Adopted September 2025

THE CITY OF PLEASANTON

Urban Forest Master Plan

PREPARED BY

DUDEK


URBAN FOREST MASTER PLAN
PLEASANTON
CITY of PLEASANTON

VISION

Pleasanton's urban forest is a well-managed, vital resource providing social, economic, and environmental benefits which contribute to the community's quality of life, value, character, and beauty.

TABLE OF CONTENTS

TABLE OF CONTENTS

FIGURES

PART 2 TECHNICAL ASSESSMENT

TABLE OF CONTENTS

TABLES

FIGURES

PART 3 APPENDICES

ACKNOWLEDGMENTS

THE CITY OF PLEASANTON©

CITY COUNCIL

Jack Balch, Mayor
Jeff Nibert, Vice Mayor
Craig Eicher, Councilmember
Matt Gaidos, Councilmember
Julie Testa, Councilmember

PARKS AND RECREATION COMMISSION

Rameshu Immadi, Chair
Lisa Brown, Vice Chair
Siena Alfaro
Chuck Deckert
Joanne Hall
Mike Vickers
Tom Medina
Rick Schempp

CITY STAFF

Gerry Beaudin
City Manager

Alexa Jeffress
Assistant City Manager

Siew-Chin Yeong
Director of Public Works

Adam Nelkie
Assistant Director of Public Works/ City Engineer

Matt Gruber
City Landscape Architect

Sarah Hosterman
Landscape Architect Assistant

Giacomo Diamonte
Parks Division Manager

HACIENDA

James Paxson
Hacienda General Manager

DUDEK

Ryan Allen
Urban Forestry Planning Practice Lead

Kevin Cullinen
Urban Forestry Project Manager

Alexandria Reed
Urban Forestry Data Scientist

Jared Davis
Urban Forester

Cameron Stecki
Urban Forester

Prepared By
DUDEK
URBAN FORESTRY DIVISION

DOCUMENT ORGANIZATION

PART 1
Urban Forest Master Plan

This part of the document is written for the public and summarizes the history and current state of Pleasanton's urban forest, identifies key findings, and provides a strategic action and implementation plan to help the City achieve its future vision for the urban forest.

SECTIONS

1 | Introduction: provides an overview of what an Urban Forest Master Plan (UFMP) is and why the City of Pleasanton needs such a plan. It also covers the benefits of trees, the key findings of the plan, and a summary of the canopy cover and tree inventory analyses.

2 | Context: covers the history of trees and tree-related ordinances in Pleasanton, the UFMP development process, and a summary of community engagement activities.

3 | The Plan: contains the overall strategy for the City in achieving its urban forest goals including the vision, guiding principles, and specific actions that will serve as a road map for Pleasanton.

4 | Implementation: provides a prioritized list of actions for improving the urban forest along with the relative cost, responsible party, and method of measurement for tracking the success of each action.

5 | Monitoring: includes a summary of the self-assessment monitoring tool by Vibrant Cities Labs that shows the current status (prior to the UFMP) of Pleasanton on a number of key urban forest sustainability indicators. This tool will also allow the City to track future improvements to these urban forest sustainability indicators.

6 | References: Provides a list of scholarly sources and research articles referenced in this plan.

PART 2
Technical Assessment

This part of the document is tailored for City Staff and provides a deeper dive into the analyses of the City's urban forest canopy cover, tree inventory, staff and budgeting, community engagement, and how this plan relates to other City planning documents.

PART 3
Appendices

This section of the document contains additional information and resources referenced in Parts 1 and 2 including a section on wildfire planning (**Appendix A**), a frequently asked questions sheet with relevant City contacts for residents (**Appendix B**), a recommended tree species list (**Appendix C**), and a series of illustrated arboriculture best management practice standards (**Appendix J**).

PART 1
URBAN FOREST MASTER PLAN

1

INTRODUCTION AND SUMMARY

1.1 What is an Urban Forest Master Plan?

An Urban Forest Master Plan (UFMP) is a guiding document designed to provide clear and actionable goals and recommendations for the long-term care, preservation, and expansion of the community's urban forest. The urban forest is made up of both public trees (the ones you see in parks, parkways, medians, rights-of-way, and on other City properties) and private trees (the ones on residential, commercial, and industrial properties). Pleasanton's community members receive urban forestry benefits from all trees in their city, regardless of ownership, with each tree playing an equally important role in contributing to the City's urban forest. Throughout the UFMP, both publicly and privately managed trees are discussed to highlight that tree management procedures, tree protection guidelines, and urban forest-related policies impact all trees in the city. Reaching Pleasanton's urban forestry goals will require a collaborative and collective effort from the entire community.

The UFMP's goals and recommendations are based on a comprehensive analyses of the City's urban forestry program including tree-related planning documents, staff capacity, operational budget, collected tree data for 23,722 publicly managed trees, and an assessment of city-wide canopy cover over time. Input from both City staff and the community were crucial in ensuring that goals and recommended actions are realistic and achievable for Pleasanton. Following the strategies and recommendations in the UFMP will increase the operational efficiencies of the City's urban forestry program and help create a robust and resilient urban forest for future generations.

1.2 Why the City Needs an Urban Forest Master Plan

The need for a UFMP has become more evident as the City's urban forest has aged and rose to a priority in early-2021 to address the urban forestry-related challenges and goals identified in the City's Climate Action Plan 2.0. The City also wanted to update its outdated Tree Preservation chapter of the municipal code, identify gaps and increase efficiencies in the City's current management program, and create actionable goals and strategies for managing the urban forest over the next 25 years. The UFMP is the first plan of its kind for the City and has been developed as a roadmap for how the City can best manage and enhance Pleasanton's urban forest and improve the benefits the community receives from the City's trees.

Figure 1-1. The Benefits of Trees

BENEFITS *of* TREES *in an* URBAN ENVIRONMENT

HEALTH

CLEANER AIR
Trees absorb pollutants and filter particulates out of the air by trapping them on their leaves and bark.

CONNECTING WITH NEIGHBORS
Trees can encourage civic pride while tree plantings provide opportunities for community involvement.

FRESH FOOD
Trees provide food in the form of fruits, nuts, leaves, bark, and roots.

HEALTHIER COMMUNITIES
Trees improve mental health and public health by decreasing respiratory illnesses and encouraging outdoor recreation.

ENVIRONMENTAL/INFRASTRUCTURE SERVICES

SAVING ENERGY
Shade trees can lower air-conditioning costs 56% annually, burning fewer fossil fuels.

BEAUTY
Trees add character to city streets and residential areas as they radiate with colors, flowers, textures, and shapes.

SHADE
Trees cool cities by up to 10˚F and shaded areas can be 20-40˚F cooler than peak temperatures.

WILDLIFE HABITAT
Trees support the lives of many wildlife and insect species and provide them with food, shelter, and nesting sites.

