City of Mountain View

Community Tree Master Plan

2015

City of Mountain View

Community Tree Master Plan

2015

Prepared for:

City of Mountain View
Community Services Department, Parks Division
201 South Rengstorff Ave.
Mountain View, California 94041
Phone: 650-903-6331

Prepared by:

Davey Resource Group
A Division of the Davey Tree Expert Company
6005 Capistrano Ave., Suite A
Atascadero, California 93422
Phone: 805-461-7500
Toll Free: 800-966-2021
Fax: 805-461-8501
www.davey.com/drg

Table of Contents

Acknowledgements

MOUNTAIN VIEW CITY COUNCIL

John McAlister, *Mayor*
Patricia Showalter, *Vice Mayor*
John M. Inks, *Councilmember*
R. Michael Kasperzak, Jr., *Councilmember*
Christopher R. Clark, *Councilmember*
Ken S. Rosenberg, *Councilmember*
Leonard M. Siegel, *Councilmember*

PARKS & RECREATION COMMISSION

Katherine Naegele, *Chair*
Jonathan Herbach, *Vice Chair*
Thida Cornes, *Commissioner*
Paul Hepfer, *Commissioner*
Helen Wolter, *Commissioner*

ENVIRONMENTAL PLANNING COMMISSION

Ellen Kamei, *Chair*
Margaret Capriles, *Vice Chair*
Todd Fernandez, *Commissioner*
Lisa Matichak, *Commissioner*
John Scarboro, *Commissioner*
Robert Cox, *Commissioner*
Kathy Trontell, *Commissioner*

CITY STAFF

Daniel H. Rich, *City Manager*
J.P. de la Montaigne, *Community Services Director*
Bruce Hurlburt, *Parks and Open Space Manager*
Rochelle Kiner, *Senior Administrative Analyst*
Community Services Department Staff
Public Works Department Staff
Community Development Department Staff
Information Technology Department Staff

COMMUNITY

Mountain View Trees
Residents/Participants

Images:

Shonda Ranson, *Communications Coordinator, City of Mountain View*
Davey Resource Group

Scope & Purpose

The purpose of the Community Tree Master Plan (CTMP) is to provide a guide for managing, enhancing, and growing Mountain View's community tree resource over the next 10 years. The plan also includes objectives for long-range planning to promote sustainability, species diversity, and greater canopy cover.

Community trees are the publicly-managed trees along streets, in parks, and at City facilities. Recognizing the significance of environmental and socioeconomic benefits provided by trees and their relationship with community values and expectations for a high quality of life, the Plan aims to:

- Preserve and improve the health and sustainability of the community's tree resource and the vital benefits that are provided to Mountain View and the region.
- Illustrate the value and benefit of community trees and promote engagement and appreciation for the urban forest.
- Support the preservation and enhancement of tree canopy throughout the community.
- Ensure that resources are in place to support the care and management of the community's tree resource.
- Communicate existing challenges and opportunities.
- Establish benchmarks for measuring the long-term success of management strategies.
- Promote shared vision and collaboration.

The Plan provides specific objectives and strategies for managing community trees, preserving and enhancing canopy cover across Mountain View (both public and private), and administering the Heritage Tree Program on nondevelopment and residential properties.

Executive Summary

Mountain View's community urban forest includes 26,166 publicly-managed trees on streets, in parks, and at city facilities. Along with their aesthetic contribution, these trees provide valuable and critical services to the community including benefits to air quality, water quality, energy savings, socioeconomics, public health, and wildlife habitat. The Community Tree Master Plan (CTMP) provides a guide for managing, enhancing, and growing this resource over the next 10 years along with long-range objectives for promoting sustainability, increasing diversity, and enhancing tree canopy cover throughout the community.

The structure and organization of the CTMP is based on the understanding of what we have, what we want, how we get there, and how we are doing. This structure, referred to as adaptive management, is commonly used for resource planning and management (Miller, R.W., 1988) and provides a good conceptual framework for managing community forest resources.

The plan development process involved a comprehensive review and assessment of the existing community tree resource, including composition, value, and environmental benefits. The process explored community values, existing regulations, and policies that protect both community trees and privately-owned Heritage Trees.

In addition to forestry staff, there are multiple stakeholders, internal and external, who play a role in the planning, design, care, and advocacy of the community forest. These stakeholders include the Urban Forestry Board, city departments, utility providers, nonprofit groups, and residents. Each of these stakeholders contributed to the development of this Plan.

What Do We Have?

Mountain View's dedication to the preservation of trees dates back to 1960 when City Council introduced the first ordinance establishing tree care services. Since that time, the community has continued to build a strong foundation for an exceptional forestry program. Considering that the community tree inventory was updated in 2007; a dynamic inventory management system maintains the database and tracks the location, maintenance history, and health of each tree; a GIS canopy assessment completed in 2013 mapped the location and extent of overall tree canopy (public and private) across Mountain View; a Resource Analysis that defines and benchmarks the composition, benefits, and replacement value of the community tree resource; tree protection regulations that promote the preservation and protection of community trees and privately-owned Heritage Trees; and a well-trained, dedicated forestry staff, Mountain View has the tools and information necessary to make well-informed and effective management choices.

With these tools and a healthy, established community forest, Mountain View is poised to realize increasing environmental benefits and value from its publicly-managed trees.

The primary challenges and opportunities for the community forestry program are:

- finite land area and limitations on available planting space;
- replacement of mature tree canopy lost through ongoing development;
- optimizing health and improving the structure and resiliency of the community tree resource to respond to drought, climate change, and emerging pests; and
- engaging the community in support of community trees and canopy expansion.

What Do We Want?

The review process identified six objectives for the CTMP:

- Preservation and Enhancement of Tree Canopy
- Sustainability, Health, and Safety in the Community Tree Resource
- Preservation and Enrichment of Wildlife and Habitat
- Increased Outreach and Education
- Increased Collaboration with Volunteers and Nonprofit Groups
- Review and Measure Attainment of the CTMP Objectives

Mountain View's Urban Forest Benchmark Values

Community Trees (Publicly-managed)	
Community Trees	26,166
Replacement Value	$85.7 million
Stocking Level	82%
Species Diversity	
Total number of unique species	230
Prevalence of top ten species	55%
Species exceeding recommended 10%	0
Benefits	
Total Annual Benefit	$8 million
Annual per Tree Benefit	$305
Tree Canopy Cover (Public and Private)	
Overall Canopy Cover	17.7%
Canopy Benefits (Public and Private)	
Overall carbon storage	$4 million
Annual Air Quality Benefits	$710,019
Annual Carbon Benefits	$199,884

How Do We Get There?

Plan objectives are supported by a comprehensive list of strategies and implementation measures that will support the success of the CTMP. Primary among these is:

- Increase canopy cover by 5 percentage points to an overall canopy cover of 22.7% (currently 17.7%).
- Adopt parking lot shade goals.
- Promote design and construction standards that increase soil volume, planting space, and pervious surface.
- Promote proactive maintenance with a minimum 7-year pruning/inspection cycle for all community trees.
- Develop and implement forestry practices and policies that protect birds and other wildlife.
- Enhance and maintain the City webpage for community trees.
- Foster relationships and facilitate collaboration with volunteers, nonprofits, neighborhood groups, and businesses.

How Are We Doing?

The success of the CTMP will be measured through the realization of objectives and demonstrated through increased value and environmental benefits in the community tree resource and enhancement and eventual growth of tree canopy throughout the City. The Plan identifies methods of measurement and a target date for each of the strategies. Perhaps the greatest measurement of success for the CTMP will be its level of success in meeting community expectations for the care and preservation of the community tree resource.

Once people of all ages understand how important trees are they value and care for them for the rest of their lives.

~Survey respondent

Introduction

Trees play an essential role in the community of Mountain View, providing numerous tangible and intangible benefits to residents, visitors, neighboring communities, and wildlife. Research demonstrates that healthy urban trees can improve the local environment and lessen the impact resulting from urbanization and industry (UEP[1]). Trees improve air quality, reduce energy consumption, help manage stormwater, reduce erosion, provide critical habitat for wildlife, and promote a connection with nature.

In addition to these direct improvements, healthy urban trees increase the overall attractiveness of a community and have been proven to increase the value of local real estate by 7 to 10% (Dwyer, et al, 1992). Trees in retail districts promote longer and more frequent shopping and greater sales (Wolf, 2007). Urban trees support a more livable community, fostering psychological health and providing residents with a greater sense of place (Ulrich, 1986; Kaplan, 1989). Community trees, both public and private, soften the urban hardscape by providing a green sanctuary and making Mountain View a more enjoyable place to live, work, and play.

Recognized since 2001 by the National Arbor Day Foundation as a Tree City USA, Mountain View has demonstrated that public trees are a valued community resource, an important component of the urban infrastructure, and a part of the City's identity.

Trees play an essential role in the community of Mountain View, providing numerous tangible and intangible benefits to residents, visitors, neighboring communities, and wildlife.

[1] Urban Ecosystems and Processes. USDA Forest Service Pacific Southwest Research Station.

Community

Mountain View is located between the Santa Cruz Mountains and the San Francisco Bay in the center of Silicon Valley. The community is home to national and international corporations, including Intuit, LinkedIn, Googleplex (Google's global headquarters) and many thriving smaller businesses. In the 1950s, Shockley Semiconductor Laboratories opened in Mountain View, later coining the term "Silicon Valley" and making Mountain View its birth place. With more than 76,000 residents in just over 12 square miles, the City takes pride in its diversity and provides excellent public services and facilities. Mountain View is committed to walk the line between innovation and the traditional values of a strong neighborhood community by prioritizing safety and public education.

Average temperatures in Mountain View range from mid-70°F in summer to mid-40°F in winter. In winter, residents can expect 3-4 inches of rainfall per month. Summer months, however, are often relatively dry (<1 inch per month) and some tree species can experience serious drought if not irrigated. In the North Bayshore Area, high salinity in the soil compounds the issue.

Mountain View has been committed to preserving urban trees since 1960 when the City Council introduced an ordinance to establish tree care services. The Street Tree Ordinance (Chapter 32.1) was established in 1961, followed by the Heritage Tree Ordinance (Chapter 32.2) in 1975. In 2006, residents concerned about urban forestry formed Mountain View Trees, a non-profit organization whose mission is to supplement the City's efforts by helping to "sustain and enhance the trees of Mountain View through community stewardship, education and advocacy."

The inventory of publicly-maintained community trees includes 26,166 existing trees on streets, in parks, and at city facilities. Inventory data was used in

conjunction with i-Tree *Streets* (v5.1.3; i-Tree v6.0.4) to develop a comprehensive analysis of the current structure, benefits, and value of this resource[2]. Community trees provide a substantial portion of the overall urban forest canopy benefits, and residents rely on the City of Mountain View's Community Services Department to protect and maintain this vital resource. Within the Department, the Division of Parks and Open Space is responsible for the care of 39 urban parks and over 9 miles of trails. The Forestry and Roadway Landscape Division maintains vegetation within the right-of-way, which includes street and median trees as well as trees located in parks.

To ensure the preservation and sustainability of community trees and overall tree canopy throughout the community, City Council adopted two major goals for fiscal years 2013-15:

- Retain and improve green space and canopy.
- Establish guidelines for tree preservation and planting in development projects with particular emphasis on canopy and habitat preservation.

A review and update of the existing Urban Forestry Management Plan (2007) is in support of these goals. To develop the updated Plan, the City of Mountain View contracted with Davey Resource Group (DRG) in 2014. DRG worked closely with City staff to examine the current structure of both the tree resource and urban forestry program. The process included a review of existing policies and regulations, internal and interdepartmental relationships, and an exploration of community values and support for public trees. In addition, DRG reviewed overall canopy cover (public and private) across the City. The result is a plan that will guide community leaders, planners, and urban forest managers in making decisions about matters affecting the management, development, and policy of Mountain View's community urban forest.

Mission

The mission of the Community Services Department is to:

". . . create community through people, parks, and programs; provide recreational experiences; promote health and wellness; foster human development; protect environmental and open space resources; strengthen security and safety; support economic growth; facilitate community problem solving; and strengthen community image and sense of place."

[2] Urban Forest Resource Analysis (2014).

Benefits of Urban Trees & Canopy Cover

Urban and natural forests work 24/7 to mitigate the effects of urbanization and development and to protect and enhance lives within the community in the following ways:

Air Quality

Urban trees improve air quality in five fundamental ways:

- Reducing particulate matter (e.g., dust and smoke)
- Absorbing gaseous pollutants
- Shade and transpiration
- Reducing power plant emissions
- Increasing oxygen levels

They protect and improve air quality by intercepting particulate matter (PM_{10}), including dust, ash, pollen, and smoke. The particulates are filtered and held in the tree canopy where they are eventually washed harmlessly to the ground. Trees and forests absorb harmful gaseous pollutants like ozone (O_3), nitrogen dioxide (NO_2), and sulfur dioxide (SO_2). Shade and transpiration reduces the formation of O_3, which is created during higher temperatures. In fact, scientists are now finding that some trees may absorb more volatile organic compounds (VOC's) than previously thought (Karl, T. et al 2010; Science NOW, 2010). VOC's are a class of carbon-based particles emitted from automobile exhaust, lawnmowers, and other human activities.

By reducing energy needs, trees also reduce emissions from the generation of power. And, through photosynthesis, trees and forests increase oxygen levels.

Mountain View's tree canopy is directly improving air quality by absorbing and filtering 2,051 tons of pollutants every year, including nitrogen dioxide, ozone, sulfur dioxide, and particulates

~CTMP, Tree Canopy Cover (2014)

Energy Savings

Urban trees and forests modify climate and conserve energy in three principal ways:

- Shading dwellings and hardscape
- Transpiration
- Wind reduction

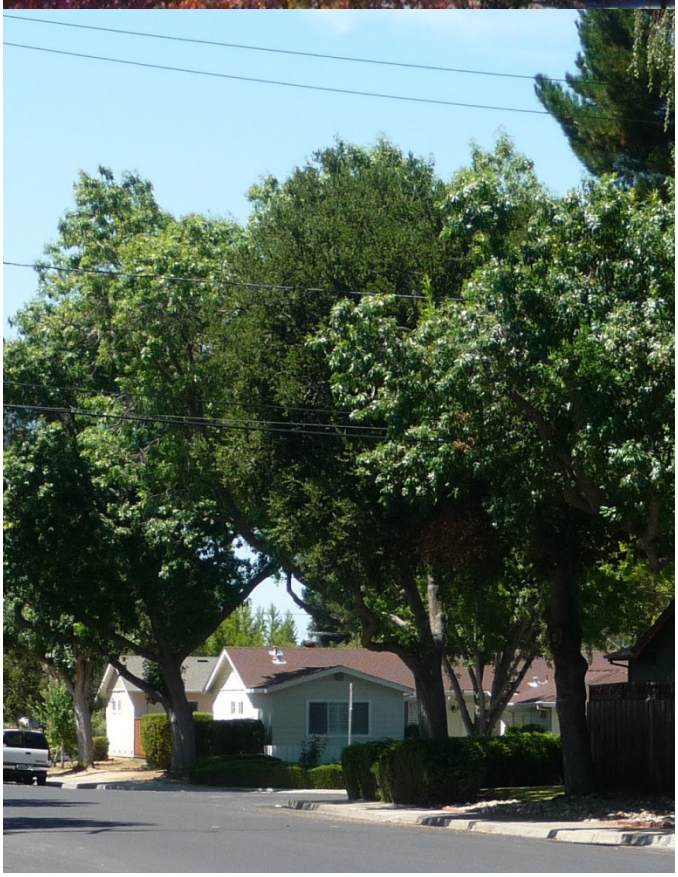
Shade from trees reduces the amount of radiant energy absorbed and stored by hardscapes and other impervious surfaces, thereby reducing the heat island effect, a term that describes the increase in urban temperatures in relation to surrounding locations. Transpiration releases water vapor from tree canopies, which cools the surrounding area. Through shade and transpiration, trees and other vegetation within an urban setting modify the environment and reduce heat island effects. Temperature differences of more than 9°F (5°C) have been observed between city centers without adequate canopy cover and more vegetated suburban areas (Akbari et al, 1997).

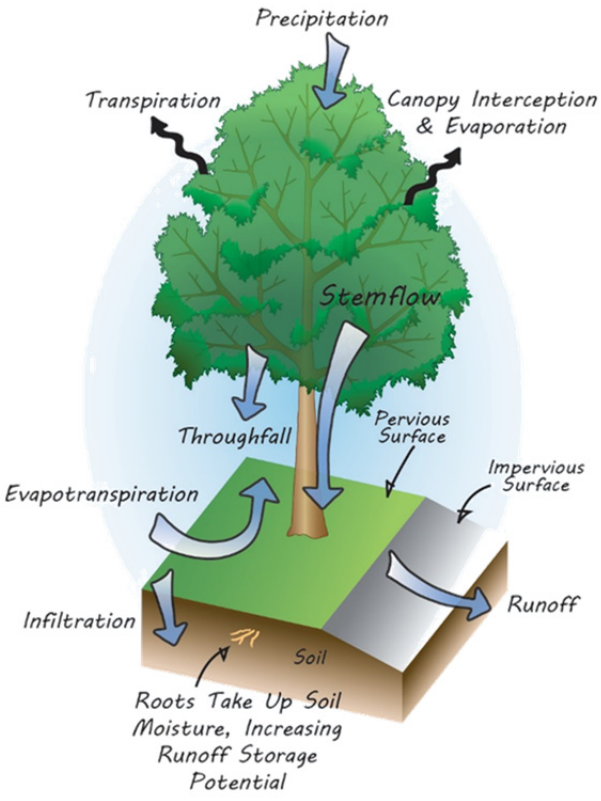
Trees reduce wind speeds by up to 50% and influence the movement of warm air and pollutants along streets and out of urban canyons. By reducing air movement into buildings and against conductive surfaces (e.g., glass and metal siding), trees reduce conductive heat loss from buildings, translating into potential annual heating savings of 25% (Heisler, 1986).

Reducing energy needs has the added bonus of reducing carbon dioxide (CO_2) emissions from fossil fuel power plants.

One acre of tree canopy in Mountain View can provide $1,233 in annual energy savings when trees are planted on the western, eastern, and southern sides of structures.

~Urban Forest Resource Analysis (2014)





Water Quality

Trees and forests improve and protect the quality of surface waters, such as creeks, rivers, and the San Francisco Bay, by reducing the impacts of stormwater runoff through:

- Interception
- Increasing soil capacity and rate of infiltration
- Reducing soil erosion

Trees intercept rainfall in their canopy, which act as a mini-reservoir (Xiao et al, 1998). During storm events, this interception reduces and slows runoff. In addition to catching stormwater, canopy interception lessens the impact of raindrops on barren soils. Root growth and decomposition increase the capacity and rate of soil infiltration by rainfall and snowmelt (McPherson et al, 2002). Each of these processes greatly reduce the flow and volume of stormwater runoff, avoiding erosion and preventing sediments and other pollutants from entering streams, rivers, lakes, and the Bay.

Urban stormwater runoff is a major source of pollution for surface waters and riparian areas, threatening aquatic and other wildlife as well as human populations. Requirements for stormwater management are becoming more stringent and costly. Reducing runoff and incorporating urban trees in stormwater management planning has the added benefit of reducing the cost of stormwater management, including the expense of constructing new facilities necessary to detain and control stormwater as well as the cost of treatment to remove sediment and other pollutants.

Each acre of tree canopy in Mountain View is intercepting approximately 57,933 gallons of stormwater every year.

On average, each coast live oak Intercepts and diverts 1,506 gallons of stormwater.

~Urban Forest Resource Analysis (2014)

Carbon Reduction

As environmental awareness continues to increase, governments are paying particular attention to global warming and the effects of greenhouse gas (GHG) emissions. As energy from the sun (sunlight) strikes the Earth's surface it is reflected back into space as infrared radiation (heat). Greenhouse gases absorb some of this infrared radiation and trap this heat in the atmosphere, increasing the temperature of the Earth's surface. Many chemical compounds in the Earth's atmosphere act as GHGs, including methane (CH_4), nitrous oxide (N_2O), carbon dioxide (CO_2), water vapor, and human-made gases/aerosols. As GHGs increase, the amount of energy radiated back into space is reduced, and more heat is trapped in the atmosphere. An increase in the average temperature of the earth may result in changes in weather, sea levels, and land-use patterns, commonly referred to as "climate change." In the last 150 years, since large-scale industrialization began, the levels of some GHGs, including CO_2, have increased by 25% (U.S. Energy Information Administration).

California's Global Warming Solutions Act (AB 32) passed in 2006 set the 2020 GHG emissions reduction goal into law. In December 2007, the California Air Resources Board (ARB) approved the 2020 emission limit of 427 million metric tons of carbon dioxide equivalent (CO_2e). As of 2007, regulations require that the largest industrial sources of GHG must report and verify their emissions. In 2011, the ARB adopted the cap-and-trade regulation. Under a cap-and-trade system, an upper limit (or cap) is placed on GHG emissions. This cap can be applied to any source, industry, region, or other jurisdictional level (e.g., state, national, or global). Regulated entities are required to either reduce emissions to required limits or purchase (trade) emission offsets in order to meet the cap. In 2011, the ARB approved four offset protocols for issuing carbon credits under cap-and-trade including the Forest Offset Protocol (ARB, 2011). This Protocol recognizes the important role forests play in fighting climate change.

The USDA Forest Service Urban Ecosystems and Social Dynamics Program (EUP) recently led the development of an Urban Forest Project Reporting Protocol. The protocol, which incorporates methods of the Kyoto Protocol and Voluntary Carbon Standard (VCS), establishes methods for calculating reductions, provides guidance for accounting and reporting, and guides urban forest managers in developing tree planting and stewardship projects that could be registered for GHG reduction credits (offsets). The protocol can be applied to urban tree planting projects within municipalities, campuses, and utility service areas anywhere in the United States.

Trees and forests reduce atmospheric carbon dioxide (CO_2) in two ways:

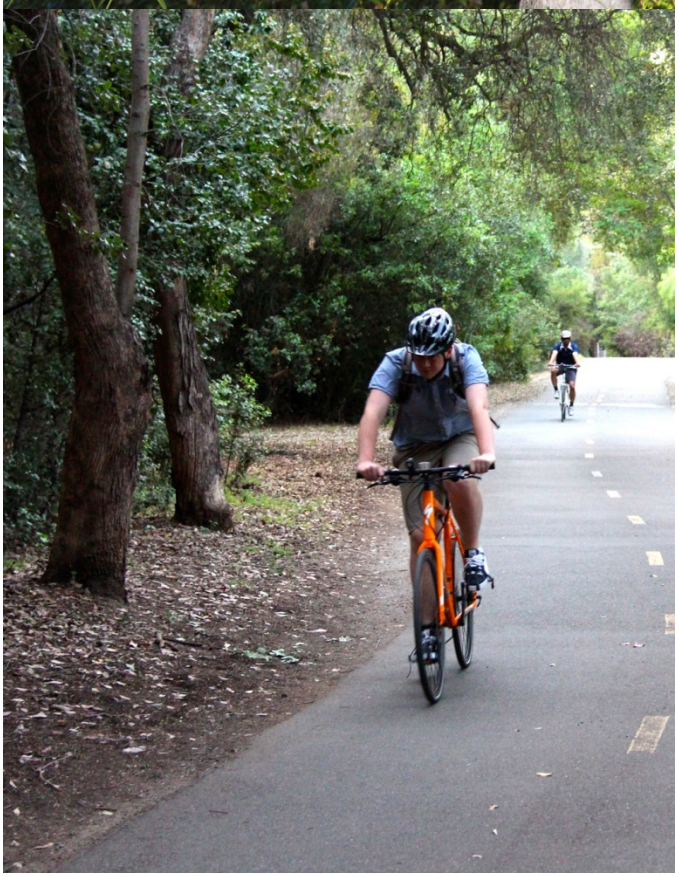
- Directly, through growth and carbon sequestration
- Indirectly, by lowering the demand for energy

Trees and forests directly reduce CO_2 in the atmosphere through growth and sequestration of CO_2 in woody and foliar biomass. Indirectly, trees and forests reduce CO_2 by lowering the demand for energy and reducing the CO_2 emissions from the consumption of natural gas and the generation of electric power.

Mountain View's urban tree canopy is directly sequestering 10,323 tons of carbon each year.

On average, a single coast live oak annually sequesters 227 pounds of carbon.

~CTMP Tree Canopy Cover (2014) and Urban Forest Resource Analysis (2014)



Aesthetic, Habitat, Socioeconomic, and Health Benefits

While perhaps the most difficult to quantify, the aesthetic and socioeconomic benefits from trees may be among their greatest gifts, including:

- Beautification, comfort, and aesthetics
- Shade and privacy
- Wildlife habitat
- Opportunities for recreation
- Reduction in violent crime
- Creation of a sense of place and history
- Human health
- Reduced illness and reliance on medication and quicker recovery from injury or illness

Some of these benefits are captured as a percentage of property values, through higher sales prices where individual trees and forests are located.

While some of the benefits of forests are intangible and/or difficult to quantify (e.g., the impacts on physical and psychological health, crime, and violence), empirical evidence of these benefits does exist (Kaplan, 1989; Ulrich, 1986). However, there is limited knowledge about the physical processes at work, and their interactions make quantification imprecise. Exposure to nature, including trees, has a healthy impact on humans, such as increased worker productivity, higher test scores, reduced symptoms of ADD, and faster recovery times following surgery. In addition, trees and forests have positive economic benefits for retailers. There is documented evidence that trees promote better business by stimulating more frequent and extended shopping and a willingness to pay more for goods and parking (Wolf, 2007).

In addition, trees and forestlands provide critical habitat (foraging, nesting, spawning, etc.) for mammals, birds, and fish and other aquatic species, along with limitless opportunities for recreation,

offering a healthful respite from the pressures of work and everyday stress.

Calculating Tree Benefits

Communities can calculate the benefits of their urban forest by using a complete inventory or sample data in conjunction with the USDA Forest Service i-Tree software tools. This state-of-the-art, peer-reviewed software suite considers regional environmental data and costs to quantify the ecosystem services unique to a given urban forest resource.

Individuals can calculate the benefits of trees to their property by using the **National Tree Benefit Calculator** (www.treebenefits.com/calculator) or with **i-Tree Design**. www.itreetools.org/design).

What Do We Have?

Mountain View's Urban Forestry History

The National Arbor Day Foundation has acknowledged the City of Mountain View as a Tree City USA since 2001 in recognition of the community's commitment to the urban forest. However, Mountain View's dedication to the preservation of trees dates back to 1960 when the City Council introduced the first ordinance establishing tree care services.

The Street Tree Ordinance (Chapter 32) was established in 1961. The ordinance is intended to protect the community's street trees[3] and includes regulations for their pruning and care.

To encourage the preservation of large, mature trees the Heritage Tree Ordinance (Chapter 32.22-32.39) was adopted in 1975. The ordinance, which applies to both public and private trees, regulates the removal or destruction of Heritage Trees, defined as any tree which has a trunk (or multi-trunk) measuring 48 inches in circumference or greater at breast height (54" above grade). All species of oak (*Quercus*), redwood (*Sequoia*), and cedar (*Cedrus*) are considered to be Heritage Trees when the trunk measurement is 12 inches in circumference or greater.

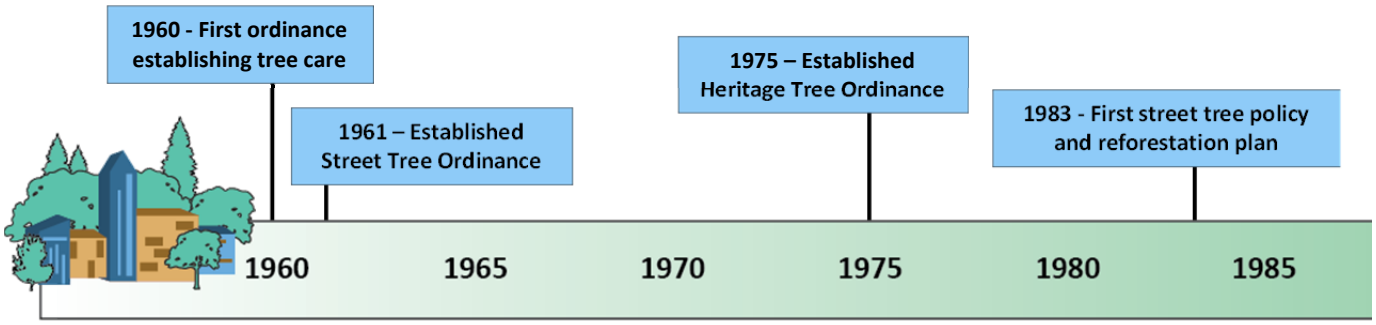
In 1983, the City developed the first street tree policy and reforestation plan and in 1989 they introduced the Arbor Day Program, where residents were provided with free trees[4].

In 1993, development was increasing and the City recognized the need to establish an Urban Forestry Management Program to protect and preserve community trees. The primary goals of the program are to improve service to the community through long-range planning, cyclical maintenance, and ordinance enforcement. The City collected an inventory of public (community) trees and developed a management plan.

In 1994, the community tree inventory was converted to an electronic database (TreeKeeper®) providing the City with the ability to record and track inventory data, including location, species, size, condition, maintenance needs, and history. That same year saw the establishment of the annual Forestry Capital Improvement Program to fund the maintenance of large trees and the replenishment of the urban forest.

The inventory was updated in 2007 by a team of International Society of Arboriculture (ISA) certified arborists from DRG. The update included collecting the GIS location of each tree as well as updating information about the species, size, condition, and maintenance needs.

This information was used to develop an updated Urban Forestry Management Plan.



[3] Street Trees are trees located in the public right-of-way, which is typically defined as five feet from the back edge of the sidewalk or ten feet from the beginning of the curb edge.

[4] Program was put on hold from 1993 to 1999 due to funding constraints.

Forestry staff continues to manage the inventory database by adding trees in newly developed areas and tracking removals, replacements, and maintenance history.

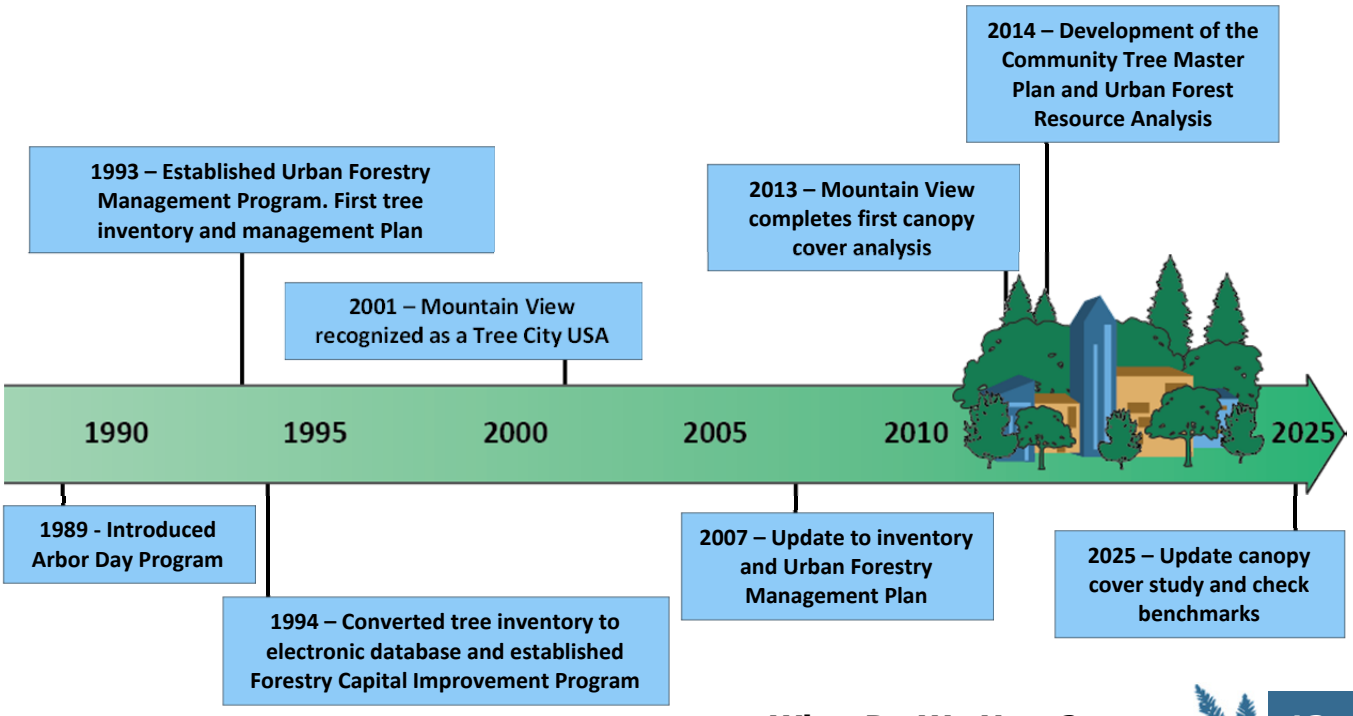
Recognizing that canopy cover is the critical factor in preserving urban forest benefits, the City conducted a canopy cover analysis in 2013. The analysis, which does not differentiate between private and public trees, used high-resolution aerial imagery to map the location and extent of tree canopy across the community. This information can be used with other GIS layers (e.g., zoning, land use, and parcel data) to better understand the distribution of tree canopy, identify areas of focus for additional tree planting, and as a benchmark to measure change over time.

For fiscal years 2013-15, Mountain View's City Council adopted two major goals related to the urban forest:

- Retain and improve green space and canopy.
- Establish guidelines for tree preservation and planting in development projects with a particular emphasis on canopy and habitat preservation.

In support of these goals, the Community Tree Master Plan (CTMP) provides an update to the Urban Forestry Management Plan (2007). The plan development process included analysis of the overall canopy cover in Mountain View, review of the Urban Forestry Program, public outreach and consideration of stakeholder input, and a comprehensive analysis of the community tree resource. To provide a foundation for the plan along with benchmark values for measuring the outcomes of objectives and strategies, current inventory data was analyzed using i-Tree's Streets (Streets v5.1.3; i-Tree v6.0.4). The resulting report provides an in-depth analysis of the structure, value, and benefits provided by Mountain View's community urban forest (Urban Forest Resource Analysis, 2014).

Mountain View's dedication to the preservation of trees dates back to 1960 when the City Council introduced the first ordinance establishing tree care services.



Community Tree Resource

Mountain View's community urban forest includes 26,166 trees on streets, in parks, and at City facilities. To replace these trees with trees of similar size, species, and condition would cost nearly $85.7 million.

Composition

Understanding the structure, composition, and condition of an urban forest resource is essential to developing effective management strategies. The Urban Forest Resource Analysis (2014) found the following characteristics define Mountain View's community urban forest:

- 84% of community trees are on streets and medians. 16% are in parks.
- The inventory includes more than 230 unique species.
- The top ten species represent 55% of the overall population (Figure 1).
- The predominant species are coast redwood (*Sequoia sempervirens*, 10%), London planetree (*Platanus acerifolia*, 9%), and Chinese pistache (*Pistacia chinensis*, 7%).
- The resource is established, with 7% of trees measuring greater than 24 inches in diameter (DBH[5]).
- Overall, community trees are in good condition.
- Community trees are providing approximately 350 acres of canopy cover.
- To date, community trees have sequestered 23,988 tons of carbon (CO_2).
- The stocking level is 82%, based on 32,032 planting sites and 26,166 existing trees.
- 92% of available planting sites are street tree locations (Figure 2).

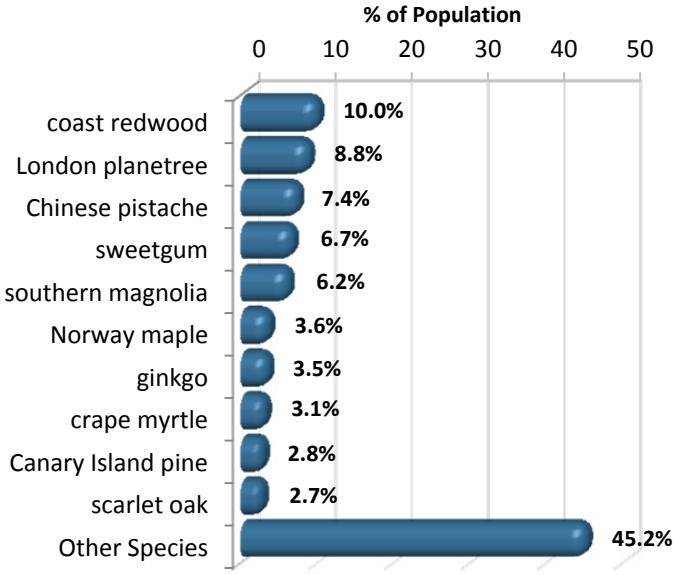


Figure 1. Prevalent species in Mountain View's community urban forest

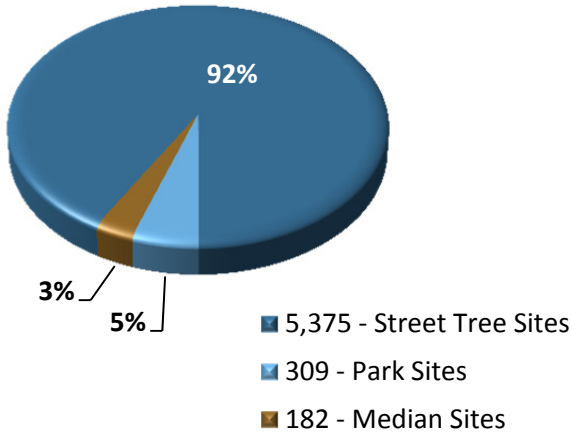


Figure 2. Vacant planting sites by location

Benefits

Based on the current composition, Mountain View's community trees provide $8 million in benefits each year, an average of $305 per tree (Figure 3). These benefits include:

- Reduction in the use of electricity and natural gas through shading and climate effects, valued at $431,062.
- Additional sequestration of 1,330 tons of CO_2, valued at $35,535.

[5] DBH. Diameter at breast height, measured at 4'6" above the ground.

- The removal and avoidance of 16.3 tons of air pollutants, including nitrogen dioxide (NO_2), ozone (0_3), sulfur dioxide (SO_2), and small particulate matter (PM_{10}); an overall value of $272,129.
- Interception of 20.3 million gallons of stormwater, valued at $157,985.
- Benefits to property value, aesthetics, socioeconomics, and health exceed $7 million annually.

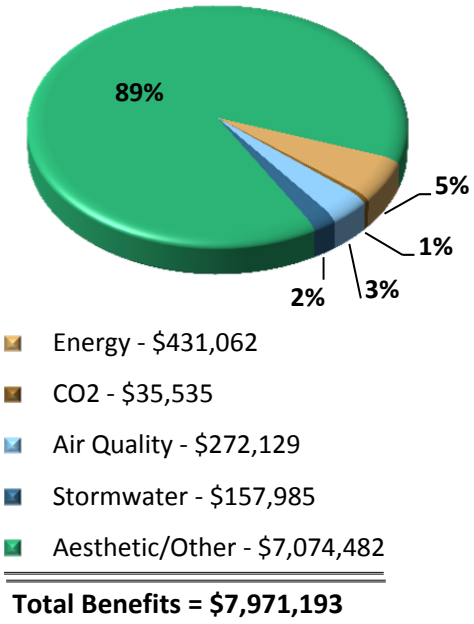


Figure 3. Annual benefits from Mountain View's community urban forest

Benefit versus Investment Ratio

When Mountain View's annual investment of $1.5 million ($56/tree) for maintenance of community trees is considered, the annual net benefit (benefits minus investment) to the community is more than $6.5 million. In other words, for every $1 invested in community trees, Mountain View receives $5.43 in benefits.

Maximizing Benefits

An urban forest is a living and dynamic resource, changing over time and in constant response to its environment. The health and stability of the urban forest can be influenced by many factors, including pruning, irrigation, climate fluctuations, emerging pests and disease, as well as development and new tree planting.

Annual benefits are based on the composition (size of trees, number of trees, condition, and species) of the current inventory. Maximizing the use of available planting space by gradually increasing the stocking level will increase the overall benefits over time. Where space allows, every effort should be made to plant large-stature species as greater canopy cover and canopy density are the key drivers of environmental benefits.

In addition to filling vacant planting sites, it is also important to plan for the replacement of existing mature trees and species that are being phased out of the inventory (e.g., Sweetgum, *Liquidambar styraciflua*).

Sustainability

A sustainable urban forest is healthier, more resilient to pests, disease, and climate fluctuations and, as a result, more cost effective. As urban forests evolve over time, managers revise species recommendations based on past performance and emerging prospects. Because trees are relatively long-lived organisms, urban forests like Mountain View's are often a combination of well-adapted, high-performance species mixed with some species that may have proved less desirable. Nevertheless, the vital benefits of tree canopy require the preservation of existing, healthy trees in most situations.

When appropriate, planting native and adapted species is a good strategy for building a sustainable urban forest. The urban environment presents many challenges to tree health, including

restricted planting sites, poor and compacted soils, pollution, and water limitations. Selecting the appropriate species can help control maintenance costs, reduce damage to infrastructure, and manage the need for pest and disease control measures. A diverse population can significantly increase overall performance and resiliency in the urban forest. While it may seem reasonable to rely heavily on native species, it is important to recognize that no species are native to the urban environment. Selecting the "right tree for the right spot" requires consideration of multiple factors, including site and soil characteristics, irrigation infrastructure, landscape objectives, and tree density.

A diverse population can help to minimize detrimental consequences in the event of storms, drought, disease, pests, or other stressors that can severely affect an urban forest and the flow of benefits and costs over time. Catastrophic pathogens, such as Dutch elm disease (*Ophiostoma ulmi*), emerald ash borer (*Agrilus planipennis*), Asian longhorned beetle (*Anoplophora glabripennis*), and sudden oak death (SOD) (*Phytophthora ramorum*) are some examples of unexpected, devastating, and costly pests and pathogens that highlight the importance of diversity and the balanced distribution of species and genera.

There is a widely accepted rule that no single species should represent greater than 10% of the total population, and no single genus more than 20% (Clark et al, 1997). No genus or species in Mountain View's community urban forest are exceeding these values. The most common genera are *Sequoia* (10%), *Platanus* (9%), and *Pistacia* (7%). However, the existing City Street Tree Master List (2012) identifies a designated tree for each public street in Mountain View. This policy results in a monoculture in many neighborhoods that, while attractive from an aesthetic viewpoint, can prove devastating on a neighborhood level if the species becomes susceptible to an emerging pest or disease or becomes undesirable for performance reasons.

Photo Credit: USDA Forest Service Pacific Northwest Research Station. *http://www.fs.fed.us/pnw/news/2013/01/tree-human-health.shtml)*

A tree-lined street in Toledo, Ohio before emerald ash borer infestation (Left, 2006) and three years later after the invasive insect spread through the neighborhood (Below, 2009).

Tree Canopy Cover

The amount and distribution of leaf surface area is the driving force behind the urban forest's ability to produce benefits for the community (Clark et al, 1997). As canopy cover increases, so do the benefits. Tree canopy is the layer of leaves, branches, and stems of trees and other woody plants that cover the ground when viewed from above. Understanding the location and extent of tree canopy is critical to developing and implementing sound management strategies that will promote the smart growth and sustainability of Mountain View's urban forest and the invaluable benefits it provides.

The City of Mountain View completed a canopy assessment in November 2013 using a heads-up digitizing approach and high resolution (4.8 inch), leaf-on aerial imagery captured in September 2013. The assessment does not distinguish between publicly-owned and privately-owned trees since trees provide benefits to the community that extend beyond property lines. The assessment resulted in a GIS[6] map detailing the location and extent of existing tree canopy. This information establishes a benchmark for measuring the success of long-term objectives and can be combined with other GIS layers to determine:

- Changes in tree canopy over time and in relation to growth and development.
- The location and extent of canopy at virtually any level, including neighborhood, land use, zoning, parking lots and parcels.
- The location of available planting space and strategies to increase canopy in underserved areas.

The data, combined with existing and emerging urban forestry research and applications, can provide additional guidance for determining a balance between growth and preservation and aid in identifying and assessing urban forestry opportunities.

