recommendation. The landscape architect shall prepare a written recommendation which shall be considered by any official authorized to approve or disapprove the project or summarized or included in the agenda report(s) prepared for the body or bodies who will review and make recommendations or who will approve, conditionally approve or disapprove the development project application.

(c) Action on Application. Action on any protected-tree-related matter shall be made part of any recommendatory action and of any action to approve, conditionally approve or disapprove the development project application. Such action shall include mitigation requirements imposed in accordance with Section 18.215.080 for any authorized removal of protected trees.

(d) Inclusion of Tree Maintenance Requirement in CC&Rs. The obligations imposed under this section and by Section 18.215.060 shall be stated in any CC&Rs for the project required by the city.

(e) Effect of Appeal Provisions. During the pendency of any appeal of an approval of a development project application and during any period in which a timely appeal may be filed, the effectiveness of any such approval shall be stayed insofar as it pertains to trees.

(f) Exemptions. The landscape architect may waive any requirement of this section when (s)he determines that full compliance is not necessary to allow effective application of the tree protection provisions of this chapter. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5111.)

18.215.130 Designation and listing of landmark trees.

(a) City Council Designation of Landmark Trees. Any tree meeting the following criteria may be designated by resolution of the city council as a landmark tree. All trees so designated shall be placed on a landmark tree list which may be updated from time to time by subsequent city council resolutions.

(1) Presumptive Qualification for Landmark Tree Designation. A tree meeting all of the following criteria presumptively qualifies for designation as a landmark tree:

(A) DBH is 54 inches or greater;

(B) The tree's structure and character exemplify its species or it has an extraordinary form caused by environmental influences;

(C) The tree is free, or can practicably be made to be free, of any structural defect posing a threat of either injury to persons or of substantial damage to property;

(D) The tree has substantial aesthetic appeal, or its lack of such appeal can be remedied by standard arboricultural practices; and

(E) Probability that the tree will survive more than five years from date of landmarking while retaining substantial aesthetic appeal is at least 50 percent.

(2) Other Factors Supporting Landmark Tree Designation. Whether or not a tree meets the criteria of subsection (a)(1) of this section, it may qualify for landmark tree designation based on any of the following criteria:

(A) The tree has an important historic significance in that:

(i) It is associated with events that have made a significant contribution to local, state or national cultural heritage; or

(ii) It is associated with the life of a person important to local, state or national history;

(B) The tree is a native tree or a tree of exceptional adaptability to the Fremont area which has a special significance to the community;

(C) The tree has an especially prominent and beautiful visual impact;

(D) The tree is one of a group of trees that as a group meets one or more of the criteria of this section for landmark tree designation; or

(E) Any other factor causing the tree to have a special and important significance to the community.

(b) Trees That Are Primary Historic Resources. Trees which have been and which in the future are designated in the general plan as primary historical resources are hereby further designated as landmark trees. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5112.)

18.215.140 Procedure for designation of landmark trees and removal of such designation.

(a) Initiation of the Process. The landscape architect shall from time to time propose landmark tree designation or removal of such designation based on the criteria of Section 18.215.130, and the proposal shall be acted upon as provided in this section. Such proposals may include city-owned trees, which proposals shall be exempt from the payment of fees and costs. Additionally, the process for landmark tree designation or removal of such designation may be commenced by motion of the city council or by the tree's owner filing an application for such action.

(b) Fee and Cost for Application to Remove Landmark Tree Designation. A fee in an amount established by resolution of the city council and an advance deposit to cover estimated cost of inspection and any required report(s) shall be charged for an owner's application for removal of a landmark tree designation. In all other cases, no fee or costs shall be charged.

(c) Inspection and Reports. Following initiation of the process, the tree shall be inspected by the landscape architect or by a qualified arborist selected by the landscape architect and retained by the city. The landscape architect shall prepare a city council agenda report applying the above-stated legislative findings and the applicable criteria set out in Section 18.215.130. The report shall set out the landscape architect's recommendation on the proposal and reasons supporting it.