Source: Dudek 2024

Benefits of Trees

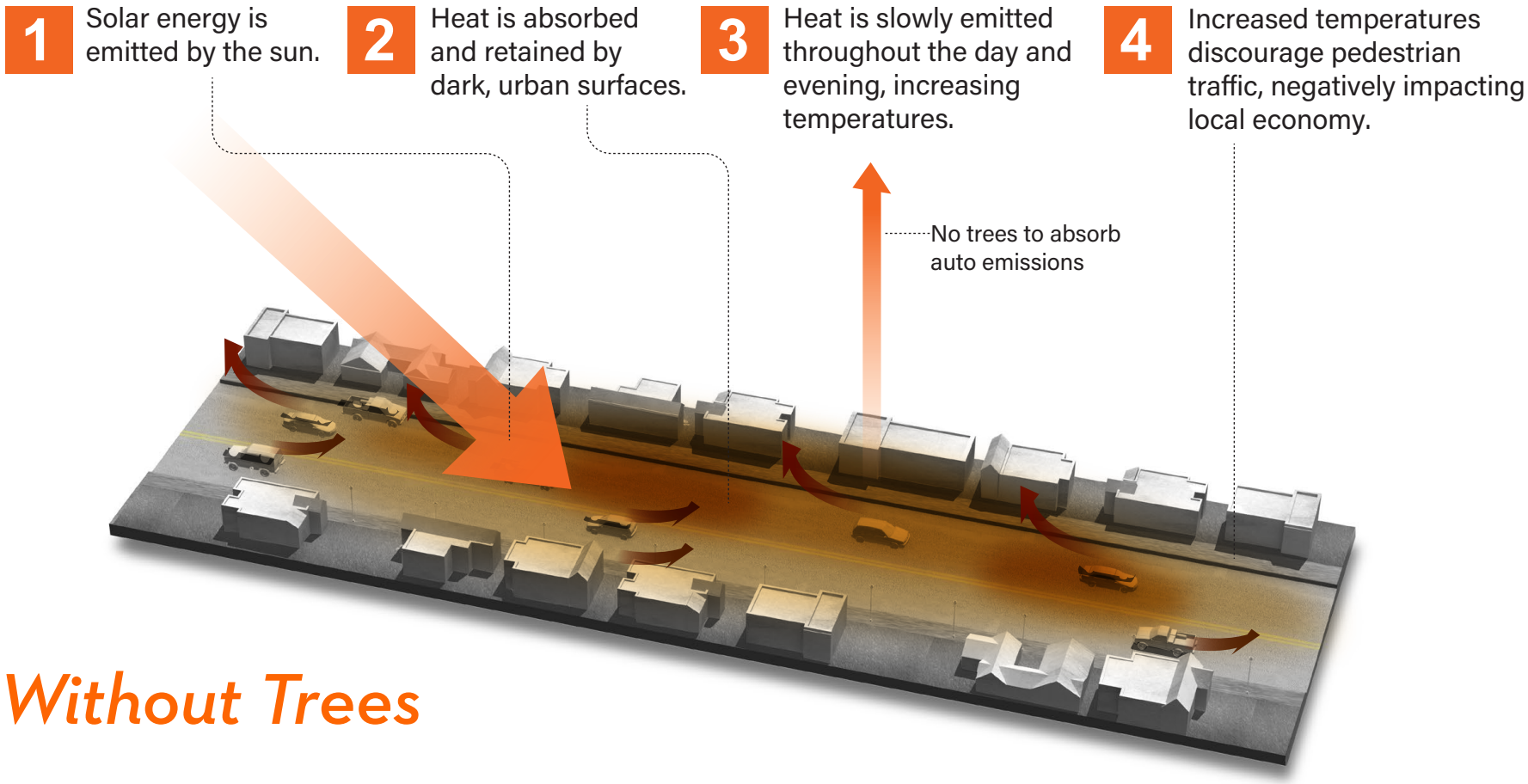
The City of Pleasanton recognizes that trees offer numerous environmental, social, and economic benefits like providing shade and relief from hot weather, creating habitat for wildlife, improving air and water quality, enhancing mental health, supporting physically active communities, reducing energy costs, and increasing property values (O'Brien et al., 2022, Donovan and Butry 2009, Wolf 2007) (**Figure 1-1**). Pleasanton's residents recognize the value that the urban forest brings to their community. Many attendees of the Urban Forest Summit, an event hosted to inform the community about the UFMP, cited Pleasanton's "beautiful trees" as a primary reason they choose to make this city their home. Residents associate Pleasanton's urban forest as part of their community character and identified the urban forest as a priority to preserve for future generations. Community outreach, engagement, and education of urban forestry benefits, value, and principles will be imperative in implementing the UFMP and fostering urban forest advocacy over time. Recognizing these benefits as a valuable public investment, the UFMP formalizes the City's commitment to improving the urban forest and maximizing these benefits for Pleasanton's community.

Mitigating Impacts of a Hotter Future Climate

Urban trees and the benefits they provide will be even more important to protect and enhance in the face of a predicted hotter future climate. Environmental stressors that currently impact the day-to-day activities of Pleasanton's citizens include a variety of climate and health risks such as extreme heat, drought and water uncertainty, longer wildfire seasons, and flooding. These issues are only expected to increase in the future according to California's Fourth Climate Change Assessment (Cayan 2018). Trees will be vital in mitigating these impacts and protecting Pleasanton's future community from these environmental stressors by providing shade and cooler temperatures on hot summer days, reducing the urban heat island effect (**Figure 1-2**), and by intercepting, slowing down, and infiltrating stormwater into the soil during winter months. Similar to residents, trees are also affected by these environmental stressors which can make them more vulnerable to pests and diseases. The UFMP will be a key resource for the City in promoting the long-term health and sustainability of the urban forest by addressing climate-related challenges through recommended management actions.