Canopy Cover Summary

The City of Mountain View encompasses a total area of 12.2 square miles. The overall area mapped in the tree canopy assessment included 11.9 square miles (7602.5 acres) (Map 1). Using the City's GIS canopy layer in conjunction with land use, zoning, and parcel data and i-Tree Canopy software, DRG determined that the following information characterizes tree canopy cover in the community:

- 2.1 miles^2 (1,346 acres) of overall tree canopy, including trees and woody shrubs, an average canopy cover of 17.7%.
- 26% (350 acres) of overall tree canopy is from community trees (Urban Forest Resource Analysis, 2014).
- An estimated overall impervious surface cover (e.g., pavement and structures) of 54% (i-Tree Canopy)[7].
- An estimated overall pervious surface cover (e.g., grass, bare soil, and low-lying vegetation) of 24% (i-Tree Canopy).
- An estimated 1% overall average of open water (i-Tree Canopy).
- 60 acres of tree canopy is in parks, an average canopy cover of 7%.
- 14 acres of tree canopy is in schools, an average canopy cover of 24%.
- To date, Mountain View's urban forest has sequestered (stored) an estimated 204,068 tons of carbon dioxide (CO_2), valued at nearly $4 million (i-Tree Canopy).

[6] GIS. Geographic information system, used to capture, store, and analyze spatial (geographical) data.

[7] Estimations based on i-Tree Canopy analysis using Google Maps aerial imagery.

- Annually, the urban forest sequesters an additional estimated 10,323 tons of CO_2, valued at $710,019 (i-Tree Canopy).
- Annually, an estimated 2,051 tons of air pollutants are intercepted or absorbed by Mountain View's urban forest, including carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), and particulate matter (PM_{10} and $PM_{2.5}$) (i-Tree Canopy).

Overall Tree Canopy Cover

Currently there are 1,346 acres of tree canopy, both public and private, in Mountain View covering 17.7% of the City (Map 1). Community trees provide approximately 350 acres (26%) of the overall canopy cover. Of community trees, coast redwood (*Sequoia sempervirens*) provide the greatest canopy cover (51 acres) followed by London planetree (*Platanus acerifolia*, 41 acres) and Chinese pistache (*Pistacia chinensis*, 21 acres).

Canopy Cover by Zoning

Zoning is the practice of mapping designated zones to regulate the use, form, design, and compatibility of property development. Tree canopy cover can vary widely between different zoning distinctions (Figure 4). In Mountain View, Flood Plain zones have the highest percentage of canopy with an average tree cover of nearly 40%. Parcels zoned for Mobile Homes have the least, with an average canopy cover less than 6%.

The amount of impervious surface (e.g., roads, sidewalks, parking lots, and structures) can also differ widely as a result of zoning and land use, posing limitations to the amount of tree canopy and tree canopy potential (possible tree canopy). While impervious surfaces were not mapped in the tree canopy cover assessment, flood plains generally have a very low percentage of impervious cover, while commercial, industrial, and mobile home parcels often have a relatively high proportion of impervious surface area.

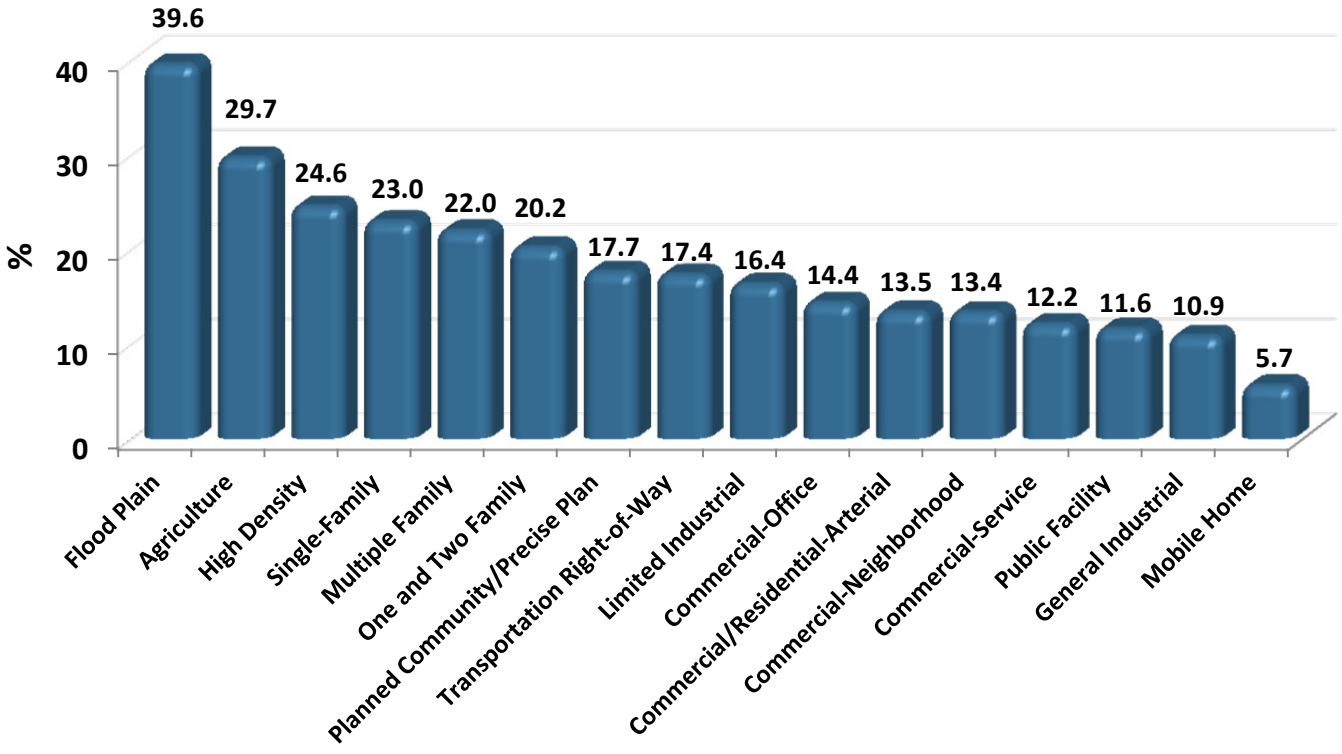


Figure 4. Tree canopy cover by zoning

North

Key

City Limits

Canopy Cover

No Scale

Map 1. Mountain View Tree Canopy Cover

Park Canopy Cover

Mountain View's 27 parks encompass 857 acres and include 60 acres of tree canopy for an overall average canopy cover of 7% (Table 1). Mountain View's largest park, Shoreline Regional Park, has 29 acres of tree canopy and an average canopy cover of only 4%. However, this large regional park near the Bay was developed over a previous landfill. In addition to the limits imposed by the landfill, marshlands, burrowing owl habitat, and a links style golf course all impose limitations to the number and size of trees that can be planted in the park.

771 N. Rengstorff Park (1.2 acres) has the highest average canopy cover of 80%, followed by Fairmont Park (70.6%), and Jackson Park (63.6%).

Table 1. Tree Canopy Cover in Mountain View Parks

Park	Park Acres	Canopy Acres	% Canopy
Charleston Park	6.48	1.74	26.85
Chetwood Park	0.86	0.27	31.40
Creekside Park	0.78	0.46	58.97
Cuesta Annex	12.67	2.62	20.68
Cuesta Park	32.56	7.38	22.67
Dana Park	0.42	0.21	50.00
Del Medio Park	0.38	0.03	7.89
Devonshire Park	0.86	0.30	34.88
Eagle Park	5.17	2.46	47.58
Fairmont Park	0.34	0.24	70.59
Gemello Park	0.48	0.14	29.17
Jackson Park	0.77	0.49	63.64
Klein Park	1.36	0.35	25.74
Magnolia Park	0.92	0.25	27.17
Mariposa Park	0.61	0.12	19.67
McKelvey Park	4.27	0.73	17.10
Mercy-Bush Park	0.65	0.20	30.77
Pioneer Park	3.15	1.61	51.11
Rengstorff Park	16.92	6.43	38.00
Rex-Manor Park	0.41	0.13	31.71
San Veron Park	2.08	0.59	28.37
Shoreline Regional Park	753.00	29.33	3.90
Sierra Vista Park	0.80	0.17	21.25
Sylvan Park	8.37	2.14	25.57
Thaddeus Park	0.83	0.24	28.92
Varsity Park	0.48	0.18	37.50
771 N Rengstorff Park	1.22	0.98	80.33
All Parks	**856.84**	**59.79**	**6.98**

School Canopy Cover

Mountain View's 13 public schools encompass 105 acres and include nearly 14 acres of tree canopy for an overall average canopy cover of 23.8% (Table 2). Mountain View High School has the greatest overall area (17 acres) and an average canopy cover of 3.6%. Castro School/Park (4.2 acres) has the greatest overall canopy cover of 33%, followed by Bubb School/Park (23.8%), and Monta Loma School/Park (21.3%).

Table 2. Tree Canopy Cover in Schools

School	School Acres	Canopy Acres	% Canopy
Bubb School / Park	9.18	2.18	23.75
Castro School / Park	4.18	1.38	33.01
Cooper School / Park	11.01	1.70	15.44
Crittenden School / Park	7.72	0.6	7.77
Graham School / Park	9.54	0.26	2.73
Huff School / Park	6.50	0.38	5.85
Landels School / Park	8.49	0.94	11.07
Monta Loma School / Park	5.67	1.21	21.34
Mountain View High School / Park	16.86	0.60	3.56
Slater School / Park	3.39	0.34	10.03
Springer School / Park	5.50	0.10	1.82
Stevenson-Theuerkauf School / Park	8.54	1.51	17.68
Whisman School / Park	8.60	2.71	31.51
All Schools	**105.18**	**13.91**	**23.75**

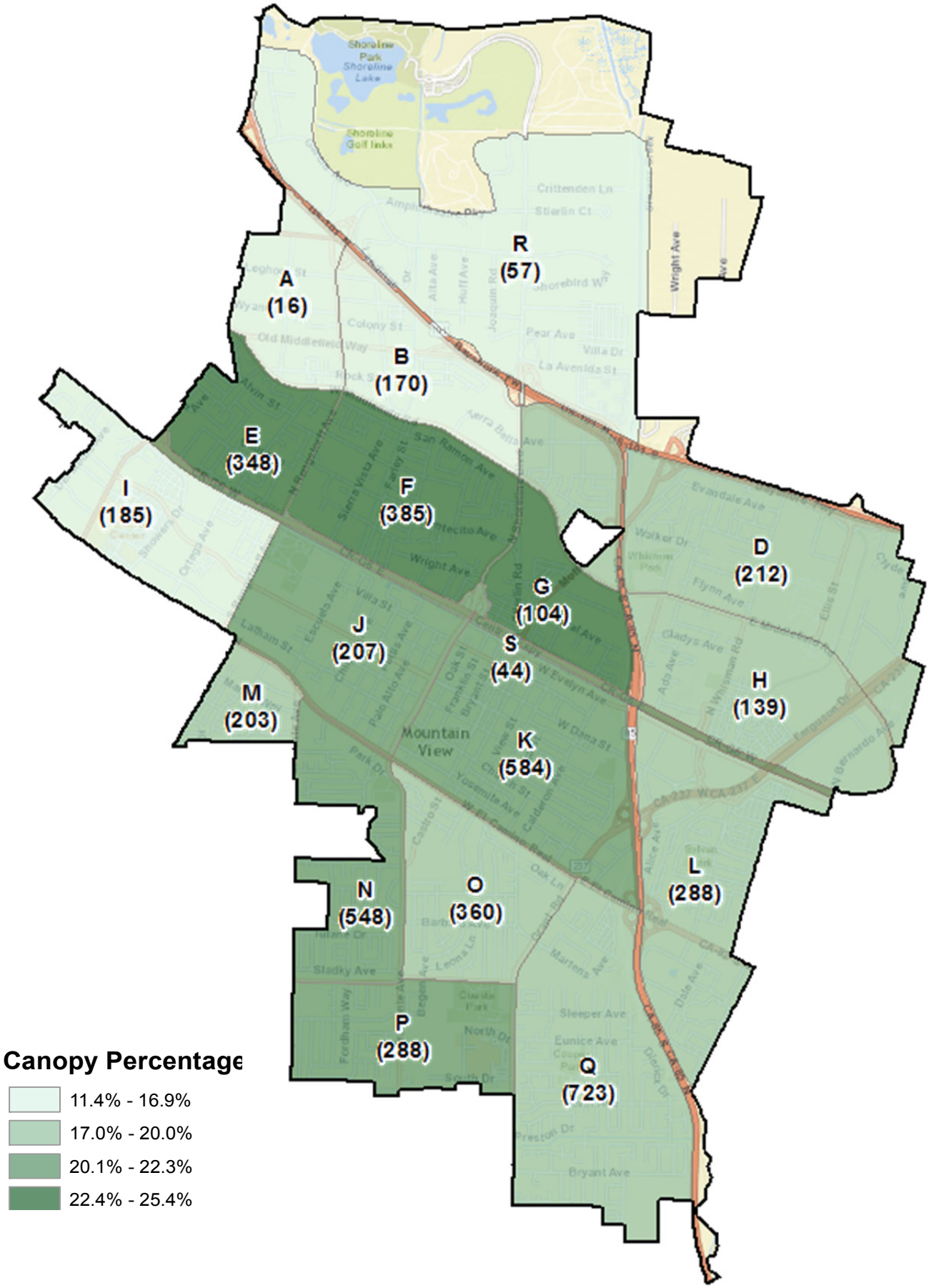
Maintenance Zones

To coordinate maintenance activities and pruning/inspection cycles, the Forestry Division divides the City into 19 maintenance zones (A-S, Map 2). The overall average canopy cover in maintenance zones is 20%.

Zone G has the highest average canopy cover at 25%, followed by Zone E (24%) (Table 3). Zone A has the lowest average canopy cover at 11%.

Table 3. Tree Canopy Cover by Maintenance

Maintenance Zone	Zone Acres	Canopy Acres	% Canopy
A	208.34	23.84	11.44
B	247.87	41.22	16.63
C	159.41	31.27	19.62
D	556.22	109.20	19.63
E	216.87	53.12	24.49
F	379.53	89.02	23.46
G	199.03	50.46	25.35
H	406.18	77.53	19.09
I	374.06	63.21	16.90
J	376.67	78.24	20.77
K	508.60	112.26	22.07
L	454.94	82.00	18.02
M	109.60	20.28	18.50
N	279.30	58.84	21.07
O	306.02	61.26	20.02
P	304.16	62.87	20.67
Q	594.66	117.64	19.78
R	856.41	142.48	16.64
S	97.42	21.68	22.25
All Zones	**6635.29**	**1296.42**	**19.54**



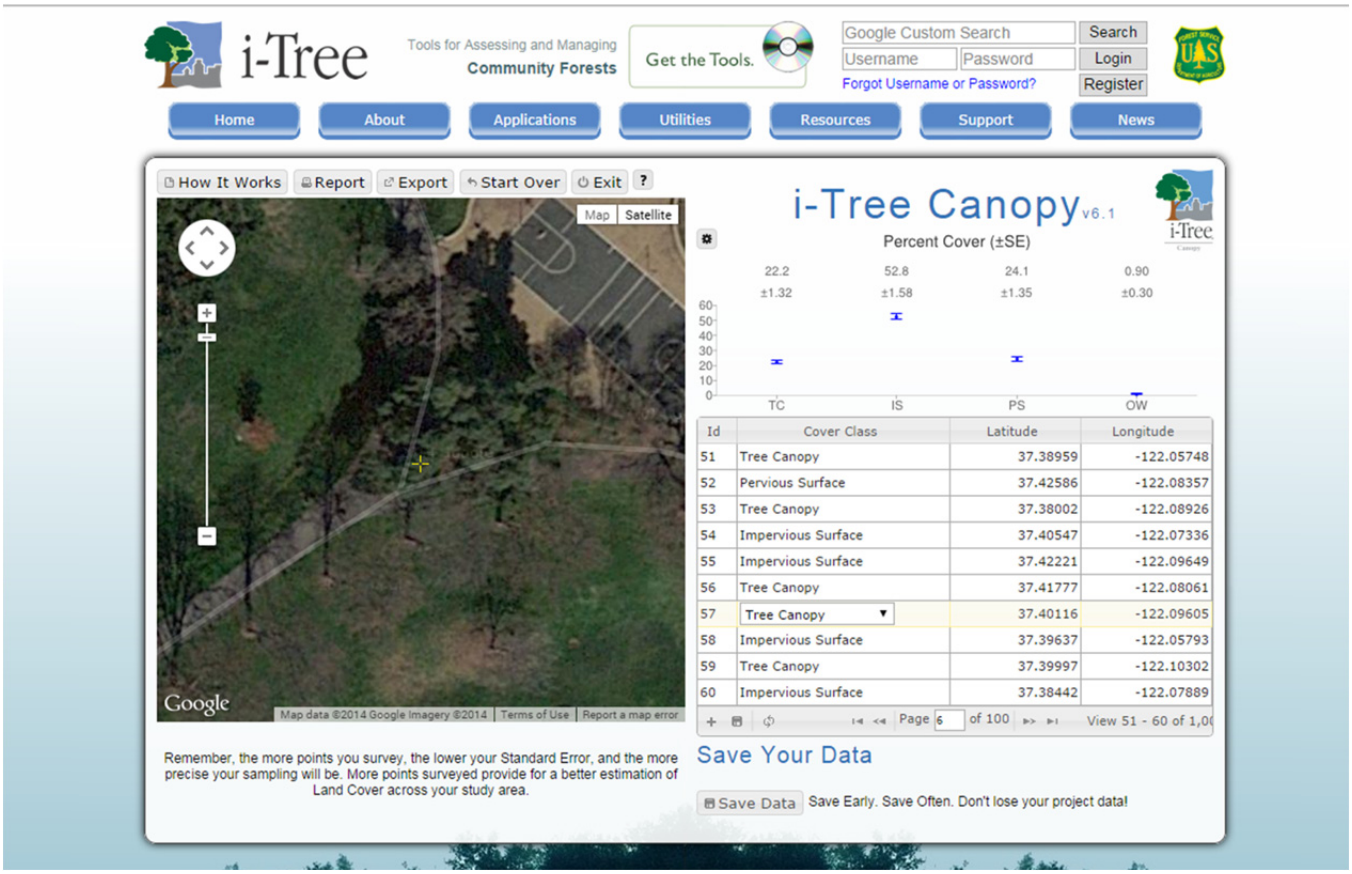
Map 2. Tree Canopy Cover and Vacant Community Tree Sites (X) by Maintenance Zone

i-Tree Canopy Analysis

For quality assurance, DRG used i-Tree Canopy to cross-check the overall results of Mountain View's tree canopy assessment. i-Tree Canopy analysis uses point sampling and current Google imagery to estimate the overall percentage of land cover classes, including tree canopy, pervious surface, impervious surface, and open water. Unlike remote sensing and the heads-up digitizing method used by the City to develop the tree canopy GIS layer, this methodology does not "map" land cover. But it does provide an accurate breakdown of the overall amount of canopy cover within a defined area.

i-Tree Canopy estimates that Mountain View's current overall canopy cover is 21.2% (SE, standard error = ±0.91) (Figure 5). While this result is slightly higher than 17.7% found in the canopy assessment, remote sensing can miss some tree canopy depending on shadows, time of day, and the angle of the image. It is likely that Mountain View's tree canopy cover is somewhere in between.

The results from i-Tree Canopy indicate that Mountain View's current overall impervious surface is approximately 54% (SE=±1.11) and overall pervious surface is 24% (SE=±0.95). Understanding the extent of other land cover classifications can help a community determine canopy cover potential and develop reasonable goals for canopy cover. Mountain View is anticipating the addition of an impervious GIS layer for the community in 2015. Like the tree canopy layer, this layer will map the location and extent of impervious surfaces (e.g., roads, buildings, parking lots, etc.) and support the identification of additional planting space.



Canopy Benefits

In addition to providing statistically accurate land cover estimations, i-Tree Canopy provides an estimate of air quality and carbon benefits derived from a community's urban forest. Considering total tree cover, evergreen percentage, and leaf area index, benefit values are determined using county-level multipliers (Hirabayashi, 2014).

Carbon Storage

Mountain View's urban forest (public and private trees) is storing 204,068 tons of CO_2 in woody and foliar biomass, valued at nearly $4 million.

Annual Air Quality and Carbon Benefits

Annually, Mountain View's tree canopy is sequestering an additional 10,323 tons of CO_2, valued at $199,884 (Figure 6 and Table 4). In addition to CO_2, tree canopy is annually removing 2,051 tons of air pollutants, including carbon monoxide (CO), nitrogen dioxide (NO_2), ozone (O_3), sulfur dioxide (SO_2), and particulate matter ($PM_{2.5}$ and PM_{10}). Altogether, annual air quality benefits are valued $710,019.

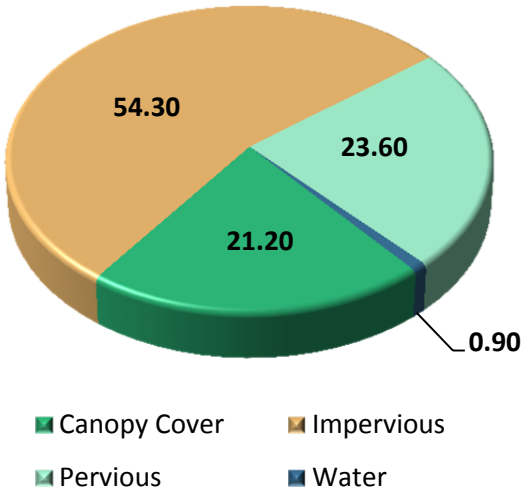


Figure 5. Mountain View land cover (i-Tree Canopy)

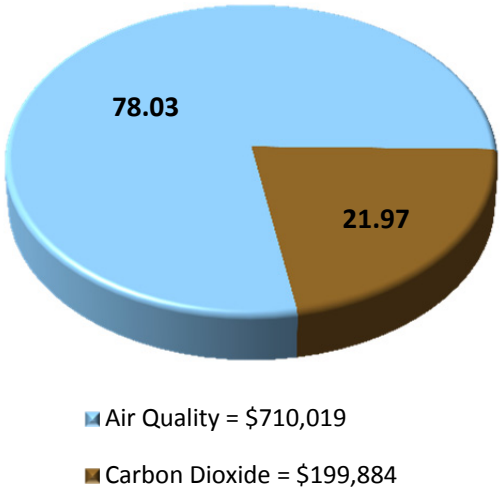


Figure 6. Annual benefits from Mountain View's tree canopy (includes public and private trees) (i-Tree Canopy)

Table 4. Annual Air Quality and Carbon benefits from Mountain View's Tree Canopy (i-Tree Canopy)

Annual Benefits	Value	±SE	Amount (tons)	±SE
Carbon monoxide (CO)	1,350.34	58.13	1.02	0.04
Nitrogen dioxide (NO_2)	7,052.60	303.61	9.03	0.39
Ozone (O_3)	208,781.12	8,987.76	38.75	1.67
Sulfur dioxide (SO_2)	263.47	11.34	1,991.87	85.75
Particulate matter ($PM_{2.5}$)	440,491.56	18,962.59	1.58	0.07
Particulate matter (PM_{10})	52,080.26	2,241.99	8.34	0.36
Carbon dioxide (CO_2)	199,883.69	8,604.73	10,322.79	444.38
Total Annual Benefits	**$909,903.04**	**39,170.15**	**12,373.38**	**532.66**

Regional Comparisons

To better understand how Mountain View's tree canopy compares with other regional communities, DRG performed an i-Tree Canopy analysis of the following cities:

- Palo Alto
- Campbell
- Santa Clara
- Sunnyvale

Not all communities have completed a canopy assessment to map the urban forest. This methodology was selected to provide for consistency of comparison. Each of these communities was point sampled to achieve a standard error (SE) between ±0.91 and ±1.07 for tree canopy cover. In addition, DRG compared impervious surface, pervious surface, and open water.

Among these communities, Palo Alto has the highest tree canopy cover (36%) and lowest impervious surface area (25%) (Figure 7 and Table 5).The City of Santa Clara has the highest impervious surface cover (63%) and Sunnyvale has the lowest overall canopy cover (14%).

In comparison, Mountain View is above the average for both tree canopy and impervious surface cover.

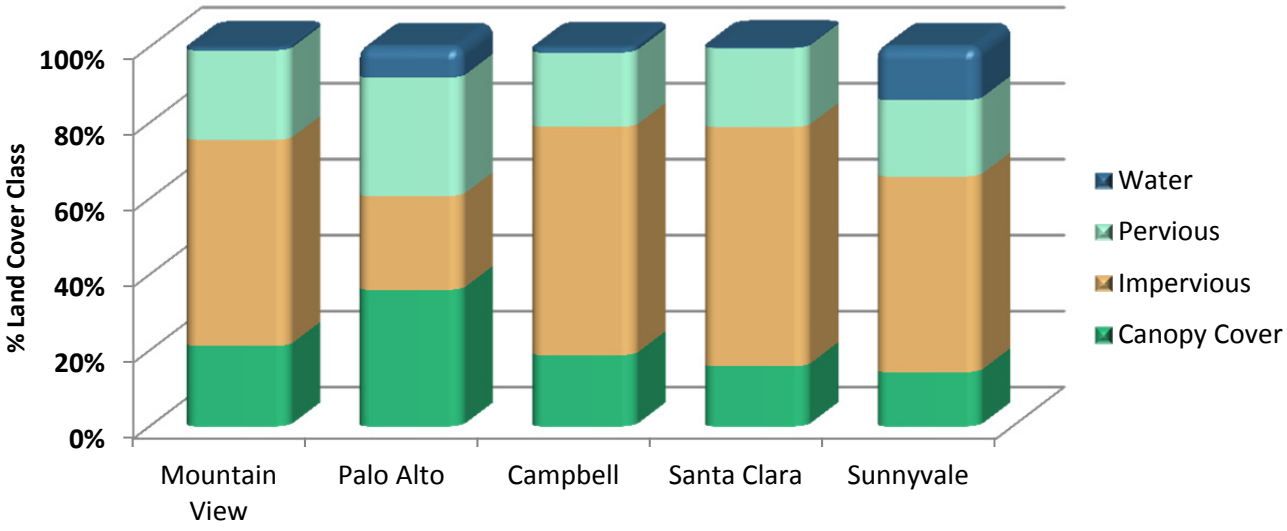


Figure 7. Regional comparison of land cover classes (i-Tree Canopy)

Table 5. Regional land cover for four neighboring cities (i-Tree Canopy)

	Canopy Cover	SE	Impervious	SE	Pervious	SE	Water	SE
Mountain View	21.20	±0.91	54.30	±1.11	23.60	±0.95	0.90	±0.21
Palo Alto	36.00	±1.07	24.70	±0.96	31.20	±1.04	8.10	±0.61
Campbell	18.80	±1.01	60.20	±1.26	19.60	±1.02	1.47	±0.31
Santa Clara	15.80	±1.00	63.00	±1.33	20.80	±1.12	0.30	±0.15
Sunnyvale	14.30	±1.00	51.60	±1.44	20.10	±1.15	14.00	±1.00
Average	**21.22**		**50.76**		**23.06**		**4.95**	

Forestry Program

The Forestry and Roadway Landscape Division is responsible for the management of community trees. In addition to street trees, the Division maintains trees at 39 urban parks and along nine miles of trails on Stevens Creek, Permanente Creek, Hetch-Hetchy, Bay, and the Transit-Oriented Development Trails. Forestry staff are also responsible for the administration and enforcement of the City's Heritage Tree Ordinance for residential and non-development applications.

Forestry Division staff provide the following services:

- Tree inspections
- Contract monitoring
- Maintenance of the tree inventory data
- Service calls
- Emergency response
- Most tree removals
- Some pruning and tree replacement
- Integrated Pest Management
- Volunteer coordination
- Public outreach
- Administration of the Heritage Tree Program

Some pruning and new tree planting is provided by a contract provider.

Street Trees

Street trees are located in the parking strip[8] or, when no parking strip exists, behind the sidewalk in the front yard of the property owner and within the public right-of-way, typically within 5 feet of the sidewalk. While street trees behind the sidewalk are owned by the property owner, the Forestry Division retains the authority to plant, prune, or remove street trees (City Code, Chapter 32). Property owners are not permitted to prune or remove a street tree without written permission from the City.

Property owners are responsible for providing water to all street trees, including additional water needed for newly planted trees.

Integrated Pest Management

Mountain View uses an Integrated Pest Management (IPM) approach towards pest control whenever possible. IPM is an effective and environmentally sensitive approach that minimizes the use of pesticides and incorporates the use of natural predators and biological controls.

Tree Nursery and Recycling Program

To ensure quality and availability, forestry staff maintains an onsite nursery of approved trees for replacement and new tree planting. Green waste is converted to mulch to reduce costs and impacts on landfill. The mulch is available for community trees and residents.

[8] A parking strip is the planting area that is between the curb and the sidewalk.

Summary of Annual Operations (FY 2011 through 2014)

Considering the past 3 years, beginning with fiscal year 2011-12, the Forestry Division annually provides services for an average of 4,269 community trees (Table 6). The majority of operations (78%) are for tree trimming, both contracted (58%) and in-house (21%). In addition to regular trimming, an average of 175 young trees receive training, or structural pruning, each year. Including regular trimming and tree training, an average of 3,515 trees are trimmed annually. Considering a current inventory of 26,166 community trees this suggests that the average pruning cycle is approximately 7.4 years. However, some areas and tree species are pruned more frequently (2-3 years) than others, resulting in a longer period between maintenance for some trees. To maintain tree health and manage risk, one objective for the CTMP is to establish a minimum pruning and inspection cycle goal of 7 years.

In addition to tree trimming, the City is currently planting approximately 240 trees each year to maintain existing inventory levels.

Table 6. Annual Forestry Operations for fiscal year 2011-12 through 2013-14

Service	Fiscal Year 2011-12	2012-13	2013-14	Average	% of Overall Average
Trees Planted - City/Contractor	248	199	274	240	5.63
Trees Trimmed - City	1,002	607	1,016	875	20.50
Trees Trimmed - Contractor	1,941	3,142	2,312	2,465	57.74
Tree Removals	209	247	261	239	5.60
Stump Removals	253	245	247	248	5.82
Debris Pick Up	29	22	29	27	0.62
Tree Training	249	47	229	175	4.10
Total Trees Serviced	**3,931**	**4,509**	**4,368**	**4,269**	**100%**
Total Trees Trimmed	**2,943**	**3,749**	**3,328**	**3,340**	**78%**
Other Tree Services					
Urgent Non-Routine Services	251	191	211	218	
Tree Claims Reviewed	5	4	11	7	
Total Other Tree Services	**256**	**195**	**222**	**224**	

Tree Protection

Municipal regulations that provide for the preservation, care, and protection of Mountain View's community and Heritage trees are defined by City Code, CHAPTER 32 TREES, SHRUBS AND PLANTS.

Municipal Code 32, Article I – GENERAL

Chapter 32.1, Tree Regulations for the City of Mountain View, provides the definition of a street tree and defines ownership and liability. Specifically, this Chapter:

- Prohibits damage to street trees.
- Provides the Director of Parks and Recreation with the authority to enforce this Chapter and the authority to plant, trim, spray, preserve, and remove street trees.
- Prohibits any person from cutting, trimming, pruning, planting, spraying, removing, or otherwise injuring or interfering with a street tree without prior written permission of the Director of Parks and Recreation.
- Requires the protection of street trees during construction or repair projects.
- Defines the liability for hazards on private property.
- Confers the responsibility for watering street trees to the adjacent property owner.

Municipal Code 32 Article II – PROTECTION OF THE URBAN FOREST

Chapter 32.2 sets forth the policies for the preservation of heritage trees and their contribution to the welfare and aesthetics of the community, including:

- Defining a "Heritage Tree" as any tree that has a trunk circumference of 48 inches or more measured at fifty-four inches (54") above grade. Three genus; oak (*Quercus*), redwood (*Sequoia*), and cedar (*Cedrus*) are considered Heritage if they have a circumference of 12 inches or more.
- Conferring the responsibility to maintain and preserve all Heritage Trees to the property owner.
- Prohibiting the willful injury, damage, destruction, relocation, or removal of a Heritage tree except by permit.
- Requiring the protection of Heritage Trees during construction and grading projects.
- Defining the application process and terms for obtaining a permit to remove a Heritage Tree.
- Defining the Director of Community Services or his/her designee as authority for the administration and enforcement of Heritage Tree preservation in nondevelopment-related situations.
- Defining a specific permitting process for development-related removals.
- Defining criteria and conditions for granting a permit to remove a Heritage Tree.
- Defining the process for appealing the permit or denial to remove a Heritage Tree.
- Defining the process for post-removal permits when a Heritage Tree is removed with a permit.
- Defining penalties, restitution, and methods for tree valuation pursuant to this ordinance.
- Defining the role of the Urban Forestry Board and granting the following powers and duties:
  - Act as the decision-making body for Heritage Tree appeals (the exception is for decisions made by the Development Review Committee).
  - Make recommendations for modification to this ordinance.
  - Assist with the planning of urban forest management.
  - Make recommendations for appropriate mitigation for removals associated with City capital projects.

Heritage Tree Program

Because large trees provide benefits that enhance the health and welfare of the entire community, the Heritage Tree Program is intended to protect large trees from indiscriminate or unnecessary removal. In development-related applications, a certified staff arborist[9] serves in an advisory capacity to the Community Development Department and assists with the review of plans and proposed mitigation measures, including preservation strategies and tree replacement species and quantities.

For nondevelopment and residential properties, the Forestry Division is responsible for the evaluation and approval of requests for tree removal. Application fees help to recover the costs associated with the permit request.

When a request is received to remove a tree, an arborist reviews the request, inspects the tree(s), and prepares a report in support or denial. In non-development situations, the removal of a Heritage Tree is generally only permitted when the tree is dead, dying, or otherwise structurally unsound.

For both development and non-development removals:

- A notice, visible from the public right-of-way, is posted on the tree(s) for a minimum of 10 days
- Notice and additional information, including number of trees, species, size, and exact location are posted on the City's website
- An appeals process allows any person who is aggrieved or affected by a decision to either remove or deny a tree removal to be heard

For development projects, appeals are heard by the City Council. For non-development appeals, the Parks and Recreation Commission, which also serves as the Urban Forestry Board, is the decision-making body. When an appeal is received, forestry and/or development staff prepares a presentation for the hearing.

Trees removed through development are subject to mitigation which may include planting replacement trees on site and/or paying in-lieu fees. In non-development situations, the property owner is typically required to plant a 24-inch box replacement tree(s) or pay an in-lieu fee.

Challenges for this program include:

- Significant investment of time for forestry staff to review requests, inspect trees, and prepare reports and presentations.
- Ensuring the replacement of lost trees and canopy.
- Enforcement when trees are removed without a permit.

[9] Arborists are certified by the International Society of Arboriculture. *www.isa-arbor.com.*

Habitat Protection

Approximately 350 species of birds live in or migrate through Mountain View and neighboring Bay Area communities, several of which are listed as state and/or federally protected species. Tree trimming and other maintenance activities, when conducted during the nesting season can reduce valuable nesting sites and potentially destroy birds, eggs, and fledglings.

Preserving wildlife habitat and migratory species is a priority for Mountain View. Species selection and maintenance and pruning policies provide consideration for nesting birds, migratory species, and native wildlife. Trees and tree canopy also help preserve water quality for fish and marine animals by helping to reduce and clean stormwater runoff. Trees shading streams can help alleviate lethal water temperature increases for certain fish caused by climate change (Broadmeadow, S.B., et al, 2011).

Regulations

The Federal Migratory Bird Treaty Act (MBTA) protects all common wild birds found in the United States except house sparrow, starling, feral pigeon, and resident game birds such as pheasant, grouse, quail, and wild turkeys. The MBTA makes it unlawful for anyone to kill, capture, collect, possess, buy, sell, trade, ship, import, or export any migratory bird, including feathers, parts, nests, or eggs.

The Federal Endangered Species Act makes it illegal to sell, harm, harass, possess or remove protected animals from the wild.

California Fish and Game Code Section 3503 protects active nests of all bird species, and states it is unlawful to “take, possess, or needlessly destroy the nest or eggs of any bird....”

Protective Measures

To prevent harm to active bird nests and to comply with federal and state laws, it important that all tree care operations and workers are made aware of regulations and are properly trained to avoid disruption to active nests. Whenever possible, tree trimming should be avoided or minimized during the nesting season (from February to mid-September) or focused on low-risk areas where there is little or no chance of nesting birds (e.g., urban parking lots with sparse vegetation).

When tree trimming and other ground-disturbing activities cannot be avoided during the nesting season, managers, supervisors, and crews are responsible for ensuring that activities do not result in any violation of the Migratory Bird Treaty Act or relevant Fish and Game Codes. The California Department of Fish and Wildlife (CDFW) recommends that surveys for active nests be conducted by a qualified wildlife biologist no more than 10 days prior to the start of any ground or vegetation disturbance and that the surveys be conducted in a sufficient area around the work site to identify any nests that are present and determine their status. In addition to direct impacts, such as nest destruction, nests can be affected by noise, vibration, odors, and movement of workers or equipment.

For emergency operations and other unplanned activities, at the very least a pre-work survey is necessary to identify any nesting birds. Environmental awareness training for all crew members can provide a basic understanding of the signs of birds and other wildlife as well as the laws and penalties that apply. An online certification and training program for arborists and tree care professionals is available at www.wildprotect.org.

2012 Shoreline Burrowing Owl Preservation Plan

The City of Mountain View has developed the Shoreline Burrowing Owl Preservation Plan (2012) to promote burrowing owl protection, meet regulatory requirements, and avoid impacts to birds when maintenance activities are performed at Shoreline at Mountain View, Vista Slope, and Crittenden sites.

Community Outreach

Community outreach and education are an important component of the urban forestry program. The engagement of residents in issues relative to public trees ensures that the community has an appreciation for the value and benefits of the urban forest and an understanding of the program and resources that are required to support it.

Currently, the urban forestry program supports public tree plantings, workshops, and Arbor Day celebrations. The website offers information about street trees and the Heritage Tree Program. Increasing programming for outreach and education are an integral part of the Community Tree Master Plan.

Stakeholders

The urban forest has an impact on every resident, visitor, property owner and business in Mountain View. The benefits of community trees extend beyond the city limits and the responsibility for their care and protection is shared by many individuals, volunteers, nonprofit organizations, city departments, and tree care professionals. The engagement and contribution of stakeholders was integral to the development of the CTMP.

While it may not be their primary focus, many individuals and departments within the City share some level of responsibility for community trees, including planning for, caring for, and/or affecting the policy of urban forest assets.

Davey Resource Group worked with forestry staff to identify other departments and individuals who have a stake in the management of community trees. Stakeholders were invited to participate in an interview and discussion about their role and perspective on the urban forest, as well as their views, concerns, and ideas for the CTMP. Internal stakeholders who contributed to the planning process included representation from the following.

Parks and Recreation Commission

The Parks and Recreation Commission assists in the planning of parks and recreation facilities and activities. The Commission also serves as the Urban Forestry Board whose primary function is to hear appeals regarding Heritage Trees (nondevelopment-related properties) and provide advisement for community tree management and the Heritage Tree Program. The Board is responsible for reviewing the urban forest management/ master plans every 10 years.

Community Development

The Community Development Department is focused on creating a livable community that balances the needs of residents, property owners, and businesses. The Department is responsible for planning, economic development, building inspection, and neighborhood and housing programs.

Development-related tree removal and mitigation projects subject to the Heritage Tree Program are under the authority of Community Development. The challenges include balancing new development and tree removal requests with ensuring that enough new trees are planted to replace canopy that is lost. Department concerns include replacing the right tree in the right spot to reduce future conflicts and provide the greatest socioeconomic benefits to the community.

Public Works

Among other responsibilities, the Public Works Department is responsible for planning, designing, reviewing, and maintaining the City's infrastructure. When it comes to the urban forest, this means planting and removing trees for capital projects, ensuring that private projects under permit comply with street tree requirements, and maintaining roads, sidewalks, and utilities—including repairing damage caused by tree roots.

Proper species selection and providing adequate planter space to reduce conflicts between trees and other infrastructure is of primary concern to the Department.

Community Services

In addition to the Forestry and Roadway Landscape Division the Community Services Department employs a Wildlife Preservation Biologist to provide direction on the preservation of wildlife, including migratory species and nesting birds. While this position's primary role is focused on habitat preservation and monitoring at Shoreline Park, he is available as an information and training resource to ensure that City staff are aware of regulations that protect raptors, migratory species, and other nesting birds. In addition, the Biologist can train supervisors and tree workers to perform pre-work inspections to avoid disturbance or harm to an active nest.

Pacific Gas & Electric

Tree versus utility conflicts are a common source of concern for electric providers. Trees that grow into power lines can cause electrical outages and fires. They can even conduct an electric shock to someone who touches a tree that is in contact with, or in close proximity to, a high-voltage line.

As the primary natural gas and electricity provider for Mountain View, Pacific Gas & Electric (PG&E) is an important partner and stakeholder in the urban forestry program.

In California, all utility providers are subject to General Order 95; Rule 35 Vegetation Management (California Public Utilities Commission, revised 2012) and FAC-003-2 Transmission Vegetation Management (NERC) which outline requirements for vegetation management in utility easements. These requirements include clearance tolerances for trees and other vegetation growing in proximity to overhead utilities.

Since 1995, PG&E has been recognized by the Arbor Day Foundation as a Tree Line USA. This program recognizes utilities that use best management practices to demonstrate that trees and utilities can co-exist. All PG&E line clearance and right-of-way tree care operations conform to American National Standards Institute (ANSI) A300 Integrated Vegetation Management – Part 7 and ISA Best Management Practices for Utility Pruning of Trees and Integrated Vegetation Management. Because of the danger of electric shock, trees located under utility lines should be directionally pruned to provide clearance and/or reduce height only by trained, authorized line clearance personnel. Selecting small-stature tree species that are utility friendly for planting sites in utility rights-of-way can minimize the need for these maintenance activities.

City forestry staff coordinate with PG&E to facilitate vegetation management in utility corridors.

Stewardship

The contribution of volunteers and nonprofit groups to a successful urban forestry program cannot be overemphasized. Mountain View is fortunate to have a local non-profit organization to assist forestry staff with education and outreach programs.

Mountain View Trees

In 2006, residents concerned about urban forestry formed Mountain View Trees, a 501(c) (3), whose mission is to supplement the City's efforts by helping to "sustain and enhance the trees of Mountain View, California, through community stewardship, education and advocacy." The group provides support to urban forestry staff by helping to identify and alleviate threats to community trees, educate people about proper tree care, and generate appreciation for the urban forest. The Parks Manager serves as a liaison and volunteers from Mountain View Trees assist staff by:

- Conducting young tree surveys to confirm existing trees and identify any maintenance needs.
- Providing leadership at community tree planting events.
- Developing brochures for self-guided tree walks.
- Conducting educational workshops.

The contribution of volunteers and nonprofit groups to a successful urban forestry program cannot be overemphasized.

Conclusion

As a Tree City USA with a dedicated urban forestry program, the City of Mountain View is well aware of the importance of trees and canopy cover to the health and sustainability of the community. The City has assembled a strong foundation and the tools necessary for making meaningful and effective management decisions, including:

- A community tree inventory and management system,
- Community Tree Resource Analysis, defining benchmarks,
- Ordinances protecting community and Heritage Trees, and
- A GIS canopy cover layer and assessment.

The community tree resource is well-established and in overall good condition and the canopy assessment establishes a baseline for monitoring overall tree canopy cover throughout the community as well as measuring the success of long-term planning objectives over time.

Challenges and opportunities

The community forest is a dynamic, growing, and ever-changing resource that requires ongoing, proactive management to support tree health and safety and fully realize its maximum potential. Anticipating challenges and recognizing opportunities is key to implementing strategies in a timely and efficient manner. Over the next 10 years and beyond, Mountain View is faced with a number of critical challenges and opportunities that will affect both community trees and overall tree canopy.

The boundaries of Mountain View are established, defining a finite area of land as home to an ever-expanding community that incudes residents, commuters, retail and commercial sites, high-tech corporations, and wildlife. Identifying and preserving adequate planting space for trees is often a challenge. To increase canopy cover and support the health, longevity, and mature stature of large trees and to reduce damage to other infrastructure from tree roots, Mountain View will need to explore additional options for increasing root zone area beneath hardscapes. These options may include pervious pavements, structural soils, and suspended sidewalks.