(d) Notice of Hearing. Notice of any hearing conducted pursuant to this section shall comply with Section 18.320.020, as though the matter were an application under Title 18.

(e) Action by the City Council. The city council shall conduct a noticed public hearing and shall review the proposal, any written inspection report, and the recommendation of the landscape architect, all in light of the above-stated legislative findings and the applicable criteria of Section 18.215.130. The council's decision shall be set out in a resolution. (Ord. 2481 § 1, 7-23-02; amended during 4/14 supplement. 1990 Code § 4-5113.)

18.215.150 Policy for protection of landmark trees.

(a) Special Status of Landmark Trees. Landmark trees, including those on city-owned property, may be removed, damaged, or relocated only in accordance with the provisions of this chapter which specifically pertain to them.

(b) Environmental Significance of Landmark Trees. Landmark trees are significant community resources, and the damaging or removing of any landmark tree shall be regarded as causing at least a potentially substantial adverse change in the environment unless either of the following criteria is met:

(1) Probability that the tree will survive while retaining most of its aesthetic appeal for an additional five years is less than 50 percent; or

(2) Because of disease, age or damage, the tree has lost most of its original aesthetic appeal, which cannot feasibly be restored.

(c) Preservation Standards for Landmark Trees.

(1) When Damage or Removal Would Constitute a Substantial Adverse Change in the Environment. When removal of a landmark tree would constitute a substantial adverse change in the environment, authorization to either damage or remove the tree shall not be given if its preservation intact is feasible in light of economic, environmental and technological factors. Provided, however, that authorization to damage or remove a landmark tree may be given if the tree meets the criteria of Section 18.215.070(a)(1) or (3).

(2) When Removal Would Not Constitute a Potentially Substantial Adverse Change in the Environment. Damage or removal of landmark trees which would not constitute a potentially substantial adverse change in the environment may be authorized when such action is found to be appropriate after balancing the above-stated legislative findings and the criteria of Section 18.215.070.

(d) Measures Available to Preserve Landmark Trees. In order to accommodate the preservation of landmark trees in cases where authorization of removal or damage might otherwise appear warranted, the city council may, in its discretion, consider the following measures to make feasible the preservation of a tree:

(1) Directing an application for variance of zoning regulations;

(2) Transfer of development rights to offset any substantial economic burden or loss that city-required preservation of the tree might place on its owner; or

(3) Any other reasonable means of avoiding removal or damage of the tree. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5114.)

18.215.160 Procedure for applications to remove, damage or relocate a landmark tree when no development project application is contemplated or pending.

(a) Application – City Council Authorization Required. Removal, damage or relocation of a landmark tree requires authorization by the city council. When no development project application is contemplated or pending for the lot, application for such authorization shall be filed initially with the landscape architect.

(1) Fee for Application. Except for landmark trees owned by the city, a fee in an amount established by resolution of the city council and an advance deposit to cover estimated costs of inspection and any required report(s) shall be paid by the applicant.

(2) Time for Application. Applications shall be made at least 90 days prior to the proposed date of tree removal, damage, or relocation.

(3) Contents of Application.

(A) The application shall set out a complete description of the proposed action including the applicant's statement as to why it should be granted and any information, drawings or reports the landscape architect may deem necessary.

(B) The applicant shall provide a proposal for mitigating the effects of the proposed action, which shall reflect the difficulty or impossibility of achieving full mitigation for removal of or damage to a landmark tree and which shall therefore provide for very extensive mitigation for such an action. In cases where the landmark tree is owned by the city, any public benefit resulting from its damage or removal shall be considered as contributing to mitigation for removal.

(b) Inspection and Report. The tree(s) will be inspected by the landscape architect or by a qualified arborist selected by the landscape architect and retained by the city. The landscape architect's recommendation on the application and the reasons supporting it shall be set out in a report (s)he shall prepare for the city council.

(c) Notice of Hearing. Notice of any hearing conducted pursuant to this section shall comply with Section 18.320.020 as though the matter were an application under Title 18.