Figure 1-2. Urban Heat Island Effect

The Urban Heat Island Effect



Source: EPA 2019, 2020

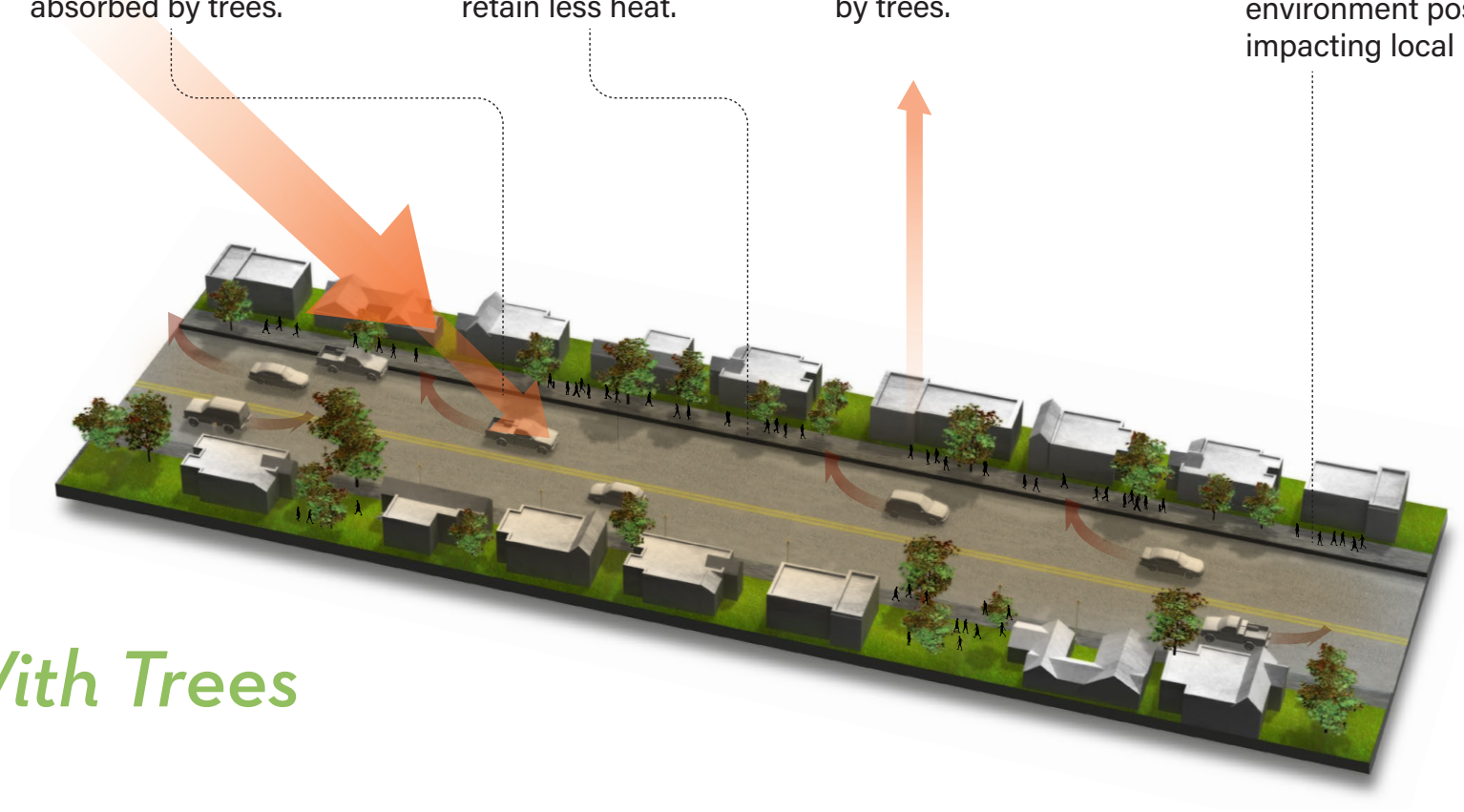
How Trees Help

1 Solar energy emitted by the sun is partially absorbed by trees.

2 Shaded surfaces absorb and retain less heat.

3 Auto emissions are partially absorbed by trees.

4 Cleaner air, cooler weather creates a pedestrian-friendly environment positively impacting local businesses.



With Trees

Source: EPA 2019, 2020

Challenges Facing Urban Trees

Beyond environmental impacts, trees in the urban landscape also face numerous challenges from human-caused factors throughout their lifecycle that are unique to trees growing in cities. To start, urban trees are unable to naturally propagate like trees in natural areas, meaning, just about every tree in the City was planted intentionally by someone, be it a City employee, resident, or business owner. It also means that if new trees are not regularly planted, or if trees being removed are not replaced, the urban forest will diminish throughout the City. Pleasanton's urban forest relies on its community and publicly-driven urban forestry efforts to keep the forest alive and growing.

Another human-caused challenge affecting urban trees is how they are planted and maintained. There are many arboriculture best management practices (BMPs) that should be followed when planting and maintaining trees in an urban environment to give them the best chance of surviving and thriving into maturity. If these BMPs are not followed it can lead to tree health issues, future conflicts with surrounding infrastructure, or early mortality. Some examples of poor management practices include trees being planted at a site with insufficient growing space and soil volume, under watering young trees, and pruning too frequently. Additional human-related challenges that make growing conditions challenging for urban trees include intentional or accidental damage from humans and pollution from cars and other urban-based chemicals (herbicides, fertilizers, etc.). When trees fail to thrive due to limited resources, conflicts with infrastructure as they mature, or are improperly maintained, there is potential for a decline in tree health. When this occurs, trees are removed from the landscape, losing their benefits for the community and significantly affecting the return on investment for planted trees.

Planning for, selecting, and planting the 'right tree, in the right place,' properly caring for trees to arboriculture standards, and replenishing the urban forest by planting new trees, are the first steps a city and its community can take to decrease the human factors related to trees being removed in an urban landscape. The UFMP considers both environmental and human-caused challenges to urban trees and provides recommendations to mitigate these factors and ensure trees in the City can thrive alongside the people that benefit from them.

Pleasanton's Trees and Urban Forestry Program

Pleasanton currently has a city-wide canopy cover of 25.3%, which is roughly 5% above the average canopy cover for a city in a grassland landscape according to a recent global study (Nowak and Greenfield 2020). Canopy cover is discussed in greater detail in the key findings and in section 1.3.2.

While the City's canopy cover is doing well, the recent inventory assessed most of the public trees as being in “fair” condition, meaning there are still areas for improvement in how the City is managing the urban forest. Analyzing the current urban forestry program identifies operational challenges and provides guidance to enhance operational efficiency which will help the City to better manage and care for its trees. While the City works on improving their urban forest program and the management of public trees throughout Pleasanton, it is important to note that private trees (discussed more in Key Finding 2) and the residents and businesses that care for them, play an even more important role in contributing to the City’s overall canopy. One of the most prominent ways the City has protected private trees is through the Tree Preservation Ordinance.

TREE CITY USA

The City of Pleasanton has been recognized as a Tree City USA (Arbor Day Foundation 2024) for the past 8 years! This means the City is committed to maintaining a Tree Board or department, has an adopted tree ordinance, spends at least $2 per capita on urban forestry, and celebrates an annual Arbor Day!

Pleasanton's Favorite Benefits from Trees

The top three benefits of trees resident's most valued were shade, environmental benefits like improved air and water quality, and the aesthetic value they give the City of Pleasanton.

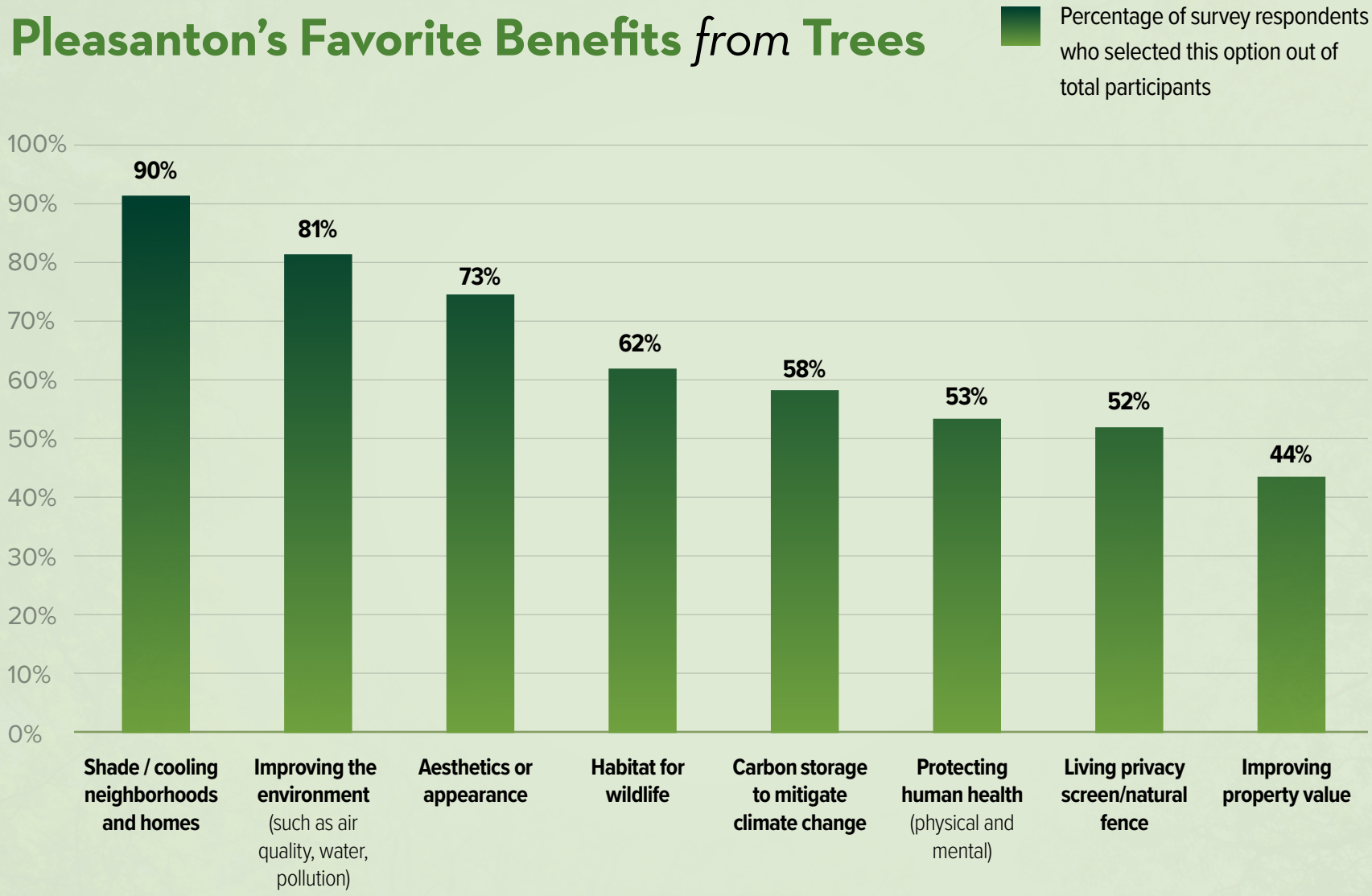
(Chart on the following page)

The Tree Preservation Ordinance and the Role of Private Property

Because the collective urban forest relies on the contribution from trees on private property, updating the Tree Preservation Ordinance was a top priority under the greater UFMP effort. The Tree Preservation Ordinance, discussed more in Section 2.1, is the City's main tool for protecting existing mature trees on private property and ensuring trees that are removed will be replaced with appropriate new trees so that the overall urban forest can continue to grow. The City's efforts to update and enforce the Ordinance is one step towards meeting UFMP goals. Community advocacy, education, and identification of resources for residents are also vital to successfully implement the UFMP.