In spite of efforts to preserve heritage trees, ongoing development continues to result in the loss of mature tree canopy. While the City's planning and urban forestry staff collaborate to protect as many trees as possible and to provide adequate mitigation strategies when trees are lost, it takes time to replace canopy lost from the removal of mature trees. A strategy to replace trees at a 2:1 ratio based on canopy loss will help to promote and increase in canopy over time.

The aerial imagery used to assess tree canopy cover (currently 17.7%) was collected in September 2013. Recognizing that a significant amount of tree canopy has and will continue to be removed since the imagery was collected, current objectives for the CTMP include a strategy to plant enough trees over the next 15 years (estimated at 11,000 trees) to increase the overall tree canopy by 5 percentage points to 22.7%. When the City obtains a GIS impervious layer (anticipated in 2015), this added information can be used along with the tree canopy layer and other special features (e.g., athletic fields, golf courses, open water, and utility easements) to determine actual canopy cover potential. With this data, Mountain View can revise long-term goals for overall canopy cover and develop more specific goals relative to land use and zoning.

Increasing the stocking level for the community tree resource to 91% (currently 82%) will support the strategy to increase overall canopy cover to 22.7%. This requires that the City plant 3,000 new public trees over the next 15 years. As these trees mature, their increasing canopy will contribute to the overall existing tree cover.

Providing more diversity and flexibility in the Master Street Tree List may increase the number of street trees in neighborhoods with a high tree vacancy. Fruit and nut producing trees present additional management challenges, including higher maintenance needs along with the potential for seed and fruit litter, limiting their use to specific locations. However, some individuals and cultures may be more willing to accept and care for a street tree in front of their home when that tree also serves as a source of food for humans and/or wildlife. By collaborating with individuals and neighborhoods, forestry staff can better understand and respond to specific concerns and/or cultural preferences that may cause residents to be resistant to neighborhood street trees.

Of primary concern for all California urban forests is sustainability in the face of ongoing drought, emerging pests, and climate change. To improve resiliency in the community tree resource, new tree plantings should:

- Place emphasis on drought resistant and low-water use species.
- Promote greater species diversity throughout the community as well as by streets and neighborhoods.
- Reduce reliance on the most prevalent species (coast redwood, London planetree, and Chinese pistache).
- Reduce reliance on ash species in anticipation of emerald ash borer (*Agrilus planipennis*), reaching the west coast.
- Place an emphasis on planting the right tree in the right place (i.e., matching the site and expectations to the species).
- Place an emphasis on local native plantings that are pest resistant and work well with the City's climate and soil type.

Because trees are always growing and responding to their environment, they require maintenance to address structural issues, maintain clearance for roads, sidewalks, and traffic devices, and at times health care to manage pests or disease. Timely and proactive care can help control and reduce the overall cost of maintaining an urban forest, manage liability, and improve longevity to preserve the existing benefits that come from mature trees. Transitioning to a 7-year maintenance cycle for all community trees will ensure that each tree is inspected and pruned a minimum of every 7 years.

Ultimately, protecting and growing the community forest requires a commitment from the entire community. While growth and development are vital to the economic well-being of Mountain View, preservation of the community forest is equally important for ensuring that quality of life expectations are maintained.

Community engagement and volunteer collaboration are integral to the success of the CTMP and the urban forestry program. Increasing outreach and public education will help generate the support and enthusiasm necessary to increase the stocking level in the community tree resource, increase the number of street trees on private property, and increase the number of private trees and canopy across Mountain View.

It will be important to nurture relationships with volunteer groups, including Mountain View Trees and Friends of Stevens Creek. The City should explore additional opportunities to support and partner with these groups to augment City resources and coordinate outreach efforts.

Altogether, Mountain View is poised to enjoy ongoing environmental and socio-economic benefits from community trees. The CTMP ensures that these benefits will continue and that Mountain View remains a vibrant and attractive community.

What Do We Want?

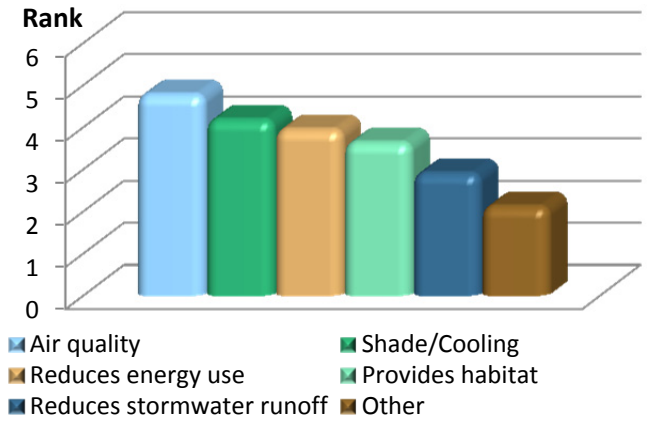


Figure 8. Importance of environmental benefits as ranked by respondents

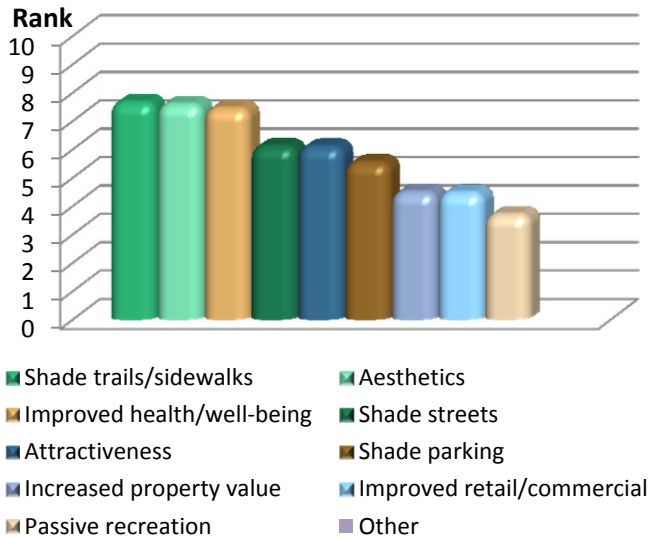


Figure 9. Importance of aesthetic benefits as ranked by respondents

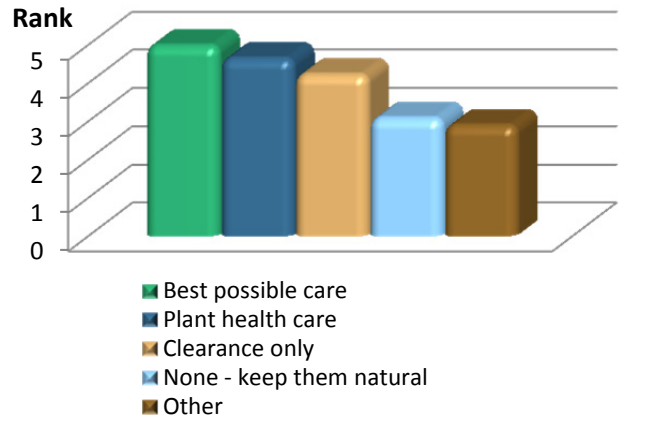


Figure 10. Respondents expectations for tree care

Community Participation

To better understand how residents value urban forestry and the benefits of community trees and to provide community stakeholders with an opportunity to express their views about management policies and priorities, the development process for the Community Tree Master Plan included a community meeting and an online survey.

Both the meeting and survey were promoted through a press release and on the City's social media sites (Facebook and Twitter). Notifications were sent to neighborhood groups and posted on *NextDoor*. Invitations were sent to residents showing an interest in urban forestry, including the Parks and Recreation Commission (Urban Forestry Board), Mountain View Trees, Friends of Steven's Creek Trail, and those who subscribe to the City's Heritage Tree subscription service. The Mountain View Voice published a notice on their website. Notice of the public meeting and a link to the survey was promoted on the City's Street Trees webpage.

Community Meeting

A public meeting was held on Wednesday, July 23, 2014, from 6:30 to 8:30 p.m. at the Senior Center. The meeting began with a presentation about the community's tree resource and an overview of the development process for the Community Tree Master Plan. Following the presentation attendees participated in a discussion and planning session to identify goals and objectives for the Community Tree Master Plan. Attendees discussed a number of concerns including:

- Better preservation of canopy and trees in development projects.
- Greater consistency and enforcement of the Heritage Tree Ordinance.
- Reducing or removing the fee to appeal a determination on Heritage Tree removal.

- A desire for more diversity and a greater emphasis on native and drought-tolerant species in the community tree resource.
- A desire for more overall tree canopy cover.

They also discussed what types of education and outreach they would like to see along with ways to incentivize tree preservation and planting on private property.

Online Survey

Links to the online survey were posted on the City's Street Tree webpage, Facebook and Twitter accounts, and in the electronic notices that were sent out. The survey was available from July 1 through August 1, 2014. There were a total of 596 respondents, and 493 completed 100% of the survey.

The survey included a series of 24 questions, including questions about the respondents' views on tree benefits, awareness of the urban forestry and Heritage Tree programs, expectations for community tree care and planting, views on incentivizing tree preservation and planting on private property, and the preferred topics and methods for public education and outreach[10].

Eighty-six percent (86%) of respondents "strongly agree" that community trees are important to the quality of life in Mountain View. Eighty-five percent (85%) also "agree" or "strongly agree" that Mountain View needs more community trees. The most popular location for more trees is in landscaped medians (71%), followed by parking lots (68%), parks (61%), and trails and bike paths (57%).

When asked to rank the environmental benefits of trees, respondents expressed the greatest appreciation for air quality benefits, with 46% indicating that this is the most important benefit, followed by outdoor temperature reductions through shading, and reduced energy use. Reducing pollution from stormwater runoff was ranked lowest (Figure 8).

On average, respondents ranked shaded trails and sidewalks as the most important aesthetic benefit, followed by overall beauty, and improved health and psychological well-being. The benefit to passive recreation was ranked lowest (Figure 9).

Eighty-eight percent (88%) of respondents "agree" or "strongly agree" that it is important to have an ordinance to protect Heritage Trees. One hundred seventy-six respondents provided ideas to improve the existing ordinance, including:

- Better protection/enforcement
- Discretion for removing undesirable trees
- Stronger maintenance requirements
- Higher fines for unpermitted removals/damage
- More education and transparency about policies and processes

When asked to rank various options for the level of maintenance that community trees should receive, 74% of respondents indicated their preferred expectation is for trees to receive the best possible care to promote good health, strong structure, clearance and safety (Figure 10).

Sixty-four percent (64%) of respondents indicated that they are satisfied with the current level of maintenance provided to Mountain View's community trees.

Sixty-eight percent (68%) of respondents "agree" or "strongly agree" with the statement, "I am more likely to visit a store or retail center if there is a shady place to park.

Respondents were asked to indicate the types of education and public outreach they would like to see offered by the urban forestry program. The most popular topic was tree care and maintenance information

[10] For the complete survey and results, see Appendix D.

(74%) followed by species information (58%), tree pruning (57%), and tree planting (55%).

When asked to identify the best ways to encourage tree planting and preservation on private property, 73% of respondents indicated that providing free trees was the best method, followed by education and outreach (70%), and tree maintenance tips and brochures (65%).

Objectives and Strategies

Based upon review of the urban forestry program and resources (*What Do We Have?*) and input from the community and other stakeholders, the CTMP identifies six objectives that represent what we want for the future of Mountain View's community trees. These objectives and the strategies that support them are intended to adequately manage the City's community trees in a timely, cost-effective, safe, and efficient manner.

Preservation and Enhancement of Tree Canopy

This objective is intended to preserve existing trees and grow tree canopy over time. Strategies include adopting policies and implementation measures to plant enough trees (public and private) over the next 15 years to increase overall tree canopy 5 percentage points from 17.7% to 22.7%. This will be a 28% increase over existing canopy (Figure 5).

Additional strategies that support this objective include developing standards for the protection of trees in construction zones, revising methods for appraising heritage trees, and adopting parking lot shade goals.

Canopy Goals and Tree Canopy Potential

To determine a long range, reasonable, and attainable canopy goal for Mountain View, it is important to consider the actual potential for tree canopy across the community. To establish tree canopy potential, the City should analyze existing

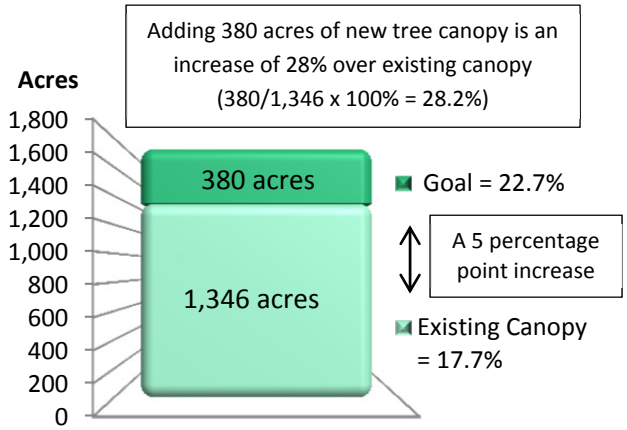


Figure 5. To increase existing canopy by 5 percentage points will add an additional 380 acres of tree canopy and increase existing canopy by more than 28%.

tree canopy in conjunction with impervious surface cover. At the time of the plan development process for the CTMP, a GIS layer (map) of impervious surface cover was not available. However, the City is scheduled to obtain this information in 2015.

Analysis of a GIS mapping layer of impervious surfaces in conjunction with existing tree canopy and special features (e.g., open water, athletic fields, golf courses, utility easements, and view corridors) can identify areas and sites where additional tree canopy can be supported. This information can be used to establish more specific goals for overall canopy as well as for particular land use and/or zoning application.

When setting canopy goals, the community should consider how trees and forests contribute to quality of life and how tree and forest canopy can help achieve environmental goals, including federal and local regulations for clean air, water, and stormwater runoff.

In addition to tree canopy potential, it is important to identify canopy that is at risk for development and determine if preservation is warranted. Understanding where canopy loss will likely occur and planning for that eventual loss provides additional information in support of canopy goals.

2 to 1 Replacement of Canopy Lost Through Development

The CTMP suggests that mitigation for trees removed during a development project should be calculated on a 2:1 ratio based on the resulting loss of tree canopy. Where adequate trees cannot be replaced on site, in-lieu fees will provide funding for tree planting at other sites within the community.

Parking Lot Shade

Shading parking lots can help to increase overall canopy cover and have a big impact on reducing summertime temperatures and protecting air quality. This is especially true for communities like Mountain View with a large percentage of impervious surface cover. Unshaded asphalt surfaces are one of the greatest contributors to the urban heat island and can increase the overall ambient temperature of a community by as much as 9°F compared to air temperatures over adjacent rural areas (EPA). In warmer months, the difference in surface temperature between asphalt and shaded areas can be greater than 40°F. The composition and lack of solar reflection from an asphalt surface allows it to absorb and store greater amounts of solar energy (heat). Since asphalt stores heat so well, it remains warmer and releases stored heat long after the sun goes down (NASA, 1996).

In addition to heat island effects, the cabin temperature of a car parked in full sun can quickly reach 160 degrees Fahrenheit and dark surfaces can reach temperatures of 180-200 degrees (NOAA, 2012). Parking in the shade reduces temperatures and emissions from parked vehicles, including nitrogen oxides (NOx) and hydrocarbons, which are precursors to ozone (O3) formation.

Mountain View's current zoning requirements (SEC. 36.32.80) stipulate that parking areas shall have at least one 15-gallon tree for every three spaces. However, a canopy cover goal for parking lots is not identified. Considering the impact on overall quality of life, adopting parking lot shade requirements will be very beneficial to the community.

It is important to recognize that meeting parking lot shading goals will require the appropriate selection of tree species. Small-stature species, like crape myrtle will never grow large enough to provide substantial shading. In addition to species selection, providing adequate planting space to support trees at mature size is critical. Adopting Industry standards for tree care and pruning will help to ensure healthy structure and manage risk.

It is also important to recognize that impervious surfaces and canopy cover can co-exist in many instances, and especially with appropriate design standards. Canopy that extends over hardscape features, including parking lots, streets, and structures can add to the overall amount of canopy cover and reduce the ratio between canopy cover and impervious surfaces. In addition, shade provided by tree canopy can demonstrably extend the life span of materials used in the construction of hardscape features (McPherson, et al, 2005).

Implementation of these broad-reaching objectives may require consideration for additional staffing to ensure adequate follow-up and enforcement for tree replacement, mitigation, non-permitted removals, and destructive trimming.

Increase Stocking Level

In support of canopy goals, the City will increase the stocking level of the community tree resource from 82% to 91% by planting an additional 3,000 new public trees over the next 15 years. Increased collaboration with individuals and neighborhoods with a low number of street trees can help identify specific reasons and/or cultural preferences that may cause residents to be resistant to neighborhood street trees.

Sustainability, Health, and Safety in the Community Tree Resource

This objective is intended to promote health, longevity, and resiliency in the community tree resource. Strategies include increasing species diversity in the overall resource and at the neighborhood and street level. The current practice of monoculture (i.e., a single species by street) creates a landscape that is more susceptible to introduced or emerging pests, disease, drought, and climate change. A diverse mix of species throughout the community can better ensure the preservation of benefits and that, should such an event occur, damages and loss are spread more evenly throughout the community and not resulting in catastrophic loss to individual neighborhoods or streets.

Other strategies that support this objective include initiating a 7-year pruning and inspection cycle for all community trees and ensuring that all tree care activities follow current industry standards and best management practices.

Preservation and Enrichment of Wildlife and Habitat

Birds and other wildlife are valued and appreciated by the residents of Mountain View. The CTMP includes strategies and implementation measures to protect native and migratory species and enhance existing habitat, including developing and implementing forestry practices and policies that protect birds and other wildlife and promoting important habitat tree species that provide opportunities for cover, foraging, and nesting.

Increased Outreach and Education

Ultimately, the preservation, protection, and enhancement of the community urban forest will require the engagement and support of the entire community. Recognizing this, the CTMP includes strategies for increasing outreach and education, including enhancements to the City's webpage for community trees, workshops, seminars, and other material that increase awareness and knowledge about trees and canopy cover, and a regular report on the State of the Community Forest.

Increased Collaboration with Volunteers and Nonprofit Groups

The support of nonprofit groups and volunteers is integral to the success of any community forestry program. Volunteers can help engage residents and promote program objectives, provide leadership during community tree planting events, and supplement City staff with tree surveys and young tree care. The CTMP includes strategies that foster relationships and facilitate collaboration with volunteers, nonprofits, neighborhood groups, and businesses, and nurture existing relationships (e.g., Mountain View Trees and Friends of Stevens Creek).

Review and Measure Attainment of the CTMP Objectives

The CTMP establishes benchmarks for the current benefits and value of the community tree resource and for canopy cover across Mountain View. The Plan includes strategies for using these benchmarks to measure the overall success of the CTMP in meeting the objectives for the community forest. The strategies include an updated resource analysis every 5 years and an updated canopy analysis every 10 years.

The following section, **How Do We Get There?**, provides comprehensive details for the objectives, strategies, and implementation measures identified in the CTMP.

How Do We Get There?

The following table communicates the objectives for the CTMP and provides strategies and implementation measures for achieving these objectives. A timeline illustrating the objectives and priorities can be found in Appendix B.

Preservation and Enhancement of Tree Canopy

The primary source of environmental benefits from the urban forest is tree canopy. The more tree canopy, the greater the benefits to the community in energy savings, carbon reduction, air and water quality, and socioeconomics. Mountain View's tree canopy provides these critical benefits that support and improve the quality of life for residents, visitors, and the entire region. Preserving and growing those benefits is of vital importance.

Strategies to preserve and enhance tree canopy include:	Priority:
1. Increase canopy by 5 percentage points to an overall canopy cover of 22.7%. A primary strategy of the CTMP is to increase the overall canopy cover by 5 percentage points. Canopy cover was assessed and mapped (GIS) in 2013 by the City of Mountain View, establishing a baseline value of 17.7% overall average tree canopy across the community. The aerial imagery used in this assessment was captured in September of 2013 and considering the current pace of development and the associated loss of mature tree canopy, the City recognizes that tree canopy is still being lost. This strategy will align community tree planting and outreach programs to promote a concerted effort to plant enough new trees (estimated at 11,000) over the next 15 years to offset this loss and increase canopy cover to 22.7% over time. Trees require time to mature and reach full canopy potential. As these young trees become established, their canopies will grow over time and their eventual contribution to the overall canopy cover will be substantial. **Implementation Measures:** A) Plant 11,000 trees over the next 15 years that, when fully mature, will increase the overall canopy cover by 5 percentage points. o Years 1-10, plant 300 new public trees annually to increase the community urban forest stocking level to 91%. o Years 1-15, facilitate the planting of 535 new trees annually on private property, including new development. B) Establish a Tree Mitigation Fund to fund tree planting, canopy enhancement, outreach, and other urban forestry operations and programming. o Fund with in lieu and mitigation fees recovered from the Heritage Tree Program.	**High** **Ongoing**

$ Low ($0-$5,000)	$$ Medium ($5,000-$20,000)	$$$ High ($20,000-$100,000)	$$$$ Very High (>$100,000)

Preservation and Enhancement of Tree Canopy

Strategies to preserve and enhance tree canopy include:	Priority:
1. Increase canopy by 5 percentage points to an overall canopy cover of 22.7%. *Continued* **Implementation Measures:** C) Develop and implement a community-wide policy to increase tree planting to offset the loss of mature canopy to ongoing development. o Monitor and track canopy cover area that is removed for development, including capital projects. o Tree removal and mitigation plans should include calculation of the canopy area being removed and a plan to mitigate that loss of canopy cover at a 2:1 ratio. D) Coordinate with Community Development to revise policies for the Heritage Tree Program to promote canopy replacement for trees that are removed in both development and non-development projects. o Revise mitigation policies to require appraisal of trees that are removed with consideration of their current condition, size, and contribution to the site. o Appraisal should follow methods established by the Council of Tree & Landscape Appraisers *Guide for Plant Appraisal* (9th Edition or most current). o Permitted tree removals (development and non-development) should recover fees based on the appraised value (and contribution) of the tree in addition to any permit fees. o Mitigation for tree removal should include calculation of the canopy are being removed and a plan to mitigate that loss at a 2:1 ratio. o When canopy cannot be replaced onsite, excess mitigation fees (in lieu) should be captured within the Tree Mitigation Fund to support tree planting and canopy enhancement on other sites within the community. o At the discretion of the Director of Community Services, not all trees defined as Heritage Trees should be preserved. Poorly located trees, trees with poor structure or health, or individual trees that would reasonably be considered undesirable may, in special situations, warrant removal and replacement with a more beneficial tree or species. In this case, mitigation should recover the appraised value and equivalent canopy area of the tree being removed. This may include replanting a more suitable tree in addition to excess fees to the Tree Mitigation Fund.	**High** **Ongoing**

$ Low ($0-$5,000)	$$ Medium ($5,000-$20,000)	$$$ High ($20,000-$100,000)	$$$$ Very High (>$100,000)

Preservation and Enhancement of Tree Canopy

Strategies to preserve and enhance tree canopy include:	Priority:
1. Increase canopy by 5 percentage points to an overall canopy cover of 22.7%. *Continued* **Implementation Measures:** E) Increase outreach and awareness and develop strategies for increasing street trees in residential neighborhoods, including: o More options for species selection o Education about the value and benefits of street trees F) Explore opportunities to incentivize tree planting on private property, including: o A 1-year water rebate to cover the cost of watering and establishing a new tree(s) G) Establish an overall long-term canopy cover goal as well as individual goals for specific land use. o To increase the overall canopy by 5 percentage points, will require 380 acres of new canopy (~11,000 trees) to be planted on both public and private locations, including new development sites, residential sites, and vacant community tree sites. o Use impervious surface GIS layer (to be obtained in 2015) to better refine canopy goals. o Use impervious surface layer and other City infrastructure layers to identify potential planting areas and sites.	**High** **Ongoing**
Cost:	**$$$$**
2. Increase the stocking level of the community tree resource. In support of strategies to increase overall canopy across the community, the City will increase the stocking level of the public tree resource from 82% to 91%. This strategy involves planting an additional 3,000 new public trees over the next 15 years, in addition to replacing trees that are removed due to failure (e.g., falling/fell down), unsafe structure, or other reasons. Increased collaboration with individuals and neighborhoods where there are a low number of street trees can help identify and respond to specific reasons and/or cultural preferences that may cause residents to be resistant to neighborhood street trees.	**High** **Ongoing**

$ Low ($0-$5,000) **$$ Medium ($5,000-$20,000)** **$$$ High ($20,000-$100,000)** **$$$$ Very High (>$100,000)**

Preservation and Enhancement of Tree Canopy

Strategies to preserve and enhance tree canopy include:	Priority:
2. Increase the stocking level of the community tree resource. *Continued* **Implementation Measures:** A) Develop a tree planting and replacement plan that includes planting 3,000 new trees over the next 15 years. o Plant 300 new trees annually (*Tree Planting and Replacement Schedule*, Appendix A). o Plant replacement trees for those public trees removed or lost through tree failure, unsafe structure, and/or other reasons (*Tree Planting and Replacement Schedule*, Appendix A). B) Classify and prioritize available planting sites based on: o Space and minimum planting setbacks o Soil characteristics o Irrigation infrastructure and type of irrigation (e.g., recycled or potable) o Landscape objectives and density o Site constraints and existing infrastructure including hardscape, utilities (overhead and underground), bridges, and culverts C) Place an emphasis on low water use and drought tolerant species. D) Place an emphasis on native species where possible. E) Avoid planting invasive species that can become a problem in other areas, especially sensitive habitats. o Reference California Invasive Plant Council (www.cal-ipc.org), for northern California. F) Place emphasis for planting/replacement on street trees in downtown and on major arterial roadways to maximize treescapes in public areas. G) Place emphasis on Right Tree Right Place: o Avoid/reduce hardscape and utility conflicts o Match tree species to soil and water conditions o Match tree species to planter size and intended use/objective H) Optimize shade and environmental benefits by planting large stature trees where feasible. I) Identify locations, neighborhoods, and other areas where tree planting will enhance overall canopy cover. J) Identify areas/locations where trees can be planted to mitigate development related removals where space is not available on the site.	**High** **Ongoing**

$ Low ($0-$5,000) $$ Medium ($5,000-$20,000) $$$ High ($20,000-$100,000) $$$$ Very High (>$100,000)

Preservation and Enhancement of Tree Canopy

Strategies to preserve and enhance tree canopy include:	Priority:
2. Increase the stocking level of the community tree resource. *Continued* **Implementation Measures:** K) Collaborate with neighborhood organizations, groups, and individuals to identify strategies for increasing street trees in neighborhoods with a high tree vacancy rate: o Identify specific reasons and/or cultural preferences that may cause residents to be resistant to neighborhood street trees and develop a targeted approach: - Offer fruit/nut trees that also provide a food source - Increase flexibility and species options - Consider incentives (e.g., water rebate) o Collaborate with residents/neighborhoods to better understand their concerns L) Coordinate with other City plans (e.g., Pedestrian Master Plan, Bicycle Master Plan, etc.) to provide shade for users. M) Consider that larger planting projects may qualify as mitigation strategies for meeting CEQA requirements. N) Identify additional resources needed to implement this strategy, including administrative support, contract services, and the cost of additional trees. **Cost**	**High** **Ongoing** **$$$$**
3. Develop a technical manual for the protection and preservation of trees during construction and development. Once a determination has been made to preserve a tree(s), it is critical to ensure that adequate protection is provided to avoid damage to the tree(s), and/or critical root zone areas during and immediately following construction. **Implementation Measures:** A) Develop a technical manual for tree preservation in development and construction zones. See Appendix Z. *Guidelines for Tree Preservation in Construction Zones*. **Cost**	**High** **2015-2016** **$$**

$ Low ($0-$5,000)	$$ Medium ($5,000-$20,000)	$$$ High ($20,000-$100,000)	$$$$ Very High (>$100,000)

Preservation and Enhancement of Tree Canopy

Strategies to preserve and enhance tree canopy include: **Priority:**

4. Adopt parking lot shade goals.

Shading parking lots can contribute greatly to reducing the overall heat island effect from the heat-absorbing characteristics of asphalt. Additionally, shade reduces temperatures and emissions from parked vehicles, including nitrogen oxides (NO_X) and hydrocarbons, precursors to ozone (O_3) formation that contribute to poor air quality.

Implementation Measures:

A) Establish a goal of 40% canopy cover at 15-20 years after construction. Trees should shade at least 40% of the paved parking areas as measured at 20 year maturity, based on the tree species and mid-summer sun angle conditions.

B) Establish standards for species selection to ensure that canopy goals are reasonably attainable, based on the average canopy spread at maturity of the species selected.

C) Require that planting sites are designed and constructed to provide the soil space requirements that will reasonably support the mature size of the tree species intended for the site.

D) Consider special provisions where physical constraints may prevent attainment of 40% shade (e.g., overhead utility corridors:
   - Use utility-friendly species that mature at the desirable height
   - Consider solar shade structures as an alternative to required shade trees

E) Establish maintenance standards for parking lot trees, including:
   - Promote healthy branch structure to encourage canopy spread and shading
   - No topping or pollarding

F) Promote, where possible, new parking lot shade goals in existing parking lots where there is a request for a redevelopment permit

G) Coordinate with GIS staff to use aerial imagery and canopy cover analysis to monitor compliance and achievement towards parking lot shade requirements.

High
2015-2016

Cost **$**

$ Low ($0-$5,000)	$$ Medium ($5,000-$20,000)	$$$ High ($20,000-$100,000)	$$$$ Very High (>$100,000)

Preservation and Enhancement of Tree Canopy

Strategies to preserve and enhance tree canopy include:	Priority:
5. Revise Municipal Code Chapter 32.39 Tree Valuation. To support the preservation and enhancement of tree canopy, it is important to recover the benefits that are lost when large trees are removed. Using the appraisal formulas established by the Council of Tree & Landscape Appraisers *Guide for Plant Appraisal* (9th Edition or most current) will ensure that mitigation measures are consistent and fair with consideration to the size, species, condition, and contribution of the tree(s) being removed. **Implementation Measures:** A) Revise Municipal Code 32.39 Tree Valuation to reflect the most current industry standards for tree appraisal. **Cost**	**High** **2015-2016** **$**
6. Promote design and construction standards that increase soil volume, planting space, and pervious surface. To reach full potential (i.e., a trunk diameter, height, and canopy spread typical of the species) and to provide the greatest benefits to the community, a tree must have enough soil volume to support healthy root growth and structure (Appendix A, Soil Volume & Tree Stature). This is particularly important in parking lots and other paved areas where the temperatures of surrounding asphalt can inhibit the natural spread of roots beyond planter boundaries. In addition to planter design, species selection is critical (e.g., right tree, right place) to ensure that a tree will perform its intended role and function in the landscape in balance with other infrastructure. Finding adequate planter space for medium and large-stature trees can be a challenge in Mountain View where space for large trees is often limited by hardscape. Developers and City planners should consider using planter designs that increase soil volume below grade when surface area is restricted by impervious surface. See Appendix A. Soil Volume & Tree Stature and Alternative Planter Designs.	**High** **Ongoing**

$ Low ($0-$5,000) **$$ Medium ($5,000-$20,000)** **$$$ High ($20,000-$100,000)** **$$$$ Very High (>$100,000)**

Preservation and Enhancement of Tree Canopy

Strategies to preserve and enhance tree canopy include:	Priority:
6. Promote design and construction standards that increase soil volume, planting space, and pervious surface. *Continued* **Implementation Measures:** A) Supplement Planter Design Standards with options for increasing soil volume where above ground area is restricted by impervious surfaces (Appendix A, *Alternative Planter Designs*). B) Supplement planter and pavement design options to reduce conflicts between trees and other infrastructure (Appendix A, *Alternative Planter Designs*) o Structural soils o Suspended pavement o Pervious pavement/rubberized pavers o Flexible (e.g., rubber) sidewalks	**High** **Ongoing**
Cost	**$**

$ Low ($0-$5,000)	$$ Medium ($5,000-$20,000)	$$$ High ($20,000-$100,000)	$$$$ Very High (>$100,000)

Sustainability, Health, and Safety in the Community Tree Resource

This objective is intended to preserve and improve the overall health of the community tree resource (structure and composition), promote best management practices to manage risk and liability, and provide the foundation for sustainability and maximum benefits over time.

Strategies that support sustainability, health, and safety include: **Priority:**

1. Continue to maintain public trees based on the most current industry standards for all contractors and in-house crews engaged tree care operations.

The Tree Care Industry Association (TCIA) and the International Society of Arboriculture (ISA) partner with government agencies, tree care companies, and green industry organizations to develop and maintain comprehensive standards approved by the American National Standards Institute (ANSI). The ANSI A300 Series applies to tree care operations and ANSI Z133 safety requirements apply to employers and employees engaged in arboricultural operations. The ISA Best Management Practices (BMP) Series compliments these standards.

The City of Mountain View applies these standards, which are based on current science, to ensure the highest level of tree care, thereby promoting health and longevity, reducing the risk of tree failure, and minimizing liability.

High

Ongoing

Implementation Measures:

A) Ensure that all contract specification and in-house policies and directives require that tree care operations adhere to current industry and best management practices (BMPs).
   - ANSI A300 Standards for Tree Care Operations
   - ANSI Z133 Safety Requirements
   - ISA Best Management Practices

B) Ensure that all contract specifications and in-house policies and directives require that tree care operations adhere to federal and state regulations for the protection of birds and other wildlife.
   - Federal Migratory Bird Treaty Act (MBTA)
   - Federal Endangered Species Act
   - California Fish and Game Code, Section 3503

Cost **$**

$ Low ($0-$5,000) **$$ Medium ($5,000-$20,000)** **$$$ High ($20,000-$100,000)** **$$$$ Very High (>$100,000)**

Sustainability, Health, and Safety in the Community Tree Resource

Strategies that support sustainability, health, and safety include:	Priority:
2. Promote proactive maintenance with a minimum 7-year pruning/inspection cycle for all community trees. A cyclical pruning program ensures that all community trees are inspected and pruned a minimum of every 7 years, promoting the preservation of tree health, longevity, structure, and risk management and ensuring equity of service throughout the community. **Implementation Measures:** A) Establish a regular 7-year maintenance cycle for most trees. B) Establish a 3-year maintenance cycle for fast growing trees. C) Maintain community trees in good health and structure o Proper training and pruning o Integrated Pest Management (IPM) o Healthy environment (mulch, planter space, irrigation D) Inspect large/mature trees to identify structural and age-related defects and manage/mitigate risk. E) Update inventory data when trees are serviced (i.e., pruned or inspected): o Inspect trees for structural, pest, and disease and document findings o Verify species o Update condition rating o Update diameter (DBH) **Cost**	**High** **Ongoing** **$$$$**
3. Update inventory management procedures to improve efficiency and accessibility. The updated inventory management system will support live updates in the field, reduce paperwork, and improve efficiency, accessibility, and applicability in the inventory database. **Implementation Measures:** A) Provide training for staff and contractors on field applications for inventory updates to promote accuracy, timeliness, and quality control of inventory data. B) Ensure that inventory updates are included in trimming, pruning, and maintenance contracts. **Cost**	**High** **2015-2016** **$**

$ Low ($0-$5,000) **$$ Medium ($5,000-$20,000)** **$$$ High ($20,000-$100,000)** **$$$$ Very High (>$100,000)**

Strategies that support sustainability, health, and safety include: **Priority:**

4. Promote greater diversity in the street tree palette.

Species diversity in an urban forest is an indicator of the overall health and stability of the resource. Greater diversity promotes greater resistance to pests, disease, and environmental stresses. High reliance on one or a few key species can result in devastating loss within the resource and to the benefits afforded to the community in the event of a major pest or disease outbreak (e.g., emerald ash borer, Dutch elm disease).

Climate change is expected to have a significant effect on all forests (including urban forests) because of changes in temperatures (average, high, and low) and increases in pest and disease outbreaks. Some areas, particularly in northern and southern regions, are already experiencing these effects. Species that are marginal now may experience either an advantage or a disadvantage from these changes. Increasing species diversity in the overall population will be critical to preparing for these changes and promoting sustainability of both tree canopy and benefits.

Mountain View's community tree resource includes more than 230 unique species. However, the top 10 species represent nearly 55% of the overall population. This strategy promotes sustainability of the overall community tree resource and lessens the likelihood of catastrophic loss at the neighborhood level.

Medium
2015-2025

Implementation Measures:

A) Identify and maintain a diverse palette of regionally compatible species (including native species).
   - Collaborate with stakeholders, including Mountain View Trees and residents to review and update the Master Street Tree List every 10 years.
   - Review the performance of existing species in the inventory to identify performance history and continued suitability and/or ideal distribution.

B) Explore revision to the Heritage Tree Ordinance to exclude "invasive species" as classified by Cal-IPC for northern California and also palm species from being classified and protected as a Heritage Tree(s).

C) Eliminate street tree designations (e.g., monoculture planting) and encourage greater diversity.
   - Where design standards call for uniformity, consider using 2-3 species in a pattern or alternating design.

Strategies that support sustainability, health, and safety include:	Priority:
4. Promote greater diversity in the street tree palette. *Continued* **Implementation Measures:** D) Reduce reliance on heavily used species by decreasing use in new tree plantings: o Coast redwood (*Sequoia sempervirens*) – currently 10% o London planetree (*Platanus acerifolia* – currently 9% o Chinese pistache (*Pistacia chinensis* – currently 7%) **Cost**	**Medium** **2015-2025** **$**
5. Develop an annual work plan. The Parks Manager will coordinate with forestry staff to develop an annual work plan in anticipation of planned operations and budget and resource requirements. **Implementation Measures:** A) Identify goals for annual tree care operations: o Tree trimming/inspection. Number and location of trees to prune and inspect (see Appendix A. *Tree Trimming/Inspection on a 7-year cycle*). o Tree planting to replace removals and increase stocking level (See Appendix A. *Tree Planting and Replacement Schedule*). o Whenever possible, schedule tree trimming to occur between mid-September and February to avoid disruption or harm to nesting birds. **Cost**	**High** **Ongoing** **$**

$ Low ($0-$5,000) **$$ Medium ($5,000-$20,000)** **$$$ High ($20,000-$100,000)** **$$$$ Very High (>$100,000)**

Sustainability, Health, and Safety in the Community Tree Resource

Strategies that support sustainability, health, and safety include:	Priority:
6. Develop a Risk Management Plan and policy for urban forestry operations. This strategy is intended to manage the public safety component of community forestry. Managing the risk of trees (i.e., inspection, identification of risk factors, mitigation) along streets, trails, sidewalks, parks, and in open space areas adjacent to private property can significantly reduce the risk and liability of entire tree or branch failure. **Implementation Measures:** A) Work with the Risk Management Division to identify objectives and action thresholds for tree risk management. B) Coordinate risk management objectives with the tree pruning/inspection program recommended to occur on a 7-year cycle. C) Prioritize mitigation measures and coordinate with work plans. D) Identify risk assessment priorities, protocols, policy, and final authority for removals. **Cost**	**High** **2015-2016** **$**

$ Low ($0-$5,000)	$$ Medium ($5,000-$20,000)	$$$ High ($20,000-$100,000)	$$$$ Very High (>$100,000)

Preservation and Enrichment of Wildlife Habitat

Approximately 350 species of birds live in or migrate through Mountain View and the preservation of these species and other wildlife is a priority for the community. Urban trees and forests provide critical habitat (foraging, nesting, spawning, etc.) for the wildlife who share our environment. Where possible, the City incorporates tree species that specifically support foraging and cover in the urban landscape.

Federal and state regulations protect endangered and migratory species and nearly all common wild birds in the U.S. During nesting season (February through mid-September), tree trimming and other maintenance operations can reduce valuable nesting sites and potentially cause harm to birds, eggs, and fledglings. When possible, scheduling major tree trimming operations (e.g., block side pruning) to occur between late September through January can greatly reduce the likelihood of harm. In addition, contractors and in-house staff must be made aware of regulations and be properly trained to identify and avoid disruption to active nests.

Strategies to preserve and enrich wildlife habitat include: **Priority:**

1. Develop and implement forestry practices and policies that protect birds and other wildlife.

Urban trees provide shelter and homes for many bird and wildlife species. Forestry operations should provide adequate consideration to the protection of these species and their habitat.

Implementation Measures:

A) While not always possible, it is preferable to schedule major tree care operations like block-side pruning to occur from late September through January. This will greatly minimize interference or harm to nesting birds.

B) When tree trimming and other potentially disruptive activities must occur during the nesting period, all contracted and in-house personnel participating in the activity shall be aware of state and federal regulations protecting nesting birds and be properly trained to identify and avoid the disturbance of any active nests.

- Ensure that contract specifications require appropriate training and certification to comply with all state and federal regulations that protect endangered and migratory species and nesting birds.
  - Federal Migratory Bird Treaty Act (MBTA)
  - Federal Endangered Species Act
  - California Fish and Game Code, Section 3503
- The City's Wildlife Preservation Biologist will provide training and certification for in-house staff.

High
Ongoing

Cost **$**

$ Low ($0-$5,000)	$$ Medium ($5,000-$20,000)	$$$ High ($20,000-$100,000)	$$$$ Very High (>$100,000)

Preservation and Enrichment of Wildlife Habitat

Strategies to preserve and enrich wildlife habitat include:	Priority:
2. Promote important habitat species (cover, foraging, and nesting). Whenever possible, the City of Mountain View will provide consideration for habitat enrichment by planting species that provide critical nesting, foraging, and cover for birds and wildlife. **Implementation Measures:** A) Whenever possible, landscape and tree planting projects should incorporate species to enrich wildlife habitat within the community by providing important cover, nesting, and foraging sources.	**High** **On Going**
Cost	**$-$$$**

$ Low ($0-$5,000)	$$ Medium ($5,000-$20,000)	$$$ High ($20,000-$100,000)	$$$$ Very High (>$100,000)

Increased Outreach and Education

This objective is intended to support the development of programs, activities, and materials that increase community awareness and appreciation for the urban forest and trees in general.