(d) Action by the City Council. The city council shall conduct a noticed public hearing and shall review the application, any written inspection report and the recommendations of the landscape architect in light of the above-stated legislative findings and the applicable criteria and policies set out in Sections 18.215.070 and 18.215.150. The council may approve, conditionally approve or deny the application and may, in its discretion, order measures to be taken by the city to assist in preservation of the landmark tree(s). Mitigation requirements for removal, damage or relocation of landmark trees shall be established on a case-by-case basis and shall reflect the special quality and importance of any such tree. The council's decision shall be set out in a resolution.

(e) Notice of Decision. The city council's decision and written findings supporting it shall be mailed to the applicant.

(f) Applications to Remove, Damage or Relocate Protected Trees from the Site Must Be Filed Contemporaneously. If the applicant also desires to remove, damage or relocate any protected tree(s) on the site, (s)he shall also contemporaneously file an application in accordance with Section 18.215.110. (Ord. 2481 § 1, 7-23-02; amended during 4/14 supplement. 1990 Code § 4-5115.)

18.215.170 Procedure for applications to remove, damage, relocate or retain landmark trees when a development project application is contemplated or pending.

(a) Section 18.215.160 Procedures Incorporated. Applications to remove, damage, relocate or retain landmark trees on lots for which development project applications are contemplated or pending shall be processed in accordance with Section 18.215.160 as supplemented or modified by this section.

(b) Recommendation of the Landscape Architect. The landscape architect shall make a recommendation on the proposal, which shall be included in the agenda report(s) prepared for the city council and for any subordinate body whose recommendation on the entire development project application is required by this code.

(c) Procedures for City Council Authorization. City council authorization to remove, damage or relocate a landmark tree in connection with a development project for which an application is contemplated or pending shall be given as follows:

(1) When City Council Approval of a Development Project Application Is Otherwise Required. When city council approval of an entire development project application is otherwise required by this code, the council's decision regarding the landmark tree shall be made as part of its action on the entire development project.

If the council's action on the entire development project application is required to be preceded by a recommendation of any subordinate official or body, such recommendation(s) shall encompass the proposal regarding the landmark tree.

(2) When City Council Approval of a Development Project Is Not Otherwise Required. When city council approval of an entire development project is not otherwise required by this code, the development project shall be processed in accordance with the procedures that would be followed in the absence of a landmark tree proposal, except that:

(A) Review by officials or bodies subordinate to the council shall end with the official or body that would have had authority to approve the development project in the absence of a landmark tree proposal;

(B) The action of the last official or body to review the project shall be a recommendation that the city council approve, conditionally approve or deny the entire development project, including the proposal pertaining to the landmark tree(s); and

(C) The city council shall approve, conditionally approve, or disapprove the entire development project, including the proposal pertaining to the landmark tree(s).

(3) Optional Procedure. In lieu of the procedure prescribed by subsection (c)(2) of this section, the applicant may, prior to the commencement of any public hearing conducted on the application, elect that the landmark tree proposal be processed in advance of a decision on the entire development project application as follows:

(A) The city council shall make the city's final decision on the landmark tree proposal prior to any decision by a subordinate official, board or commission to approve, conditionally approve or disapprove the entire development project or to recommend any such action.

The authority of subordinate officials or bodies to approve, conditionally approve or disapprove the development project or to recommend any such action shall be exercised in a manner consistent with the city council's prior landmark tree decision.

(d) Fees and Costs. All fees and other costs associated with applications made under this section shall be charged as components of the fees and costs charged for the entire development project application. The cost of any inspection or report required under this section shall be borne by the applicant.

(e) Tree Applications an Essential Part of Development Project Application. Applications for removal, damage or relocation of any landmark tree(s) shall be required as essential components of applications for development project approval, which shall not be deemed complete until the applications required by this chapter have been completed and filed. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5116.)

18.215.180 Responsibility and liability for unauthorized tree removal or damage.

All persons who, in violation of this chapter, remove or damage a tree, including proprietors and employees of tree service businesses, owners of the lot on which the tree is located, and persons who direct such removal or damage, shall be jointly and severally responsible and liable for violations of this chapter. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5117.)