Tree management is an ongoing venture which requires constant vigilance to maintain tree health and success over a long period. This care can be expensive for property owners (both public and private) so engaging and educating the community on the benefits of trees in the built environment is paramount to encouraging their protection over the next 25 years and beyond. In addition to helping to foster a desire to plant new trees and protect existing trees, Pleasanton will need to find new ways to incorporate large tree canopies into older neighborhoods which lack trees. This plan outlines a thoughtful and creative approach to ensure the equitable distribution of trees and shade for the entire city. Working together with the community, the City will utilize the UFMP to help achieve its vision for a resilient and robust urban forest that will continue to provide vital social, economic, and environmental benefits for future generations to come.

Pleasanton's Favorite Benefits *from* Trees



1.3 Key Findings

1.3 KEY FINDINGS

Development of the UFMP revealed key findings that were consistently discussed by City staff and residents and confirmed through program analysis. The detailed analysis and methodology are provided in the technical assessment of the UFMP. The key findings informed the vision, guiding principles, and actions in this UFMP, which are a roadmap for achieving the City's urban forest goals. The state of the urban forest and its most pressing issues are presented in the following five findings:

#1 Canopy Cover is Increasing Through Improved Management Actions

#2 Trees on Private Property Provide the Majority of Pleasanton's Urban Forest Canopy

#3 Increasing Species Diversity with Climate Adapted Trees Will Help Create a More Resilient Urban Forest

#4 Additional Funding is Required for the City to Achieve its Urban Forest Goals

#5 Need for a Dedicated Urban Forestry Team

Key Finding #1

Canopy Cover is Increasing Through Improved Management

Canopy cover, the area of land shaded by tree leaves, branches, and stems, increased on a City-wide basis from 18.5% in 2012 to 25.3% in 2022 (See Table 1-1 and 1-2). Several factors have contributed to this observed increase, including younger trees maturing in the urban forest, improved tree ordinance enforcement practices, and the Green Building code requiring more trees in parking lots and the many large private development projects over the last decade preserving and planting more trees. Canopy cover results are influenced not only by on-the-ground changes in the urban forest but also by the data and methods used to map canopy. The 2022 dataset applied in this analysis used finer-resolution imagery[1] and LiDAR, which allowed for more detailed canopy detection compared to earlier years. At the time of this study, these were the best data available. Since then, other statewide datasets[2] have been produced using different methods, which may yield different canopy values that are not directly comparable. For long-term tracking, the City should consider selecting one dataset source and applying it consistently in future analyses.

While canopy estimates vary depending on the dataset used, the overall trend shows that Pleasanton's canopy has expanded in recent years. To sustain and build on this progress, the City will need to continue to improve management actions, such as replacing all trees that are removed annually and planting, at minimum, an additional 44 trees each year over the next 25 years. Prioritizing planting in neighborhoods with lower canopy levels will help progress towards an equitable distribution of the urban forest. (See Section 1.4.1 to learn more about this finding).

Table 1-1. Canopy Cover Change (2012-2022)

Year	Canopy Acres	Canopy %
2012	2,544	18.5%
2018	2,567	18.7%
2022	3,472	25.3%

Table 1-2. Canopy Cover by Land Use

Land Use Type	Canopy % (2012)	Canopy% (2022)	Absolute Change
Roadways/ Train Stations	7.9%	8.1%	0.2%
Community Facility/Parks	13.0%	15.3%	2.3%
Industrial / Commercial	15.9%	19.4%	3.5%
Mixed Use	17.7%	21.9%	4.2%
Residential	20.2%	27.5%	7.3%
Open Space	19.0%	27.9%	8.9%

1 The 2022 dataset was mapped at a resolution of 0.076 meters, compared to 1 meter in 2012 and 0.6 meter in 2018.

2 California Urban Tree Canopy dataset (2018 & 2022), developed by EarthDefine LLC in collaboration with CAL FIRE, USFS, and NOAA

Figure 1-3A. 2012 vs. 2022 Canopy Cover Comparison Map with Neighborhood Boundaries

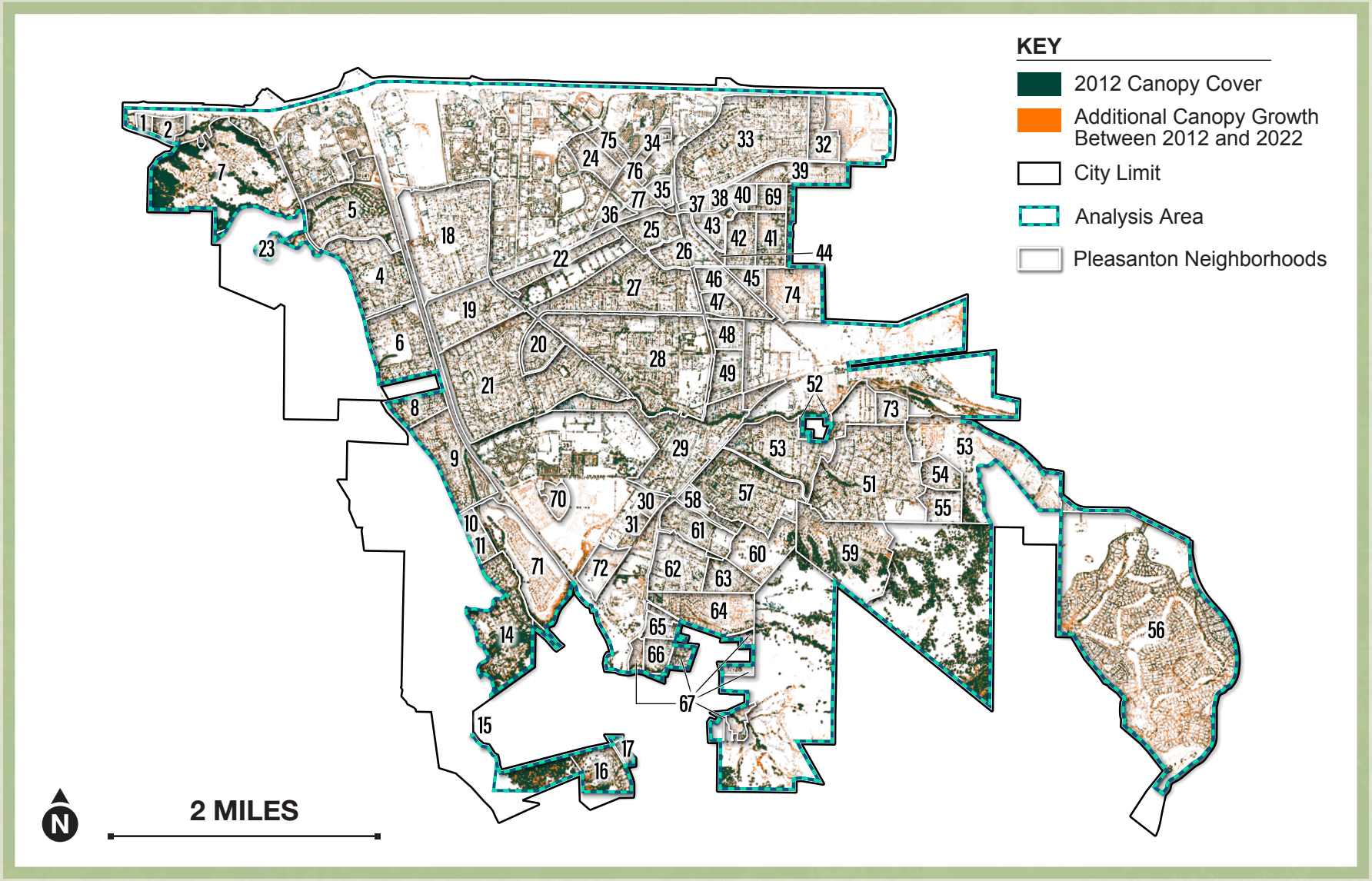


Figure 1-3B. 2012 vs. 2022 Canopy Cover Comparison Map with Neighborhood Boundaries