Strategies to increase outreach and education include:	Priority:
1. Enhance and maintain the City webpage for community trees. The urban forestry webpage is the first place residents and others look to for information about community trees, the Heritage Tree Program, and tree care information. It should be engaging, user-friendly, and a comprehensive resource for everything about trees in Mountain View. **Implementation Measures:** A) Incorporate Information and images that illustrate important information about the state of the urban forest and Mountain View's canopy cover, including composition and benefits. B) Include active links and engaging articles for residents and property managers, including: o How to plant a tree o How to prune a tree o How to fertilize and mulch o How to irrigate and care for trees in times of drought o How to hire an arborist or tree care company C) Include links to electric and natural gas utility websites that explain safety and Right Tree, Right Place concepts. D) Include information about the City's pruning cycle for community trees so that residents can see when their neighborhood is scheduled for maintenance. E) Include facts and links to the City's tree protection regulations, requirements, policies, and necessary forms. o Accessible database of pending and active requests for Heritage Tree removal permits o Benefits and responsibilities of street trees F) Include a homeowner's list of recommended tree species for Mountain View. G) Include information and links on habitat enhancement and wildlife protection: o Non-native and invasive species o Wildlife and habitat (e.g., Golden Gate Audubon Society) o Watershed and riparian resources H) Include information about volunteer opportunities and groups (e.g., Mountain View Trees).	**Medium** **On Going**

$ Low ($0-$5,000)	$$ Medium ($5,000-$20,000)	$$$ High ($20,000-$100,000)	$$$$ Very High (>$100,000)

Increased Outreach and Education

Strategies to increase outreach and education include:	Priority:
1. Enhance and maintain the City webpage for community trees. *Continued* I) Include information about incentives for planting and maintaining trees on private property: o Link to information about carbon sequestration and credits for larger parcels o Link to nonprofits and regional, state, and national tree interests o Mountain View Trees o Trees Are Good (ISA) o Arbor Day Foundation o California Urban Forests Council	**Medium** **On Going**
Cost	**$-$$**
2. Develop and present workshops and seminars that increase awareness and knowledge about trees, canopy, and the urban forest. Develop a dynamic presentation that highlights the value and benefits of trees and tree canopy. Develop hands-on workshops for the community that teach the basics of tree care and the best methods for caring for trees. Make the presentation and workshops available to the community, schools, and neighborhood groups and for increasing awareness at community and council meetings. **Implementation Measures:** A) Develop a series of hands-on workshops that teach the basics of tree care (planting, pruning, mulching, fertilizing, etc.). B) Develop a presentation that explains the benefits of trees and tree canopy to the community (environmental, social, and economic). C) Develop a workshop that teaches the basics of irrigation practices, water conservation, and how to care for trees during drought. D) Develop a hands-on program for elementary schools to engender basic knowledge and appreciation for trees and the urban forest. E) Collaborate with Mountain View Trees to present seminars and workshops to the community, neighborhood associations, and schools.	**Medium** **2015-2020**
Cost	**$**

$ Low ($0-$5,000) **$$ Medium ($5,000-$20,000)** **$$$ High ($20,000-$100,000)** **$$$$ Very High (>$100,000)**

Increased Outreach and Education

Strategies to increase outreach and education include:	Priority:
3. Develop outreach materials that communicate information about trees, canopy, and the urban forest. Develop outreach materials (pamphlets, articles, etc.) that communicate specific topics about trees, canopy, the urban forest, and environmental benefits. **Implementation Measures:** A) Develop outreach materials to educate home/property owners about the benefits and responsibilities of street trees. B) Develop outreach materials that communicate: o Basics of tree care, including planting, pruning, irrigation, and caring for trees during periods of drought. o Benefits of trees and tree canopy, including environmental, social, and economic benefits. o Information about the community tree resource, including composition, health, and species diversity. o Recommendations for tree species for private property o Recommendations for caring for trees during times of drought C) Partner with utilities, other city departments, nonprofits, schools, and other groups to collaborate on shared information and outreach goals when possible. Examples include: o Right Tree Right Place – Power line friendly tree species o Safety considerations related to tree near energized lines and underground utilities D) Identify resources needed to support this strategy, including administrative, consultant (for resource materials), supplies, and materials.	**Medium** **2015-2020**
Cost	**$-$$$**
4. Develop and deliver a State of the Community Forest Report. Public support is critical to a successful and sustainable urban forest program. Keeping stakeholders well informed is the best way to generate support and engagement. Providing a State of the Community Forest Report every 5 years is the perfect way to communicate progress and accomplishments toward CTMP objectives. It is also an opportunity to communicate any challenges or issues that may be holding up the Plan.	**Medium** **2020, 2025**

$ Low ($0-$5,000) **$$ Medium ($5,000-$20,000)** **$$$ High ($20,000-$100,000)** **$$$$ Very High (>$100,000)**

Increased Outreach and Education

Strategies to increase outreach and education include:	Priority:
4. Develop and deliver a State of the Community Forest Report. *Continued* **Implementation Measures:** A) Present an update to the Urban Forestry Board and residents on the overall condition of the community forest: o Highlight services (e.g., number of trees pruned/replaced, service calls responded to, etc.) o Summarize progress towards canopy goals and trees planted (public and private) o Accomplishments towards CTMP objectives	**Medium** **2020, 2025**
Cost	**$**

$ Low ($0-$5,000) **$$ Medium ($5,000-$20,000)** **$$$ High ($20,000-$100,000)** **$$$$ Very High (>$100,000)**

Increased Collaboration with Volunteers and Nonprofit Groups

This objective is intended to promote new relationships and strengthen existing ones with nonprofits, business groups, volunteer organizations, and individuals who share a vision and goals for Mountain View's urban forest (public and private).

Strategies to increase collaboration include:	**Priority:**
1. Foster relationships and facilitate collaboration with volunteers, nonprofits, neighborhood groups, and businesses. Just as a healthy urban forest is vital to the health and well-being of the community, the support, partnership, and engagement of residents is critical to the growth, preservation, and sustainability of the urban forest. **Implementation Measures:** A) Enhance and build on existing relationships with nonprofit organizations (e.g., Mountain View Trees, Friends of Stevens Creek): o Explore work agreements with Mountain View Trees in exchange for funding to support administration. B) Identify and partner with groups, organizations, and individuals who share a vision and goals for a healthy and sustainable urban forest. C) Participate in and support regional groups and committees that share vision and goals for the urban forest.	**High** **Ongoing**
Cost	**$-$$$**

$ Low ($0-$5,000) **$$ Medium ($5,000-$20,000)** **$$$ High ($20,000-$100,000)** **$$$$ Very High (>$100,000)**

Review and Measure Attainment of the CTMP Objectives

The Community Tree Master Plan provides critical information and an outline for forestry operations over the next 10 years. It is important to review the Plan annually to ensure that objectives and strategies are incorporated into the annual work planning process. In addition, this objective provides strategies for measuring the success of the Plan and the enrichment over time of the community tree resource and overall canopy cover in Mountain View.

Strategies to measure attainment include:	**Priority:**
1. Annually review the CTMP and the attainment status of objectives and strategies to develop an annual work plan. The CTMP is intended to be an active tool that can and should be adjusted in response to available resources and changes in community expectations. In addition to serving as a day-to-day guide for planning and policy making, the Plan should be reviewed internally each year for progress and integration of objectives into the annual work plan. **Implementation Measures:** A) Review the CTMP annually and integrate objectives and strategies into work plans. **Cost**	**High** **Annually** **$**
2. Complete a resource analysis (i-Tree Streets) every 5 years. With current tree inventory data Mountain View can quickly and easily complete an updated resource analysis to quantify environmental benefits and benefit versus investment ratio for the community's urban forest. Since benefits will increase with additional trees planted and as the urban forest matures, it is recommended that a resource analysis be completed every 5 years. **Implementation Measures:** A) Use i-Tree Streets to calculate the current composition, benefits, and benefit versus investment ratio of the community urban forest. B) Review changes and improvements to benefits, composition, and benefit versus investment ratio. C) Report change and progress in the State of the Community Forest Report. **Cost**	**Medium** **2020, 2025** **$$**

$ Low ($0-$5,000) **$$ Medium ($5,000-$20,000)** **$$$ High ($20,000-$100,000)** **$$$$ Very High (>$100,000)**

Review and Measure Attainment of the CTMP Objectives

Strategies to measure attainment include::	Priority:
3. Review and update the Master Street Tree List every 10 years. Maintaining a broad selection of street tree species that perform well in Mountain View's climate will promote increased sustainability and health in the community tree resource. **Implementation Measures:** A) Collaborate with stakeholders (Mountain View Trees, maintenance personnel, individuals, etc.) to periodically review and update the Master Street Tree List. B) Review the performance of existing species and provide consideration for new cultivars and varieties along with changes to environmental conditions and emerging pests and/or disease. o Identify performance history (e.g., using i-Tree) and continued suitability and/or ideal distributions. C) Identify and maintain a diverse palette or regionally compatible species (including native species). **Cost**	**Medium 2025** **$**
4. Complete a canopy analysis every 10 years. Now that a baseline tree canopy cover analysis has been completed, overall canopy and canopy cover by maintenance area, zoning, land-use, and other boundaries can be measured periodically for change over time and attainment with community canopy goals. Canopy analysis should be completed every 10 years. **Implementation Measures:** A) Use aerial imagery and remote sensing to map changes to the extent and location of tree canopy B) For a quick check of overall land cover values, use i-Tree Canopy. C) Review changes and improvements to overall canopy cover and canopy cover by land use, neighborhoods, etc. D) Report change in the State of the Community Forest Report. **Cost**	**Medium 2025** **$-$$$**

$ Low ($0-$5,000) **$$ Medium ($5,000-$20,000)** **$$$ High ($20,000-$100,000)** **$$$$ Very High (>$100,000)**

How Are We Doing?

Monitoring and Measuring Results

With appropriate care and planning, the urban forest is an asset that has the potential to increase in value over time. Considering a well-established community tree resource in overall good condition, with proactive management and planning, and additional tree planting to increase the stocking level, Mountain View is well positioned to realize this potential. As young trees mature and their leaf surface and canopy grows, so too will the overall benefits and value from the community's urban forest. The objectives and strategies of the CTMP are intended to support this process in an appropriate manner that encourages the sustainable stewardship of community trees with consideration for, safety, cost efficiency, and community values. The CTMP includes strategies for measuring the success of the Plan over time.

Mountain View's Urban Forest Benchmark Values

Community Trees (Publicly-managed)	
Community Trees	26,166
Replacement Value	$85.7 million
Stocking Level	82%
Species Diversity	
Total number of unique species	230
Prevalence of top ten species	55%
Species exceeding recommended 10%	0
Benefits	
Total Annual Benefit	$8 million
Annual per Tree Benefit	$305
Tree Canopy Cover (Public and Private)	
Overall Canopy Cover	17.7%
Canopy Benefits (Public and Private)	
Overall carbon storage	$4 million
Annual Air Quality Benefits	$710,019
Annual Carbon Benefits	$199,884

Annual Review

The CTMP is an active tool that will guide management and planning decisions over the next 10 years. The objectives and strategies will be reviewed internally on a yearly basis for progress and integration into the annual Department work plan. The Plan also includes strategies for some long-range objectives. Target dates are intended to be flexible in response to emerging opportunities, available resources, and changes in community expectations.

Resource Analysis

With up-to-date tree inventory data, Mountain View can quickly and easily complete an updated resource analysis. Updated values on structure, annual benefits, replacement value, and benefit versus investment ratios can be compared with the benchmarks set by the 2013 analysis to demonstrate progress and improvements to health (condition), species diversity, annual benefits, and overall resource value. A strategy of the CTMP is to complete this analysis every 5 years to illustrate progress and success towards Plan goals.

Master Street Tree List

Maintaining a diverse selection of regionally (and locally) compatibly street trees species supports diversity and health in the urban forest. Forestry staff should collaborate with stakeholders (e.g., maintenance managers, Mountain View Trees, experience individuals) to periodically review and update the Master Street Tree List. Evaluate existing species with consideration for their performance history and distribution within the overall urban forest and provide consideration for new cultivars and varieties that may provide solutions to emerging pests, disease, or climate issues. A strategy of the CTMP is to update this list every 10 years.

Canopy Analysis

With a baseline tree canopy assessment (2013) and an anticipated impervious surface layer (2015), Mountain View can monitor and illustrate changes to the extent and location of tree canopy over time. Using GIS analysis, the City can measure changes in overall land cover as well as by neighborhood and zoning. This information can be used to inform canopy goals and monitor attainment. CTMP strategies include an update of canopy cover in 10 years.

DRG recommends two options for calculating progress towards canopy goals:

Aerial Imagery Remote Sensing

With advanced GIS and remote sensing software capabilities and advances in image acquisition, a top-down canopy assessment approach is recommended to quantify the extent and location of tree canopy. DRG recommends an object-based image analysis (OBIA) semi-automated feature extraction method to process and analyze current high resolution color infrared (CIR) aerial imagery to identify tree canopy and other land cover classifications. Remote sensing imagery analysis is cost-effective and provides a highly accurate approach to assessing existing tree canopy coverage.

In addition to up-to-date high resolution aerial imagery owned by the City of Mountain View, 4-band imagery acquired by the United States Department of Agriculture (USDA), National Agricultural Imagery Program (NAIP) is freely available. The NAIP, administered by the USDA's Farm Service Agency, acquires imagery at a one-meter ground sample distance (GSD) (www.fsa.usda.gov). Acquired during the agricultural growing season (or leaf on), NAIP imagery can provide the base layer for object based image analysis.

Advanced image analysis software, such as Feature Analyst®, an extension of ArcGIS®. Feature Analyst® can be used to classify, or separate, land cover layers from the overall imagery. This semi-automated extraction process uses an object-oriented approach to cluster together objects with similar spectral (i.e. color) and spatial/contextual (e.g., texture, size, shape, pattern, and spatial association) characteristics. At a minimum, DRG recommends extracting the following five land cover classes:

- Tree canopy
- Pervious surface (e.g., turf, grass, and low shrubs)
- Impervious surface
- Bare soil
- Open water

Secondary source, high resolution aerial imagery used in conjunction with custom ArcGIS® tools can aid in final manual editing, quality checking and quality assurance processes (QA/QC). A manual QA/QC process can identify, define, and correct any misclassifications or omission errors in the final land cover layer.

With complete land cover analysis, the City can more easily prioritize planting space and assess contributions to stormwater management and heat island effects.

i-Tree Canopy

For a quick and inexpensive measure of overall canopy and land cover change, DRG recommends using i-Tree Canopy. This methodology can provide an overall estimate of the percentage of tree canopy across Mountain View and by zoning and can be used to examine the relationship between tree canopy and other land cover classifications. However, unlike remote sensing, this methodology does not map the actual location or extent of tree canopy.

For i-Tree Canopy Analysis, DRG recommends the following protocol:

Develop a boundary layer for each of the zoning classifications in Mountain View. Individually import each zoning boundary layer and the overall Mountain View boundary layer into i-Tree Canopy (www.itreetools.org/canopy/) for point-

based analysis. i-Tree Canopy uses default imagery from Google Maps to provide a base layer for analysis, but can be configured to use other current aerial imagery when available.

A qualified technician with aerial image experience should interpret the cover class at points randomly assigned by i-Tree Canopy as:

- Tree
- Pervious surface
- Impervious surface
- Water

Assign a land cover classification to 1,000-2,000 points in each zoning class to achieve a standard error of less than 1.5%. Once established, these points should be used for any future analysis to monitor change. A second technician should perform quality assurance testing on up to 10% of the data set. Any points that do not receive the same interpretation by both observers in any year should be removed from the analysis.

The results of these analyses can be compared over time to monitor the baseline values for tree canopy and other land cover classifications.

State of the Community Forest Report

The CTMP calls for the Parks and Open Space Division to deliver a State of the Community Forest Report every 5 years. This report, which includes updates on canopy change, numbers of trees planted and removed, and changes to the overall community forest (e.g., structure, benefits, and value) will serve as a performance report to the Urban Forestry Board and stakeholders and an opportunity for engagement. The report is also an opportunity to highlight the successful attainment of CTMP objectives as well as to inform stakeholders about any issues or stumbling blocks.

Community Satisfaction

Plan results will be measurable through increased benefits and value in the community tree resource and the preservation and eventual increase in canopy cover over time. Attainment of the objectives and strategies will support better tree health, greater longevity, and a reduction in tree failures. However, perhaps the greatest measurement of success for the CTMP will be its level of success in meeting community expectations for the care and preservation of the community tree resource. Community satisfactions can be measured through surveys and evidenced by public support for realizing the objectives of the Plan. Community satisfaction can also be gauged by the level of engagement and support for forestry programs.

Perhaps the greatest measurement of success for the Plan will be its level of success in meeting community expectations for the care and preservation of the community tree resource.

Appendices

A. Reference

Bibliography

AB 32. 2006. Assembly Bill 32: California Global Warming Solutions Act. 2006. *wwwarb.ca.gov* http://www.arb.ca.gov/cc/ab32/ab32.htm

ANSI A300 Series. Accredited Standards Committee A300.

ANSI Z133.1-2000. Accredited Standards Committee on Safety in Tree Trimming Operations, Z133.

Air Resources Board. October 2011. Compliance Offset Protocol U.S. Forest Project. California Environmental Protection Agency Air Resources Board. www.arb.ca.gov. <http://www.arb.ca.gov/regact/2010/capandtrade10/copusforest.pdf>

Akbari, H., D. Kurn, et al. 1997. Peak power and cooling energy savings of shade trees. Energy and Buildings. Vol 25:139–148.

Arbor Day Foundation. Tree City USA Directory. 2014. http://www.arborday.org/programs/treeCityUSA/directory.cfm

Broadmeadow, S. B., et al. "The influence of riparian shade on lowland stream water temperatures in southern England and their viability for brown trout." *River Research and Applications* 27.2 (2011): 226-237.

California Fish and Game Code Section 3503. www.leginfo.ca.gov. http://www.leginfo.ca.gov/cgi-bin/displaycode?section=fgc&group=03001-04000&file=3500-3516

Clark JR, Matheny NP, Cross G, Wake V. 1997. A Model of Urban Forest Sustainability. J Arbor 23(1):17-30.

CTLA. 1992. Guide for Plant Appraisal. 8th ed. Savoy, IL: ISA.

CTLA. 2000. Council of Tree & Landscape Appraisers *Guide for Plant Appraisal*. 9th ed. International Society of Arboriculture.

CUFR. Center for Urban Forest Research. USDA Forest Service Pacific Southwest Research Station. http://www.fs.fed.us/psw/programs/cufr/

Dwyer, J., McPherson, E. G., Schroeder, H. W., and Rowntree, R. (1992). Assessing the Benefits and Costs of the Urban Forest. 1992. Journal of Arboriculture 18(5), 1-12.

EPA, US Environmental Protection Agency. Heat Island Effect. <www.epa.gov/heatisland/about/index.htm>

Federal Endangered Species Act. 1973. www.fws.gov. http://www.fws.gov/endangered/laws-policies/

Federal Migratory Bird Treaty Act (MBTA). www.fws.gov. http://www.fws.gov/migratorybirds/regulationspolicies/mbta/mbtintro.html

General Order 95; Rule 35, Vegetation Management (revised 2012). www.cpuc.ca.gov. California Public utilities Commission. http://www.cpuc.ca.gov/gos/ GO95/go_95_rule_35.html

Heritage Tree Ordinance. 1975. City Code, CHAPTER 32.2, ARTICLE II. – PROTECTION OF THE URBAN FOREST. https://library.municode.com/index.aspx?clientId=16508

Heisler GM. 1986. Energy Savings with Trees. Journal of Arboriculture 12(5): 113–125.

Hirabayashi, Satoshi. 2014. i-Tree Canopy Air Pollutant Removal and Monetary Value Model Descriptions. www.itreetools.org. http://www.itreetools.org/canopy/resources/iTree_Canopy_Methodology.pdf

ISA. International Society of Arboriculture. http://www.isa-arbor.com/

i-Tree Canopy. http://www.itreetools.org/ canopy/

i-Tree Streets, http://www.itreetools.org/

i-Tree. Tools for Assessing and Managing Community Forests. itreetools.org. <http://www.itreetools.org/index.php>

Kaplan, Rachel and Stephen. 1989. The Experience of Nature: A Psychological Perspective. Cambridge: Cambridge University Press.

Karl, Tom, P. Harley, L. Emmons, B. Thornton, A. Guenther, C. Basu, A. Turnipseed, K. Jardine. Efficient Atmospheric Cleansing of Oxidized Organic Trace Gases by Vegetation. October 2010. Web 11/9/2010. http://www.sciencemag.org/cgi/content/abstract/330/6005/816>

McPherson, E.G., Muchnick, J. November 2005. Effects of Street Tree Shade on Asphalt Concrete Pavement Performance. International Society of Arboriculture. Journal of Arboriculture 31(6): pp 303-310.

<http://www.fs.fed.us/psw/programs/cufr/products/cufr639mcpherson-JOA-pavingshade.pdf>

Miller, R. W. 1988. Urban Forestry: Planning and Managing Urban Greenspaces. New Jersey: Prentice Hall.

Mountain View City Code. Section 36.32.80. 2013, Development Standards for Off-Street Parking. https://library.municode.com/index.aspx?clientId=16508

Mountain View Municipal Code 32 Article 1 – GENERAL. Street Trees

Mountain View Municipal Code 32 Article 2 – PROTECTION OF THE URBAN FOREST. Heritage Tree Preservation

Mountain View Trees. www.mountainviewtrees.org

NASA. 1996. What's Hot in Huntsville and What's Not: A NASA thermal remote sensing project. www.ghcc.msfc.nasa.gov. Web 03/2012. <http://wwwghcc.msfc.nasa.gov/land/heatisl/heatisl.htm>

NERC. Transmission Vegetation Management NERC Standard FAC-003-2 Technical Reference. September 2009. www.nerc.com. North American Electric Reliability Corporation. http://www.nerc.com/docs/standards/sar/FAC-003-2_White_Paper_2009Sept9.pdf

NOAA. NOAA's National Weather Service. How Fast Can the Sun Heat a Car? www.nws.noaa.gov. Web 3/2012. <http://www.nws.noaa.gov /os/heat/index.shtml>

Shoreline Burrowing Owl Preservation Plan. 2012.

TreeKeeper®. http://www.davey.com/natural-resource-consulting/urban-forestry/urban-forestry-management-software/tree-keeper/

Tree Regulations of the City of Mountain View. 1961. City Code, CHAPTER 32, ARTICLE I. – GENERAL. https://library.municode.com/index.aspx?clientId=16508

Urban Forest Resource Analysis, City of Mountain View (2014)

Ulrich, Roger S. 1986. Human Responses to Vegetation and Landscapes. Landscape and Urban Planning, 13, 29-44.

U.S. Energy Information Administration (EIA) Independent Statistics & Analysis. www.eia.gov. Web 2014. <http://www.eia.gov/oiaf/1605/ggccebro/chapter1.html>

Urban Forestry Management Plan. 2007. City of Mountain View, California. Davey Resource Group.

UEP. Urban Ecosystems and Processes. USDA Forest Service Urban Ecosystems and Social Dynamics Program (formerly called the Center for Urban Forest Research). http://www.fs.fed.us/psw/programs/uesd/uep/

Wolf, K.L. 2007. The Environmental Psychology of Trees. International Council of Shopping Centers Research Review. 14, 3:39-43.

Soil Volume and Tree Stature

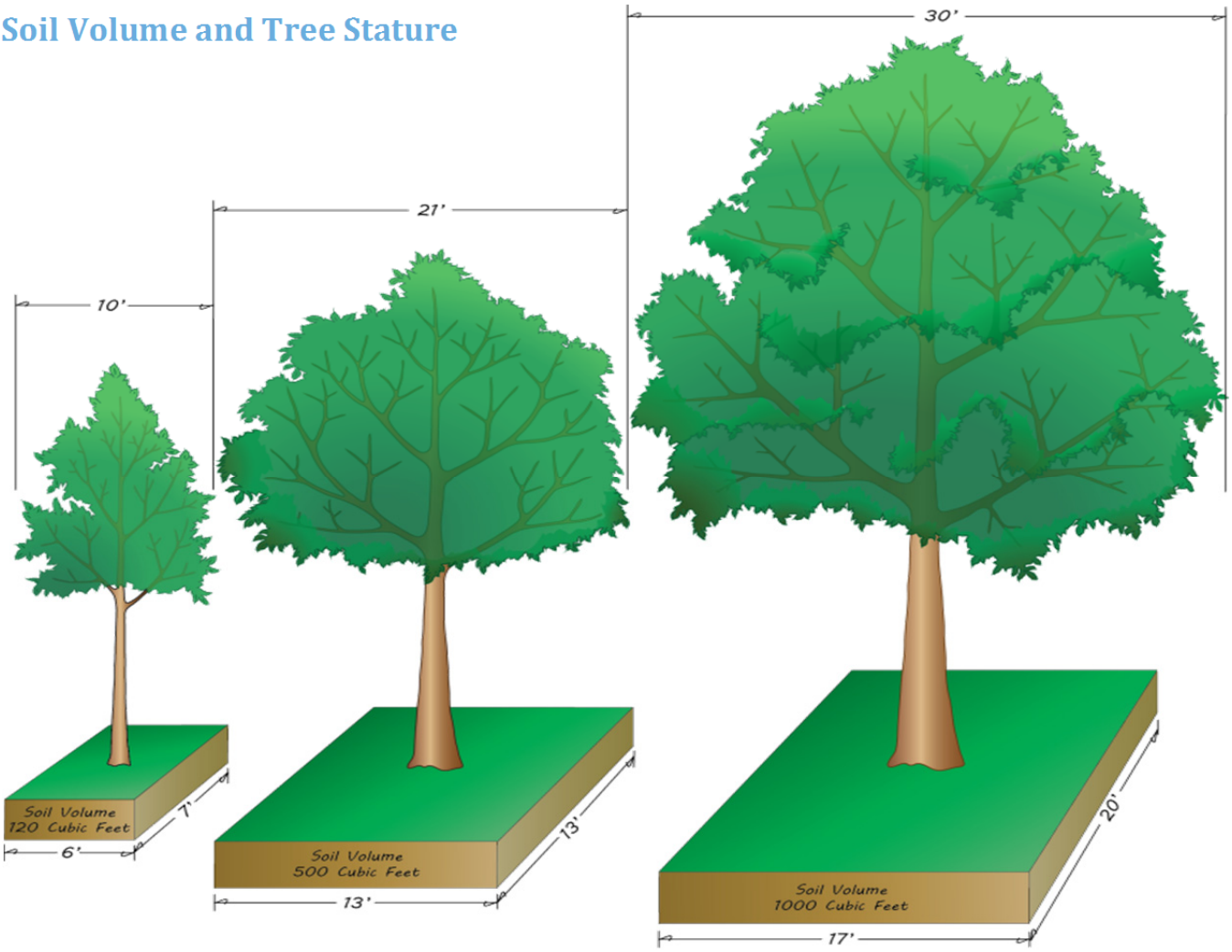


Figure 7. Tree growth is limited by soil volume. Larger stature trees require larger volumes of uncompacted soil to reach mature size and canopy spread (Casey Trees, 2008)

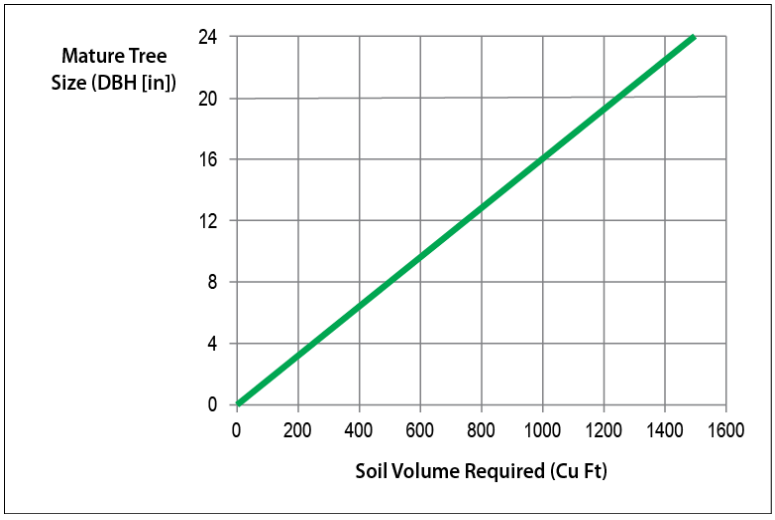


Figure 7. General relationship between soil volume requirements and mature tree size (James Urban, various sources, 1992)

Alternative Planter Designs

The following Alternative Planter Designs represent options that may be considered for increasing root zone below grade and/or to reduce the runoff of stormwater. These alternatives are intended to be conceptual in nature and should not be considered as standards for design purposes.

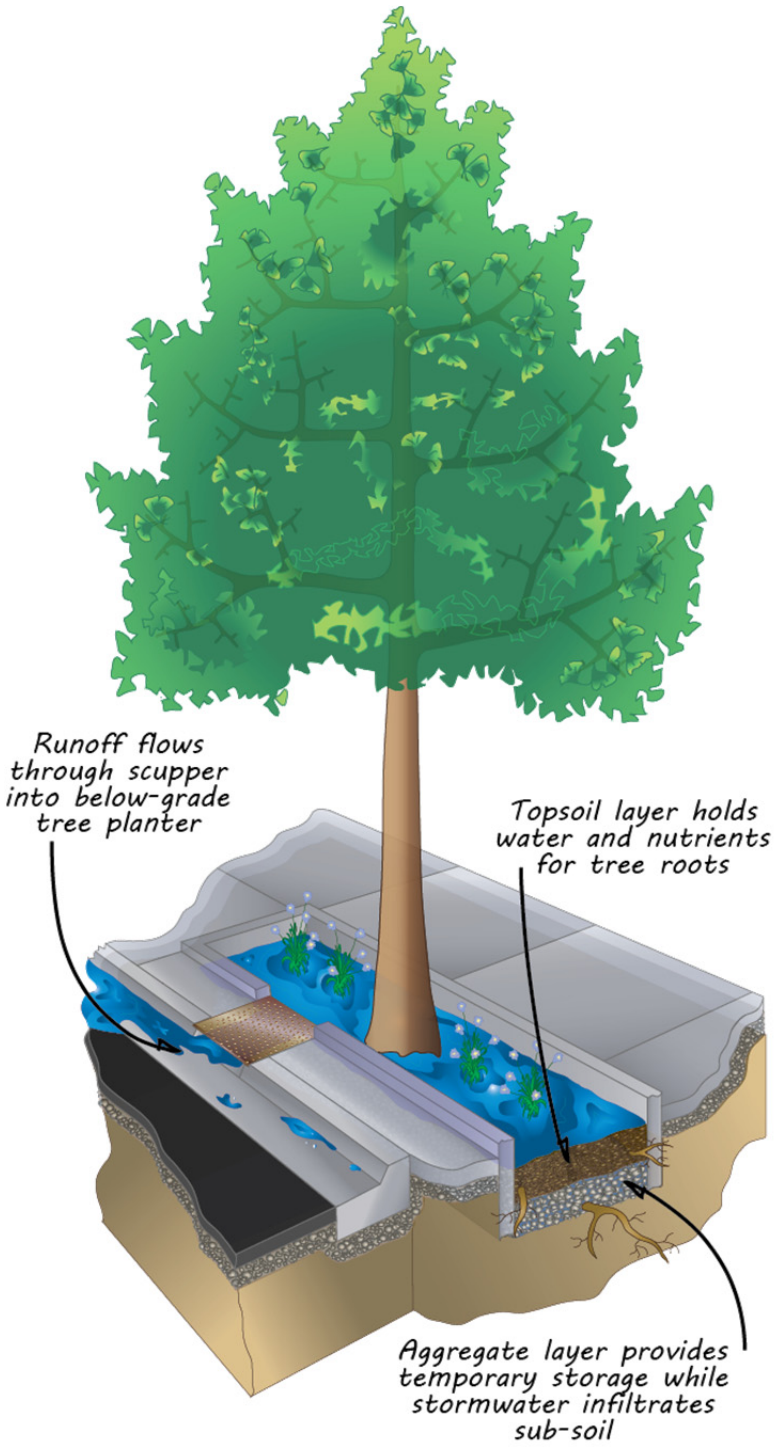


Figure 8. Stormwater tree pits are designed to collect runoff from streets, parking lots, and other impervious areas. Stormwater is directed into scuppers that flow into below-grade planters that then allow stormwater to infiltrate soils to supplement irrigation

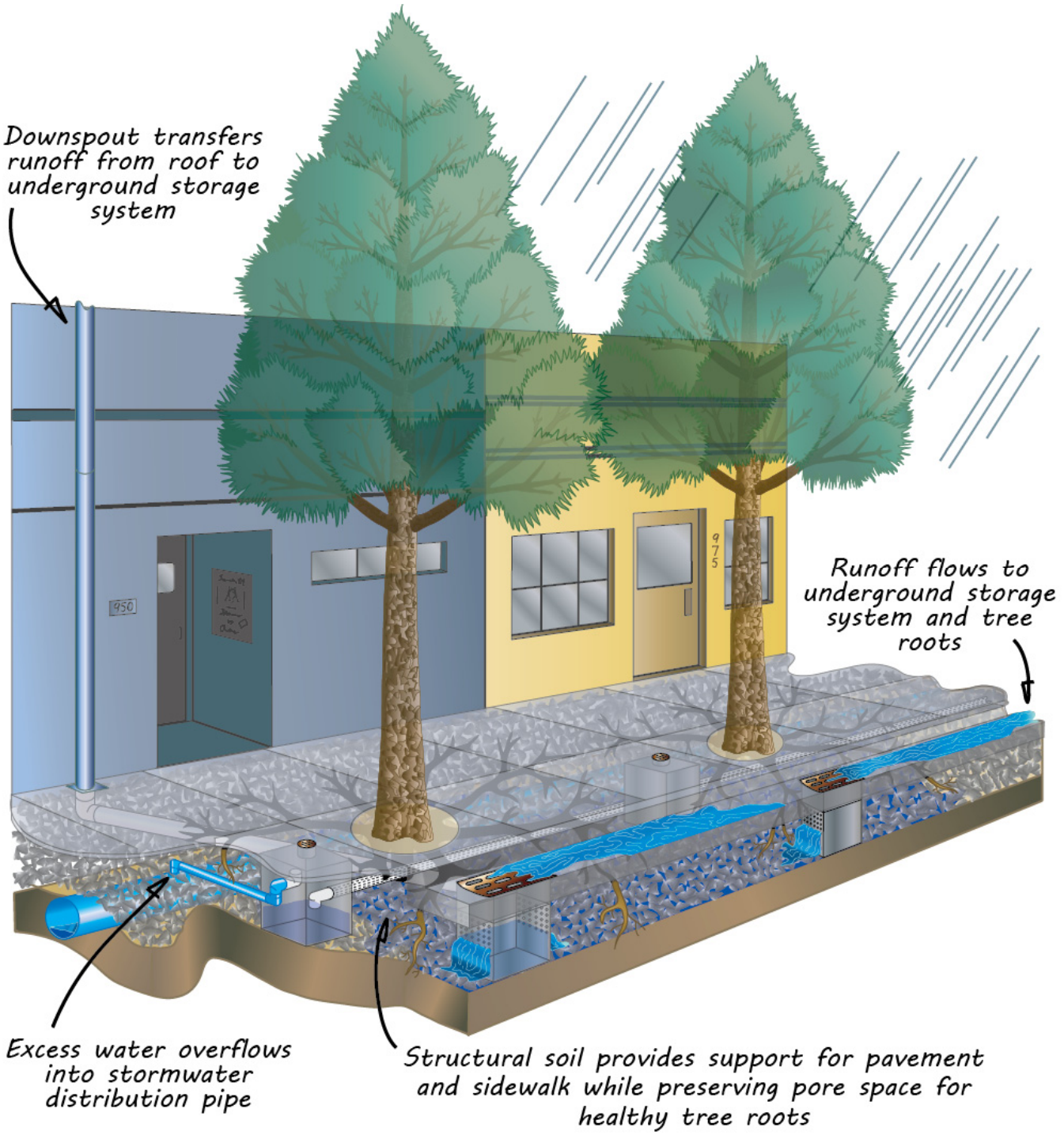


Figure 9. Structural soil is a highly porous, engineered aggregate mix, designed for use under asphalt and concrete as a load-bearing and leveling layer. Pore spaces allow for water infiltration and storage and also root growth.

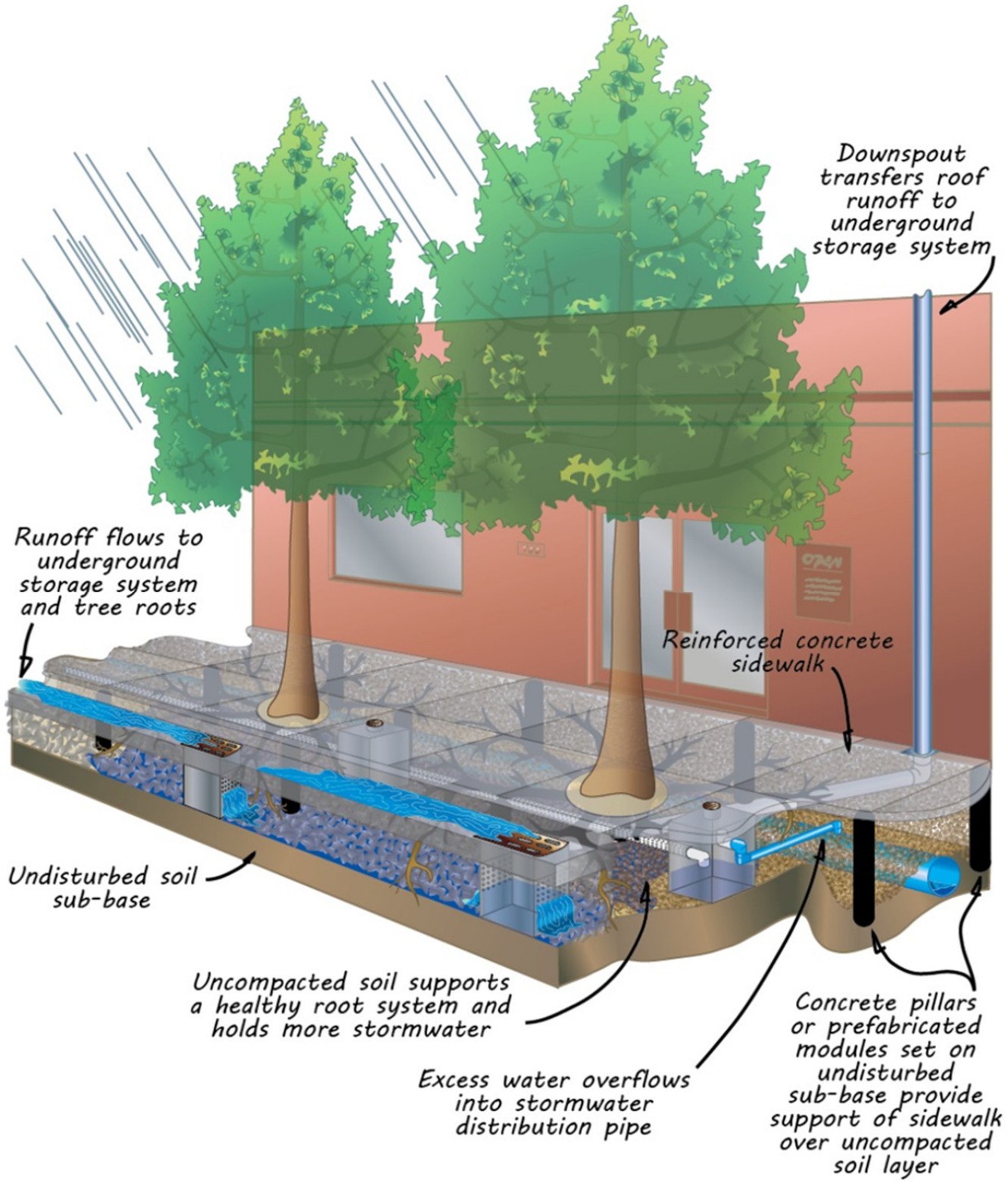


Figure 10. Suspended sidewalks use pillars or structured cell systems to support reinforced concrete, increasing the volume of uncompacted soil in subsurface planting areas and enhancing both root growth and stormwater storage.

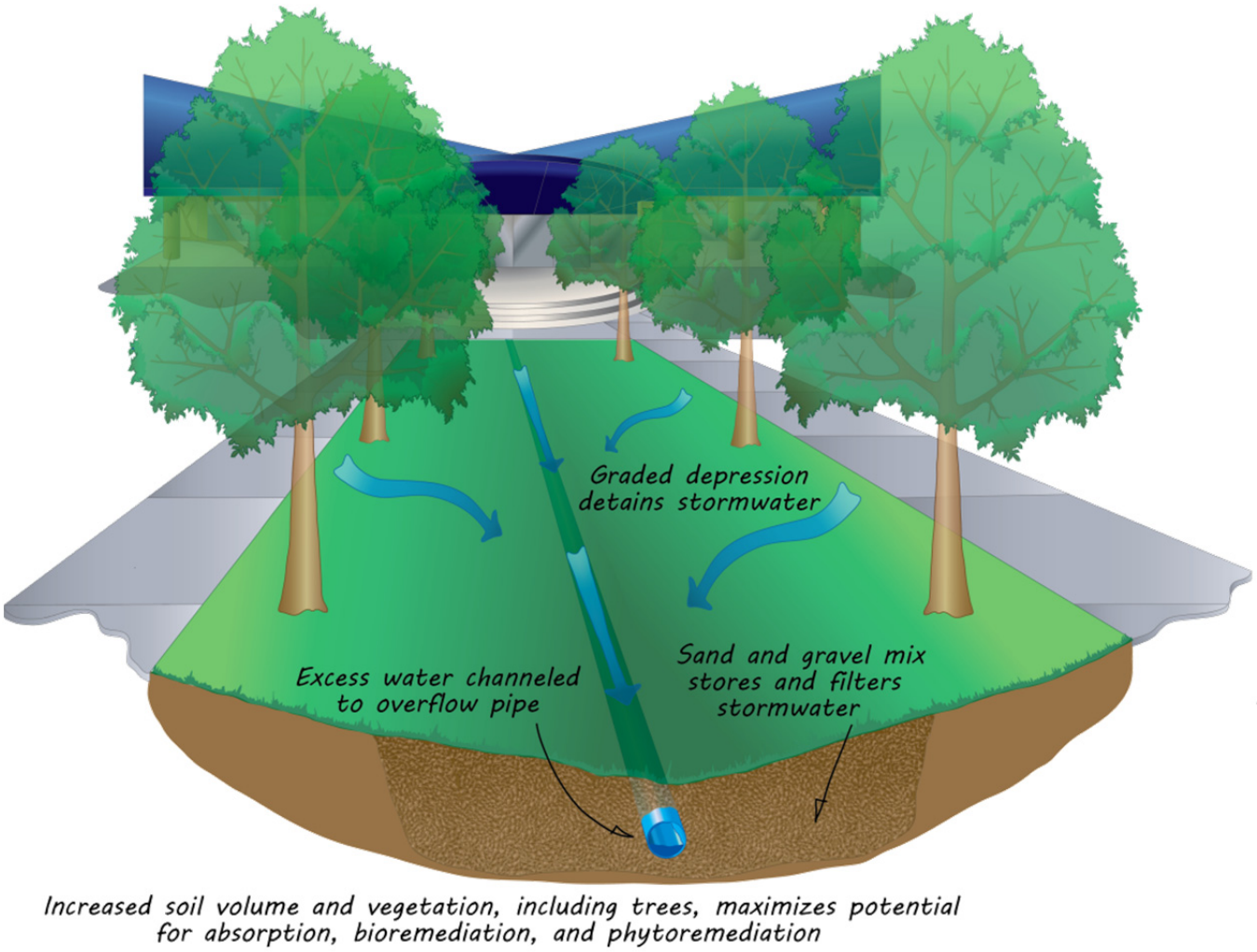


Figure 11. Bioswales are landscaped drainage areas with gently sloped sides designed to provide temporary storage while runoff infiltrates the soil. They reduce off-site runoff and trap pollutants and silt.

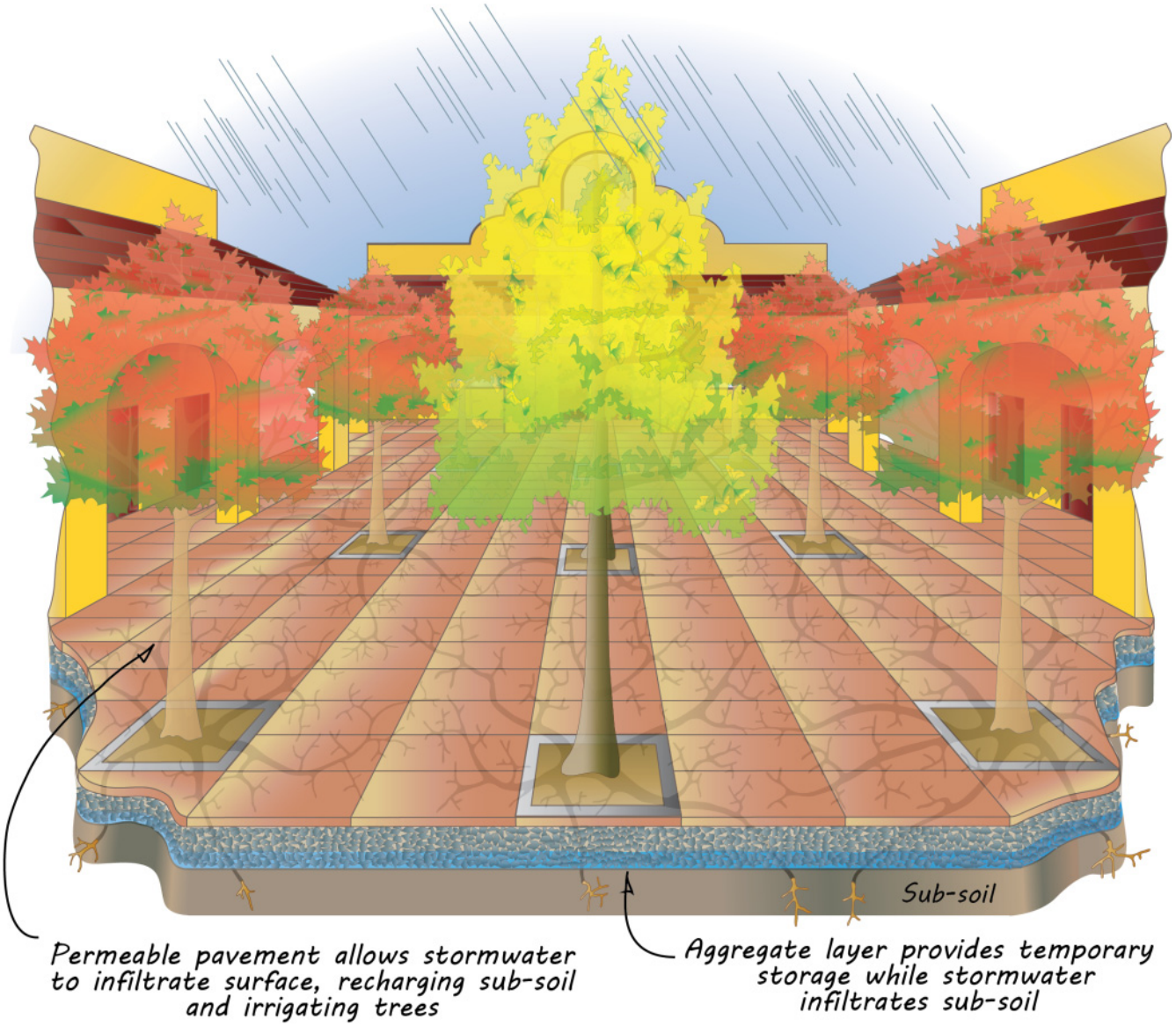


Figure 12. Pervious pavements allow stormwater and oxygen to infiltrate the surface, promoting tree health and groundwater recharge.