18.215.190 Procedures for imposition of mitigation requirements for trees unlawfully removed.

(a) Investigation and Preliminary Imposition of Mitigation Requirement. When the landscape architect has cause to believe that a tree has been removed in violation of this chapter, (s)he shall conduct an investigation. If the investigation establishes that such removal has occurred and the identity of the responsible person(s) is preliminarily established, the landscape architect shall notify such person(s) by mail of his or her intent to impose on him or her specified mitigation requirements and investigation costs as authorized by this section.

(b) Mitigation Requirements. A person who removes a tree in violation of this chapter shall be required to provide mitigation in accordance with Section 18.215.090, or, in the case of a landmark tree, as established on a case-by-case basis by the landscape architect.

(c) Cost of Investigation. In addition to the above-stated mitigation requirements, the person(s) found to have violated this chapter shall pay the city's cost of investigation of the violation.

(d) Request for Hearing. The person(s) notified of the landscape architect's intent to impose mitigation requirements and payment of investigation costs shall have 10 days from the mailing of the notice to file a written request for a informal hearing before the landscape architect. Unless such a request is made, the landscape architect may order the earlier specified mitigation plus payment of investigation costs, which order shall not be subject to appeal. Any such order and the reasons supporting it shall be written and mailed to the person(s) affected. Time(s) for performance shall be specified.

(e) Hearing. If a timely request for a hearing is made, the landscape architect will conduct an informal hearing. If, on the basis of the hearing and the city's investigation, it is established that a tree has been removed in violation of this chapter, the landscape architect shall order mitigation and

payment of costs in accordance with this section. The landscape architect's order and the reasons supporting it shall be made in writing and shall be mailed to the person responsible. Time(s) for performance shall be specified.

(f) Appeal of Landscape Architect's Decision.

(1) Landscape Architect's Decision Appealable. The landscape architect's order made under this section is appealable to the city council by the person(s) affected by the order.

(2) Form and Time of Appeal. The appeal shall be made in writing and filed in the office of the city clerk no later than 10 days after mailing of the order of the landscape architect. The basis of the appeal shall be completely stated. The city council may refuse to consider matters not set forth in the written appeal.

(3) Notice of Appeal Hearing. Notice of the hearing of an appeal, whether by the director or the city council, shall be given by mail to the appellant at least 10 days prior to the hearing date.

(4) Hearing on Appeal. The appeal hearing shall be conducted de novo and generally in accordance with Chapter 1.25, as supplemented by this section.

(5) Notice of Decision on Appeal. Notice of the city council's decision on appeal and findings supporting it shall be mailed to the appellant. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5118.)

18.215.200 Penalties.

(a) Violation of this chapter may be remedied by any means available to remedy a violation of this code.

(b) The remedies for violation of this chapter are nonexclusive and cumulative.

(c) Notwithstanding Section 1.20.080, the administrative penalties that may be imposed for damaging or removing a tree in violation of Section 18.215.040, failing to replace a tree as required by Section 18.215.060, or failing to comply with a final order issued under Section 18.215.190 are as follows:

(1) A person committing a violation is subject to a fine in the amount of:

(A) Two hundred fifty dollars for the first offense;

(B) Seven hundred fifty dollars for the second offense; and

(C) One thousand dollars for the third and subsequent offenses; or

(2) A person committing a violation either knowingly or with intent to injure a tree is subject to a fine in the amount of $1,000 for each offense. (Ord. 2481 § 1, 7-23-02; Ord. 11-2010 § 10, 5-25-10. 1990 Code § 4-5119.)

18.215.210 Severability.

If any section, subsection, sentence, clause or phrase of this chapter is, for any reason, held to be invalid or unconstitutional by the decision of any court of competent jurisdiction, such decision shall not affect the validity of the remaining portions of this chapter. (Ord. 2481 § 1, 7-23-02. 1990 Code § 4-5120.)

Home < >