ID	Neighborhood Name	CC
1	Canyon Creek	35%
2	Canyon Meadows	38%
4	North Muirwood	25%
5	Stoneridge	33%
6	South Muirwood	24%
7	The Preserve	44%
8	Foothill Knolls	38%
9	Laguna Oaks	34%
10	Foothill Place	44%
11	Laguna Vista	41%
14	Golden Eagle Farms	55%
15	Castlewood	78%
16	Oak Tree Farms	50%
17	Oak Tree Acres	51%
18	Val Vista	16%
19	Valley Trails	19%
20	Country Fair	30%
21	Del Prado	25%
22	Parkside	23%
23	Moller Ranch	40%
24	Valencia/Siena/Avila	25%
25	Amberwood/Wood Meadows	29%
26	Willow West	24%
27	Birdland	27%
28	Pleasanton Valley	27%
29	Downtown	27%
30	Civic Square	30%
31	Ridgeview Commons	40%
32	California Somerset	19%
33	Pleasanton Meadows	21%
34	Hacienda Gardens	36%
35	Las Positias Garden Homes	20%
36	Verona	29%
37	Belvedere	22%
38	Gatewood	39%
39	Stoneridge Park	23%
40	Stoneridge Orchards	21%
41	Mohr-Martin	32%
42	Mohr Park	24%
43	Pleasanton Village	24%
44	Sycamore Place	25%
45	Rosewood	27%
46	Heritage Valley	23%
47	Danbury Park	28%
48	Amador Estates	21%
49	Jensen Tract	24%
50	California Reflections	25%
51	Vintage Hills	25%
52	Remen Tract	27%
53	Vineyard Avenue	23%
54	Foxbrough Estates	35%
55	Grey Eagle Estates	21%
56	Ruby Hill	35%
57	Pleasanton Heights	33%
58	Old Towne	26%
59	Kottinger Ranch	37%
60	Bonde Ranch	21%
61	Mission Hill	26%
62	Mission Park	19%
63	Lund Ranch	31%
64	North Sycamore	30%
65	Rosepointe	26%
66	Carriage Gardens	41%
67	Happy Valley	27%
69	Walnut Glen	31%
70	Walnut Hills	21%
71	Pleasant Ridge	28%
72	Canyon Oaks	16%
73	Shadow Cliffs	22%
74	Ironwood	20%
75	Archstone	30%
76	Hacienda Commons	36%
77	Springhouse	39%


MAIN ST

Key Finding #2

Trees on Private Property Provide the Majority of the Pleasanton's Urban Forest Canopy

The canopy cover analysis reflects that 70% (2,446 acres) of the City's total canopy cover is located on private land, with the remaining 30% (1,027 acres) located on public land and right-of-way. This points to the large role that private property owners play in contributing to overall City-wide canopy cover, and the necessity to enforce policies that preserve these trees. The City understands that reaching a canopy cover goal of 25% in all residential neighborhoods will require engaging the community and providing resources to residents that will support their ability to plant, maintain, and preserve trees on private property. Another strategy to increase canopy cover on private land would be for City staff to work with developers and businesses to plant 25 trees per year, and work with residents to plant 50 trees per year for the next 25 years to reach the City's goal of an equitable canopy across the City. (See section 1.4.1 and Section 1.4.5 for more information).

How You Can Help Grow Pleasanton's Urban Forest

As Key Finding #2 pointed out, private property plays an important role for Pleasanton's urban forest. As the City focuses on ways to increase the number of trees within the limited available space on public property, residents can have a big impact on the growth and care of the urban forest as well. **The City is recommending that each residential property in Pleasanton have at least one front yard tree.** If you don't already have a tree in your front yard, this is a great opportunity to get involved and play a key part in growing Pleasanton's urban forest. There are several resources in the Appendices of this document (Part 3), which cover everything from appropriate tree species selection, to how to properly plant and maintain a tree.

For more information, you can also visit the website: https://www.treesaregood.org/treeowner/plantingatree

Key Finding #3

Increasing Species Diversity with Climate Adapted Trees Will Help Create a More Resilient Urban Forest

The City's inventory currently contains 23,722 individual trees, comprised of 114 genera, and 250 species. Of the total 250 species, 36 species making up 11,132 trees, or 40.2% of the total City inventory, are likely to be poorly adapted to Pleasanton's future climate if temperatures continue to rise as predicted by California's Fourth Climate Change Assessment (Cayan 2018). Species predicted to be poorly adapted include American sycamore, coast redwood, and maple (Acer species) which combined comprise 2,279 trees or 11.5% of the City's inventory and typically need higher levels of water and cooler temperatures to thrive. California is continually adapting to changing climate conditions with policies that restrict water use and require the removal of non-functional turf. These changes in statewide policy may make it difficult for the City to supply the supplemental

By diversifying the City's high profile landscapes such as the City's downtown trees, we can ensure that the canopy endures even if one or more species are threatened.

irrigation these species will need to maintain health during periods of drought and extreme heat. Trees that are in poor health and stressed are more susceptible to invasive pests and diseases. The species composition and diversity of trees in Pleasanton's urban forest play a central role in long-term urban forest health. Beginning to plant tree species that are likely to be adapted to future climate conditions and diversifying the overall makeup of the City inventory will create a more resilient urban forest against these threats. In 2020, the City lost a few of its last remaining American Elm trees in Civic Park as they succumbed to Dutch Elm Disease (DED). Starting in the 1930s, DED almost completely wiped out the species throughout America. Almost a century later, it is still a serious concern. The redesign of the park included a climate adapted oak tree that will provide similar benefits as the elms without the pest and disease problems.

Key Finding #4

Additional Funding is Required for the City to Achieve its Urban Forest Goals

Over the past six years funding has increased for urban forestry-related work from $920,000 in fiscal year (FY) 2018/19, to $1.6 million in fiscal year 2023/24. The increase in urban forestry spending is partially due to extensive damage to trees caused by large winter storms in the more recent years, and also due to the rising costs of tree establishment and maintenance work combined with the City's desire to maintain the same level of tree services each year. A further increase in funding will be needed to achieve annual service targets established in the UFMP. The annual service targets are based on achieving a 25% canopy cover goal for each residential neighborhood within Pleasanton, starting with ensuring tree removals do not outpace tree replacement and filling all vacant City-owned planting sites. The increase in tree planting efforts increases the number of trees for the City to manage, raising the level of service needed for watering new trees, pruning, removals, and risk assessment. It is estimated that the City’s current budget of approximately $1.6 million would sufficiently cover costs to meet the urban forest service targets in the first year, but by year ten the City would need up to $560,000 in funding to fully cover costs due to the increased number of new trees in the City managed inventory. By the end of this Plan, in 2050, the budget difference is estimated to be $1.17 million for that year if the city doesn't implement alternative maintenance strategies (see section 1.4.5 for more information).

Key Finding #5

Need for a dedicated Urban Forestry Team

The City has identified the need for a dedicated team of professionals to be responsible for the urban forest program. Currently, the management of City-owned trees is carried out by the Landscape Architecture Office and the Parks Division. Neither of these divisions have roles that are solely focused on trees, so staff must balance competing priorities with urban forest management tasks. Because many different City divisions are affected by and manage trees in different ways, this can lead to conflicts, delays, and inefficiencies. Currently, Parks is the default division for addressing tree-related issues and coordinating work for City-owned trees, whether that's a sidewalk repair from tree root damage or having trees pruned to maintain line of sight for traffic signals, but the Streets division also contracts tree work and has different standards/practices that they follow. This has raised concerns with Parks staff for the level of responsibility they currently have around trees.