Annual Work Plans

Tree Trimming/Inspection on a 7-Year Cycle

Year	Maintenance Zones	Broadleaf Trees*	Conifers**	Total Maintenance Zone Trees*	Cycle-Busters (Zones)	Cycle-Busters Elm	Cycle-Busters Pistache	Total Cycle-Buster Trees	Total Trees to Trim
1	E, F, P	3,724	582	**4,306**	E, F, 0, C, L, Q, S	217	596	**813**	**5,119**
2	J, D	3,797	463	**4,260**	J, D, N, R	17	434	**451**	**4,711**
3	K	3,763	512	**4,275**	K, H, A, B, I	0	647	**647**	**4,922**
4	O, C, L	3,874	835	**4,709**	E, F, 0, C, L, Q, S	217	596	**813**	**5,522**
5	M, G, N, R	4,033	650	**4,683**	J, D, N, R	17	434	**451**	**5,134**
6	K, H, A, B, I	3,880	611	**4,491**	K, H, A, B, I	0	647	**647**	**5,138**
7	Q, S	3,500	1,215	**4,715**	E, F, 0, C, L, Q, S	217	596	**813**	**5,528**
8	E, F, P	3,724	582	**4,306**	J, D, N, R	17	434	**451**	**4,757**
9	J, D	3,797	463	**4,260**	K, H, A, B, I	0	647	**647**	**4,907**
10	K	3,763	512	**4,275**	E, F, 0, C, L, Q, S	217	596	**813**	**5,088**

* Maintenance Zone Broadleaf Trees and Total Maintenance Zone Trees do not include cycle busting elms or pistache

** Arborist should survey conifers ahead of block side pruning to determine any maintenance needs

Tree Planting and Replacement Schedule

	Public Trees to Replace*	Public Trees New	Total Public Trees	Total Private Trees	Total All Trees
Annual number of new trees, to be planted over the next 15 years, estimated to increase overall canopy by 5 percentage points at maturity	240	199	**439**	534	**973**

* Trees to replace is based on the average number of annual tree replacements (FY2011-12 through FY2012-14

Sites	Trees	Stocking Level
32,032	26,166	**81.69**
32,032	29,149	**91.00**

2,983	Number of new trees to reach 91% stocking level
199	Number of new trees to plant annually - 15 year goal
298	Number of new trees to plant annually - 10 year goal

Approximate Number of Mature Trees per Acre of Canopy

	Tree Type									
	BDL	BDM	BDS	BEL	BEM	BES	CDL	CEL	CEM	CES
Average # of Mature Trees/Acre	**16.1**	**34.7**	**105.3**	**12.3**	**62.2**	**113.8**	**22.9**	**64.6**	**49.3**	**693.3**

	Average Canopy Area (ft^2)									
Mean	**2,699.8**	**1,253.6**	**413.7**	**3,550.0**	**700.3**	**382.9**	**1,904.6**	**674.1**	**883.6**	**62.8**
Standard Error	380.7	131.5	76.1	1,160.0	190.3	122.1	1,413.7	144.2	229.8	50.3
Minimum	490.9	490.9	113.1	1,256.6	176.7	78.5	490.9	176.7	314.2	12.6
Maximum	4,417.9	1,963.5	962.1	7,854.0	1,256.6	962.1	3,318.3	1,256.6	1,256.6	113.1
Count	12	13	11	5	6	6	2	6	4	2

BDL = Broadleaf Deciduous Large
BDM = Broadleaf Deciduous Medium
BDS = Broadleaf Deciduous Small
BEL = Broadleaf Evergreen Large
BEM = Broadleaf Evergreen Medium
BES = Broadleaf Evergreen Small
CDL = Conifer Deciduous Large
CEL = Conifer Evergreen Large
CEM = Conifer Evergreen Medium
CES = Conifer Evergreen Small

Guidelines for Tree Preservation in Construction Zones

Construction Site Management

Preservation of existing mature trees before, during, and after new construction and redevelopment is beneficial for a number of reasons, including:

- To sustain both the function and value of existing trees and tree canopy.
- To promote public safety and reduce liability by carefully maintaining the health of preserved tree.
- To contain costs associated with site restoration.
- To reduce or avoid soil compaction and degradation and preserve soil volume.
- To avoid physical injury to existing trees.
- To avoid root injury to trees.
- To protect soils and the hydraulic integrity of the entire site.
- To protect existing irrigation, utilities and underground drainage.
- To prevent sediment-laden and/or polluted runoff from entering drainage systems and water bodies (streams, wetlands, lakes, bays).

Best Management Practices (BMPs)

Pre-Construction

- The Project Manager shall know and understand the development and building regulations concerning trees and vegetation in the area.
- The Project Manager shall ensure that irrigation and drainage systems are operable and adequate.
- The Project Manager shall ensure all temporary erosion sediment control measures are in place prior to groundbreaking.
- The Project Arborist will be responsible for decisions related to vegetation on site before, during, and after construction.
- The Project Arborist shall perform a site inventory of all existing trees in order to record the variety, location, size, and health of each tree. Site inventory includes determining size, species, numbers, and numbers of trees/plants on site.
- Trees that require removal or pruning to accommodate future structures and construction equipment should also be identified.
- The Project Arborist shall submit a Tree Protection Plan (TPP) that identifies all significant trees that will remain on the project site.
- The TPP will indicate the Tree Protection Zone (TPZ) for each tree as (at a minimum) the greater of: six (6) feet, or by multiplying each tree's diameter at 4.5 feet above existing grade (DBH) by a factor of one (1) to determine the diameter, in feet, of the area above and below ground to be protected.
- The TPZ may exceed the Critical Root Zone (CRZ), which is not less than half the distance between the trunk and the outer edge of the tree's canopy, or drip line, but the TPZ may not be smaller than the CRZ.
- The TPP will contain the expected tree protection techniques that will be used on the project.
- The TPP will also list a timetable for project meetings with the Project Team including a pre-construction meeting and the schedule for the Project Arborist monitoring.

- Prior to approval of the TPP, the City shall collect an assurance device in the form of a deposit equal to the tree appraisal value of all protected trees as determined under the methods established by the Council of Trees & Landscape Appraisers *Guide for Plant Appraisal* (9th Edition or most current).

Construction Site Preparation

- Staging areas for equipment shall be established far enough from existing trees to ensure adequate protection of the root zone.
- Entry and exit routes shall be established and fenced off with chain link or construction fencing. When planning routes, avoid utility access corridors.
- Irrigation and drainage systems shall be protected from damage unless plans call for renovation of such systems.
- Prior to beginning construction activities the Project Arborist will supervise and verify the following tree protection measures are in place and comply with the approved TPP:
  1. A six-inch (6") layer of coarse mulch or wood chips is to be installed within the TPZ of protected trees. Mulch shall be kept 12 inches away from the trunk.
  2. Trunks of trees shall be protected with a single wrap of Geocomposite. Geocomposite shall be double sided, Geonet core with non-woven covering (such as Tenax Tendrain 770/2), or equivalent. Tree trunks will be protected with wrap consistent with Figure 19.
  3. Trees that have been identified in the site inventory as posing a health or safety risk may be removed or pruned by no more than one-third, subject to approval of the required permit by the Planning Division. Pruning of existing limbs and roots shall only occur under the direction of the Project Arborist
  4. A protective barrier shall be installed around the Tree Protection Zone (TPZ). The Fence shall be construction of 6-foot high chain link. Posts shall be 2 inches in diameter, driven two (2) feet into the ground. The distance between posts shall be not more than ten (10) feet. The enclosed area is the TPZ and shall have a warning sign displayed prominently at 20-foot (maximum) intervals along the fence. The warning sign shall be a minimum 8.5 inches x 11 inches and clearly state the following: "WARNING - Tree Protection Zone" (Figure 18). Fencing may be moved within the TPZ if authorized by the Project Arborist *and* City Staff but not closer than the drip line from the trunk of any tree.
  5. Movable barriers of chain link fencing secured to cement blocks may be substituted for "fixed" fencing if the Project Arborist *and* City Staff agree that the fencing will need to be moved to accommodate certain phases of construction. Moving TPZ fencing shall be prohibited without authorization form the Project Arborist and City Staff.
  6. Should temporary access into the TPZ be approved, an additional layer of approved tree matting shall be placed over the Critical Root Zone (CRZ).
  7. Tree Growth Regulators may be used as approved by the Project Arborist and City Staff. Paclobutrazol soil applied tree growth regulator (Cambistat® or equivalent) shall be applied to indicated trees by a qualified applicator. Applications shall follow manufacturer's label and applicable laws. TGR reduces canopy growth and increases fibrous root system growth over two to three (2 to 3) years. This can increase tolerance to drought, stress and improve absorption of nutrients and moisture during the stress recovery period.

During Construction

During the Construction phase, the Project Arborist should inspect the site on a regular basis to ensure the TPP is being adhered and report any conflicts or deviations to the City Planner or City Representative. The Project Arborist also needs to be available at the site to monitor construction activities that require encroachment within the TPZ, such as grading or trenching. It may also be necessary to have other key project team members available to monitor these activities.

The Project Arborist shall specify to construction personnel that the following conditions shall be avoided:

- Allowing run off or spillage of damaging materials into the area below any tree canopy.
- Storing construction materials or portable toilets, stockpiling of soil, or parking or driving vehicles within the TPZ.
- Cutting, breaking, skinning, or bruising roots, branches, or trunks without first obtaining authorization from the Project Arborist.
- Allowing fires under and adjacent to trees.
- Discharging exhaust into foliage.
- Securing cable, chain, or rope to trees or shrubs.
- Trenching, digging, or otherwise excavating within the CRZ or TPZ of the tree(s) without first obtaining authorization from the Project Arborist.
- Applying soil sterilizers under pavement near existing trees.

The Project Arborist shall provide periodic inspections during construction. Four-week intervals should be sufficient to access and monitor the effectiveness of the TPP and to provide recommendations for any additional care or treatment. Inspections that are more frequent may also be required based on the approved TPP.

The following activities should be observed and inspected by the Project Arborist during the construction phase to ensure compliance with the approved TPP:

- Only excavation by hand or compressed air shall be allowed within the TPZ of trees. Machine trenching shall not be allowed.
- In order to avoid injury to tree roots, when a trenching machine is being used outside of the TPZ of trees, and roots are encountered smaller than two inches (2”), the wall of the trench adjacent to the trees shall be hand-trimmed, making clear, clean cuts through the roots. All damaged, torn, and cut roots shall be given a clean cut to remove ragged edges, which promote decay. Trenches shall be filled within 24 hours; where this is not possible, the side of the trench adjacent to the trees shall be kept shaded with four layers of dampened, untreated burlap, wetted as frequently as necessary to keep the burlap wet. Roots two inches (2”) or larger, when encountered, shall be reported immediately to the Project Arborist, who will decide whether the Contractor may cut the root as mentioned above or shall excavate by hand or with compressed air under the root. All exposed roots are to be protected with dampened burlap.
- Where possible, route pipes outside of the TPZ of a protected tree to avoid conflict with roots.
- Where it is not possible to reroute pipes or trenches, the contractor shall bore or tunnel beneath the TPZ of the tree. The boring shall take place not less than three feet (3’) below the surface of the soil in order to avoid encountering “feeder” roots. All boring equipment must be staged outside of the TPZ.

- All grade changes adjacent to the TPZ of a significant tree shall be supervised by the Project Arborist. Cuts or fills of soil adjacent to the TPZ will have a retaining wall system installed as approved by the Project Arborist and City Staff.
- Any damage due to construction activities shall be reported to the Project Arborist and City Staff within six (6) hours so that remedial action can be taken.
- The Project Arborist shall be responsible for the preservation of the designated trees. Should the builder fail to follow the tree protection specifications, it shall be the responsibility of the Project Arborist to report the matter to City Staff as an issue of non-compliance.

Additionally, it is the responsibility of the Project Manager to ensure compliance with the following activities:

- Construction shall be monitored regularly to ensure compliance with specifications. Work shall be stopped if construction site management BMPs are not being followed by the contractor.
- Cement washout pits and chemical holding areas shall be located away from tree protection areas, streams, and wetlands.
- Contractor parking and material storage shall be limited to already impacted areas away from tree roots.
- Site offices and equipment shall not encroach into tree protection areas.
- Refueling and maintenance areas shall be kept away from trees, native soils, water bodies and drainage systems. Fuel spills will not be tolerated on construction sites.
- To the extent possible, construction equipment shall be kept away from all onsite vegetation, especially those within designated protection areas.

Post-Construction

The post-construction phase does not end when the equipment leaves and the new tenants move in. Important follow-up monitoring of the protected trees will help ensure their survival and identify signs of early stress.

The applicant shall arrange with the Project Arborist for the long-term care and monitoring of preserved trees by complying with the following conditions:

- Complete post-construction tree maintenance, including pruning, mulching, fertilization, irrigation, and soil aeration where necessary.
- Remove, by hand, all soil and root protection material such as wood chips, gravel, and plywood.
- Provide for remediation of compacted soil by methods such as aeration or vertical mulching.
- In the absence of adequate rainfall, apply at least one (1) inch of water per week in the CRZ by deep watering.
- Fertilize trees with slow released phosphorus, potassium, calcium, magnesium, and other macro- and micro-nutrients as indicated by a soil test, but wait at least one (1) year to apply any nitrogen.
- Fertilize lightly with slow release nitrogen after one (1) year, and then make annual light nitrogen applications for the next three to five (3 to 5) years.
- Inspect trees annually for at least three (3) and up to five (5) years after construction to look for changes in condition and signs of insects or disease and to determine maintenance needs.

- Remove trees that are badly damaged or are in irreversible decline as determined by the Project Arborist and City Staff.
- Continue to protect not only the large, established trees on the site but also those newly planted in the landscape.
- Maintain TPP during the installation of new landscaping.
- Provide annual inspection reports to the City.
- Review TPP prior to the installation of landscaping and walkways/sidewalks.

Mitigating Tree and Infrastructure Conflicts

Conflicts may occur when tree roots grow adjacent to paving, foundations, sidewalks, or curbs (hardscape). Improper or careless extraction of these elements can cause severe injury to the roots and instability or even death of the trees. The following alternatives must first be considered before root pruning within the TPZ of a tree.

Removal of Pavement or Sidewalk

Removal of existing pavement over tree roots shall include the following precautions: break hardscape into manageable pieces with a jackhammer or pick and hand-load the pieces onto a loader. The loader must remain outside the TPZ on undisturbed pavement or off exposed roots. Do not remove base rock that has been exploited by established absorbing roots. Apply untreated wood chips over the exposed area within one (1) hour, then wet the chips and base rock and keep moist until overlay surface is applied.

Replacement of Pavement or Sidewalk

An alternative to the severance of roots greater than two inches (2") in diameter should be considered before cutting roots. If an alternative is not feasible, remove the sidewalk, as stated above, cut roots with a sharp, clean saw, as approved by the Project Manager or Project Arborist and replace sidewalk using #3 dowels at the expansion joint if within ten (10) feet of a protected tree. Use wire mesh reinforcement if within ten (10) feet of the trunk of a tree.

Alternative methods to prevent root cutting

- Grinding a raised sidewalk edge.
- Ramping the walking surface over the roots or lifted slab with pliable paving.
- Routing the sidewalk around the tree roots.
- Install boardwalk, flexible paving, or rubberized sections.

1. **New sidewalk or driveway design** should consider alternatives to conventional pavement and sidewalk materials. Substitute permeable materials for typical asphalt or concrete overlay, sub-base or footings to consider are permeable paving materials (such as ECO-Stone or RIMA pavers), interlocking pavers, flexible paving, wooden walkways, and brick or flagstone walkways on sand foundations.
2. **Avoid tree and infrastructure conflicts and associated costs by the following planting practices**:

- Plant deep rooting trees that are proven to be non- or minimally-invasive.
- Over soil that shrinks and swells, install a sidewalk with higher strength that has wire mesh and/or expansion slip joint dowel reinforcement.
- Fracture soil with an air spade and backfill with sand prior to planting to promote deep rooting and improved drainage.

- Install root barrier only along the hardscape area of the tree and allow roots to use open lawn or planter strip areas.
- Dedicate at least ten (10) linear feet of planting space for the growth of each new tree.
- Provide a dedicated irrigation system or zone for the tree so the trees do not have to compete and are not dependent on the turf and shrub irrigation.
- Avoid planting trees over underground drainage systems where root intrusion will impede function of the system.

1. **Alternative Base Course Materials**: When designing hardscape areas near trees, the project architect or engineer should consider the use of recommended base course material such as an engineered structural soil mix. An approved structural soil mix will allow a long-term, cost-effective tree and infrastructure compatibility that is particularly suited for the following types of development projects:

- Repair or replacement of sidewalk greater than 40 feet in length;
- Planting areas that are designed over structures or parking garages;
- Confined parking lot medians and islands or other specialized conditions as warranted.

Training

- The Project Arborist should provide training to all construction personnel to ensure they understand all construction site BMPs
- The Construction Supervisor and Architect should have current training and education dealing with construction site management. This training should include topics regarding protecting trees and erosion control on construction sites.

WARNING

TREE PROTECTION ZONE (TPZ)

- No grade change, storage of materials, vehicles or equipment is permitted within this TPZ
- No cleaning of equipment near this TPZ
- No unauthorized entry
- This tree protection barrier must not be removed without the written authorization of the City of Mountain View and Supervision by the Project Arborist

MOUNTAIN VIEW
TREE CITY USA
CALIFORNIA

Figure 13. Tree Protection Zone Sign

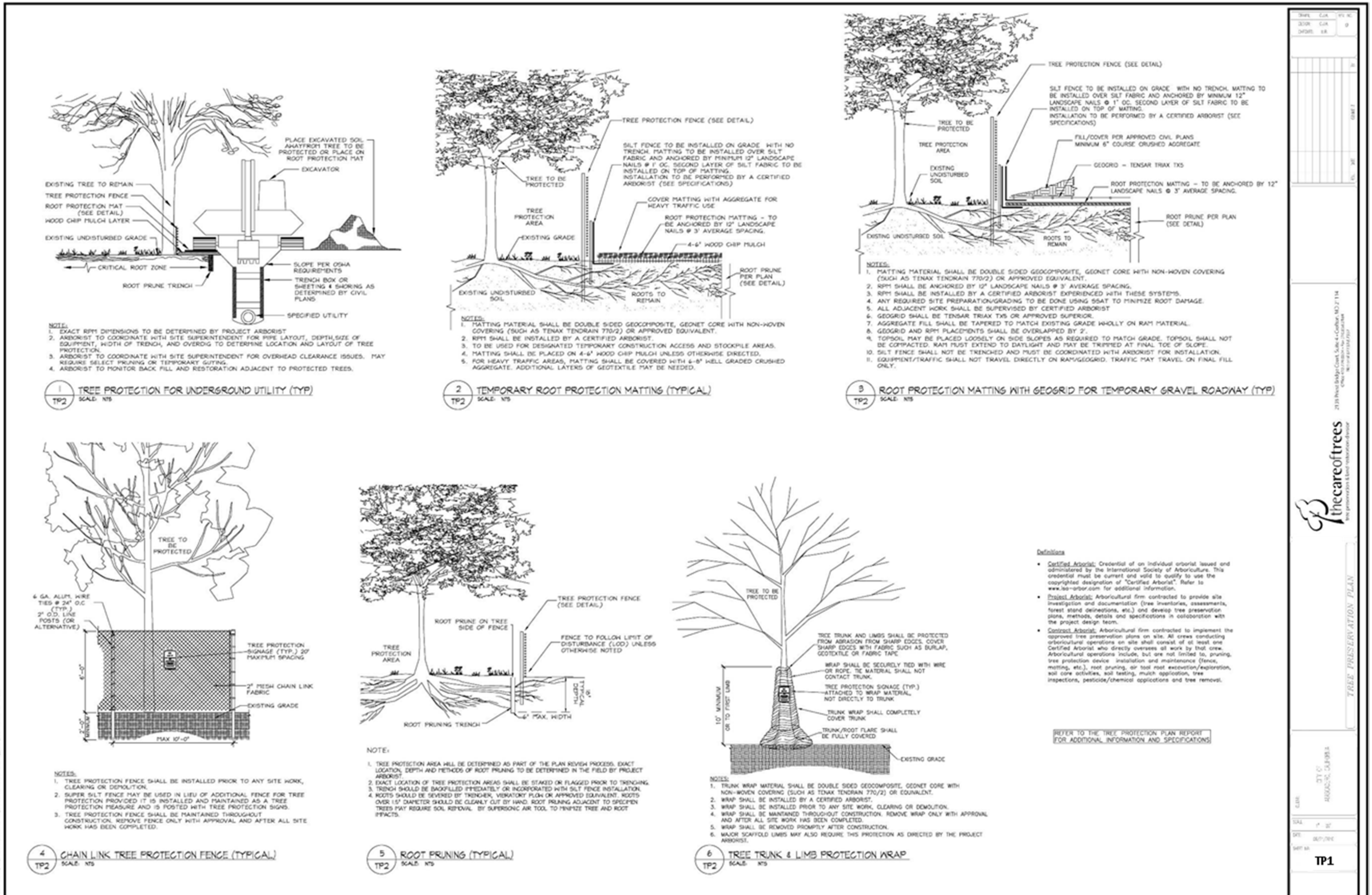


Figure 14. Standard Detail of Tree Protection Measures

B. Timeline for Objectives & Strategies

City of Mountain View Urban Forest Master Plan – Objectives, Strategies, and Implementation Measures

Objectives, Strategies, and Implementation Measures*	Estimated Cost	Priority (Year) 2016	2017	2018	2019	2020	2021	2022	0223	2024	2025	Date of Completion	Priority
Objective: Preservation and Enhancement of Tree Canopy													
1. Increase canopy by 5 percentage points to an overall canopy cover of 22.7%.	$$$$											Ongoing	High
A) Plant 11,000 new trees over the next 15 years.													
• Plant 300 new public trees/year													
• Facilitate planting of 535 new trees/year on private property													
B) Establish a Tree Mitigation Fund													
C) Develop a policy to increase tree planting to offset the loss of mature canopy to ongoing development.													
D) Coordinate with Community Development to revise policies for the Heritage Tree Program.													
E) Increase outreach and awareness and develop strategies for increasing street trees in residential areas.													
F) Explore opportunities to incentivize tree planting on private property.													
G) Establish an overall long-term canopy cover goal as well as individual goals for specific land use.													
2. Increase the stocking level of the community tree resource.	$$$											Ongoing	High
A) Develop a tree planting and replacement plan.													
• Plant 300 new public trees/year													
• Plant replacement trees for public trees that are lost/removed													
B) Classify and prioritize available planting sites.													
I) Identify locations, neighborhoods, and other areas where tree planting will enhance overall canopy cover.													
J) Identify areas/locations where trees can mitigate development related removals when space is not available on site.													
K) Collaborate with neighborhood organizations, groups, and individuals to identify strategies for increasing street trees in neighborhoods with high tree vacancy.													
• Identify reasons/cultural preferences that cause residents to be resistant to street trees and develop a targeted approach													
• Collaborate with residents													
L) Coordinate with other City plans (e.g., Pedestrian Master Plan, Bicycle Master Plan, etc.) to provide shade for users.													
M) Consider larger projects that may meet CEQA/mitigation qualifications.													
A) Identify additional resources needed to implement this strategy.													

$ Low ($0-$5,000) $$ Medium ($5,000-$20,000) $$$ High ($20,000-$100,000) $$$$ Very High (>$100,000) * Only Implementation Measures that result in a deliverable are listed – refer to the CFMP "How Do We Get There" for additional information.

City of Mountain View Urban Forest Master Plan – Objectives, Strategies, and Implementation Measures

Objectives, Strategies, and Implementation Measures*	Estimated Cost	Priority (Year) 2016	2017	2018	2019	2020	2021	2022	0223	2024	2025	Date of Completion	Priority
Objective: Preservation and Enhancement of Tree Canopy - *Continued*													
3. Develop a technical manual for the protection and preservation of trees during construction and development.	$$												High
A) Develop a technical manual													
4. Adopt parking lot shade goals.	$												High
A) Establish a goal of 40% canopy at 15-20 years post construction													
B) Establish standards for species selection.													
C) Require planting site designs that accommodate mature trees.													
E) Establish maintenance standards for parking lot trees.													
G) Coordinate with GIS to monitor compliance/achievement													
5. Revise Municipal Code Chapter 32.39 Tree Valuation.	$												High
A) Revise Chapter 32.39 to reflect the most current industry standards for tree appraisal													
6. Promote design and construction standards that increase soil volume, planting space, and pervious surface.	$												High
A) Supplement Plant Design Standards with options that increase soil volume where above ground area is restricted.													
B) Supplement planter and pavement design options to reduce conflicts between trees and other infrastructure.													
Objective: Sustainability, Health, and Safety in the Community Tree Resource													
1. Continue to maintain public trees based on the most current industry standards for all contractors and in-house crews engaged in tree care operations.	$											Ongoing	High
A) Ensure that all specifications, policies, and directives require that tree care operations adhere to current industry standards and BMPs.													
B) Ensure that all contract specifications and in-house policies/directives require that tree care operations adhere to federal and state regulations for the protection of birds and other wildlife.													
2. Promote proactive maintenance with a minimum 7-year pruning/inspection cycle for all community trees.	$$$$											Ongoing	High
A) Establish a regular 7-year maintenance cycle for most trees													
B) Establish a 3-year maintenance cycle for fast growing trees													
C) Maintain community trees in good health and structure													
D) Inspect large/mature trees to identify structural and age-related defects and manage/mitigate risk													
E) Update the inventory data when trees are serviced													

$ Low ($0-$5,000) $$ Medium ($5,000-$20,000) $$$ High ($20,000-$100,000) $$$$ Very High (>$100,000) * Only Implementation Measures that result in a deliverable are listed – refer to the CFMP "How Do We Get There" for additional information.

City of Mountain View Urban Forest Master Plan – Objectives, Strategies, and Implementation Measures

Objectives, Strategies, and Implementation Measures*	Estimated Cost	Priority (Year) 2016	2017	2018	2019	2020	2021	2022	0223	2024	2025	Date of Completion	Priority
Objective: Sustainability, Health, and Safety in the Community Tree Resource - *Continued*													
3. Update inventory management procedures to improve efficiency and accessibility.	$												High
A) Provide training for staff and contractors													
B) Insure that inventory updates are included in trimming, pruning, and maintenance contracts													
4. Promote greater diversity in the street tree palette.	$											Ongoing	Medium
A) Identify and maintain a diverse palette													
B) Explore revision to the Heritage Tree Ordinance to exclude invasive species (Cal-IPC) and palms													
C) Eliminate street tree designations (e.g., monoculture planting)													
D) Reduce reliance on heavily used species													
• *Sequoia sempervirens*													
• *Platanus acerifolia*													
• *Pistacia chinensis*													
5. Develop an annual work plan.	$											Annual	High
A) Identify goals for annual tree care operations													
• Number of trees to prune/trim and inspect													
• Number of new trees to plant and trees to replace													
• Preferably schedule tree trimming to occur between mid-September and January													
6. Develop a Risk Management Plan and policy for urban forestry operations.	$												High
A) Work with Risk Management Division to identify objectives and action thresholds													
B) Coordinate risk management objectives with the pruning/inspection program													
C) Prioritize mitigation measures and coordinate with work plans													
D) Identify risk assessment priorities, protocols, policy, and final authority for removals													
Objective: Preservation and Enrichment of Wildlife Habitat													
1. Develop and implement forestry practices and policies that protect birds and other wildlife.	$											Ongoing	High
A) When possible, schedule major tree care operations from late September through January													

$ Low ($0-$5,000) $$ Medium ($5,000-$20,000) $$$ High ($20,000-$100,000) $$$$ Very High (>$100,000) * Only Implementation Measures that result in a deliverable are listed – refer to the CFMP "How Do We Get There" for additional information.

City of Mountain View Urban Forest Master Plan – Objectives, Strategies, and Implementation Measures

Objectives, Strategies, and Implementation Measures*	Estimated Cost	Priority (Year) 2016	2017	2018	2019	2020	2021	2022	0223	2024	2025	Date of Completion	Priority
Objective: Preservation and Enrichment of Wildlife Habitat - *Continued*													
1. Develop and implement forestry practices and policies that protect birds and other wildlife.	$											Ongoing	High
B) When tree trimming and other potentially disruptive activities must occur during the nesting period, all contracted and in-house personnel participating in the activity shall be aware of state and federal regulations protecting nesting birds and be properly trained to identify and avoid the disturbance of any active nests.													
• Ensure that contract specifications require appropriate training and certification to comply with all state and federal regulations that protect endangered and migratory species and nesting birds.													
• City's Wildlife Biologist will provide training and certification for in-house staff													
2. Promote important habitat species (cover, foraging, and nesting).	$												High
A) When possible, landscaping and planting projects should incorporate species to enrich wildlife habitat													
Objective: Increased Outreach and Education													
1. Enhance and maintain the City webpage for community trees.	$-$$											Ongoing	Medium
A) Incorporate Information and images that illustrate important information about the state of the urban forest and Mountain View's canopy cover.													
B) Include active links and engaging articles for residents and property managers.													
C) Include links to electric and natural gas utility websites that explain safety and Right Tree, Right Place concepts													
D) Include information about the City's pruning cycle for community trees so that residents can see when their neighborhood is scheduled for maintenance													
E) Include facts and links to the City's tree protection regulations, requirements, policies, and necessary forms													
• Accessible database of pending and active requests for Heritage Tree removal permits													
• Benefits and responsibilities of street trees													
F) Include a homeowner's list of recommended tree species													
G) Include information and links on habitat enhancement and wildlife protection													
H) Include information about volunteer opportunities and groups													
1) Include information about incentives for planting and maintaining trees on private property													

$ Low ($0-$5,000) $$ Medium ($5,000-$20,000) $$$ High ($20,000-$100,000) $$$$ Very High (>$100,000) * Only Implementation Measures that result in a deliverable are listed – refer to the CFMP "How Do We Get There" for additional information.

City of Mountain View Urban Forest Master Plan – Objectives, Strategies, and Implementation Measures

Objectives, Strategies, and Implementation Measures*	Estimated Cost	Priority (Year) 2016	2017	2018	2019	2020	2021	2022	0223	2024	2025	Date of Completion	Priority
Objective: Increased Outreach and Education - *Continued*													
2. Develop and present workshops and seminars that increase awareness and knowledge about trees, canopy, and the urban forest.	$-$$											Ongoing	Medium
A) Develop a series of hands-on workshops that teach the basics of tree care (planting, pruning, mulching, fertilizing, etc.).													
B) Develop a presentation that explains the benefits of trees and tree canopy to the community (environmental, social, and economic).													
C) Develop a workshop that teaches the basics of irrigation practices, water conservation, and how to care for trees during drought													
D) Develop a hands-on program for elementary schools to engender basic knowledge and appreciation for trees and the urban forest													
E) Collaborate with Mountain View Trees to present seminars and workshops to the community, neighborhood associations, and schools													
3. Develop outreach materials that communicate information about trees, canopy, and the urban forest.	$-$$$												Medium
A) Develop outreach materials to educate home/property owners about the benefits and responsibilities of street trees													
B) Develop outreach materials that communicate basic tree care and species selection													
C) Partner with utilities, other city departments, nonprofits, schools, and other groups to collaborate on shared information and outreach goals when possible													
D) Identify resources to support this strategy													
4. Develop and deliver a State of the Community Forest Report.	$											Every 5 years	Medium
A) Present an update to the Urban Forestry Board and residents on the overall condition of the community forest													
Objective: Increased Collaboration with Volunteers and Nonprofit Groups													
1. Foster relationships and facilitate collaboration with volunteers, nonprofits, neighborhood groups, and businesses.	$-$$$											Ongoing	High
A) Enhance and build on existing relationships with nonprofit organizations.													
• Explore work agreements with Mountain View Trees in exchange for funding to support administration													
B) Identify and partner with groups, organizations, and individuals who share a vision and goals for a healthy and sustainable urban forest													
C) Participate in and support regional groups and committees that share vision and goals for the urban forest													

$ Low ($0-$5,000) $$ Medium ($5,000-$20,000) $$$ High ($20,000-$100,000) $$$$ Very High (>$100,000)

*** Only Implementation Measures that result in a deliverable are listed – refer to the CFMP "How Do We Get There" for additional information.**

City of Mountain View Urban Forest Master Plan – Objectives, Strategies, and Implementation Measures

Objectives, Strategies, and Implementation Measures*	Estimated Cost	Priority (Year) 2016	2017	2018	2019	2020	2021	2022	0223	2024	2025	Date of Completion	Priority
Objective: Review and Measure Attainment of the CTMP Objectives													
1. Annually review the CTMP and the attainment status of objectives and strategies to develop an annual work plan.	$											Annual	High
A) Review the CTMP annually and integrate objectives and strategies into work plans.													
2. Complete a resource analysis (i-Tree Streets) every 5 years.	$$											Every 5 years	Medium
A) Use i-Tree Streets to calculate the current composition, benefits, and benefit versus investment ratio of the community urban forest.													
B) Review changes and improvements to benefits, composition, and benefit versus investment ratio.													
C) Report change and progress in the State of the Community Forest Report.													
3. Review and update the Master Street Tree List every 10 years.	$$$											Every 10 years	Medium
A) Collaborate with stakeholders (Mountain View Trees, maintenance personnel, individuals, etc.) to periodically review and update the Master Street Tree List.													
B) Review the performance of existing species and provide consideration for new cultivars and varieties along with changes to environmental conditions and emerging pests and/or disease.													
C) Identify and maintain a diverse palette or regionally compatible species (including native species).													
3. Complete a canopy analysis every 10 years.	$$$											Every 10 years	Medium
A) Use aerial imagery and remote sensing to map changes to the extent and location of tree canopy.													
B) Report change in the State of the Community Forest Report.													

$ Low ($0-$5,000) $$ Medium ($5,000-$20,000) $$$ High ($20,000-$100,000) $$$$ Very High (>$100,000) * Only Implementation Measures that result in a deliverable are listed – refer to the CFMP "How Do We Get There" for additional information.

C. Additional Trees to Be Considered for Inclusion in the Master Street Tree List

Common name	Botanical name	Minimum recommended planter width	Height (ft)	Width (ft)	Root damage potential	Water needs	Habitat value	Utility friendly	CA native	Comments
Large Broadleaf Deciduous (BDL)										
Black maple	*Acer nigrum* 'Greencolumn'	7	100	25	Moderate	Moist to Dry				Tolerates wide soil, sun, and pH ranges. Susceptible to aphids, anthracnose, oak root rot, Phytophthora, powdery mildew, root rot and Verticillium.
Freeman maple 'Autumn Blaze'	*Acer x freemanii* 'Jeffersred'	7	60	40	Moderate	Wet to Moist				Tolerates wide range of soil and sun. Prefers acidic soil. Susceptible to aphids, beetle borers, scale, oak root rot, Phytophthora, root rot, and Verticillium.
Northern/Western catalpa	*Catalpa speciosa*	7	65	35	Moderate	Moist				Tolerates wide soil, sun, and pH ranges. Susceptible to caterpillars, anthracnose, powdery mildew, root rot, and Verticillium.
European beech	*Fagus sylvatica*	7	65	45	Moderate	Moist				Tolerates wide soil and pH ranges. Resistant to Verticillium. Susceptible to aphids and spider mites, canker, oak root rot, Phytophthora, root rot and sooty mold
White ash 'Autumn Purple'	*Fraxinus americana*	7	80	50	Moderate	Wet to Dry				Very wide pH range. Susceptible to caterpillars, scales, white fly, anthracnose, root rot, rust, sooty mold, and Verticillium.
Kentucky coffeetree	*Gymnocladus dioicus*	7	75	65	Moderate	Moist to Dry				Drought tolerant. Very wide pH range. Resistant to oak root fungus.
London Planetree	*Platanus acerifolia*	7	65	60	High	Wet to Dry				Very wide pH range. Resistant to Verticillium but susceptible to scales, spider mites, anthracnose, and powdery mildew.
Scarlet oak	*Quercus coccinea*	7	65	50	Moderate	Moist				Tolerates wide soil, sun, and pH ranges.
Chinese elm	*Ulmus parvifolia* 'Allee', 'Athena'		75	75	Moderate	Moist				Drought tolerant. Very wide pH range. Resistant to oak root fungus but susceptible to aphids, beetle borers, beetles, scales, caterpillars, Dutch elm disease, oak root rot, Phytophthora, root rot, scooty mold, and Verticillium.

Common name	Botanical name	Minimum recommended planter width	Height (ft)	Width (ft)	Root damage potential	Water needs	Habitat value	Utility friendly	CA native	Comments
Japanese zelkova	*Zelkova serrata*	7	65	60	Moderate	Moist				Very wide pH range. Susceptible to beetles, spider mites, and Dutch elm disease, but more resistant to DED than most other elms.
Medium Broadleaf Deciduous (BDM)										
Briottii red horsechestnut	*Aesculus x carnea 'Briottii'*	5	50	50	Low	Moist				Tolerates highly acidic to slightly alkaline soils. Susceptible to chlorosis.
Red maple	*Acer rubrum*	5	65	40	Moderate	Wet to Moist				Drought and smog tolerant. Susceptible to aphids, beetle borers, scales, oak root rot, Phytophthora, root rot, and Verticillium.
Erect European hornbeam	*Carpinus betulus* 'Fastigiata'	5	50	40	Low	Moist				Resistant to Verticillium but susceptible to scales, oak root rot and root rot.
Pink Dawn	*Chitalpa tashkentensis* 'Pink Dawn'	5	35	30	Low	Moist to Dry				Soils, slightly acidic to highly alkaline. Susceptible to aphids, root rot, Verticillium.
Green ash 'Cimmzan', 'Marshal', or 'Urbanite'	*Fraxinus pennsylvanica*	5	50	45	Moderate	Wet to Moist				Prefers highly acidic to slightly alkaline soils. Susceptible to beetle borers, scales, white fly, anthracnose, root rot, rust, sooty mold, and Verticillium.
Ginkgo	*Ginkgo biloba*	5	65	40	Moderate	Moist to Dry				Prefers highly acidic to slightly alkaline soils. Smog tolerant. Plant male trees to avoid unpleasant fruit odor. Resistant to oak root fungus but susceptible to anthracnose.
Jacaranda	*Jacaranda mimosifolia*	5	50	35	Low	Moist				Prefers slightly acidic to slightly alkaline soils. Showy blue or lavender flowers. Resistant to oak root fungus but susceptible to aphids, Phytophthora, and root rot.
Chinese flame tree	*Koelreuteria bipinnata*	6	35	40	Low	Moist				Very wide pH range. Showy, yellow flowers. Susceptible to beetle borers and scales.

Common name	Botanical name	Minimum recommended planter width	Height (ft)	Width (ft)	Root damage potential	Water needs	Habitat value	Utility friendly	CA native	Comments
Goldenrain tree	*Koelreuteria paniculata*	5	40	40	Low	Moist to Dry				Drought tolerant. Very wide pH range. Susceptible to beetle borers, plant bug, scales, root rot, and Verticillium.
Sour gum	*Nyssa sylvatica*	5	50	45	Low	Wet to Dry				Drought tolerant. Very wide pH range. Susceptible to fusarium, Phytophthora, root rot, rust, and Verticillium.
Chinese pistache	*Pistacia chinensis*	5	35	35	Low	Moist to Dry				Drought resistant. Prefers, slightly acidic to highly alkaline soils. Resistant to oak root fungus but susceptible to root rot and Verticillium.
Callery pear	*Pyrus calleryana*	4	50	30	Moderate	Moist to Dry				Very wide pH range. Resistant/ fairly resistant to fire blight, oak root fungus, and Verticillium but susceptible to white fly and sooty mold.
Sawtooth oak	*Quercus acutissima*	5	45	45	Moderate	Moist to Dry				Very wide pH range. Resistant to Verticillium.
Silver linden 'Green Mountain' or 'Sterling'	*Tilia tomentosa*	5	50	30	Moderate	Moist to Dry				Drought tolerant. Prefers highly acidic to slightly alkaline soils. Showy, fragrant flowers. Susceptible to aphids, root rot, sooty mold, and Verticillium.
Tipu tree	*Tipuana tipu*	8	50	55	Moderate	Moist to Dry				Prefers highly acidic to slightly alkaline soils. Showy, orange to yellow flowers.
Chinese tallow	*Triadica sebifera*	5	35	30	Low	Moist				Prefers highly acidic to slightly alkaline soils. Resistant to oak root fungus. Might require regular light top-shoot trimming to maintain low height.
Elm hybrid	*Ulmus* 'Frontier'	5	40	25	N/A	Moist				High level of tolerance to Dutch elm disease. Moderate resistance to elm leaf beetle.
Small Broadleaf Deciduous (BDS)										
Chinese fringe tree	*Chionanthus retusus*	3	20	25	Low	Moist		X		Prefers highly acidic to slightly alkaline soils and full sun to partial shade.

Common name	Botanical name	Minimum recommended planter width	Height (ft)	Width (ft)	Root damage potential	Water needs	Habitat value	Utility friendly	CA native	Comments
Paul's Secret English hawthorn	*Crataegus laevigata* 'Paul's Scarlet'	4	25	15	Low	Moist to Dry		X		Tolerates wide soil and pH ranges. Resistant to Verticillium. Susceptible to aphids, beetle borers, scales and spider mites, fire blight, oak root rot, powdery mildew, root rot, rust and sooty mold.
Lily of the Valley	*Crinodendron patagua*	4	25	20	Moderate	Wet to Moist		X		Prefers highly acidic to slightly alkaline soils.
Crapemyrtle	*Lagerstroemia indica*	2	25	20	Low	Moist to Dry		X		Drought tolerant. Prefers highly acidic to slightly alkaline soils. Showy flowers. Resistant to Texas root rot but susceptible to aphids, powdery mildew, and sooty mold.
Carolina cherrylaurel	*Prunus caroliniana*	4	30	15	Low	Moist				Drought tolerant. Prefers highly acidic to slightly alkaline soils. Resistant to oak root fungus but susceptible to scales, branch blight, root rot, rust, and Verticillium.
Purple-leaf plum	*Prunus cerasifera*	4	25	20	Low	Moist				Prefers well-drained, acidic soil. Showy, fragrant flowers. Resistant to oak root fungus but susceptible to aphids, beetle borers, caterpillars, scales, canker, and leaf spot.
Chitalpa 'Pink Dawn', Morning Cloud'	*× Chitalpa tashkentensis*	4	25	25	Low	Moist				Blooms best in full sun with moderate moisture, it becomes taller in half shade. Susceptible to aphids, root rot, and Verticillium.
Large Broadleaf Evergreen (BEL)										
Queensland kauri	*Agathis robusta*	7	150	50	High	Wet to Moist				Prefers highly acidic to slightly alkaline soils.
African fern pine	*Podocarpus/Afrocarpus falcatus/gracilior*	7	65	40	Low	Moist				Prefers well-drained, acidic soils. Branches droop but resistant to breaking.
Coast live oak	*Quercus agrifolia*	7	65	50	Moderate to High	Moist to Dry				Prefers highly acidic to slightly alkaline soils. Resistant to Verticillium but susceptible to gold spotted oak borer, aphids, beetle borers, beetle grubs, caterpillars, coddling moths, insect galls, scales, white fly, sudden oak death, crown rot, mistletoe, oak root rot, Phytophthora, powdery mildew, root rot, and sooty mold.

Common name	Botanical name	Minimum recommended planter width	Height (ft)	Width (ft)	Root damage potential	Water needs	Habitat value	Utility friendly	CA native	Comments
Cork oak	*Quercus suber*	7	70	70	Moderate	Moist to Dry				Drought tolerant. Prefers highly acidic to slightly alkaline soils. Resistant to Verticillium but susceptible to Phytophthora and root rot.
Medium Broadleaf Evergreen (BEM)										
Australian willow	*Geijera parviflora*	5	30	20	Low	Moist to Dry				Drought tolerant. Prefers highly acidic to slightly alkaline soils. Resistant to oak root fungus.
Brisbane box	*Lophostemon confertus*	5	50	30	Moderate	Moist to Dry				Drought and smog tolerant. Prefers slightly acidic to highly alkaline soils. Showy white flowers. Susceptible to scales, Phytophthora, and root rot.
California pepper tree	*Schinus molle*	5	50	40	High	Moist to Dry				Drought tolerant. Very wide pH range. Saline soil and smog tolerant. Susceptible to aphids, psyllid, scales, thrips, root rot, Phytophthora, sooty mold, and Verticillium.
Small Broadleaf Evergreen (BES)										
Bronze loquat	*Eriobotrya deflexa*	3	25	15	Low	Moist		X		Very wide pH range. Susceptible to fire blight.
Evergreen pear	*Pyrus kawakamii*	4	25	25	Low	Moist				Very wide pH range. Resistant to Verticillium but susceptible to aphids, white fly, fire blight, and sooty mold.
Broadleaf Deciduous Large (BDL) Fruit/Nut tree										
Black Walnut	*Juglans nigra*	7	100	70	High	Wet to Dry				Drought tolerant. Prefers highly acidic to slightly alkaline soils. Resistant to Verticillium but susceptible to beetle borers, caterpillars, anthracnose, Phytophthora, root rot, and virus.
Broadleaf Deciduous Medium (BDM) Fruit/Nut tree										
Common persimmon	*Diospyros virginiana*	5	50	35	Moderate	Wet to Dry				Tolerates a wide range of pH, and sun conditions. Resistant to oak root fungus. Susceptible to caterpillars, crown rot, root rot, and Verticillium.
Avocado	*Persea americana*	5	50	50	Low	Moist				Tolerates a wide range of soil types and pH values. Prefers well-drained soil. Susceptible to mites and scales, root rot and leaf spot.

Common name	Botanical name	Minimum recommended planter width	Height (ft)	Width (ft)	Root damage potential	Water needs	Habitat value	Utility friendly	CA native	Comments
Broadleaf Deciduous Small (BDS) Fruit/Nut tree										
American hazelnut	*Corylus americana*	4	18	12	Low	Moist		X		Prefers highly acidic to neutral soils. Susceptible to aphids, scales, chlorosis, leaf blight, powdery mildew and sooty mold.
Japanese loquat	*Eriobotrya japonica*	4	30	30	Low	Moist to Dry		X		Drought tolerant. Very wide pH range. Fragrant flowers. Susceptible to fire blight, oak root rot, and root rot
Pomegranate	*Punica granatum*	4	20	15	Low	Wet to Dry				Tolerates a wide range of pH, and sun conditions. Resistant to Texas root rot. Susceptible to plant bug and white fly, chlorosis and sooty mold.

D. Online Survey

INTRODUCTION

We ask that you complete this short survey to help us understand how you view Mountain View's community trees, and to identify which community forest management services are most important to you.

BACKGROUND

Trees are vital assets that provide significant benefits to the community. The City of Mountain View's community urban forest consists of approximately 26,000 trees valued at more than $85.6 million. With proper care, the value and benefits will increase over time. In order to manage this valuable resource, sustainable, long-term strategic planning is needed. As responsible stewards of the community's urban forest, the City is working with a consultant to develop a long-term Community Tree Master Plan. The Plan provides for a healthy and thriving urban forest through proper care, cost efficient maintenance, tree preservation guidelines, canopy enhancement, reforestation, habitat preservation, and promotion of community forest benefits.

THE VALUE AND BENEFIT OF COMMUNITY TREES AND CANOPY

The following statements reflect the annual benefits currently provided by the City of Mountain View's public trees. Please rate these benefits according to their level of importance to you.

1. **IMPROVES AIR QUALITY. Mountain View's community trees improve air quality by filtering small particulate matter such as dust, ash, pollen, and smoke. Studies have shown that fine particulate air pollution can cause serious health effects, such as pulmonary inflammation and asthma. Trees can also absorb and reduce gaseous pollutants such as carbon dioxide, sulfur dioxide, and nitrogen dioxide. How important is this benefit?**

Answer Options	Response Percent	Response Count
Very important	88.4%	525
Somewhat important	8.8%	52
Not important	2.0%	12
Not sure	0.8%	5
answered question		**594**
skipped question		**2**

2. **REDUCES HEAT AND ENERGY USE. By providing shade, reducing wind speeds, and lowering the outside air temperature, Mountain View's community trees act as a natural air conditioner, thereby reducing energy use (electricity and natural gas). How important is this benefit?**

Answer Options	Response Percent	Response Count
Very important	88.4%	524
Somewhat important	9.8%	58
Not important	1.5%	9
I'm not sure	0.3%	2

	answered question	**593**
	skipped question	**3**

3. INCREASES PROPERTY VALUES. Trees and community forests increase property values by approximately 7-10%. How important is this benefit?

Answer Options	Response Percent	Response Count
Very important	54.2%	321
Somewhat important	33.6%	199
Not important	11.0%	65
I'm not sure	1.2%	7
answered question		**592**
skipped question		**4**

4. REDUCES POLLUTION FROM STORMWATER RUNOFF. By reducing the flow of stormwater runoff and the pollutants that are carried with it, urban trees protect the water quality of creeks, rivers, lakes, and other water bodies. Mountain View's community trees intercept more than 20.2 million gallons of stormwater each year. How important is this benefit?

Answer Options	Response Percent	Response Count
Very important	75.5%	446
Somewhat important	20.3%	120
Not important	2.7%	16
I'm not sure	1.5%	9
answered question		**591**
skipped question		**5**

5. PROVIDES HABITAT FOR WILDLIFE. Trees and tree canopies provide habitat for wildlife; including shelter, food, protection from predators, nesting areas, and resting points for migratory birds. How important is this benefit?

Answer Options	Response Percent	Response Count
Very important	74.3%	437
Somewhat important	20.6%	121
Not important	4.9%	29
I'm not sure	0.2%	1
answered question		**588**
skipped question		**8**

6. IMPROVES HEALTH AND WELL-BEING. Studies have shown that trees can have a profound effect on psychological health and well-being. Trees, and other natural, green settings, can reduce stress, improve moods, reduce anger and aggressiveness, and increase overall happiness. How important is this benefit?

Answer Options	Response Percent	Response Count
Very important	81.1%	476
Somewhat important	15.2%	89
Not important	3.4%	20
I'm not sure	0.3%	2
answered question		**587**
skipped question		**9**

7. **Understanding which benefits are most appreciated by the community can help guide long-term management strategies. Please rank (1-6, with 1 being the most valuable) the following ENVIRONMENTAL benefits in order of their value to you.**

Answer Options	1 - Most Important	2	3	4	5	6 - Least Important	Rating Average	Response Count
Improves air quality	249	102	86	59	39	10	4.79	545
Reduces heat and energy use	52	159	145	101	71	14	3.96	542
Reduces pollution from stormwater runoff	2	49	99	167	189	29	2.92	535
Provides habitat for wildlife	75	99	98	123	128	21	3.65	544
Provides canopy that shades and reduces outside temperatures	137	123	99	83	88	11	4.19	541
Other	27	9	12	7	14	139	2.13	208
answered question								**546**
skipped question								**50**

Other

Adds to beauty of our community
Aesthetic value makes people happy in dense urban cities
Aesthetically valuable
Aesthetics (2)
Aesthetics (greenery looks/feels good)
All are equally important. It is ridiculous to rank these, but the survey does NOT allow sckipping it.
All of them at once
All of these are of first importance to me.
all of these are the most important
appearance, property values
Beautifies the town
beautify our environment
Beautify the city
Beauty (4)
Beauty and aesthetic/property value
Beauty and nature to balance the concrete jungle
Beauty and stress reduction

	Beauty! Trees not only heal the soul and add beauty to our community.
	beauty, harmony
	Benefit to our children of growing up in an area with accessible nature.
	calms people, reduces tension, headaches, etc.
	city is planting too many male trees increasing pollen count
	Community aesthetics
	each tree leaf acts as an air filter: filters pollutants in the air
	Enhances beauty of our surroundings
	Enhances property values
	Enhances well being of urban residents
	Esthetic value
	fruit trees provide fruit
	health
	Health and well being (2)
	house values
	I would prefer that resident be able to select their OWN valuable trees -- I dont' appreciate that I HAVE TO keep and maintain messy Magnolia trees. I love trees and am happy to have them on my property, but would prefer to be able to select a tree that is both aesthetically pleasing and safe (such as not dropping slippery leaves and sharp seed pods.)
	If we have no trees, it will feel like desert - especially with temperatures slowly rising
	Impossible to rank because all benefits are interrelated
	Improve real estate values
	Improves aesthetics of environment
	improves beauty of neighborhood and psychological well being
	Improves Health and Well-being
	Improves quality of life.
	Increase housing value
	increase property value
	Increases beauty
	Increases nice views
	increases property value (3)
	Is beautiful and important to human well-being.
	Keeps our community beautiful!
	look nice
	Looks pretty
	Lovely to be around
	makes a pleasant-looking community
	Makes streets look nicer
	Mental health : pleasant ambiance
	Nice place to live with complete street tree canopy

	noise pollution
	None
	opportunity for people(kids!) to experience the variety of the natural world
	parking lot 9 canary island pine is an accident waiting to happen does not belong in that location. Unbalanced, poorly maintained
	Pleasing to the eye.. Calms us..
	positive psychological effect. FYI -hard to rate 1-6 since they are all equally important to me...
	Potential food (fruit, etc.)
	Privacy and less urban appearance
	produce fruit
	propert values and quality of life
	Property values (6)
	Property values and psychological effect
	Provide a buffer from wind
	Provide fruit and blossom to enjoy
	provides a nicer look to neighborhoods
	Provides beauty and restful green
	provides psychological benefits
	provides relaxing influence
	Provides shade for walkers, improving walk ability and public health when people walk more
	psychological benefit -- trees and nature are soothing which is very needed in this age
	Psychological benefits
	psychological well being
	Reduce water consumption for lawns
	Reduces stress and improved natural beauty
	Saves water-using native trees and replacing lawns with trees that once established need little to no supplemental water
	sequesters carbon dioxide
	Since trees are required to do all 6 of these things I don't see any need to rank them in this manner. Except for selecting "Other", all other check marks are random, just to get past this question. Trees are needed to do each and every one of the things listed. Why waste time deciding if its more important for a tree to improve air quality, or as habitat for wildlife? They are all important, and trees are the answer to each of the needs listed.
	So important the trees - let me know if I can help support them!
	Street Trees roots crack and raise the sidewalks causing trip hazards Block my view of the mountains.
	Tell our City Council to STOP approving all requests to cut down heritage trees.
	The beauty of the trees
	the health and well-being issue! We are healthier!!!
	These are impossible to rank
	They look good.
	they work together for best result
	They're all important
	This list shouldn't have to be priortized -- all listed are "1"s (to me).

	Trees are beautiful and add to my sense of well-being
	Trees are the lung of the earth. MV is growing so fast, due to increase of people working here, have 1/2/3 cars and the busses of the companies!
	Trees make life beautiful.
	Try actually taking care of the trees you plant.
	Well-being
	wellbeing, happiness

8. Please rank (1-9, with 1 being the most valuable) the following AESTHETIC and/or SOCIOECONOMIC benefits in order of their value to you.

Answer Options	1 - Most Important	2	3	4	5	6	7	8	9	10 - Least Important	Rating Average	Response Count
Attractiveness to residents and tourists	32	52	66	66	92	79	57	33	25	8	6.1	510
Overall beauty and aesthetics	119	97	84	63	53	41	30	17	5	2	7.6	511
Shaded trails, sidewalks, and pathways	81	121	107	85	41	37	22	10	6	0	7.67	510
Shaded parking	22	45	48	70	66	58	79	65	48	4	5.54	505
Shaded streets	28	51	76	72	79	70	64	44	25	1	6.11	510
Increased attractiveness of retail and commercial areas	2	13	23	43	61	97	96	91	68	15	4.48	509
Increased property values	24	24	31	45	41	45	66	101	104	29	4.5	510
Improved health and psychological well-being	178	71	50	40	32	42	39	42	14	4	7.45	512
Passive recreation	10	29	20	18	31	33	48	94	186	39	3.71	508
Other	8	3	5	2	2	2	3	2	15	98	2.35	140
										answered question		**513**
										skipped question		**83**

Other

a green city is our legacy to our children. Where are the schools mentioned in this survey?
abundance of birds
All of these are of first importance to me.
Anything else
As with your question #7, I see no value in ranking in this way. Except for selecting "Other", all other check marks are random, just to get past this question. One thing which has always bugged me is that, even though the first parking spaces to be taken is always those that aare shaded, the first thing that is done to "improve" a parking area is to butcher the trees. The reason, I've been told, is that their insurance requires it. Perhaps the place to start is to convince insuranace companies that tree canopy is needed for all the reasons you have stated in these questions, and they need to change their requirements on their policies..
Attractiveness to wildlife
Block the view of the Mountains that are privately owned.
don't know what "passive recreation" means
Enjoyment of wildlife that live in tree habitats
Everyone is more inclined to be nice to each other!
For kids to climb; and to educate kids about nature

	fruit for homeowners and others
	General quality of life
	I don't want Mt View to look like Sou Cal - where we shouldnt even have cities because it is desert climate
	I would prefer that resident be able to select their OWN valuable trees -- I dont' appreciate that I HAVE TO keep and maintain messy Magnolia trees. I love trees and am happy to have them on my property, but would prefer to be able to select a tree that is both aesthetically pleasing and safe (such as not dropping slippery leaves and sharp seed pods.)
	Kids like to climb them
	legacy to others in the future
	Need more trees. Stop City Council from approving all requests to cut down heritage trees.
	Overall community benefit
	parking lot 9 canary island pine is an eyesore, potentially dangerous and needs to be taken down
	Reduce heat energy
	Sense of coummunity from same species street trees
	shaded parks
	Sharing with wild life & birds.
	Shows our native trees as being part of our community
	some of these are the same, like overall beauty and attractiveness
	something to lock my bike to;-)
	Streets with sidewalk extensions with trees look 10x better
	Take care of the trees you plant.
	Takes 30 years to grow and big tree and 30 min to cut it down.
	Thanks Trees are so important for human health and joy and the natural world
	These are all equal to me! They are small variations on the same thing in my opinion.
	These, too, are really impossible to rank.
	Traffic calming on streets (speed reduction)
	trees are a reflection of a community's level of education about common values. Please try to keep as many of the old trees as possible
	What is passive recreation (3)
	Wildlife habitat (also has aesthetic benefits!)
	Wildlife habitat and beneficial insects. Specifically need more CA native trees, like oaks and redwoods, rather than cheap, fast growing small trees.
	Wind breaks

9. What is your current awareness of the City's community urban forest program? Please select all that apply.

Answer Options	Response Percent	Response Count
I was not aware that the City has a community urban forestry program	40.2%	205
I have visited the City's web page for information about community trees and/or the urban forest	28.0%	143
I have read a newspaper article or publication that discussed community trees and/or Mountain View's trees.	41.8%	213
I am a member of a Mountain View organization which supports trees, such as the Parks and Recreation Commission, Mountain View Trees, Friends of Stevens Creek Trail, etc.	6.1%	31

I have attended Mountain View's Arbor Day event.	15.1%	77
I subscribe to the City's subscription service notifying residents about Heritage Tree applications and permits.	2.7%	14
I have participated in a community tree planting in Mountain View.	9.0%	46
I am aware that the City maintains all street trees.	65.7%	335
	answered question	**510**
	skipped question	**86**

10. Did you know that the City has a Heritage Tree Ordinance which protects the City's heritage trees?

Answer Options	**Response Percent**	**Response Count**
Yes	83.5%	426
No	16.5%	84
	answered question	**510**
	skipped question	**86**

11. Community trees are important to the quality of life in Mountain View.

Answer Options	**Response Percent**	**Response Count**
Strongly agree	85.5%	435
Agree	13.2%	67
Disagree	0.4%	2
Strongly disagree	0.8%	4
Not sure	0.2%	1
	answered question	**509**
	skipped question	**87**

12. I am more likely to visit a store or retail center if there is a shady place to park.

Answer Options	**Response Percent**	**Response Count**
Strongly agree	30.3%	154
Agree	38.0%	193
Disagree	19.7%	100
Strongly disagree	3.5%	18
Not sure	8.5%	43
	answered question	**508**
	skipped question	**88**

13. The City of Mountain View needs more community trees.

Answer Options	**Response Percent**	**Response Count**

Strongly agree	57.7%	293
Agree	27.2%	138
Disagree	3.7%	19
Strongly disagree	1.2%	6
Not sure	10.2%	52
	answered question	**508**
	skipped question	**88**

14. The City of Mountain View needs more drought resistant trees.

Answer Options	**Response Percent**	**Response Count**
Strongly agree	53.7%	273
Agree	33.9%	172
Disagree	3.1%	16
Strongly disagree	1.0%	5
Not sure	8.3%	42
	answered question	**508**
	skipped question	**88**

15. It is important for the City to have a Heritage Tree Ordinance to protect the City's heritage trees.

Answer Options	**Response Percent**	**Response Count**
Strongly agree	57.9%	294
Agree	30.1%	153
Disagree	3.7%	19
Strongly disagree	1.2%	6
Not sure	7.1%	36
	answered question	**508**
	skipped question	**88**

16. How do you think the Heritage Tree Ordinance could be improved? (Optional)

answered question	**176**
skipped question	**420**

Response
(1) Better inclusion of California native trees. (2) More stringent requirements when removing healthy heritage trees, such as perhaps requiring builders to put in new trees when removing or vastly pruning a healthy old tree to make space for building development, ideally aiming to maintain or increase total canopy area.
A palm tree is not a heritage tree. I think that there needs more clarity between defining a lovely and beneficial heritage tree and a tree that simply has a trunk with an 18 inch diameter.
After dealing with heritage tree removal, I will never, ever plant the protected species like oak or cedar on my property, which is a strange disincentive. I don't want the hassle, the nosy neighbors, etc. I have ugly, old monterey pines that cannot be removed until they actually die. I really do not like this ordinance.
Allow diseased, dying or otherwise not good looking heritage trees to be removed.

	Allow for non-native trees like eucalyptus to be replaced with something more appropriate. Allow magnolias be replaced with something that doesn't drop its rubber-like leaves 6 months a year. More routine pruning of trees on city property in front of homes.
	Allow for removal and replacement of liquidambar trees.
	Allowance for removal if causing structural damage (e.g., premature roof failure).
	Although we have a heritage tree ordinance, I've seen many great old trees approved for destruction when it seems it could have been avoidable. Additionally, I think the City could do a better job maintaining (pruning, replanting, etc.) trees in residential neighborhoods.
	As more residents understand what a Heritage Tree is, more jobs could be created to monitor and protect them.
	Assure that replacement of trees is adequate when permits are approved for removal. Balance tree removal with environmental benefits of the associated project, if any.
	At present the heritage tree ordinance is very weak or perhaps insincere. It seems to favor species that certain members of the department prefer. A HTO that respected trees of substantial size or age which are already growing would make more sense. Allowing developers to tear down great numbers of trees and replace them with smaller, ("more manageable") trees, such as those that can be grown in a box is not really in the spirit of a "heritage tree ordinance".
	Be flexible. Work with people to have their needs met, replace heritage trees with others. Great trees should be part of lives that work.
	Be sure more people are aware of it and apply for permits as required.
	By allowing residents to remove trees in their properties in exchange for a good sum of money or planting two trees in their property. I found a bit extreme when somebody who does not eat oranges is denied a permit to remove an orange tree in their property
	By not having it circumvented. Trees on La Avenida have been tagged for removal for this new five story development.
	by the time I see the notice on the tree, it's already marked as approved! How are we supposed to protest the removal if only approvals are posted? Rex Manor is losing MANY heritage trees lately. Why?!
	City pays for maintenance of trees that it designates as heritage trees, since the property owner may not be able or willing to bear the costs.
	City should enforce at least one tree for each house. For commercial or larger homes more based on the overall land size. Also for every tree removed by the property owner for any reason, they should fund planting of at least two trees.
	Coordinate with PG and E so that trees they prune are pruned for longevity, not only power line clearance.
	Deprioritize non-native, water-loving, messy trees. Not all trees are of equal value!
	Designating and planting more trees across all neighborhoods. There are more trees on better streets, and less with streets full of apartments. The city should try to add more trees on it's streets with apartments, and require more trees be planted in and around new developments.
	Developers often remove Heritage Trees and replace them with several cheap trees, such as flowering plums or other small junk trees. It would make more sense if they were required to plant at least TWO trees, of similar value, for every Heritage Tree removed. Developers should be held more accountable for the removal of Heritage Trees.
	Do not allow City Council to green-light all applications to cut down heritage trees for every construction project put before them. I have been to council meetings. In one of the meetings, City Council approved the removal of 16 Heritage Trees over the course of one evening.
	Do not let developers remove indigenous trees to replace with non-indigenous trees. At very least, indigenous tree canopy should be maintained.
	Do not permit land developers and companies like Google to circumvent the heritage tree ordinances. The clear-cut at the former Mayfield Mall/Hewlett Packard property and plan to cut down two dozen mature redwoods to build a bike path is a disgrace. How could the city permit this deforestation?
	Do not tear down so many trees in order to build developments. Encourage variety of trees to be planted in homes and easements
	Don't know it
	Don't know. Perhaps you could give a clue what you're thinking of doing with it.
	Dramatically increase the fine if a tree is removed without a permit. Don't be so accommodating of people wanting to remove trees to do things like build a bigger house.

Educate people about it
Educate resident about it. Develop a culture for it
Educate residents on how to keep heritage trees healthy
Electronic Community notification, survey, and request for input. Transparency of deisions
Enforce the rules where PG&E is concerned. Look at how they've butchered the Gingko trees along Cuesta Drive. Lopsided trimming weakens and splits a tree from unbalanced weight.
Enforce tree replacement rules. Often, a replacement is required but never planted. More, and more realistic, scrutiny on removal requests. More consequences if a tree is removed for a stated reason which is later found to be bogus (developers like this strategy).
enforcement
Eucalyptus should be removed as a heritage tree. They are not native, provide little shade, are dangerous. Native trees should be emphasized -- native oak for one. Care should be taken to make sure the street trees are planted properly to ensure proper growth. When property is for sale or on option, responsibility for watering and care must be spelled out so trees don't die during that period. All parking lots must be required to have shade trees and solar panels. Tree longevity must be a factor in heritage tree maintenance and removal.
First of all, make it blatantly obvious when these trees are going to be cut down. If it's on the street I can see the signs, but just recently I saw a notice about heritage tree removal and was told that 13 trees had already been cut down LAST YEAR--I felt I'd had no opportunity to voice my opinion about that in a more timely fashion and was sickened at the thought of losing so many trees in our neighborhood. Second, don't make the neighbors pay $50 to simply challenge another person's cutting down of a heritage tree. It is hard enough to say something to those we live next to on a daily basis without adding money on top of things. Take away the hefty fine to simply let the city know we don't want a tree removed--that's pretty awful. The trees benefit us all, and fining us for voicing an opinion is heinous.
First of all. Residents need to actually pay a fee for the removal of a heritage tree that is likely to last 5 or more years. especially if there is no threat to a home, structure or side walk. I have seen too many removals done in my street just because neighbors "hated" that there was sap, or bird poop on their cars, thus depriving the rest of us from the benefits of that large tree. The city is too quick to approve these kinds of permits for cutting. Paying a fee might prevent homeonwers from feeling like the tree is "in their way" of having a beautiful lawn. Also heritage trees are not monitored for sprinkler damage that accurs when neighbors irrigate directly on its trunk thoghlessly. I feel like the city should look for this type of neglect of trees and effectlively educate us on proper tree care. Also regular trimming of urban "leggy" trees WILL extend the life span of so many Mountain View trees. Just follow the example of Menlo Park, Burlingame, Palo Alto. The same varieties of trees are being maintained with regular limb trimming, and therefore these neigboring cities have so many specimens that have old and strong trunks, The same trees in Mountain View are frail mostly due to poor care and oftentimes are cut down after a big storm. Finally tree trimming companies operating in Mountain View know how laxed Mountain View is with respect to it heritage tree ordinances. I remember hiring one for consulting on how to save the tree, while the tree specialist was thoughlessly doing his speech on how to get around the ordinance by removing certain limbs that would make the tree look narrower and thus no longer be a heritage tree. I was so surprised, the guy was not even hearing me just trying to help me break the city ordinance. I spoke with friends that live in Palo Alto and believe me these companies operate with a lot more care when it comes to their work with trees. I wonder why this is.
Flexibility for taking down backyard trees that cause problems in small yards, and even front yard trees that are destructive, provided that they are replaced with more appropriate trees.

Follow the standards that the City has in place, NO EXCEPTIONS, ESPECIALLY WITH CONTRACTORS
From the little I know about the content of the ordinance, I believe the status of "Heritage Tree" is conferred upon a tree merely by it's girth at breast height. Since there are some trees that were clearly a poor choice for their brittleness, water needs, or short life span, I think that it would help to change the parameters that qualify a tree for "heritage" status. It would seem that Heritage trees could be limited to: -any tree with known historic importance -specific oaks and other native trees (as long as they are not problematic) that have a specified girth -any designated non-native trees with a specific girth that have been established to show good qualities as street trees -any tree that someone has requested to protect based on similar reasoning or something along these lines. This way, exotic or less beneficial species could be removed without it being such a burdensome process. It would also hopefully streamline the selection process for new street trees. It was a little stupefying to see Southern Magnolias - which want to be 50-60' wide and are a swamp tree planted in the parking strip along Shoreline Blvd. - how sad!! That tree is a poor choice as a street tree both for its water needs and for its sheer size! Thanks for listening!
Fund and hire the position to support the current level to which Roadways-Forestry-Landscaping ... and Planning ... and Building ... and Public Works (like sewers, sidewalks, asphalt, etc) handle their part of this huge picture. That's the way of our world - a lot of forward looking cities are bringing in more professional staff to work with these issues! Catch us up, Mountain View!!!
Get rid of those ugly magnolia trees that suck up water from lawns and drop leaves everyday of the year and don,t decompose! Esp. On Alison Ave.
Heavier penalties for people who cut down heritage trees.
Heavily fine those home owners who cut down heritage trees on their property without applying for permit. City should thoroughly investigate reasons why property owners want to remove heritage trees, not just because they are dying. Try harder to preserve trees that are "sick." Remove some redwood trees from the list, especially if they encrouch on adjoining property and cause problems.
Heritage Trees should be protected but it seems it is quite easy to get a permit to cut them down. Heritage trees should start out as good trees - deep root system (no surface roots), strong structure (no weaklings) California Natives if possible, drought tolerant, good shade, but need evergreens too. City should care for all Street Trees so homeowners will not cut them down.
Heritage trees that are removed should have to be replaced by a new tree that can have a chance of becoming a heritage tree, and it should be maintained until it does so, and checks should be done on that tree after 3 and 5 years, and severe fines should be imposed if the tree is not being treated well.
heritage trees that caused him to be four people are causing damage to personal property should
Higher fees and more paper work to remove a heritage tree on one side, and a reward if caring well for a heritage tree.
I am on the Board of the Homeowners Association for CP Lakes, 505 Cypress Point Drive. We have many many heritage trees on our property and have to remove some occasionally because of roots picking up foundations and other issues caused by the trees. The cost to the Association to file a permit to remove a tree is too high. If a tree is doing damage or is sick, the process for getting permission to remove it should not be hundreds of dollars. It used to be much easier and less expensive just a few years ago. We love our trees and don't take lightly the need to remove one once in a while. We should not be 'punished' for taking care of our property. Seems like a money grab by the city....

	I am still sad that tree(s) at the city hall were cut down - even if by mistake. and sad to see San Antonio so very treeless. Help property owners pick trees that will not block pipes and have the city help to keep trees out of power lines. Create a contest for best heritage trees in order to generate more civic pride.
	I applaud the city having an ordinance, I love and value trees but the current ordinance is too restrictive. Homeowners should not have to fight city hall to get a tree removed when it no longer has a positive impact on a home - especially if the homeowner is willing to replace with a better tree. I see trees that struggle with fire blight, anthracnose, etc. - all of which the city ignores and prohibits the trees from being replaced. Trees that are too large for the current space? Just because a tree is of a certain size does not mean it is the right tree for that space.
	I can't say b/c I don't know what the ordinance stipulates. However, it should be at least as strict as Palo Alto's and Stanford's ordinances. If you want to see how places with haphazard or no ordinances look, take a drive around all recent residential building in North Carolina. They apparently scrape the whole lot flat, build the house, then plant a few spindly sticks around, hoping they'll turn into trees in 30 or 40 years. Pitiful!
	I do not know, but do not think size should be an overriding consideration when considering removal applications. Future plans, including future tree plantings should be considered as well. So far, my experience with City staff is that they are reasonable and would positively consider removal of a large but unattractive tree on my property.
	I do not think I have ever seen a Heritage tree saved from owner requested destruction. Not ever. I have attended a city meeting with an owner and arborist testifiying. It was a total joke. The arborist declared that it was important to cut down the trees in question because of the danger of them being knocked down IN A TORNADO and landing on someone's car. There is a lot of climate change going on, but Dorothy and Toto can tell you there a tornado is rare in this area. So, the way the ordinance could be improved is actually to use it to protect trees. This is not the way it is going now or in the past 20 years.
	I do think there are time when a very large tree should be taken down. People should be discouraged from planting redwoods in the first place because they eventually grow very large and take up a lot of water.
	I don't know
	I don't know many details about the ordinance, but the general ordinance seems good to me. There are possibly details about conditions that I'd care about if I needed to remove a tree, but I haven't needed to do that.
	I feel the current heritage tree ordinance primarily considers size/age. It's criteria doesn't provide property owners the flexibility to maintain a safe property, since a tree needs to be practically dead before it can be removed. It is also short-sighted in that it protects existing trees without providing a mechanism for ensuring a plentiful supply of heritage trees in the future. It says "Maintain the status quo at all costs," which is not indicative of a progressive city. I strongly oppose the Heritage Tree Ordinance as it is currently written and implemented. Please re-write it!
	I have the impression (although I could be mistaken) that when residents apply for tree removal it is usually granted. Does there need to be stricter criteria to remove mature trees?
	I often see Heritage trees with signs on them notifying the public that they will be removed. I am hopeful that only diseased and damaged trees are allowed to be removed. I think the City arborist(s) need to be extremely careful about their choice in which trees to plant where. Our sidewalks in the Cuesta Park neighborhood are tripping hazards for anyone with mobility issues. Roots have grown under sidewalks and make them very uneven
	I strongly feel that when a home is for sale that there should be a disclosure regarding a heritage tree that is on the property. I am in the nursery business, and I am constantly being the deliverer of bad news to people who purchase a home and I have to tell them that they cannot/should not, water under your oak trees. No one said anything to them. The realtor need to be ether educated, or be held accounted for not being honest to new buyers. Probably three times a day at work I am delivering this message.

	I support a Heritage Tree Ordinance for healthy, well located trees. However, the ordinance is not applied in practice. Park Place (Prometheus) can remove healthy heritage trees at will, with proper notice of course. Homeowner's can petition the city to remove healthy heritage trees from their property for a room addtition or "safety" concern. The city can remove healthy heritage trees for a meditation garden (The 2 or 3 removed to make the garden, by coincidence, showed signs of crown rot-note all pines demonstrate some type of rot). Trying to get the city to remove a unsightlghtly, no longer useful tree from a city owned parking lot is impossible. The canary island pine, parking lot 9 needs to be removed. It's an eyesore the city ignores. Pine needles coat the sidewalk, the street and fill the gutters of nearby homes. The maintenance of this area has dropped significantly. Unfortunately, the utilities have trimmed so this once beautiful tree so badly, it now needs to be removed. Having seen the condition of the other trees prior to removal (Park Place and Meditation Garden), it's obvious the city would rather ignore their responsibililty remove this heritage tree. I suspect if there was a plan for a meditation garden in parking lot 9, or an apartment complex, the tree would be removed before if falls on something or someone. Heritage trees that no longer serve their purpose (shade, energy efficiecy, drainage-all thing mentioned in survey) need to be removed if they pose a danger or no longer serve their purpose.
	I think if a home owner dislikes their current tree they should be allowed to change the tree if they are willing to pay the cost. We have maintenance issues with he heritage trees on our street.
	I think it is important to protect the existing trees, but the city could also sponsor citizens for planting their own new trees - if only with a small bonus! This would raise awareness as well.
	I think more trees should be protected by the ordinance. Fines for removing heritage trees should be prohibitive so that people are not tempted to get rid of the trees and then pay the fine. So many trees were removed from the site for Google's new home on Central Expressway. I can't understand how that was allowed to happen.
	I think that the City should replace heritage trees when they are removed...particularly the Ginkgos in the Cuesta Park neighborhood.
	I think the city's policies are extremely weak. I regularly see amazing old trees approved for removal. It seems that all one needs to do is have a flimsy excuse and somebody to sign off on it and it is approved. I think the regulations need to be made much more stringent and the presumption should be against removal.
	I think the Heritage Tree Ordinance should take into account more the existing structures. Many of the trees are providing problems with the roots invading housing foundations, sewers, and sidewalks. I love trees, but I think we have to preserve the existing structures.
	I was in contact with the Tree Group as I moved to MV and told them I would love to make a neighorhood inventory (near Rock Street/Middlefield Road and school neighborhood) of all the trees as I walk daily. I tried to get an answer, how I should proceed and I would need a tree guide. Unfortunately it never happened, due to the answer, that they meet on Saturdays (when I work) and there was not much help for a meeting outside of their doing. I loved the story the gentlemen wrote to me, about the Olive Trees. I was thinking of a tree guide in that neighborhood for the school kids. I am a teacher and was interested in giving back to my community in this way.
	I would like to see the city be more active in the replacement of heritage trees. We have lost many trees in the Cuesta Park neighborhood but new trees are often not planted in their place leaving unsightly holes or dirt patches in yards and the neighborhood less attractive overall.
	I would prefer that resident be able to select their OWN valuable trees -- I dont' appreciate that I HAVE TO keep and maintain messy Magnolia trees. I love trees and am happy to have them on my property, but would prefer to be able to select a tree that is both aesthetically pleasing and safe (such as not dropping slippery leaves and sharp seed pods.) I am from the city of Sacramento where no such ordinacnce exists and the canopy is diversified and BEAUTIFUL -- residents there love and care for their trees. This is not the case in Mountain View. I and many of my neighbors are frustrated by our ugly, messy, and dangerous magnolia trees -- we love trees and would be happy to have their property and care for them, but not these magnolias. I am strongly in favor of requiring that residential properties be required to have and care for a specified number of trees on their property, but I also believe that they should be allowed to CHOOSE which trees those are. Our magnolia tree is ripping up our driveway and sidewalk and walkway, dropping dangerously large and sharp seed pods on my son and neighbors walking by, and dropping waxy leaves that are easily slipped on. I would like to replace this tree with a lovely birch to supplement the other two birch trees growing in our front yard (they grow best in groups of three). The Heritage Tree Ordinance prevents me from doing this. Not to mention that these trees are UGLY. One trip through Sacramento and you will agree with the stark contrast.
	I'd hope it would account for dangerous situations
	I'd like to see the city and residents do more with fruit-producing trees, whether planting or harvesting them. It's part of what makes this area special.

	If a heritage tree is still reasonable healthy but clearly near the end of its lifespan, it should be easier to remove it.
	If a huge part of the tree has fallen down and caused damage because it is rotting and needs to come out, there is no need to go through the process of showing that it is a heritage tree and give the chance for neighbors to appeal (which wouldn't work anyway). This is a waste of time. Just take the tree out. But of course, replace it with another tree.
	If an applicant to remove a tree pays money instead of planting a new tree post how the money was applied on the website - maybe a monthly summary
	If the city wants to enforce this ordinance, they should make sure to make taking better care of the existing trees the highest priority before they plant more. Trimming and planting of proper trees should also be better implemented. The city has really fallen down on the job as far as these responsibilities go. If you plant a tree, you better take care of it. And this also includes repairing any damage to sewer lines, sidewalks and streets that city trees cause.
	Im just curious why I can not remove one from my yard but the just killed off so many at the old mayfield mall site. Most of those trees ahve been there since the mall was open and I was a young boy.
	I'm not sure, new here, but the tree removal at the HP/Google building is horrendous
	Improve ordinance to make it easier to remove trees if the they are close to residential property and make it easier to remove them before property damage actually happens.
	In some cases trees were planted years ago that were simply inappropriate for the location. It's great to have old trees, but it should be easier to have them removed if they are inappropriate. As with most things, the decision should be made on a case by case basis.
	-Introduce incentives to plant protected species. The way the ordinance is written now, planting protected species is actually disincentivized; people don't want to plant trees they can't cut down later if they become problematic. -Shift the focus away from number of trees for replacements, and toward total mature canopy cover. -Rethink protected species list. In my opinion, Cedrus and redwood should receive no special protection, and more local natives should be added. -Consider adding list of species encouraged for removal, like blue gum eucalyptus and tree of heaven.
	It appears they grant an exemption to anyone that asks for one
	It is a 100% lie that the city "maintains all street trees." Home owners bear the cost. When was the last the city denied itself of cutting down a heritage tree? While the city is supposed to follow the same laws that the citizens do, in practice they never do. The city can and does cut down any tree it wants to. The same goes for PG&E.
	It is too rigid. Some big trees are in bad locations and need to go. Safety is most important.
	It is too strict now. There are trees hat property owners should be allowed to take down for sheer massive size
	It seems like a nice idea but has no appearance of working to me. Anyone who wants to remove a heritage tree seems to easily be able to do so.
	It should be more selective. Age alone does not imply 'heritage'. Fast growing trees that were planted in new neighborhoods in the 1950s were not necessarily right for our environment. EG Modesto trees.
	It should not just be on the size of the tree but also on the species.
	It should protect trees from utility companies, particularly P.G.&E.
	It would be great if there were a way to also have it encompass protecting California native trees that do not meet the circumference measurements. There are many, many native species that will never come anywhere close to growing that large. Size alone should not be a requirement, but rather age, placement, value to native wildlife, and preservation of native habitat.
	It would be helpful if the notice on a tree slated to be taken down included a reason why it is being removed.
	It would be nice to state the heritage tree ordinance before asking these questions.
	It's too easy to get an o.k. to remove trees right now. In addition, trees are are not considered when it comes to power lines - they are just cut down ugly to make space for power lines when the trees grow. The lines should be in the ground or away from trees.