The addition of a dedicated Urban Forestry Team that manages both public and private trees will help balance the urban forestry workload of overextended staff, including relieving Parks staff of the workload for identifying solutions and delegating responsibility for implementation when tree-related conflicts arise. Other tasks taken on by the Urban Forestry Team would include the planning and implementation of new programs, grant writing, community outreach and education, efficiently directing the tree work required by other divisions, and tracking and implementing the strategic actions of this UFMP to achieve the City's urban forest goals. Dedicated staff will allow for better tracking and analysis on how to best utilize urban forestry funds.

1.4 Status of the Urban Forest

This section provides an overview and summary of the key analyses for canopy cover (public and private trees), tree inventory (public trees only), and City staff operations and budget for the urban forest program that make up the UFMP.

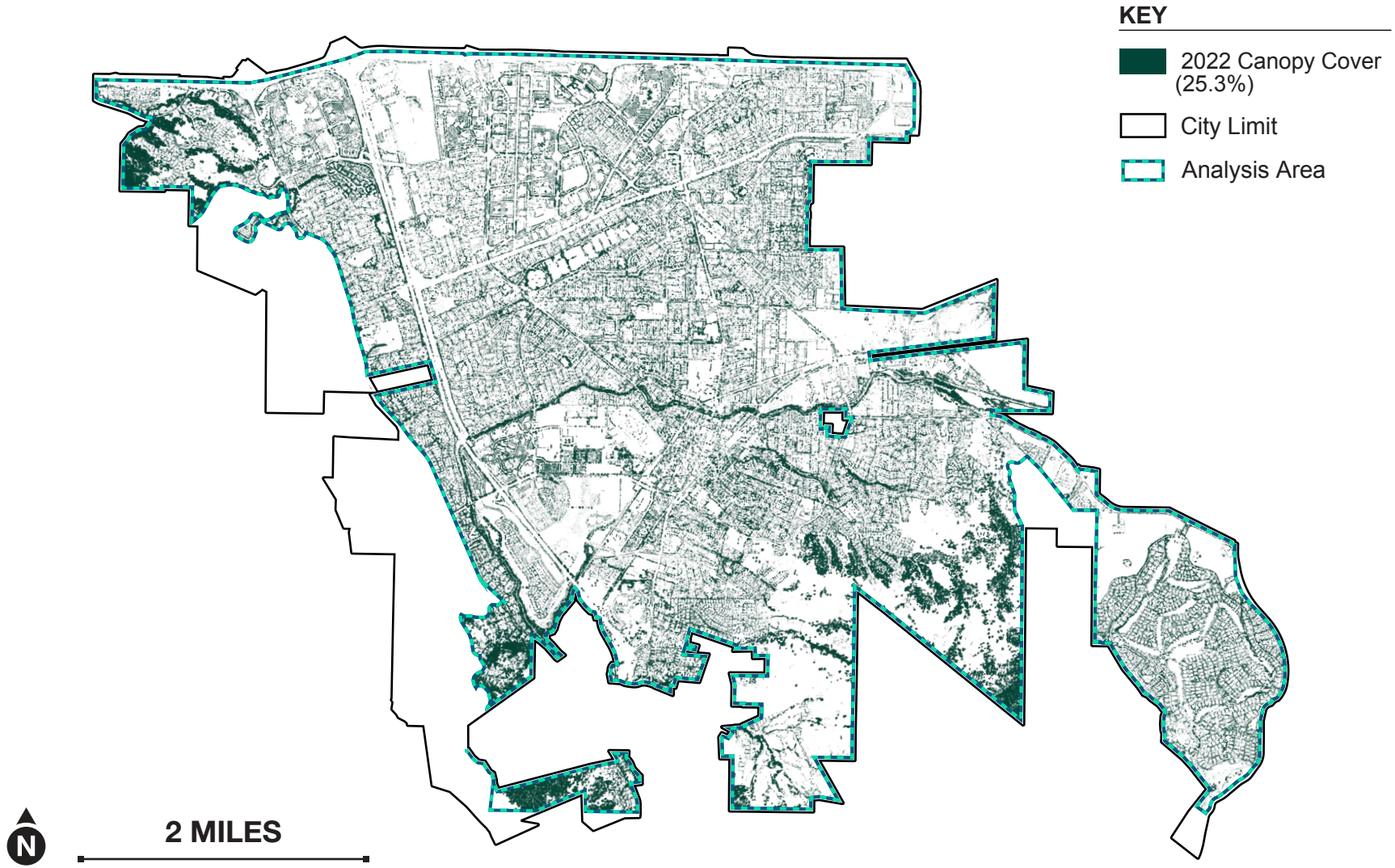
1.4.1 Canopy Cover

The City's canopy cover increased from 18.5% in 2012 to 25.3% in 2022 (the most recent year of aerial imagery and LiDAR data available at the time of the analysis), reflecting a relative increase of 36.5% **(see Figure 1-4 and Table 1-1)**, Canopy Cover Map and Canopy Cover Change (2012-2022). A study of tree canopy in California found that 15% of urban areas are covered by trees (McPherson, E., et al. 2017), while another study suggests that 20% is a reasonable target for a city developed in a grassland area (Nowak and Greenfield 2020). Pleasanton's 25% City-wide canopy cover shows that City-wide efforts to maintain and grow dense canopy cover are resulting in a robust urban forest.

While, the City has historically successfully grown its canopy, there are still challenges which threaten the City's ability to continue to do so and ensure that canopy cover does not decrease significantly over the next 25 years. One such challenge, as presented in the Key Findings, is replacing the number of public trees that are removed each year. New development also threatens tree canopy, particularly in the hillside areas west of Foothill Road and in East Pleasanton. Development in these densely forested regions may lead to a decrease in canopy cover. Improving tree replacement practices at the city level as well as engaging developers and private property owners in the early planning stages of projects, along with educating the community about the updated Tree Preservation Ordinance, is crucial for maintaining and growing city-wide canopy.

The canopy analysis focuses on the City's urban areas (blue and white outline in **Figure 1-4**) rather than the entire City boundary (solid black outline in **Figure 1-4**) to monitor canopy change over time. This is because available canopy cover products, such as the 2018 dataset from the U.S. Forest Service, excludes certain non-urban and forested regions. By concentrating on the urban boundary, the City can use a data source that is updated every four years, allowing for more accurate tracking of current canopy cover and targeted management where it is most effective.

Figure 1-4. Current Canopy Cover Map




bank
ACURA
5DBR878

1.4.2 Tree Inventory

The City of Pleasanton's most recent tree inventory was collected between 2023 and 2024 by Dudek. The current inventory was updated from an older inventory, originally collected by West Coast Arborists, Inc. (WCA), and includes 23,722 trees and 3,976 plantable vacant sites (three feet wide and greater in size) in streets and parks. Vacant sites were considered plantable if they were labeled as a vacant site or stump by inventory collection field staff and had a tree well or parkway size equal to or greater than three feet. The City's current stocking rate, which is calculated by dividing the total number of existing trees by the total number of plantable sites on public land is 85.6%. The stocking rate does not include potential sites that need modification to be viable or sites that are not captured in current inventory data.

The variety of different tree species within the urban forest is known as species diversity. Another important related factor is species evenness, which is the relative abundances of each species. Species diversity and evenness help provide resiliency to pest and pathogen infestations through the variety of different biological and physiological characteristics of each tree species. If one tree species is especially susceptible to a particular pest, having a variation of species in the city that are more resistant or unaffected by the pest ensures that the overall urban forest will survive. Pleasanton's 23,722 trees are composed of 113 genera and 250 species. According to a recent study looking at the diversity of urban forests across multiple California cities, 250 is a typical number of species for a City with a size and climate similar to Pleasanton's (Love et al., 2022). The top 10 genera and species in Pleasanton are shown in **Figures 1-5 and 1-6.** The species diversity sustainability goals are as follows:

- **Sustainability Goal (Genus): No genus represents more than 20% of inventory.**
- **Sustainability Goal (Species): No species represents more than 10% of inventory.**

An exception to the genus and species goals above are for native species such as oaks, which may exceed the recommended sustainability goals. The City and community have put a high value on native species for the additional benefits they provide, including supporting local ecosystems, requiring less maintenance and promoting biodiversity. The oak genus *Quercus* currently makes up just over 20% of the inventory and the two most common oak species (coast live oak and valley oak) within the City make up 9.4% and 7.2%, respectively, of the overall species in the inventory. Another exception to consider for the City are tree species that already have a proven history of resiliency in Pleasanton's urban landscape, which might include species that have already survived extreme heat and drought periods, recovered from pest infestations, or that have held up to root pruning for pavement repairs.

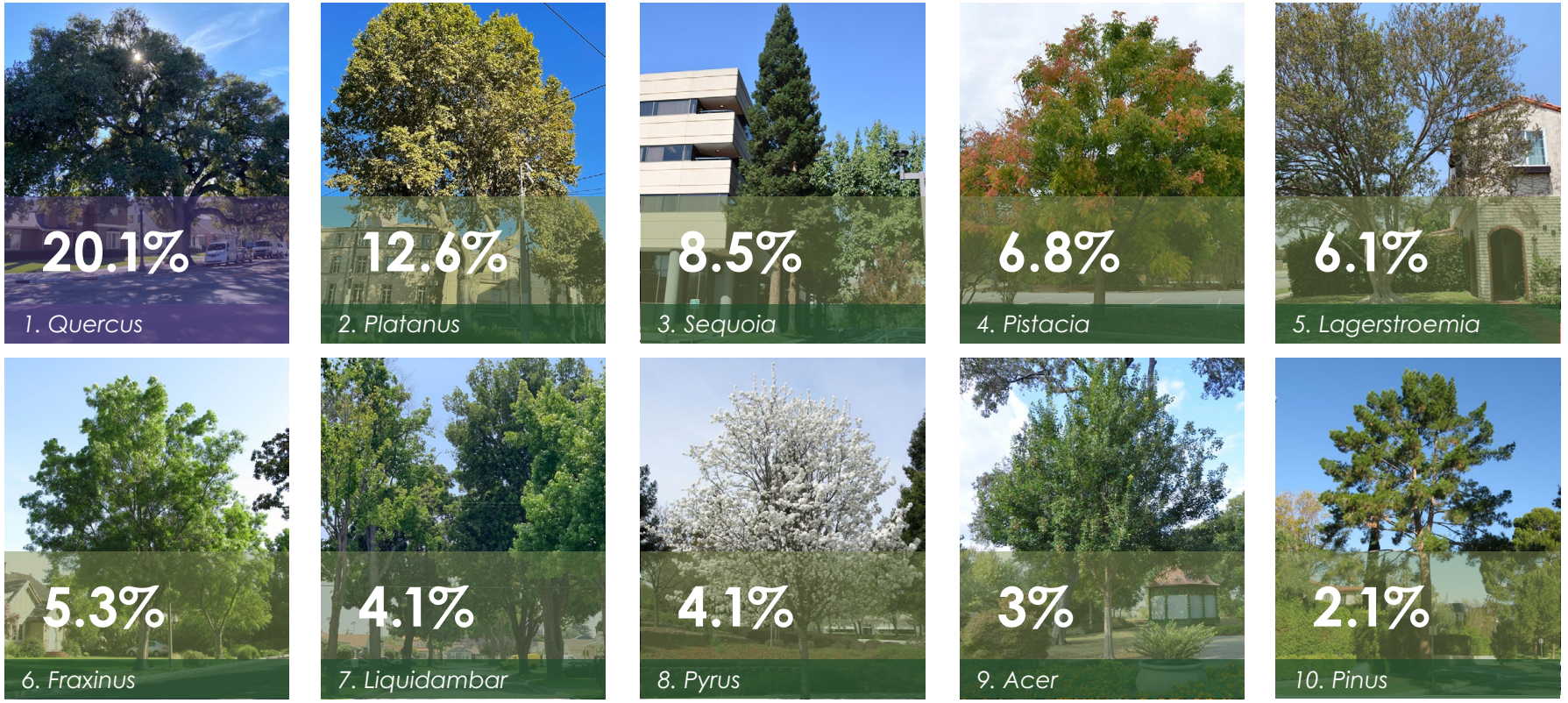
Figure 1-5. Genus Diversity

Top 10 Genera *in the* City Inventory

Sustainability Goal (Genus):
No genus represents more than 20% of inventory.

Meets Goal

Does Not Meet Goal



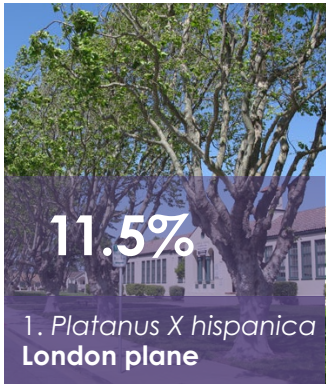
Source: Dudek 2024.
Note: The sustainability goal is that no genus represents more than 20% of inventory (Barker 1975).

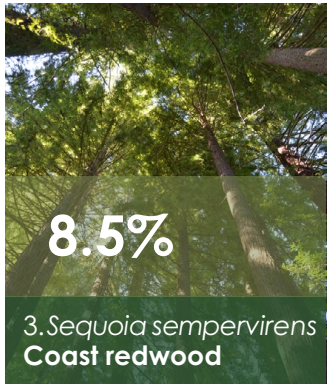
Figure 1-6. Species Diversity

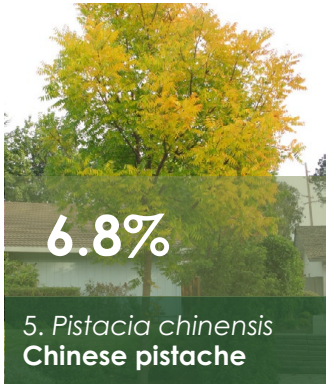
Top 10 Species *in the* City Inventory

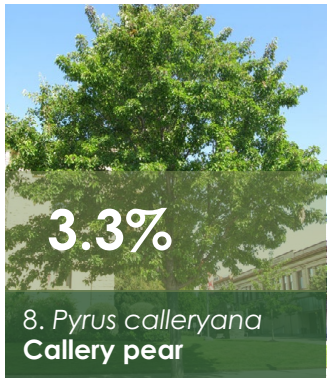
Sustainability Goal (Species):
No species represents more than 10% of inventory.

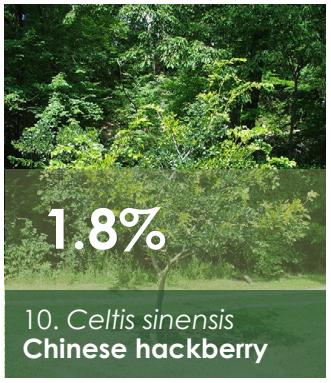
- Meets Goal
- Does Not Meet Goal











Source: Dudek 2024
Note: The sustainability goal is that no species represents more than 10% of inventory (Barker 1975).

Figure 1-7. London Plane Trees along Bernal Ave that have survived many years without irrigation

1.4.3 Environmental and Economic Benefits

Trees provide environmental benefits that hold real economic value for the City. These benefits contribute directly to the communities' quality of life and the livability of Pleasanton and so it is important to quantify them. The environmental benefits were calculated for the City-managed tree inventory using i-Tree Eco, (USFS 2022), a free software developed by the U.S. Forest Service that calculates the value of trees using the attributes such as species, diameter at standard height (DSH), and health condition of the collected tree inventory data for a specific area. The i-Tree Eco analysis utilized data from 23,301 trees in the City inventory to estimate the annual carbon sequestration, stormwater diversion, and air pollution removal benefits by publicly managed trees. These values are known as the environmental benefits provided by trees and are displayed in **Table 1-3**. Quantifying tree benefits helps frame publicly-managed trees as a City asset, and justifies the use of urban forestry funding and staffing resources to ensure the City's trees can continue providing environmental benefits for the community. **Appendix D** contains the entire i-Tree Eco report for the City's publicly managed tree inventory.