	I've read it. Make it more understandable. Also outreach must address the key problem, which is neighbors don't want to oppose a neighbor who wants to cut down their own tree. We have got to make it understandable to all that the benefits of trees affects all of us, and you want to cut it down because it is inconvenient for you, then you cut all of us. It's like the argument about why should I pay school taxes if I don't have children. It is an investment for all of us. The City needs to educate residents more about the tree preservation ordinance and take the neighbor-on-neighbor issue head on. Some people see the ordinance as nanny-gate; I do not. It is vital we not cut down trees or we will end up looking like Sunnyvale and Santa Clara and paying the heat price for it. Also, our redwood trees must be protected and not use recycled water on them. Redwood define as a peninsula city--an important property value.
	Judgement should be exercised in the preserving of heritage trees as not all trees are created equal. If a heritage tree is found to be causing problems with walk ways, streets and power lines and when development calls for removal of a heritage tree, two to three replacements should be mandated. These replacements should be located where the trees will interface with their surroundings in a positive way.
	Less restrictive
	Let property owners choose their own trees. I HATE THE TREE ON MY PROPERTY!
	Make a blanket exception for Eucalyptus and Liquidambar/Sweetgum trees. Encourage the use of CA native and drought tolerant trees.
	Make enforcement cases and fines public on the internet. Make it cost vastly more to remove a tree without a permit. Right now it is free if you don't get caught and the same cost if you do get caught and the city does anything. Require permits and licensed arborists to prune named prized large oak trees. require pictures on the permits that are posted on line. Take more care to have the permits fully filled out.
	Make it harder to cut down a heritage tree just because you moved in and now you don't want the tree. Apparently the procedure is to put yellow tape on it that says "heritage tree", and then after a month or so, you can chop it down, no problem.
	Make it harder to remove heritage trees! I'm not aware of all the details but neighbors have very easily obtained permits to cut down heritage trees.
	Make it really apply to true heritage trees, not nuisance trees. Trunk diameter is not a good measure as there are ugly and useless tress, mainly palms that need to be removed and replaced with more appropriate varieties. Enforcement should be better but also more intelligent.
	Make sure that the enforcers of the ordinance are knowledgeable, reasonable, and flexible in interpreting the ordinance.
	Make the community involved more! Low income community more educated and Involved so we can care more about our environment and our city.
	Making the information more available to new home-buyers. Many do not understand the value that the trees have on their newly-acquired property.
	Monitor cutting/removal process or make sure just the approved tree gets taken out. Follow up on replanting.
	More awareness of program. Teach about program in schools and at the library?
	More enforcement! People who don't like trees cut them down and then it is too late!
	More native trees
	More notice to the community before they are slated to be cut down
	more penalties for people that disregard it.
	More public awareness to build appreciation and therefore value the importance/benefit of them.
	Needs to be enforced more strictly. Residents I talk to feel any heritage tree can be removed with little resistance from the city.
	no idea
	Non-native trees should not receive the same protections as native trees. It is more important to protect native heritage trees.
	Not all trees that are large in diameter are worth keeping. Some are incredibly messy or dangerous (dropping pine cones, etc)

	not let the City Council Members have the power to overrule that Ordinance at the bequest of deep pocket developers - make the ordinance have some teeth against demands of outside developer interests who just chop the trees, build the worthless buildings and walk away with the profits, leaving the residents with a denuded landscape. Make the Ordanance mean something.
	Not sure if this is the case already or not, but removal of a heritage tree should be supported by the planting of two or more trees which support community goals.
	Notices should indicate whether new trees will be planted to replace tree being removed. This should state whether the tree/trees will be in front, back or side yard
	Palm trees should not be protected by the ordinance. Additionally, removal of heritage trees in commercial developments need replacement trees that offer shade after 10 years.
	Plant more native trees. Educate the public.
	post signs in the front of the property when large trees anywhere are being removed
	Proposed improvement: Provide an exception for redwood trees in people's front yards. They're way too big and all you can see at eye level is an enormous tree trunk. It would be great if my neighbors could remove their giant redwood trees and plant trees that are better sized for the small yards in our neighborhood. Streets in question are Hollingsworth, Lloyd, Ernestine, Todd.
	Protection of native trees should be a priority
	Provide more convenient times for meetings. The last one was in mid-afternoon, when a lot of people work or have classes. The Heritage Tree Ordinance is a truly wonderful thing! It has saved many beautiful trees, and my husband and I are very appreciative of it!
	Provide more information to residents about the Heritage trees and pruning or removing them. I have seen many trees removed without permits or pruned terribly (pollarded) destroying a tree's natural beauty. Perhaps there could be some financial assistance to some who can't afford to maintain them.
	Putting people's safety and property first in case of storm or natural disaster then the trees.
	Recognize when trees become too old and proactively plant new Heritage Trees that will mature before the older ones have to be cut down.
	Reduce fee for appealing tree removal requests.
	Reduce the number of exceptions for healthy trees, particularly in large commercial builds.
	Redwood trees get too tall and endangers neighbors
	Remove the ordinance. It is an impediment to development.
	Remove trees of little habitat value from the ordinance, even if large Restrict time of tree removal to winter only
	Require any replacement trees to be larger in size when first planted. This will help to increase the canopy in a shorter amount of time.
	Require developers to work around existing heritage trees, not remove them. Say "no" more often - especially for trees on the perimeter of sites that could be kept but are "inconvenient" for contractors. Better follow-up after removal of heritage tree to ensure that they are (adequately) replaced and maintained. Require replacement with trees of equal or better heritage value - not crape myrtles. Charge higher fees for heritage tree removal permits - to cover cost of investigating potential objections. Charge meaningful penalties for those who remove trees without permits - on a sliding scale, with developers paying a real penalty for ignoring rules. No removal or pruning of trees during nesting season, unless the tree is potentially dangerous. Education of tree trimming crews in matters of wildlife. (I was once told by a city tree trimmer, when asked, that he would move a nest from one branch to another if

	he came upon one.)
	REQUIRE residents who remove trees to replace them with approved city trees. Do not allow removal of heritage trees for only aesthetic reasons - only remove them if dead, dying, diseased or dangerous.
	Require the replacement tree to go in the same location unless there is a significant justification.
	Required replantings should be protected.
	Residents are often prevented from removing overgrown nuisance trees (such as palm trees).
	Revolk the ordinance. All Heritage trees on private property should not be regulated.
	Seems rigid sometimes...i have heard of disputes over trees on personal property that seem unreasonable while city cuts down its own trees on el camino. Also trees that buckle sidewalks, driveways etc are hazards and should have less priority. Some city council members act extreme in tree discussions..need to be more reasonable in respecting rights to manage trees on private property. There are many, many "trip" hazards on our sidewalks that should be taken care of caused by city owned trees
	Send notice to the various community associations locating the heritage trees in their neighborhoods. I know Monta Lomans don't know where all their heritage trees are.
	Several years ago we applied to have a tree removed. We submitted the paperwork and in the course of the meeting we offered additional information. Despite having the whole team including the arborist present, we were turned down because the additional info wasn't part of the written. That could have been played much better on the committee's side. If they needed to think things through outside of our presence, they could have excused us to another space while they conversed.
	Simpler application process at no cost to homeowner, stiffer criteria especially for developers, improved community awareness/education, replacement tree assistance for homeowners, huge penalties for disregard of ordinance, early notification and input collection from residents affected by heritage tree removals, better support from City in ensuring best replacement trees for developments.
	Some heritage trees are poorly placed, or are nuisance types of trees whose roots are invasive, or drop sap or spiny balls (liquid amber) or cones. I don't think it is as necessary to preserve heritage trees as it is to replace a tree if it is cut down (and replace it with a drought tolerant tree!)
	Some of the heritage trees are not visually appealing or enjoyable. For example, my next door neighbor has a heritage tree that is a nuisance from what it drops on the street and cars, and we would both prefer a different type of tree that could provide the same shade benefits but have better appeal and be a better fit for the neighborhood.
	Sometimes it is not just the size of a tree that should make it important to protect but maybe the type, history, a grouping of trees. These should be taken in to consideration. Example: Google just ripped out a couple of huge groupings of trees that were not heritage size but really eliminated a beautiful setting for an otherwise heat-bubble office site of asphalt. (Mayfield site) Whoever is permitting all of the destruction of the landscaping at Mayfield should be held accountable. It looks like a bomb went off and killed or is killing every living thing on the site.
	stop cutting them down and replacing them with small trees
	Stop making exceptions such as the HP/Mayfield site which has allowed many many heritage trees to be cut down. Insist that canopy trees be replaced by canopy trees and not dinky non-native quick growing trees.
	Stop planting trees that belong in the forest.
	Stopping allowing removal of heritage trees for developments. A developer should be made to design/work around the trees, not just be granted approval for removal. It should not cost a fee to object to removal of a heritage tree.
	Stronger rules for large developments in terms of maintaining canopy and planting larger trees and trees capable of reaching large size and canopy.
	Strongly fine vandalism of heritage tree. E.g. random trimming by no qualified day laborers of old established heritage trees.
	Take into account what damage a tree is doing to nearby structures.
	The city does not really I enforce this law. It's enforce unfairly. You allow trees to be removed on city owned property and on developers and only hold residents to the law. Examples are the new building going on on north bay shore (all those beautiful tree cut down) on moffet blvd, Sierra Vista, city should enforce the heritage rule to all esp out of city developers.

	The heritage tree ordinance should not consider "trash trees" as heritage trees. Also, native trees, such as oaks should be more strongly protected (a nearby oak was cut down by a developer, they had purchased the land for cheap specifically because there was an oak in the middle of the plot, making it difficult to work with.)
	The ordinance is only important if the city actually protects the heritage trees it claims to protect. It's too easy to get around the ordinance as evident in the clear cutting that happened at the Mayfield site.
	The ordinance seems to apply only to residential areas; they seem to have no problem taking heritage trees down for the many "developers." It needs to be applied equally to everyone.
	The ordinance should not cover liquidambar sweetgum trees, as long as people are going to replace them with California/bay area native trees. We have a very "green" neighborhood in St. Francis acres, but everyone despises the liquidambars.
	There have been cases where heritage trees have been taken down at inappropriate times (nesting season). Unless there is the need to to take down a tree for safety reasons (I had one such tree removed because it was half uprooted after a storm); I also think that any development/redevelopment should ADD not merely maintain existing canopy. I also would want to see more vertical or roof gardens. In fact any roof in a new multi-stories structure (parking, appartment complex, office, retail) should be solar or green (garden, trees, heat absorbing landscaping...) or both.
	There must be a more nuanced mechanism that considers the qualities of heritage trees in the decision to allow or promote removal. For example, a large fan palm may meet the definition of a heritage tree, but it delivers few of the benefits hoped for in preserving heritage trees. Property owners should be permitted to remove such trees if they replace them with species that would provide more robust canopy.
	There should be a substantial fine for unpermitted removal of heritage trees, even on private property.
	Too expensive to apply; too expensive to object/contest; too expensive to appeal. Some decisions seem arbitrary. Need more efforts to educate/inform in order to prevent need for so much cutting down and replanting. Provide database to search for tree by height, width, deciduous or not, care req'd, best location, sun/shade, resistance to disease/pests, etc., photos and/or location of such trees in MV. It would be nice to assist/reward residents who maintain heritage trees on their property, with all the attendant expense, time and effort involved in maintaining those trees.
	too many trees are removed unnecessarily
	Trees are also a renewable resource and more education can be done to discuss when it is a better practice to remove a heritage tree and replace it.
	Unsure. I have seen signs that the program exists, but I don't really know anything else about the program.
	We should give preference to California native trees.
	Well, sad to see that the ordinance was changed to require someone to go downtown in person to make a statement for keeping a tree marked for removal. This limits access for many who may have a comment. Please allow phone and email input.
	When a large heritage tree is removed, and the city promises that the owner will need to replace it with something of value, assure that it actually happens. One tiny (under 4' tall) slow growing tree is no substitute for removing a large heritage tree. I've lost faith in the city enforcement of this ordinance after seeing what kind of trees are replacing the old ones.
	When a tree is permitted to be cut down, the notice posted, should list why (and if it already does, in more detail). I always wonder as to the reason when I see a posting in my neighborhood.
	Work more closely with developers so that the trees are actually protected instead of being cut down to meet developers plans. For each tree cut down, several more should be planted.
	would require research of ordinance
	yes, I live next to Mayfield and experienced the recent clear-cutting there! it was an outrage to the neighborhood. We followed Toll Brothers for years and gave input to their tree removal/replacement plans. Toll Bros exit during the recession, new developers come in and clear cut, leaving only a few heritage trees around the perimeter. What a slap in the face to the neighborhood.
17.	**What level of maintenance do you expect for community trees? Please rank the following options according to your preference (1 = best strategy; 5 = least preferred)**

Answer Options	1 - Best Strategy	2	3	4	5 - Least preferred	Rating Average	Response Count
Best possible care (clearance, structure, health, and safety)	373	40	41	35	14	5.44	503
None - keep them natural	17	29	52	292	113	3.1	503
Clearance only (over streets and sidewalks)	37	137	253	62	14	4.24	503
Plant health care (disease and pest management only)	56	271	130	41	5	4.66	503
Other	17	9	6	16	87	2.91	135
					answered question		**504**
					skipped question		**92**

Other
as natural as possible, plant health and clearance combo
Best possible care
Best possible care as stated in your #1 BUT assuming truly qualified arborists are hired. The worst cut ever done on my tree, which is now at least 45 years old) was done by a company hired by the city.
Best possible care at reasonable cost
choose right tree for location
clearance from roofs/driveways as residents request
clearance, health
depends on the species. prefer more care for native and naturalized species.
depends on the tree
disease/pests, + public safety
DO NOT TRIM Feb.-August unless immediate safety concern.
Don't remove or overly prune.
Early removal of dangerous and dying magnolia trees in residential neighborhoods.
have arborist services volunteer time
head in the sand;-)
How do we know which trees are community trees?
I don't really want anything other than the best possible care
I expect trees to be protected, citizens and companies educated and fined if they are not properly taking care of trees because they are a common good to all mountain view recidents, especially important during this age of global warming, and current drought
I wish the city would not delegate work to contractors who are not certified. I have seen bad work on trees from out sourcing tree companies when the city was too busy. I asked the workers and they said they were hired because the city needed more help.
If proper trees are select for the sites there should not be need to maintain safety clearance measures if the trees are healthy
I'm not an arborist; I don't know enough about these options to make a meaningful recommendation.
In cooperation with property owner
Interested in maintaining trees in good, health and conditon; not cutting half of it over a street; and not cutting it to reduce future maintenance unless vital.
least impact on wildlife - no pruning in spring and summer etc, leave things bushy
Maintain the integrity of existing structures.
Maintenance on a regular basis. Do not allow them to ruin sidewalks.

	Maximize Canopy coverage over streets. Remove wires that conflict with street trees.
	More thought should go into selecting appropriate CA native trees for street trees, whenever possible.
	Need to manage the structural damage to pavements that can cause injury to pedestrians
	No lion tailing
	Other - choices other than best possible are not ones I support. Having to choose beyond #1 is making #2-#5 artifically supported choices.
	Plant health plus clearance
	Plant native species
	Plant trees which will live in current conditions thenkeep them out of the power lines and lines of vision to traffic signs and signals.
	Please do not approach care by the shortest, easiest method possible: spraying pesticides. The trees given good care will not need pesticides and the residents of Mountain View do not have their health improved by the the use of toxic sprays. The birds and animals who rely on the trees also are at risk from the sprays. The bees which are disappearing are equally at risk from the sprays.
	Protect nesting birds by not trimming during the nesting season
	Remove trees in sidewalk tree wells
	repair sidewalks and roads damaged by tree roots
	Require commercial use to care for their trees in parking lots, especially when young. Bailey Park Safeway is example of terrible care.
	seems like health/pests are often used to justify cutting down trees - should only be done if tree death has occured and then ONLY if it cannot be used by wildlife for nesting/protection etc.
	Set up a Heritage Foundation of residents who will fund raise, keep people aware of these precious resources, etc.
	Take care of the trees but not to over groom for some idea of aesthetics.
	The trees should not be cut down, just because they make a mess for that owners home.
	This is incredibly biased.
	This question is clearly politically rigged
	Trim
	Trimming, but with care regarding nesting season
	Underground utilities as much as possible to stop PG&E to maim many of our trees.
	Water median trees in times of drought.
	Water them.
	Watering them
	Why just extreme cases offered in this survey. Look to other municipalities for how they approach it. Atherton, Menlo Park... All you have to do is travel from MP or Atherton in to Redwood City to feel the difference trees make in livability.

18. I am satisfied with the current level of maintenance provided for Mountain View's community trees.

Answer Options	Response Percent	Response Count
Yes	63.5%	320
No	36.5%	184
	answered question	**504**
	skipped question	**92**

Comment (Optional)

	Actually my answer is "not sure".
	Actually, yes, but I want to talk about watering and the maintenance of the swale, berm, ultility strip or whatever that area between the sidewalk and the street is called. I realize that many communities have pushed tree maintenance and more onto homeowners but think residents/homeowners are faced with a dilemma when also being asked to conserve water and being encouraged to take out lawns in favor of drought resistant plantings -- meaning that more City watering for younger trees might be a good strategy. Many of the swales in front of folks home, particularly in the larger downtown area are an eyesore of weeds and dry dirt. This might also be because few have sprinklers or drip on that side of the sidewalk. In any case, I think it would be great to develop programs to encourage residents to improve these strips. One idea is to encourage vegetable gardening on these spaces with education and how-to workshops. Another is to implement an incentive program, similar to the Water District's, to encourage drought resistant plantings.
	After the tree is planted in the yard, no attention is given to it by the city. Do the trees need to be trimmed to grow properly?
	although I'd love to be compensated for the hours we spend picking up all the liquidambar seed balls so that pedestians don't twist their ankles on them or barefoot kids don't step on them.
	Although sometimes I feel there is over-pruning, like the pine trees along Whisman. Also, I'm disappointed with the removal of the umbrella pines on San Antonio Road. San Antonio had some great heritage trees before. City should have a ballot-type website for residents to vote whether to remove community trees.
	Arborist(s) need to plant trees that are disease resistant, not require a great amount of water, NOT have root systems that will upturn sidewalks....and do not require a huge amount of care for property owners. Magnolia trees in Cuesta Park neighborhood drop thousands of leaves & pods. They are not easy to rake, cannot be used as compost, because they do not break down easily and pods drop all over (on heads, too!)
	At least in the past, more thought could have gone into selecting appropriate trees for neighborhoods. In general though I am very satisfied.
	Better or maybe more often pruning could help in some cases.
	Certain areas need more attention; e.g., trees along Central look scraggly, some are dead. I also think the city should exert more pressure on home owners to maintain trees that present potential hazards. We have neighbors with large trees on their lots (some are rental properties) that are not maintained and present hazards with high winds or extreme temperatures,
	City tree maintenance is good, though I would love to see it even better. Educating the public of the benefits of trees and promoting good care and health of trees on private property as well as public is needed.
	Cleanup of fallen debris needs to improve on Grant Road. There have been pine needles in the street for months now.
	community Heritage Trees have gotten the chop despite the ordinance supposedly against such treatment, against the protests of the residents; City Council licked the boots of deep pocketed developers instead - that's not good public servant behavior
	Confusing. We get great service to call in and have a tree cut out and maintained, but it is inefficient. Then another neighbor calls in. Is that efficient? If so, great because I like the personalized on call service. Just worried that it is not as efficient as addressing the entire street.
	Could be a little better but mostly it is good
	Could use more trimming above paths, bike lanes and sides of roads to minimize branches interfering with cyclists. The trees that seem to be most problematic on this are the ones that have the thin dangling branches like the one on the Shoreline side path south of Wright Ave.
	current' is vague. i trust the city is doing the best that it can to maintain and protect? plant some city orchards with a variety of fruit trees - once the drought is over - and monitor usage so that stores don't pillage the public resource.
	Cutting down trees is the usual level of maintenance. Also, when individuals buy a home that has heritage trees on the property, that individual should be informed that his/her purchase does not mean that the tree is protected except for when the new owner doesn't want it any more.
	Developers are allowed to cut down too many trees. There are too many large buildings being developed without any trees. This is very bad for the health of Mountain View. It is becoming a concrete jungle. Each new development should have to plant their fair share of trees. An example of this is San Antonio. Trees were removed and it has become a treeless city all until itself. The City of Mountain View is doing a very poor job in approving developments in regard to urban forest. Mountain View is consistently caving in to Google demands which sets the tone for all other developments.

	Don't know enough
	Don't know how all of the trees in different areas in MV.
	Don't know, but you forced me to pick one.
	Especially because reports of trimming needs are responding to quickly
	Except when the Gingko trees on Cuesta are trimmed only in the center beneath the wires. With the rest of the tree left to grow it does not make for a good looking tree.
	Far too much trimming during bird nesting season. Often NO inspection of trees for nests before trimming or inspecion while trimming. This is NOT acceptable and is unnecessary. It is being done with worker/equipment scheduling concerns as the highest priority, NOT concern for nesting birds or the trees as the highest priority. No ethical arborist would approve what the supervisors and workers are actually doing.
	Focus on native trees is necessary
	give preference to older and California native trees. Don't waste money/effort on younger trees not native to the area.
	Haven't noticed so suppose it's O.K.... Have there been complaints?
	Homeowner outreach for street trees that need watering could be improved, especially in the early years.
	However it would br good to work more closely w property owners when the street trees in front do their properties are dying. Case in point, 1 dead (beehive moved in) and 1 dying palm that are most unattractive on north side of Yosemite at Hope street.
	I almost ran a stop sign last week (maybe on Montecito) because a tree was completely covering the sign and the post! I was not traveling quickly, it was just invisible until I reached the intersection. Other signs are covered by leaves or branches throughout the city. Otherwise, I feel the trees are well cared for.
	I am becoming satisfied, although for the first 2 years we lived in mountain view there were trees that covered 'Dead End' sign to our Cul de Sac and trees that partially blocked other street signs.
	I am capable, as an expert amateur arborist, of maintaining the street trees on my property, and do so regularly.
	I am concern with the City/homeowner trees that were suppose to be cared for the City.
	I am concerned that too often safety/health/clearance is used as a reason to cut a tree that would survive on its own. I feel the life of the tree should always be put before the 'potential' risk of harm to human life or injury. Post warning signs or fence ....anything to help our ancestral trees survive.
	I am highly dissatisfied by the care that was taken of the hundreds of trees on the Mayfield site while it was unoccupied. As I understand it the trees were not watered for several years and most of them are now being (or have already been) removed. Seems to me that this could have been prevented had the trees been watered while the facility was vacant. Does Mountain View require businesses to properly maintain trees on their privately owned property that fronts multiple city streets? Perhaps it should.
	I am not educated enough to know if there are trees that are in need of care that are not being cared for. I think that the city staff is first rate and I hope that first class tree care is possible.
	I am not sure so I am checking no - I think our trees should receive the best possible care and be looked upon as a valuable asset to the community.
	I am satisfied
	I am very concerned that trees are being removed and not replaced, and extremely concerned over the noticeable lack of greenery in much of the new high density housing. It is ruining Mountain View.
	I am very unhappy at the way the utility companies brutalize trees in order to clear the way for the wires. It destroys these trees, which is such a loss. The city's maintenance of trees seems to be fine. But the utility companies should have to meet higher standards of care than they are meeting.
	I answered both #18 and #17 and was blocked from continuing until I filled in #17 completely, with mutually exclusive answers — note term ONLY. AND I said I could not judge #18, but was blocked from continuing until I arbitrarily punched an answer. Who designed this survey? I hope we didn't pay much for it, b/c it's lousy in structure and syntax. I don't know what it is, so cannot judge how satisfied or not I am.

	I believe better selection of what trees to plant is essential. Drought tolerant, native trees to Santa Clara Valley not only needs less water, but also is a benefit to wildlife/nature, and needs less maintenance than non-native trees. These trees thrive in their native environment and gives us a sense of history of how this valley looked before it was developed.
	I believe overall maintenance is okay but it used to be better. There was a larger crew that looked after the trees. I think could be a bigger priority then perhaps some other line items that the city manages.
	I cannot say, since I don't know which trees the city needs to maintain. When choosing trees to plant, please be thoughtful about which ones drop matter, like liquid amber trees, which are so messy. There will be less to maintain if there is less matter that drops. Thanks!
	I don't know enough to answer this question
	I don't live in Mountain View so I should not answer this question. But I cannot continue your survey if I do not.
	I don't want to do this rating thing any more- it's wrong. The rating system is fake.
	I guess I'm satisfied?? My main preferences are for trees that provide a lot of shade in summer, have beautiful blooms or fall foliage, and do not disturb sidewalks by making them dangerous for older people like my parents.
	I haven't seen a definition of "community trees" in this survey. Not clear whether this refers to city-owned trees, street trees, trees on private property, etc...
	I hope the city uses integrated pest management versus pesticide and herbicides. If yes to IPM - GREAT!
	I notice many areas where parkway trees (cities responsibility) are planted under power lines requiring maintenance at added expense to tax payers. Also, I see areas where tree's are over planted when trees are planted on the parkway adjacent to established private property trees. This tends to crowd out one tre over another and aesthetically this isn't very good looking.
	I notice that some street signs become blocked when there are leaves on trees.
	I often see GROSS MISUSE of water due to faulty irrigation late at night. W Dana and Shoreline one spot in specific I've seen a huge puddle in the street due to this issue.
	I prefer lots of beautiful trees.
	I say this because I don't know the current level of maintenance so I can't say that I am satisfied with it
	I see trees being removed more than being put in. I'd rather see Mountain View head towards being greener, like Palo Alto; not more paved, like San Jose. The trend seems to be opposite of what I'd like. The city seems to take good care of its street trees. The problem I see is in being overly lenient in removing healthy heritage trees, and not requiring new trees put in as part of new construction.
	I think it can be improved upon. Some of the ridiculous trimming around power lines is unsightly. It can take a long time for the city to come out and trim the trees but I am grateful for it.
	I think it is far too bureaucratic and costly---requiring numerous meetings and consultants and even lawyers sometimes.
	I think that if the city plants trees then it should be responsible for repairing any resulting damage to sidewalks, roads, parking lots, etc. in a timely fashion.
	I think that the city cuts down too many trees. Mountain View does not make it hard at all for people to cut down their trees. I am a home owner and Mountain View resident for over 17 years.
	I think that we could have more tree, pines too. Also keeping Google from cutting down 80 mature trees. Bad for the city.
	I think we need more trees
	I think we need to continue providing active maintenance for our trees.
	I tried to save my heritage and tree department refused to help me with pruning and spraying.
	I understand that the City does the best it can, but more trees could be maintained more often.
	I usually have to call the city to report neighborhood trees that are dying and need to be removed or at least trimmed. I doesn't seem like there's a routine schedule for checking them.

	I wish there would be more engagement from the city regarding the tree canopy of MV and the future for our kids and their green city.
	I witnessed a 750 lb limb fell from 35 feet at McKelvey Park. This is good evidence that maintenance is inadequate.
	I would like to see the city being more forceful in making home owners have a tree in the front yard. People are not adding a tree when they know they are supposed to have one. I also, wish the street trees would not be so small (crepe myrtle, cercis) I feel that the bigger the tree, the quieter the neighborhood, and they make the streets more important feeling.
	If a "community tree" that is owned by city, then the city should bear responsibility for its maintenance and health.
	If the city wants to enforce this ordinance, they should make sure to make taking better care of the existing trees the highest priority before they plant more. Trimming and planting of proper trees should also be better implemented. The city has really fallen down on the job as far as these responsibilities go. If you plant a tree, you better take care of it. And this also includes repairing any damage to sewer lines, sidewalks
	I'm not aware Mountain View takes care of any of the city trees planted. The PG&E tree crew is just awful. They have no idea of taking care of trees and kill them with their hack jobs over time. DO NOT ALLOW THE PG&E TREE BUTCHERS anymore.
	I'm not aware of how maintence is doing but they look good.
	I'm not quite sure what is being done, but there are a lot of nice trees. I do wish there was a bit more variety in street trees given how many different varieties do well here.
	I'm not sure on this. For example, I think that after the first year (or less?) the City does not water new street trees.
	I'm very disappointed that the city allowed Google to cut down so many trees at the Mayfield site. Money talks and that's sad. The view is awful now.
	In the 21 years we've lived here the care of the trees has decreased as well as continuing to have large trees.
	Invite public input in reporting trees that are not thriving -- damaged or dehydrated, etc.
	It is an unfair "No" since it seems like MV city is providing this service. Mentioned "No" since there is not community outreach regarding this. I am more educated just by taking this survey.
	It is disappointing to see trees being trimmed during bird nesting season (spring and summer). Major trimming should be limited to fall and winter if not an emergency.
	It takes too long to replace trees that have to be removed. And I still haven't forgiven the company/city who removed the evergreen on Castro and then didn't replace it.
	It would be best if I didn't have to call to get the trees checked and pruned. The city should do this on regular basis.
	It would be nice if the city would trim our street tree.
	It's hard to tell. Some street trees have been horribly pruned, but I suspect that it was done by the owner of the property.
	I've been impressed with the level of care toward my "street tree" when I've called for occasional trimming back or thinning branches.
	Landlords need to be educated about the benefits of having trees on their properties. Providing free trees could incentivize removal of concrete and more planting. Residents in neighborhoods could cooperate to educate their landlords and coordinate street trees and back-of-property trees.
	Less tree destruction for new development, and more maintenance of existing community trees.
	Look at the tree at 207 Thompson Square and see how little care the city is giving to this tree and the sidewalk which has now become very dangerous. This is probably true for many sidewalks and trees.
	make sure to replace trees that have to be removed because of disease and other reason
	Mnt. View planted new trees on our street to replace old diseased trees The trees are susceptible to athracnos and other fungus. They look awful and lose their leaves early. The city chose these trees and now refuses to spray for anthraces. I am left arranging and paying myself. I asked to be consulted about the trees in front of my house and the city proceeded without me. It is good the trees were replaced, but more thought needs to go into the appropriate varieties and proper maintenance.
	Modesto Ash in Monte Loma Neighborhood stopped getting trimmed 5-20 years ago and and have been falling down since then. Planting the same tree specifies along one street also doesn't seem so smart given that it's easier for diseases to spread along that street.
	More trees. More maintenance.

	More watering, pruning and planting is necessary.
	Mountain View needs to move toward rubber-based sidewalks and roads so the sidewalks don't crack from tree roots. Use recycled materials and show the country what progressive looks like.
	MV does a very good job maintaining the city trees. I would really like the city to have strong ordinances and enforcement requiring residents who have "garbage" trees which mess up or block sidewalks and streets to clean up those trees or remove them (and replace with approved city trees.)
	Natural on the trails. Safety emphasis in parks and sidewalks.
	Need more trees (2)
	New tress planted by the City are not consistently watered or pruned for shoots coming out of the base at the soil level.
	No opinion as I am not a resident
	not clear any maintenance is provided
	Not familiar enough to answer the question.
	Not sure (2)
	not sure what is currently being provided.
	Only answered 'no' because there's not 'don't know enough to answer' option. I'd much rather our city budget go to tree care than tax breaks for another big concrete retail development.
	Oops, it won't let me change my answer.
	Our magnolia tree is not only dying, but causes major hazards for my family, property value, and neighbors. We have had several persons hit by falling seed pods, my son has slipped on wazy leaves (which we rake up every other day), and our driveway and sidewalk is in terrible shape due to invasive roots. It is wrong and infuriating that I cannot address this problem properly (removing the tree, and replacing it with another substitute tree) due to the city ordinance. Please explain to me why I am financial responsible for the tree's damage without the authority to remove it? The optimal solution is to allow me to replace it, but if not, the city should bear the cost and responsibility for the damage it causes. My hands are tied, and I'm am furious about this catch-22.
	Plant more trees please!
	Pruning and disease control is lacking
	Pruning for utility wire clearance is too aggressive. Many trees look mangled.
	Removal by developers is often too easy. Importance of trees id minimized. Design needs to include maintaining healthy, appropriate trees as much as possible.
	Remove mistletoe, it's killing many trees. Too many street trees removed and not replaced.
	Response time could be faster. The selection of avail. street trees needs more work.
	rules was to trim tree only every 2 years. I need more than that from the city.
	Saw a giant canopy tree being dismantled in Eagle Park yesterday. I asked why and the workers wouldn't tell me. I don't understand why it has to be a secret - was it a sick tree or being removed for another reason. The community doesn't need to be kept in the dark when asking a question about a tree.
	See previous comments. In short, I feel I have no voice in what happens to the trees in my community. And if I do have the chance to say something, I have to pay a fine to do so. Ridiculous! The trees belong to all of us, and there needs to be an actual community outreach before we start hewing them down to "improve" property, etc. Unless a tree poses an immediate and clear danger to people there is no reason to cut it down unless the majority of people in the area approve. We already pay ridiculous amounts of money to simply live here--I really do consider it robbery to charge extra if I don't want one of our precious trees removed. Switch the system so that the neighbors have to approve the removal, not penalize those who oppose it.

	seems like the city is hasty in cutting down established trees, esp along Stevens Creek trail
	should have a don't know option...
	Sidewalk trip hazards caused by community trees needs more attention and resources
	sidewalks are lifting up, clearance not always maintained over sidewalks
	Some city trees in my neighborhood are replaced with new young geinkos. I believe that geinkos are a bad choice for city trees.
	Some older trees have been allowed to get too large and needed to have been pruned to maintain size better in the past.
	Some trees should be removed and replaced with more appropriate species.
	Sometimes trees seem to be cut for arbitrary reasons. They should be cut for safety or if the tree is sick, but care should be taken in the planting that they are not put in a place that they will outgrow and cause damage to roads/sidewalks, since this seems to be a reason trees get cut down.
	Street trees are sometimes planted too closely together. There is not enough diversity, too many trees of same species planted on same block. There has to be a better maintenance program, especially when tree s are young. They require pruning and care on a reasonable basis.
	Street trees can be trimmed more often to protect property and pedestrians.
	Street trees in particular are totally neglected. It took 6 months and 3 phone calls to get a trim (it has been more than 10 years since anything had been done), and the workers only took off the suckers. They only have 30 minutes per tree, which is not enough to do a thorough pruning. Pruning should be done automatically every 5 years, minimum. If the City can't keep up its end of the "street tree bargain," then residents shouldn't have to hold up theirs. My street tree (Magnolia) is ugly, dangerous, and destructive. I want to replace it with a better tree. I think the current street tree policies are STUPID and ridiculous!
	the butchering of the Gingko trees on Cuesta is a travestry. they need retrimming since the PGE people butchered them.
	The cities' extensive use of imidacloprid insecticides to treat trees and shrubs troubles me. This is because it kills all insects that feed on treated tree and plant blossoms.
	The city needs to coordinate with PG&E over how trees are trimmed. E.g. on Montecito Avenue between Farley and Burgoyne, on one side where there is wire, the trees are rather unsightly as PG&E trimmers do a terrible job.
	The City needs to inform residents about how best to care for the trees adjacent to their properties, including how much to water them. In drought years, the City needs to send around a truck to deep water the trees that are least drought resistant, because residents are conserving water by not watering outside.
	The city removed a dead community tree from my front yard and said they would replace it. Four years later they have not returned to replace the tree they removed.
	The city trimmed a very large tree in front of my home over a year ago and this spring only half the leaves that normally grow on this tree returned. The tree looks terrible. The city tree trimmers should be much better trained.
	The street trees on the Shoreline overpass over Central Expressway are dying. It's a beautiful idea, can they be watered more, mulched, fertilized, and kept alive and vibrant?
	The sycamore tree we planted in front of our house was pruned aggressively by the city without input from us. Branches were lopped off that were apparently deemed too low, but they were not causing problems and would have been even higher up in future, as the tree grew. The shape of the tree was altered for the worse.
	the tree on our property is too big and too messy.
	The trees in front of my house have not been pruned in the 18 years I have lived here. I feel I have to pay for it myself if I want the tree to be attractive and safe.
	There are a few places where trees need trimming to allow signage to be seen.
	There are a few spots where trees should be trimmed so that signs,lights and traffic/cars can be better seen, for safety. Also, I think that trees/branches that are overcrowding power lines should be trimmed, maybe the city can give some kind of rebate or something so that those trees can be trimmed down and the power lines can be clear. Also, trees that are very close to sidewalks should be kept an eye on, so that the pavement does not become uneven, I have fallen before because of a tree's roots creating uneven sidewalks and streets.

	There are many aging/dying trees on the street where I live that need to be safely maintained. As a homeowner, I've found the city very responsive in an urgent situation (tree branch unsafe over sidewalk, etc.) but I think a street tree's overall health should be the city's responsibility if they are required and protected.
	There are some community trees that overhang sidewalks and impede the progress of pedestrians. They could use a trim.
	There are some side streets that the trees are overhanging into the sidewalk clearance
	there are some trees on city's property that need care.
	there could be more, prettier, more maintained esp in retailed parking lots
	There is a long wait in response to trimming request of city trees in residential areas, and diseased city trees that are requested to be replaced are not necessarily replaced if still (barely) alive.
	There is a tree with many dead branches on the street center island on Grant Road at the Cuesta light.
	There is always room for improvement. I'd like to see more sustainable practices implemented in the care of all landscaping in Mountain View. Plant the right trees in the right place. For example, don't plant trees that will grow larger than power lines under said power lines. This will avoid the horrible pruning jobs done to cut around the wires once the trees mature. Offer trees that are resistant to Oak Root Fungus and don't replant a non-resistant city tree in a space where a tree was lost to oak root fungus. We warned a neighbor about getting another Ash tree from the city to replace the trees that died. They died of oak root fungus and the evidence has been there for the past several winters. Not one arborist came by during the winter to see the fruiting armillaria mellea in the exact place where the new Ash was planted in the spring when the mushrooms weren't visible. It's a waste of water and city resources to plant a tree that isn't going to survive due to ignorance and lack of research.
	There is room for improvement, but I'm proud to live in a city that is concerned with protecting its trees. I'm concerned with the amount of trees being removed for development projects, however.
	There needs to be a quicker response to tree calls.
	There seems to be little maintenance of community trees. Residencial streets that do not have a planting section on the city property of the sidewalk should still have Street trees. Create cutouts periodically in the street next to the sidewalk with large trees. As a side benefit, this should slow traffic. Another thought - new construction MUST provide GOOD trees minimum 36" Box specimens on new properties.
	This is a biased set of questions. City does not water new trees enough. City prunes all horizontal limbs useful for street coverage. City does not plan same species trees on a street. City plants smaller trees than they did in years past. City does not fine people that remove trees.
	This is an incredibly biased survey and needs to be rewritten from a more neutral standpoint.
	This was the first year in over thirty years that I saw someone look at and trim magnolia trees on Alison Ave.
	Too many sidewalks have buckled from tree roots.
	Too many trees removed or overly pruned.
	Tree removal at Mayfield, HP is a shame
	Trees are overgrown and hanging over structures in dangerous ways. Trees that are supposed to be trimmed that grow around power lines are rarely taken care of, even though we get notices about it being done--it does not get done. The trees need appropriate trimming, on a regular basis.
	Trees are removed without regard to nesting season.
	Trees have been removed, at request of adjacent home owners, without valid reason (sunlight blocked to flowering plants).
	Trees in my neighborhood on the easement have my been well, poor growth.
	Trees on my street have had no clearance or maintenance that we've seen in the 4 years we've lived here. I did call and request that some city trees be checked since some are leaning, overgrown, looking sickly, and/or have had large overgrown limbs break off (and fall on parked cars).
	Trimming for safety/lighting does not hapen often enough, even if requested.
	Trimming from power lines takes months, since service is very backlogged
	Water the trees you plant have a arborist prune them do not hack them up.

	We can always do better! I was so disappointed when the city removed the trees from the Trader Joe's parking lot. Couldn't they be treated instead of removed? It makes the landscape in that huge parking lot area around Walmart even more bleak and grimly urban. Those trees made a huge difference. I felt the lose immediately and still feel it each time I go to Traders Joe's (which is often!!). Trees in parking lots are SO important as our green space is gobbled up by incessant (and uncontrolled) development!
	We do pretty well. Everybody from the City Manager on down through Bruce & Jakob & "the boots on the ground (or in the trees)". More funding and paid help could assist all these guys with focus and efficacy.
	We need better shaping (see my PG&E comment) and fast replacement of failed and damaged trees.
	Well many city trees have been removed from our street and others around. and never in 17 years have the city trees on our property been tended by the city. And Cuesta Park annex an important wild space is constantly under attack for development while rather can we make it a healthier tree/wild space for the town.
	what i said about the removal, horrendous
	While I am very fond of the ash and sycamore that line our street, the Casuarina row in Stevenson Park has gotten completely out of hand. Large branches overhang our property, and they are even taller now then they were in 2006, so they are shading the rooftop solar panels we installed that year even more. I'd like to see them agressively pruned, maybe even see some removed.
	Whoever the city contracted with ruined our trees in front of our house on pettis. We had already paid an arborist to trim our trees. The city came along one month later and cut ALL branches facing the street. It completely lopsided and ruined the maple trees that we planted. It was obviously done by a laborer that had no background in tree trimming! I have no faith in the city department that manages the trees :(
	Why does the city insist on planting street trees that produce the terrible spike balls? It is the stupidest tree law ever in the history of tree laws. The city forces you to have them, and then they do not bear any cost of maintaining them.
	Would like to see more trees in Mountain View.
	Yes but always can do better mostly via demanding an increase in canopy for each development and green roofs/vertical gardens whenever possible. Also underground utilities as a way to protect our trees.
	Yes, except more enforcement needed re Heritage Trees.
	You permit widespread destruction of so-called protected trees any time a company like Intuit wants to expand. For shame!
	you should have an option "not sure"

19. Please rate the level of importance of each of the following public services and amenities:

Answer Options	Critical	Very important	Important	Not important	I'm not sure	Rating Average	Response Count
Community urban forest	233	169	69	12	15	1.81	498
Parks and open space	344	120	29	2	3	1.39	498
Trails and pathways	214	201	69	9	5	1.78	498
Sports fields	61	142	198	74	23	2.71	498
Recreation facilities (e.g, community center, senior center, teen center, Rengstorff House)	126	151	180	28	13	2.3	498
Community gardens	79	139	184	65	31	2.66	498
					answered question		**498**
					skipped question		**98**

20. Where would you like to see more community trees planted? Please check as many as apply.

Answer Options	Response Percent	Response Count

Parks	60.6%	302
Landscaped medians	70.5%	351
Open space or natural resource areas	54.2%	270
Trails and bike paths	57.0%	284
Downtown	50.8%	253
Parking lots	67.5%	336
Retail/commercial properties	54.8%	273
Mountain View has enough community trees	5.8%	29
Other	13.3%	66
	answered question	**498**
	skipped question	**98**

Other

All new developments including parking lots must be required to plant appropriate trees for shade and health.
All residential areas should have good trees as explained previously
Along street sidewalks.
Along the Hetch Hetchy aqueduct. It would be great if this were a trail as well.
Any new development should add to canopy not merely maintain existing (and often paltry) conditions. Also for retail, discourage planting trees designed to not thrive/grow.
Between sidewalks and streets. Along sidewalks.
build roundabouts and plant large trees. helps control traffic, too.
don't know enough
El Camino Real. It has greatly improved over the past 20 years with more trees, but we still have plenty of room for improvement (i.e., more trees along sidewalks).
Everywhere
For every tree which needs to be cut down, one tree should be replaces.
homes and apartments - I KNOW private property is not the City's responsibility - - BUT WE ALL benefit!
I believe that a tree that is a nuisance (such as liquid amber pods or magnolia pods..both dangerous, should be replaced.
I don't know.
I strongly feel that parking lots need larger trees, the large area of asphalt is so hot on warm days and it is another form of global warming. Every one wants to park under a tree, and its a shame when the property owner has tiny trees.
I would like to see only locally native CA trees planted in all of these locations, and for the city to better support local ecological restoration efforts.
I would like to see trees planted near the streets in neighborhoods to provide a nice canopy over the streets, sidewalks, and houses.
I'd like to see more trees on the 'pocket parks' (one-to-three parcel areas) that have been developed lately.
If planting trees, fruit trees would be nice to help those in need.
In the neighborhoods.
It would be great if the City could plant — in a secured area — lots of fruit and nut trees, with citizen groups assigned x trees to care for, nurse along, etc., w/the produce being shared among growers and feeding programs run by and for Mtn View residents. NB: No fallen fruit can be left on the ground or we'll have major critter problems, like rats!
It would be nice if trees could provide shade for various play structures in the parks.
Let people plant the trees they like on the medians and don't come along and hack them
Library schools city hall police station

	maybe in the low income areas
	Meadow near El Camino and 85.
	more on residential area
	Mountain View should be proud of and uphold its reputation for being a "green" (forested) city.
	native CA bay area trees only
	Near park play structures, for shade
	need to re-establish the city street trees in residential neighborhoods
	Neighborhood - especially where new buildings go in. Some like Gemello Park has a nice canopy, others not so much.
	Neighborhood streets need more trees!
	Neighborhoods (like the part of Cuesta park near the Rose Market) where you let residents have larger front yards in exchange for planting one tree in their yard - what should look like old mtn view looks ugly and bare
	neighborhoods in the easements
	Next to sidewalks, is this what you mean by medians? I think of medians as being in the middle of the street, where they do not provide shade for pedestrians. Wave rely Park desperately needs shading of sidewalks. Why not make the overly wide streets less so, with the addition of street trees along at least one side of the street. Either with a continuous strip or with bump outs like downtown. Walking here in the hot months is no fun!
	nieghborhoods
	No opinion (2)
	nowhere -- there's not enough water
	Oaks! They shade the street, and are pretty.
	Only planted in city-owned parking lots. I don't want the city paying for tree planting and maintenance in private business parking lots. Perhaps enact an ordinance requiring business owners to plant and maintain a specific type of tree that won't block their signage from street view?
	Outside every house and residential properties.
	Parking Strips in residential neighborhoods
	Permanente Way needs trees!!!
	Places without trees
	Replace trees on private lots when they have been removed. Magnolia trees have been removed on Cornell Drive - but they were not replaced.
	Residences should be encouraged to plant more trees and not cut/remove existing ones.
	Residential areas
	Residential neighborhoods & parks.
	Residential streets (2)
	residential streets (houses w/ no trees/ apt. complexes)
	residential streets that don't have many trees in front
	Residential streets!! Many houses on my street (where homes easily have been selling for $1.4 + million) have no trees in front of them. The vast majority of Los Altos residential streets are much more beautiful because of the abundance of trees.
	Residential streets/ Elcamino/ Reingstorf/moffit
	Rooftops
	Rooftops of new office developments required to be open to public.
	schools

	Schools, community centers, any place where there is enough space to plant a tree. My preference would be decidious trees, providing shade in the summer but allowing sun to come through in the winter.
	Schools, neighborhood streets
	shame on the developer in the San Antonio Center saying Trees just get in the way and resists their planting shame, shame, shame
	Shoreline park! Make that a forest of tall trees!
	sidewalk strips on the bike boulevard streets and other streets that are frequently used by cyclists
	Sidewalks
	Solar panels are an excellent alternative for shaded parking in parking lots, with a border of trees.
	Spaces between streets and sidewalks
	Streets (5)
	Suburban streets
	The areas next to on/off ramps. Perfect for redwood trees and habtat.
	The overall canopy in Mountain View seems very good in terms of the number of trees. I would like to see new trees planted mainly to maintain the canopy and replace lost trees. Also if there is a specific location that would be improved by trees, then my feeling is that it would be great to plant more if possible.
	The problem is in part that many trees are surrounded by cement. They need more ground around them.
	the space between the street and the sidewalk
	the st Francis acres neighborhood is surely lacking street trees
	The trees need a chance to get big, tearing out old trees and putting in new ones does not help.
	There is only one shade tree on the southeast side of Thaddeus Park's playground. The flowering pears planted on the southwest side at the time of the revamp provide no useful shade at all.
	Trees already block the view of the privately owned Mountains
	Trees near where people sit and idle in their cars might benefit from trees to help reduce pollution.
	where trees are planted, be sure they do NOT obstruct sight lines of traffic
	You don't need any more trees downtown. The current planting in the median strip has obscured your most famous resource: Moffett Field. Think of visual watersheds before you plant trees so you don't take the view away.

21. What types of education and public outreach would you like to see offered by the community urban forestry program? Please select all that apply.

Answer Options	Response Percent	Response Count
Seminars and workshops	35.2%	174
Interpretive trails and displays	44.1%	218
Species information	57.7%	285
Tree care and maintenance information	73.5%	363
Tree planting	54.5%	269
Tree pruning	57.1%	282
Guided tree walks	39.5%	195
Other	8.5%	42
answered question		**494**
skipped question		**102**

Other
Articles in local paper - say quarterly - about city trees and value and how to help; not a big fan of signs - just more manmade stuff.
dont care
Educate the supervisors and workers about why they should only be trimming in dangerous situations from January-August.
Educating the public about the importance of watershed and CA native trees and how to support habitat
Education about the best season to trim trees
education on how important trees are to our well being
education/promotion of CA trees native to MV area. A suggested replacement tree list on the website.
Guidance for private tree care
Guidance on selecting the right tree for the right place
Have a little education about trees at our neigh. mtgs.
help us plant the right trees in our yards and keep them disease-free
Help with maintaining other trees in our private yard (especially old trees like redwoods)
Heritage tree ordinance info
Huge educational opportunity for kids and grown-ups if trees are labeled. Labels in Pioneer Park are wonderful!
I see some awful examples of pruning in Monta Loma because people don't know to hire knowledgable pruners
I think the program should seriously solicit feedback from residents that love trees but don't love the specific trees they are required to maintain on their own property. No problem with requiring trees, but we should be allowed to decide which ones (perhaps from an approved list?) which ones we want.
I think we have access to enough tree information.
I would like the city to provide education to encourage community members to plant drought-tolerant native trees over ones that are non-native and provide little habitat value to local wildlife.
I'm not interested in public outreach
I'm sure some of these other suggestions are good, I just can't use them since I don't have a yard!
In general, a more assertive program (budget) about Mountain View's trees.
Include education for all students K - 12
Info about allergans produced various types of trees
Let us know if you are thinking of cutting down heritage trees without charging us for an objection. And do so in a timely manner.
MV should have an attractive tree guide which schools, neighborhoods and companies can use for their events, walks, education and free time.
Native species info
news/information on facebook, mv voice, etc.
None (2)
None! Stop spending tax dollars on these watseful programs.
not sure
Offer free CA native tree replacement for every heritage tree removal permit issued. And/or $meaningful voucher to purchase potted tree from local nursery such as Summer Winds.
Only very minimal city funds should be spent on these types of activities
Partnering with Mountain View Trees does this!
Programs for kids to learn about urban forest and city trees
Programs for schools

	Provide education to homeowners to plant more trees
	Public education about heritage tree laws.
	Put signs on poorly pruned trees shaming the arborists who mutilated them.
	Realtors are vary ignorant, and are doing a disservice to our ecology.
	self guided tree walks
	Spend all your money planting more trees
	Standards and outreach to landlords
	Street tree selection process.
	Surprise: I can do it myself without " tax eaters" advice.
	Take the Thursday NIght Live and Plazapalooza idea to parks and tree areas and areas needing trees - get people out there!!!
	Talks lectures by native plant society
	Teaching interested folks about which trees are best suited to MV area (for our own planting on our property)
	Teen internship/volunteer where they interact with trees, not stuffing envelopes or fundraising
	Tree talks for kids in elementary and middle school - education is crucial
	tree walks for children
	we need to marshall efforts against those individuals that would scrape the landscape barren
	web page
	Website..

22. What are the best ways to encourage tree planting and preservation on private property? Please select as many as apply.

Answer Options	Response Percent	Response Count
Education and outreach	69.6%	343
Information on where to hire a professional tree care company	31.4%	155
Tree maintenance tips and brochures	65.1%	321
Free trees	73.2%	361
Community tree planting event	48.7%	240
Other	9.7%	48
	answered question	**493**
	skipped question	**103**

Other

"Free" consulting on selecting the "right" tree, placement and care tips
"mulch parties", watering (supplemental irrigation) educational and participatory evenets, shopping centers need to be encouraged to take better care of their tree resources, too!
A list of City of Mountain View approved arborists would be helpful.
a promise for the city to maintain the trees as necessary at city expense
All new plants even drought tolerant ones need regular water at least the 1st year. This should be emphasized
Allow residents to hire city employees of the Forestry Division at a discount.
allow residents to plant the trees they want, not ones that have high maintenance.

	Any information provided should be online only not printed brochures
	arborist advice to homeowners, list of recommended tree care specialists, advise when not to prune, advise according to size, train local 'gardenerers' on water use practices (lot of water lost by careless gardeners who leave hose running)
	Best types of trees to plant (not redwoods or pines).
	By encouragement you mean "forced".
	dedicated website for tree selection and care specific to the area
	don't care
	Early years caring and help so that homeowner laziness does not result in dead tree
	Educate on native species
	education about how to recognize tree disease and failure to thrive situations.
	education about the importance of trees and helping people to value them
	exempt privately planted trees from heritage tree regulations - rather require a specific amount of "canopy" per square 1000 feet.
	Fewer restrictions by the city.
	focus on fruit trees, habitat trees
	Forbid tree trimming February-August except in dangerous situations.
	Free trees are good, but clients need education about them
	Free trees is great, but people will just take out the trees they have to replace with new (baby) trees. Help with tree *maintenance*might encourage letting the trees grow.
	free/discounted tree care
	Going house to house in person to talk about the benifits, AND, go to the offices of realtors on mondays to be a guest speaker. I was told by an agent that every Monday they have meetings w/ gust speakers.
	How about a series of informative adds in the voice educating residents on the many benefits of trees
	I like trees. Let people cut down trees that are dangerous, destructive, or ugly and replace with better trees! Magnolias and liquid ambers are dumb trees. Your policy makes me resentful.
	I think the program should seriously solicit feedback from residents that love trees but don't love the specific trees they are required to maintain on their own property. No problem with requiring trees, but we should be allowed to decide which ones (perhaps from an approved list?) which ones we want.
	I would like to see short educational videos on the city website pertaining to a pre-planting checklist (mature size, drought tolerance, messiness & roots, etc.) and the importance of correct pruning techniques for the health of trees, and also good watering practices.
	in regard to free trees preferably fruit trees for private property
	Incentives for apartment owners to plant trees, especially along the train tracks!
	Information and flexibility in removing and replacing trees as necessary.
	Information on Free Tree program (learned about this from a friend but missed the deadline this year)
	Information on what species might do well in our microclimate for a given yard size, or for given interests people may have. A tree selection guide if you like.
	It would be great to set up a youth and seniors program to be tutored and taught — possibly mentored by others from the community, with their trees identified by their Tree Dads/Moms, whatever, with their name engrave on a plate attached to the tree, so they get community thanks and recognition for their precious gift to their fellow Mtn View-ites.
	many home owners know nothing about their tree in front of their home (on community land)
	More presence at Farmer Market and in schools. Welcome to new homeowners. And, more outreach to multi family unit owners, too.
	Offer free CA native replacement tree for every heritage tree removal permit issued.
	Offer of free native bay area tree with every heritage tree removal application

	ordinance requiring at least one tree per front yard.
	outreach in schools
	Pay the land owner to maintain them and for the loss of use of land.
	Please do all of the above!! We will participate!!!
	preservation--if the city is willing to pay the costs to maintain it
	Programs that teach kids about the importance of trees
	Provide crepe myrtles instead of maples.
	provide free trees and pay $100 per tree. Now there's incentive!
	Publish stories local residents provide regarding their trees
	rebates for planting large canopy, sustainable trees.
	Require HOAs to maintain their trees, part of PUD for new development, outreach to older developments
	Require them as part of any permit
	Requirement as part of building permits, for example in return for leniency on other parts of design, and as a requirement if removing existing trees. If carbon offsets can be traded, why not tree planting permits?
	sell special Mountain View plaques to attatch to trees on private property
	Set minimum requirements for the number of trees to be planted per area
	Severe sanctions against tree care companies that mutilate trees at direction of the property owner.
	Tax cut for canopy coverage, especially those with really big Native Oaks.
	The answer to this depends on whether the private property is commercial or residential, and also what type of residental (apartment complex vs single family home, etc.)
	The City need to replace the tree in front of our yard.
	This survey is way too long. Checking out now...
	use "nudges" like "most of your neighbors have joined our tree friends group"
	When our neighborhood wanted to plant a tree in our tot lot, many years ago, the process was cumbersome and time-consuming instead of welcoming. Hope it's improved.f
	Work with utilities to ensure sensible pruning, rather than butchering, of trees. I know they can do better because they're willing to prune our street trees aesthetically when I talk to them about it. Butchered trees are just sad and an embarrassment to our otherwise pretty city.
	Zoning/Building policies to increase canopy not merely maintain status quo.

23. If you don't have a tree in front of your personal residence, what is the reason? Please select as many as apply.

Answer Options	Response Percent	Response Count
Not enough room	6.5%	32
Damage to sidewalk/driveway	4.1%	20
Obstruction from underground/overhead utilities	4.5%	22
I don't want a tree in front of my property	1.2%	6
Does not apply - I have a tree in front of my property	78.5%	387
Other	15.0%	74
	answered question	**493**
	skipped question	**103**

Other
8 trees - corner lot
A neighbor's shade tree extends over my property so there is not space for an additional tree.
and I HATE the tree you planted. I would love to plant something more appropriate. The entire street has the same tree. No diversity.
apartment
but I do have concerns about rooms and sewer/water. In new developments, consider where these utility lines are placed to avoid conflicts.
City tree died
Condominium
For the record, I want a tree in front of my residence -- but NOT the magnolia tree that I am currently required to have. Very unhappy with this ordinance.
had one...it died of old age
Have a tree
Have lots of trees
Have one!
Have trees
HOA complicates decision-making
HOA landscapes 'front yard.' :-(
I am a renter surrounded on 3 sides by concrete. I would if I could.
I can't believe you don't have an entry for "renter"
I do have trees.
I do not live in MV...I have dozens of trees in LAH
I do wonder why some homes in my neighborhood do not have a tree. They have removed it themselves.
I don't own my personal residence
I have 3 trees in south facing front, 2 in North facing back
I have 3 trees, one is too big, one is a messy yucca, and the other the city planted about 12 years ago and is ugly and not suited for the spot. They all should be removed.
I have 8 trees in front of my house
I have a liquidambar and hate it! I would love to remove it and replace it with a native oak.
I have a tree in the front garden but would have liked more trees on the street. I suspect a tree was not planted or taken down because of the utilities.
I have four trees in my front yard
I have observed that owners just don't want the city to replace the fallen tree, which I think should not be their saying. Where a tree has to be cut, there should be a new tree planted.
I like trees, but I wish I could have a different tree. I would take better care of it if I had a better tree. I only do the bare minimum for my terribel existing tree, which means it is not a benefit to my community. Why? Because the City won't let me replace it.
I live in a condo. There are trees planted around the perimeter of the property.
I rent (2)
i rent and there is a lemon tree but the last shade tree blocked pipes
I rent from a large community rental complex
I rent in an apartment
I rent so I don't have any say in the matter

	I still have 3 heritage trees after losing one to a storm
	I want trees
	Landlord nor the city will water the tree so the city plants them and they die.
	live in a mobile home park
	live in apartment
	Love my tree
	My apartment building is taking down trees but not putting any more up, the previous owner of Archstone apartments and the owners now have maintenance people who are destroying the trees in my opinion.
	My condo bldg. landscaper apparently had a budget of $150 to do the entire circumference of the bldg. Seven years after the bldg. opened we still have pitiful, half dead plantings, with NO money to do improvements.
	My tree is very old and I would like to know the prognosis for the next few years, and its current health
	No city tree but we've planted one after the city tree died. We'll have to replace tthe existing tree because it developed a canker.
	no front yard
	Not sure. Not a lot of space but could fit a tree. I rent.
	old trees died b/c of drought. also got rid of dangerous eyesore eucalyptus. waiting on landscaping project to put drought-tolerant ones back in.
	Rent
	Rental
	Rental. Property owner does not maintain landscaping.
	Still building our home. When it's done we plan to have a tree.
	The city hasn't offered to plant one.
	the entire front is paved...no ability to plant a tree
	the manager of Santiago Villa MHP hates trees and is on an active program to get every single one chopped down - what can I do about that?
	The right trees should be chosen for these areas to avoid the problems listed above.
	there are trees in front of my property and also in the common areas (courtyard, parking lot) but live in multifamily dwelling so...
	There was a tree I believe when the previous owners lived but it was uprooted for some reason, would like to know if we can get a free tree and plant nearby?
	This survey is way too long. Checking out now...
	townhouse HOA decides
	Tree died.
	Tree is still small, want to let it grow.
	tree root has tome removed, its expensive
	Tree was removed due to being unsafe
	trees are in common area (condo) but are damaging utilities! Need access to drawings of utilities to make changes, but city won't let me copy plans (tried to photograph by cellphone)
	Unfortunately, it is a $@#%! liquidambar owned by the city, so I cannot remove it and replace it with a less obnoxious and destructive tree.
	Unsure of what kind to plant and who to hire to assist
	Utilities be damned (in most cases)! Often WAY TOO MUCH emphasis on distances to utilities!!!
	Was cut down
	Water n Mantainance cost
	We are planning to plant one. It was not there when we bought the house.

	We have an ugly Honey Locust for our street tree that we have to maintain and cannot change out. No help from the city...just rules
	we rent and cannot change the front landscaping
	we rent and don't have control over landscaping
	We're not allowed to plant anything in our front yard per our complex/neighborhood rules. It is awful.
	What business is it of yours?
	would be great if city could provide trees for setback areas

24. Optional. Express other suggestion/comments about trees.

answered question **184**

skipped question **412**

Response
A couple of years ago, all of the (very mature) lemon and pear trees in my yard and neighbors' yards died off. Would appreciate local notifications of any blights and how-to protect or recover tips. Im sure this information would be widely disseminated through neighborhood discussion groups
Again, I like trees and greens. They are key and critical. I get that. The tree MV planted on my property is too big already, makes a mess year round, and drops sap on cars. I would like the option to replace the current tree with a native tree we like better and can select.
As expressed in other question responses, the most critical aspect of community tree planning needs to be the impact of tree roots on community infrastructure. It is a cop-out for the community tree program to respond that this would be a public works issue, not one of the community forest program.
At my son's school, Stevenson PACT Elementary School, the kindergarten classes do three field trips to Rengstorff Park to visit the trees in Fall, Winter, and Spring. We appreciate the variety of beautiful, mature trees that the kids get to visit at Rengstorff. My son was in the ginko tree group.
Be careful when placing a tree on private property, taking into account the sewer lines and water meter. Choose an appropriate species to minimize concrete heaving. My ash was planted in the 1960's, but when it needed trimming, oops, suddenly the city decided it was now 6 inches into my property and so it is now my expense to maintain a huge city heritage tree!
Beautiful mature trees are part of what makes Mountain View special and I appreciate this survey. I think canopy trees should be prioritized in office and commercial areas. I'd love to see a food forest in the city and more community wide support for harvesting fruit from existing trees. I would also like to see more protections for nesting birds.
Beautiful trees can really make a community.
By requiring a permit, the city adds injury to insult when a home owner needs to remove a heritage tree that is negatively affecting the owners home utilities(water, gas, sewer, electrical(underground or above) or foundation(uplifting). I suggest permits be waived in these instances especially for those who have limited income.
Careful evaluation of which trees are best planted in neighborhoods should be a priority. I hope that as the magnolia trees die off in Cuesta Park neighborhood, they are replaced with trees that will not ruin sidewalks, lawns and ground cover with roots. The magnolia trees drop continually (spring & summer the worst). Leaves do not compost and pods are a tripping hazard. Some of my neighbors have removed their trees and have not replaced them. For environmental reasons, I would like all to have a tree on their property
cites should dictate what trees come down, not contractors. Follow the rules
City is too easy on people who want to cut down heritage trees. Is there really a fee to object to application? We need info on how to prune big redwoods -- some people insist on topping them, then a tree-sized piece grows at top and breaks off in storm; biggest problem for city is roots damaging streets and sewer lines...
City parks employees. Are really slow on completing tasks
city should insist on replacing trees it cuts down - whether the property owner follow up or not.
Community needs to realize, and value, and protect the benefits of trees. Trees are one of communities' greatest assets!

Consideration should be given to using native trees especially those that are especially useful to wildlife. In areas where its safe to do so, deadwood should be left on trees as this is necessary habitat for woodpeckers and many birds who nest in holes in the deadwood of trees.
Deep concern about all the trimming without inspection ahead that took place by the city this spring in Thaddeus Park, in the Monta Loma Neighborhood, and by the school district at Monta Loma School (June). Please see http://www.seaandsageaudubon.org/Conservation/TreeTrimming/TreeTrimmingBrochure2013.pdf
Designating and planting more trees across all neighborhoods. There are more trees on better streets, and less with streets full of apartments. The city should try to add more trees on it's streets with apartments, and require more trees be planted in and around new developments. Please try to add trees along Permanente Way! Thank you!!!
Did I mention that I (and my neighbors) hate the liquidambars? If I could afford the money for its removal, I would apply to have it removed and replaced with at least two CA/MV native tree. Unrelated to that, I think you should replant the Cuesta annex as a heritage orchard w/ walking paths and educational/historical signage. Thanks for the opportunity to vent. The last guy I spoke with from the city thought the liquidambars were a brilliant choice as a street tree! He did admit, however, that he did not own or maintain one.
Did I mention that no one in our neighborhood likes the liquidambars? Possibly due to the drought, we are seeing about 1 major branch/month falling in our neighborhood.
Do not allow City Council to turn Mountain View into a parking lot and building city. They need to give serious consideration to requests to cut down trees. At a minimum, people who cut down trees must sponsor a like tree in a new location, or something.
Do not prune tree shade off of sidewalks and parking spaces!
Does the City reach out to other communities to share info, ideas so that there is area wide agreement on best practices?
Don't plant trees that produce lots of pollen or airborn debris.
Educate people about suitable city trees--evergreens are not always the best choice. It would be great if there was a pamphlet explaining the typical growth patterns of city trees, so people can make educated decisions about which tree is "right" for their them.
Education is greatly needed in regards to proper pruning and the importance of hiring a certified arborist (and not just gardeners) for pruning jobs. It is terrible to see topped trees and horribly butchered canopies!
Education regarding final tree size and water needs would be useful. I live in Monta Loma where there are trees which are much too large for the small lots, and trees in the front of properties with narrow lots can get into the sewer lines. Also, distance from structures info (regarding final tree size) would also be useful.
Emphasis should be placed on planting trees that are native to the region.
Encourage Califonia oaks! Get rid of redwoods - they're not native to anywhere in Mountain View and interfere with use of recycled water for landscaping.
Encourage planting of fruit trees available for responsible use by residents. This will also provide pollen for collapsing bee populations.
Enforce having a tree in front of each property, like Palo Alto.
Enforce your own laws and make developers work around our trees.
Expressed earlier. More time to comment on heritage tree removals. Get rid of penalizing fee for objecting to heritage tree removals. More emphasis on the importance of trees and nature for the benefit of young children in our community.
Flexible sidewalks would help with accommodation of root growth with less maintenance.
force/encourage the developer to explain to the Monta Loma community how all those heritage trees were able to be clear cut, and what are the plans to replace at least some of them. Some how the approval processes in place at city hall did not protect the urban forest or the community.
Fruiting tree support for local community. after all we live in old orchards we should have plenty of local organic fruit available. Village Harvest is a great organization which can be further utilized or used as a model for helping distribute from fruit trees. Also more support for sharing fruits.
Give owners more flexibility related to street and/or heritage trees. I love tree-lined streets, but some trees should be cut down and replaced, even before they die of natural causes. Homogeneity is not required for streets to be attractive and provide canopy.

Glad you created this survey! Trees are too often taken for granted but are so important to a healthy, beautiful and diverse urban landscape. I have lived in Mountain View for 10 years, and believe the city should provide more chances for residents to have free hands on access to garden space, making them more sympathetic to nature and the benefits of it in our lives! Thanks.
Good survey. Glad you are doing this.
Hanging out trees and having q booth during festivals such as Thursday night live.
Having a diverse range of trees is very important for birds as well as shade.
How about more trees along 101? There are lots along 85 but 101 is a wasteland.
How did all the "Heritage Trees" get planted without your interference?
I am in the horticulture business and I come in contact with many personalities of people. Somehow we need to spend extra time educating people from the Asian countries because they seem to be afraid of trees larger than 12'-15', and they chop large trees down to that size because "it's too big". Even Oaks! Again, the realtors are not telling them ether. One word I use to promote the idea of getting a large tree is that "it adds more power to their home"
I am really happy to see this survey and glad MV city is taking this seriously. As we build more commercial and residential properties, MV is losing its natural settings. This initiative is critical to maintain a balance between growth and environment.
I am very concerned about the developments that have sacrificed heritage trees over time. One proposal affects a 1.6 acre development very close to my house, and I do not want the trees taken down.
I appreciate having the opportunity to offer my opinion, and I hope there is value to my input. Once people of all ages understand how important trees are they value and care for them for the rest of their lives. Beautiful, healthy trees are an asset to Mountain View, and there can never be enough of them.
I believe that planting fruit trees in public roadways would be good for everyone
I can't say enough about saving our redwoods. They define us as a peninsula city. Don't use recycled water on them. Plant more of them throughout MVW. Be careful of views and vistas in placing redwoods that might obscure view points.
i chose Mountain View as a city to live in because there are still more trees in the environment. In stark contrast San Jose in the capitol express area has very few and is not an attractive environment, Very hot and dusty. I also love waking up and listening to the birds sing that live in the trees, reduces the other urban noise
I enjoyed the arborist guided tree walk in Pioneer Park. Any others planned?
I hate going to California Ave in Palo Alto now because the temp is at least 10 degrees higher than before they cut the trees. Notice that I don't shop there as often. I hate that they cut down the trees from our local construction site (it's hotter already here at home AND I see more sky and less green from inside the house). It's just too darn easy to cut down these living plants.
I have a large palm tree in my yard and yard waste won't take fronds - it would be nice to have an alternative way to get rid of them
I have been very happy with the care, maintenance, and attentiveness that mountain view supplies our community trees with. I have also spent a lot of money trying to be educated about caring properly for other trees on our property but without good results. I´d love to have access to the arborists and more education about how I can better care for all my trees...both community and private (which include redwoods and fruit trees)
I have had some dealing with the city tree people regarding a heritage tree on my property that is pushing down a fence and threatening the foundation. I found them to be a very unpleasant and pompous group of people, with no interest in working with us. Heritage trees are coming down in droves for the developers.
I like fruit trees. Keep our orchard heritage going!
I like lots of trees! I think having a lot of trees in a city is what makes a big difference between desirability and not. I'm always noticeably disappointed when I drive to a neighboring town (Sunnyvale, Santa Clara, or San Jose specifically) and see significantly fewer trees. They have too much concrete and not enough vegetation. It's the difference between the peninsula and the south bay. The rest of the south bay has so much to learn about the advantages of trees.
I love Mountain View because of the trees. So many different and beautiful silhoutte on the roadways, incl our beautiful stretches of Central Expy compared to stretches in neighboring cities, and in our neighborhoods.
I love that Mountain View is not afraid to plant big trees that provide ample shade even when the sidewalk is relatively small. It is really a tree paradise here (coming from Ann Arbor, MI, where only very small trees were planted due to various regulations and you ended up with exposed, hot concrete sidewalks downtown & elsewhere).

I love the fact that the city is taking the time to consider the trees, They are such a critical part of our environment, the unsung heroes, shading us and cleaning our air without complaint. I do like the open areas as well so we can see the beautiful "mountains" which are our city's namesake. Trees can completely define and improve any urban area. I am always grateful when there are trees planted in a parking lot and I would like to see more trees planted in the residential neighborhoods, especially those that would overshadow the street to shade parked cars.
I love the old growth trees in Mountain View. Let's keep them healthy and encourage all the young trees to grow big and beautiful...
I loved the ginkgo trees when I moved to Mountain View 26 years ago. They are beautiful and give us a fabulous autumnal display. More and more are being removed and not replaced, and the Cuesta Park neighborhood is losing its identity. More should be planted around Bubb and Bubb Park, in Cuesta Park and in the neighborhood.
I miss the trees which were removed a couple of months ago at the old HP site (Mayfield Mall). Driving through Nita from/to San Antonio looks so sad now!
I realize it may be out of the scope of this particular survey, but it would be great if the effort included all native plant species and not just 'trees'. It takes a wide range of plant types to provide a healthy ecosystem. And it looks more natural that way too! Thanks for doing this.
I think the program should seriously solicit feedback from residents that love trees but don't love the specific trees they are required to maintain on their own property. No problem with requiring trees, but we should be allowed to decide which ones (perhaps from an approved list?) which ones we want.
I think the survey is too long. Don't think you'll get a lot of responses. Your first few questions are rather self serving, although I understand why you asked.
I think trees are a valuable part of Mountain View. I can feel how much cooler the streets full of trees are, and how much hotter the heavily paved areas are. Life is more comfortable where there is a lot of canopy.
I think we have enough liquidamber trees and would prefer to see other types of trees planted. These trees are messy and dangerous due to dropped spikey balls. Both my mother and my mother-in-law have rolled their ankles while just walking on our driveway--and we can't keep up with the mess.
I wish the City would do more trimming of the geinkos trees in my neighborhood.
I would love to see more engagement of the city of MV. The companies bringing so many new residents (often just people working there and not contributing more to the city than traffic and hopefully taxes), should engage themselves as well to more trees, as the mass of cars, busses and traffic is creating more pollution.
I wouldn't mind reducing the number of trees we have.
I'd like to replace my Liriodendron trees with California native trees, but my understanding of the code prevents removal of any healthy tree for any reason.
If city is pruning street trees, homeowners should be consulted so that the pruned appearance is satisfactory to their wishes. Our tree was significantly pruned recently when it only needed to be lightly thinned.
If the city is going to plant more trees of the same variety that we already have, please plant female trees. They do not produce pollen which is a direct cause of allergies and asthma. We more female trees planted and less male, with too many male trees there is too much pollen produced which cause many health problems and reduces the quality of ground water.
If there is a better definition of what "community" trees are, that would be nice. Thank you.
I'm concerned with the number of mature and older trees that seem to be diseased/ dying in my neighborhood in Varsity Park. I hope they will be replaced with climate appropriate trees.
I'm disturbed by number of street trees cut down and not replaced. It's getting hotter and uglier without the street trees. Help people select trees that minimize root intrusion into sidewalks and sewers. I also see trees dying because of mistletoe. Does the city have a program to eliminate mistletoe in street trees? If so, it's not well communicated.
I'm glad to see this survey. Education on native species, where to get them, how to plant and care for them. Possibly provide incentives for planting trees that are native to the Mountain View area of the peninsula which will expand diversity and help return MV to a sustainable and healthy community.
I'm worried about the diseases trees in Cuesta Park. I hope the disease can be contained!
is there a brochure/pamphlet that I could present to the Mngr of my MHP (who actively detests trees and wants to destroy any of them she can) that points out all the benefits of a tree canopy as opposed to a scraped barren landscape that looks like Arizona?

Is there a way of restrict the amount of building and concrete space per lot ? The newer houses go up with little or no garden, and some pave even over that, not leaving any space for wildlife :(
It seems inconsistent that the city will not allow homeowners to remove and replace a low quality heritage tree (e.g., fan palm) with higher quality canopy trees, while it will allow commercial developers to remove essentially any trees they wish and replace them only selectively.
It would be good to see future brownfield developments have appreciable space devoted to trees rather than just concreting them over. Some future mixed-use developments would benefit from frontal areas filled with trees to provide shade and another layer of insulation from the sights and sounds of the road. Urban life need not be more devoid of vegetation than suburban life, and I believe a greenery-filled urban environment is important if a transition away from energy- and resource-intensive sprawl is to succeed. It was disappointing to see the disused farm on Grant Road be turned into yet more suburban sprawl when it could have been converted into green space. A large clump of trees would have done much to improve the neighbourhood's aesthetics. The city government should be aware of the benefits of trees and greenspace in general as it plans out future developments. The combination of capacious paved sidewalks and sufficiently tall trees would do much to make walking and bus travel more viable, pleasant options for Mountain View residents and commuters. Trees planted along the sides of the Caltrain and future High-Speed rail line would make train passengers' journeys more pleasant. So too would trees planted at stations, which would shield the passengers from the sun as they wait for their trains. Regarding existing trees, perhaps the city government could actively seek out and help repair individual trees which have been attacked by pathogens and/or parasites. This should be emphasized for members of ecologically valuable Californian endemic species such as Monterey Pine and Cypress. If some existing species of trees become hard to maintain with constrained resources due to a changing climate, perhaps cacti and various other plants adapted to arid climates should begin to be emphasised in place of current temperate species.
It would be great if the city provided free maintenance once a year to private property big trees, more people would be willing to have them.
It would be nice if the city sought input for citizens on a street when the street tree variety are to be changed.
It would be nice if you bothered to tell people that you are sending out employees to cut median trees. I have personal trees and hire a arborist to take care of them. I do not know how many times I have looked out my front window to see some stranger cutting my trees and have to get all pissed off at them and tell them to stop.
It would be nice to know if the city is voluntarily evaluating street trees (i.e. in neighborhoods) and if so could provide feedback to owners/residents of homes with trees in need of care/replacement. I have a tree in front of my house that seems like it could be ailing, but I have no way to know and no idea what to do next if it is ailing.
I've heard that Mountain View's commercial properties have 13% canopy coverage, as compared to residential's 22%.
Just as park space in unequal across the city, so are city trees. That needs to be corrected. Types of trees planted by the city need reevaluating. Some are not appropriate. Emphasis needs to be on native trees for drought tolerance, longevity and health.
Just wanted to stress the importance of planting native trees.
Keep up the great work you do and keep in mind that canopy implies something below -- let's focus on that too.
Let's maintain a balance between the human structures and inhabitants and the lovely trees.
Look at replacing the super sappy trees on the east side of Bush St, north of Church. Also please replace the tree guards on Castro St and place weights on the flags on Castro so they don't get tangled in the light fixtures. Thanks!
Love em, keep up the program

	Make it harder for developers to remove heritage trees just because they are deemed inconvenient. Even when they promise to "replace " trees, what happens is that a magnificent, mature, large tree is replaced by a tiny sapling that needs to be supported by being tied to two broomsticks.
	More trees and open space are most important to me
	More trees!
	More trees, less tree destroying developments.
	Mountain View has a beautiful urban forest; future development/developers should be held accountable to meeting the city's standard's for maintaining urban forest standards.
	Native trees such as the live oak will survive better in droughts. Plant natives, the native species of birds and insects depend on them.
	need trees that don't push up sidewalks and gutters. We have a lake in front of our property because the city tree has pushed up the gutter so it doesn't allow the water to flow down to the drain.
	No eucalyptus, they're brittle and burn well.
	No more magnolias or redwoods, please! Magnolia leaves never decompose and litter streets. Coastal redwoods don't belong here and grow too tall without shade benefits.
	OAKS! OAKS! OAKS!
	One long-term help for our street trees would be to underground our utilities in more areas. Extremely expensive, but it would have many more benefits in many more areas than just our urban forest.
	Overall, Mountain View needs many more trees. There's a huge aesthetic difference between MV's neighborhoods and the canopied neighborhoods of Palo Alto.
	Palo Alto has tall trees that give a cool pleasant atmosphere to its neighborhoods. East Palo Alto lacks those trees, and feels hotter and more desolate. Mountain View is at a fork in the road and needs to make the right choice.We should no longer be beholden to commercial interests that cut trees to expose signs, that plant wimpy trees in parking lots that shade almost nothing, we must enforce the laws, and force people to be responsible for their trees.
	Plant appropriate native trees when possible and don't prune or maintain in the spring when birds are nesting
	Plant California Native Drought Resistant Trees Plant some suitable Fruit Trees in Park and Community Garden Areas
	Plant native &/or drought tolerant trees that mature at different rates so that they don't all die at the same time.
	Plant them everywhere - we can never have enough.
	Please - no more magnolias!
	Please bring back the large scale street trees that arch over the roads and touch in the middle. Plant the same species on a given street so it has a sense of community. Water the trees that are planted. Many residents do not think they should have to water them. use the same process for commercial development as houses use. Make all developments include a tree planting plan that will give 100% canopy at maturity. Tax them if the canopy is cut away.
	Please ensure new developments plant trees that will provide actual canopy coverage, and not simply 'token' trees that will not grow to provide meaningful shade over 10-15 years.
	Please focus on planting more oaks and other native (naturally drought resistant!) species.
	Please help us take care of our trees and do not allow the ASLUM PG&E tree crew to murder our trees
	Please keep up the funding of community tree planting, maintenance, and education. Ultimately funding now reduces costs both now and in the future - it is well worth the price.
	Please no more trees that drop those hard balls with all the sharp spikes on them - they trip me when I'm walking and pop holes in bike tires! thanks!

	Please plant and encourage community members to plant native trees- they provide critical habitat for wildlife in our increasingly developed communities. They are also beautiful and have historical and cultural significance in California. Most are drought-tolerant and often require no summer water, and since they have evolved here in California they are best adapted to the extreme drought conditions we are now facing. Planting native trees will better support wildlife and will give community members increased opportunities to appreciate nature. Instead of crape myrtles which are showy but do not offer huge benefits to wildlife, why not plant California lilac (Ceanothus, a large shrub that is sometimes trained into a tree), which also has showy blue blooms that support a wide variety of butterflies, birds and other beneficial wildlife. Planting native trees would show other communities that Mountain View cares not only about the aesthetic and energy-saving benefits of planting trees, but the water-saving and ecological benefits as well.
	Please plant more trees!! Thank you!
	Pls plant native trees!
	Promote and elevate our current system and staff. I know I've call for more here, but we also need to recognize what we've got and the great job they are doing! ... No, I am NOT on staff:-)
	Put suggested trees and information on the website. For example, trees with low water requirements, non-invasive roots, low in litter, which trees are shorter than power lines, etc.
	Selecting the right type of trees for the climate and location is important. The tree planted by the city in our yard is a sweet gum tree which produces round spiky balls that are a pain to clean up and dangerous as a number of residents have fallen after stepping on them. Would also be nice to see more mature trees planted.
	So glad this effort is underway - keep up the good work!
	Some homeowners are hesitant to plant a tree because of the "heritage" ordinance. If the tree gets too big they cannot remove it. Education about how large a tree trunk and canopy will get for the proposed tree. How much space is appropriate for a healthy tree. What is the tree's long term physical impact ? Tree litter and contribution to safety for walk ways.
	Stop the tree hugging already and build more housing!
	Streets like Sleeper and Eunice have problems with speeding, problems not seen in OMV due to narrower streets. Make them less wide by adding street trees - which will improve walk ability, reduce urban heat island, and the many other benefits you mention here. In neighborhoods with less wide streets, add trees as has been done downtown, which will also serve to protect pedestrians from cars. Bike lanes could go one one side of a street with street trees on the other. This would be best with a plan for bike routes and pedestrian routes. Example on Sleeper and Eunice, bikes leaving the Stevens creek trail could get to Grant on Sleeper (with pedestrians using the other side) and bikes could get to the trail from Grant on Eunice (again with street trees other side). Also when new houses are built over here, they should be required to put in sidewalks!
	Teaching people the importance of trees can also be combined with teaching them to be more self-sustaining while providing food for wildlife by encouraging that residents plant at least one fruit tree in their yard. I have a mobile home and have managed to plant two shade trees, seven fruit trees, 30+ drought tolerant plants, plus I carved out space for a vegetable garden, berry vines, etc. Wildlife and neighbors/family/friends love my yard, and our house and yard are well shaded.
	Thank you for allowing public input. I really hope that we can preserve the trees that we have and better care for them. Planting a new seedling is not an adequate replacement for the loss of a healthy heritage tree.
	Thank you for caring about our community's trees!
	Thank you for this effort.
	Thank you very much for doing this survey.
	Thanks for giving attention to the issue of trees. I support your efforts.
	Thanks for this survey!
	Thanks very much for asking in a way I could participate. I am disabled and bed-bound, so I cannot attend meetings, but I am very interested in the topic, as a lush canopy can do wonders for everyone who gets to live with it.
	The arborist was very helpful when we wanted to replace a huge juniper with trees; I wish we had more care/instruction about supporting our two-year-old street tree.

	The city has done a terrible job of maintaining the existing city trees. For years we continually bugged the city to trim and prune the trees in our Cuesta Park neighborhood. When they did send a 3rd party tree company out, they told us that the city was only paying them $30 for each tree and they could only allocate a maximum of 30 minutes to each tree. Obviously the trimming was minimal and only involved trimming low branches over the street that interfered with the garbage trucks. Trees planted in the future need to be diciduous with no seeds or leaf dropping except once a year in the fall (magnolia trees are out!). Also, they should be no taller than 20 feet at maturity, have non-imvasive root systems and not be planted near sewer lines!
	The City needs to update often it's selection of appropriate tree specimens for it's street trees. For too long they had Magnolia's and Liquidambers on there which have destructive roots and drop too much debris. The City requires these trees be planted and then make the homeowners pay to fix sidewalks and sewer lines. No wonder people want to cut down their trees!
	The city should revise the list of trees they offer as street trees. Why would you choose Eriobotrya japonica (Loquat) as a street tree? It's beneficial to have deciduous trees that lose their leaves and get rid of all of the toxins & pollution collected on a regular basis. Loquats are messy evergreen trees. The fruit is only edible to squirrels and rats, and I'm not a fan of increasing their populations. The leaf litter is constant and the leaves take forever to break down in a compost bin. Yet I see this tree all over as a "preferred Mountain View Tree." Why not include natives like Aesculus californica (CA Buckeye)? And no tree is drought resistant. All trees need water. Drought tolerant, sure, but please revise the question about drought resistant. Trees can not survive without water and we cannot survive without trees. We need trees 100% more than we need lawns: to filter the air, provide shelter for wildlife, provide shade in a number of places, defer the heat load in the summer, etc.
	The first several questions in this survey are classic push-poll. I'd be shocked if the city actually generates significant results from them. I say this as someone who supports trees. It lowers the credibility of the survey.
	The forestry department is very responsive and helpful.
	The more trees the better for the community.
	The redwoods are dirty trees -- needles and seed pods stain and mess the property. I would like to get rid of the ones on my property, but can't.
	The tree canopy in Mountain View is an exceptional collection that adds to the attractiveness and livability of our city. People love it!! My hope is that better tree selection will occur so that the trees planted now won't be creating maintenance nightmares later. We are blessed to have all those who care for our urban forest and hope that the refinements you are making will help our trees for years to come.
	The tree cover is one of the things that sets communities apart as places with high quality of life or not. Mountain View needs more tree cover.
	The tree trimmers do not understand what it is to shape a tree. I understand it is necessary for utilities to be clear of tree branches but some aesthetics could be applied.
	The trees add beauty to our community, but often there are so many trees near homes that there is not enough sunlight on the yard or through the house's windows for gardening and houseplants. It is also important that the trees do not obstruct the view of street signs or the view of drivers making a turn.
	the urban canopy/city's trees are a huge public benefit for all the reasons mentioned. It should be the responsibility off all who live in MV, and have available land, to contribute to the canopy. This should be required in a city ordninance.
	There are a lot of beautiful trees in Mt View but there are also a lot of inappropriate trees like redwoods that are too close to buildings, palm trees that grow too high and drop potentially lethal fronds in high winds, and magnolias that grow poorly in this area and create a lot of debris.
	There are many beautiful trees available for planting, yet many new developments have planted sycamores, which are a disaster. There is no season when sycamores are not a terrible mess, and they even pose health risks. In the spring, fuzz from their leaves wafts everywhere and causes allergies. In summer, their balls of fruit split apart and the individual "seeds" with their parachutes cover mulch, blow in under garage doors, and cover garden plant leaves. I have found these stuck in my nose and in my cat's nose after I swept my patio. Both the fuzz and the "seeds" clog gutters and cannot be kept out with mesh. The large leaves are the smallest problem, but in the fall they are difficult to deal with. I love sycamores from a distance, but I really dislike them in front of my home!
	They are vital. Stop allowing exceptions to developers, residence, businesses.
	This is a great survey. I hope there is a lot of response. Mountain View Trees is having a Mulch workshop on 7/19 at the Library.
	This is an important issue but a poorly designed survey. I suggest getting some help with survey design. I suspect many of the respondents will end up with survey burn-out if they finish it at all.
	This survey is way too long. Checking out now...

	Trees (plant life) are a critical part of the ecosystem, and there are simply not enough to balance unnatural processes (e.g., burning of fossil fuels).
	Trees are great but I think the biggest improvement to our environment and community comes from helping people live close to their jobs, which, given the current state of Mountain View, must include some more dense housing.
	Trees are one of Mountain View's best features and a prime reason I love our city. Thank you for caring about trees!
	Trees are part of what make my neighborhood so special. Fall especially is a stunning time. So thankful that the city planted the street trees so many years ago.
	Trees are so important to our community. Plant more!
	trees are SO important to the appearance and health of our city, we should make sure there are plenty of them publicly and privately and esp that there is professional care of them.
	Trees are vital to our community. Plant more long lasting trees for the next generation, esp. CA native trees!
	Trees are vital to the community. Thank you for doing this survey!!
	Trees are vital to this community and others. Every consideration should be given to improving the canopy - cost should not be a factor.
	Trees distinguish Mountain View from other Silicon Valley cities... let's keep our natural advantage.
	Trees keep our city so beautiful.
	Trees keep your home cooler, the surface street heat down, provide shade for sidewalks, other plants and animals and provide beauty to the area
	Trees need to be drought tolerant and native and with minimal upkeep, ie. no berries or fruits to fall on sidewalk, not many offshoots for new trees that start growing in undesirable locations
	Trees should be preserved! The trees at the old Mayfield Mall were torn up without notice. They were beautiful in the spring and fall and provided shade for parking. What happened there was an outrage. This should never happen again to so many trees in one place in Mountain View. What does that say about the city's urban forest plan?
	We have some beautiful Sycamore trees on our street (Montecito, between Farley and Burgoyne) but they are reaching the end of their lifespace (70 years, they are 64 years old). I would support a phased-approach to replace the trees before they totally fail. I don't want the whole neighborhood to have all the trees replaced at the same time, as they are the best feature of the neighborhood.
	We love all the trees in Mountain View -- Cuesta Park is gorgeous, and we love the Stevens Creek Trail. There could be more shade trees on the upper reaches. We stick to the lower reaches because the upper ones are too sunny. We love trees!
	We love Mt. View trees!!
	We need more information about native trees, drought-resitant trees, and how trees help benefit homeowners.
	We need more open space! Closest open space areas are in los altos/ los altos hills. More trees down city streets would be pleasant. Also trails with small signs by trees would be nice to tell tree info to those interested.
	We need more trees!
	We need to enforce habitats and canopy replacement. Developers get to cut down 100's of mature, tall, deciduous trees with tap roots, and replace them with species that need more water, provide less (or no) habitat, and often remain quite small. Convenient and cheaper for the developer, but not ann equitable replacement. Fees cannot make up for habitat loss, heat islands, and loss of canopy. Thanks for all your hard work!
	We need to expand the range of 'acceptable' species of trees for City trees. Crepe Myrtles are more like bushes that trees.
	We need to preserved the trees we have in our City either on residential, parks, parking lots, ect. or where they need to be. Please check which yard like on a residential that need City trees. Tree
	When Thaddeus Park was revamped several years ago we asked for shade trees, but the City Parks people didn't seem to realize that planting trees on the south side provides shade in the winter, when the sun is low and we don't want shade. Trees are needed on the east and west sides of playgrounds to provide shade in the summer.

When trees are removed, be it due to age, disease, damage etc. require owners and developers to replace with a tree of eventual growth size. Stop allowing developers/owners cut down big trees and put in trees of a small size when mature. Stop allowing trees in one placebe replaced with trees planted elsewhere in the city.
work with neighborhood groups to engage people in working together to do a neighborhood-wide tree planing or inventory or something. Use Nextdoor to show where current City Trees are? Our neighborhood doesn't have strips in the medians or between the sidewalk and street.
Would be nice to have option for fruit trees. I would like to have trees that produce food on my property.
Would love to see some fruit trees, so that anyone may pick and eat the fruit. And if some of the fruit is in danger of becoming over ripe, it could be given to an area soup kitchen. Read about a program in another city where people were welcome to pick food from city plants for personal use, and thought that this is a wonderful idea.

THANK YOU!

Thank you for taking the time to help us plan the future of Mountain View's urban forest. Results of this survey and public input opportunities will be available this fall.