The financial replacement value of Pleasanton's tree inventory is estimated to be $99.4 million, or $4,266 per tree. This reflects the estimated cost to replace every tree in the inventory of the same species, size, condition, etc.

Table 1-3. Environmental Benefits Provided by City-Managed Tree Inventory

Impact	Quantity (Annually)	Translation
Carbon Sequestration (carbon dioxide removed from air by trees)	333.2 tons	Carbon removed from the City's air by the urban forest is equivalent to 63 homes' electricity use for one year or 34,000 gallons of gasoline consumed.
Avoided Runoff	1.4 million gallons	That volume of runoff would fill a football field to a depth of over four feet of water. Equivalent to the average annual water usage of 3,215 American homes.
Air Pollution Removal (ozone, sulfur dioxide, nitrogen dioxide, carbon monoxide, particulate matter < 2.5 µm)	5.3 tons	Equivalent to the annual nitrogen dioxide, carbon monoxide, and sulfur dioxide emissions from emissions from 92 automobiles or from 45 single family homes.

Sources: i-Tree 2024, Environmental Protection Agency's Greenhouse Gas Equivalencies Calculator

Trees and Property Values

In addition to the environmental and other quality of life benefits that Pleasanton's trees provide including shade, reducing the urban heat island effect, habitat for wildlife, and improving public health (O'Brien et al., 2022), trees have also been shown to have a positive effect on property values.

A study that analyzed multiple research papers on trees and residential property values found that trees could increase the value of a home anywhere from two percent (homes with mature backyard trees) to fifteen percent (in neighborhoods with good mature tree cover), compared to homes and neighborhoods with fewer trees (Wolf 2007).

The trend shows that in most cases, the more trees there are in a neighborhood, the greater the increase in property values. Highlighting these environmental and economic benefits is one method to encourage residents and business owners to participate in urban forest programs.

1.4.4 Urban Forest Management

1.4.4.1 Staff

The City uses a combination of in-house employees and external contractors to manage and maintain City trees. The primary work of the current tree maintenance contractor is focused on street tree pruning (62% of contracted work) and removals (10% of contracted work). In addition to maintaining parks facilities, City Parks staff are responsible for pruning trees in the City parks, debris cleanup, and for the planting and watering of new public trees in streets and parks. On the planning side, the City's Landscape Architect division, is responsible for implementing the City's Tree Preservation Ordinance, reviewing and approving tree removal permits, and providing review on tree-related aspects of development plans.

Whatever mix of staffing and contractor work the City chooses to employ must be sufficient and effective for accomplishing the City's urban forestry goals. Because Pleasanton does not currently have any full-time positions dedicated solely to tree management, this has led to more reactive tree management that contributes to the City falling short of its replanting goals each year. This suggests the City needs additional full-time staff, such as a dedicated Urban Forestry team discussed in Key Finding 5, or additional contracted labor to meet its urban forestry goals.

Figure 1-8 provides an overview of the City Departments, contractors, and utilities that are responsible for maintaining and managing Pleasanton's urban forest.

Public Trees

Public Works Department

Parks Division

URBAN FOREST RESPONSIBILITIES

- Pruning of City park and street trees
- Planting new City trees (Parks and Streets)
- Watering newly planted City trees
- Responsible for implementing Urban Forest Master Plan (UFMP)
- Oversee public tree operations and contracted work

City Contractors

CONTRACTED TREE WORK

- Pruning
- Removals
- Debris cleanup

Streets Division

URBAN FOREST RESPONSIBILITIES

- Inspection of sidewalks for uplift from tree roots
- Oversee and conduct root pruning. Tree removals, if necessary, are determined and managed by the Parks Division

Public & Private Trees

Landscape Architecture Office

URBAN FOREST RESPONSIBILITIES

- Implement and Enforce Tree Preservation Ordinance
- Review and approve tree removal permits
- Review development plans – tree species
- Lead the creation of the UFMP
- Public outreach, education, and communication on UFMP

PG&E

TREE-RELATED RESPONSIBILITIES

- Inspect trees for line clearance and utility fire safety

PG&E Contractors

CONTRACTED TREE WORK

- Line clearance under PG&E utilities and tree removal for gas lines

Private Trees

Community Development Department

Planning Division

URBAN FOREST RESPONSIBILITIES

- Review new development plans and ensure tree and landscaping standards are met
- Set planning policies

1.4.4.2 Budget

The City's urban forest funding has been increasing over the past six years to meet rising costs and the growing needs of maintaining a healthy urban forest. The six-year averages per maintenance activity is broken down by line item in **Table 1-3 in the Technical Appendix (pg. 90)**. The most recent fiscal year 2023–2024 spending on the City's Urban Forest program was $1,604,187, which covered all projected urban forest maintenance and emergency work from storm events. The six-year running average does not meet the projected funding requirements if the City is to meet its future canopy cover goal of achieving 25% cover in all residential neighborhoods. Achieving this goal will require the City to fill over 1100 vacant tree sites over the next 25 years and invest

more staff time and resources into tree establishment care, public outreach and education, and grant writing. See section 1.4.5 for a more detailed breakdown on the projected future budget needed to meet Pleasanton's urban forestry goals.

The sources of the program budget are presented in **Table 1-4** in the Technical Assessment (pg. 91). Most of Pleasanton's funding comes from the General Fund, with the remaining funding coming from the Urban Forestry Fund. The Urban Forestry Fund is primarily funded through contributions from development projects within the City. The amount listed for the Urban Forestry Fund in **Table 1-4** in the Technical Appendix, represents the average amount spent by the City from the Urban Forestry Fund over the last three years. The General Fund amount was determined by taking the six-year average total on urban forest expenditures presented in **Table 1-4 on the next page**, rounded to the nearest thousand dollar, and subtracting the three-year average Urban Forestry Fund total.

Table 1-4. Six Year Average of Urban Forest Expenditures by Department Staff and Contractor

Urban Forest Task	Totals
Pruning	$575,018
Removals	$139,753
Management Activities	$192,212
Storm Cleanup/ Emergency Work	$28,464
Downed Tree Cleanup	$83,741
Planting	$61,771
Establishment Care	$17,982
Other Expenses	$108,975
Total	**$1,207,916**

Annual Tree Service Data

Average annual service data from the past 5 years relating to tree maintenance and assessment are depicted in **Table 1-5**. Pleasanton currently plants around 151 trees each year and removes 226 trees per year resulting in an average net loss of 75 trees per year.

Table 1-5. Average Annual Tree Service Data

Tree Planting	Establishment Care	Tree Pruning	Tree Removal	Urban Wood Reuse
An average of 150 trees are planted annually.	Around 250 trees are watered annually.	The City currently operates a 5-year pruning cycle, with approximately 3,455 trees pruned per year.	Approximately 225 trees are removed per year.	The City uses some of the mulch generated from tree work as landscaping material for city parks and medians but does not distribute mulch to residents. In some cases, the City has been able to reuse wood for public benches

1.4.5 Funding Pleasanton's Future Urban Forest Goals

Determining How to Achieve the City's Canopy Cover Goal

Pleasanton's total tree canopy currently averages 25% cover within the City's urban boundary, which is considered above average for a historically grassland area (Nowak and Greenfield 2020). However, the canopy cover is not evenly distributed and 26 of the City's 77 residential neighborhoods have canopy cover below 25% (see Figure 2-3 in the Technical Assessment), Rather than setting a new city-wide canopy cover goal, Pleasanton aims to focus its efforts on those lower canopy neighborhoods, with the ambitious goal of achieving a minimum of 25% canopy cover across all neighborhoods within the next 25 years. This section outlines a potential management strategy to help the City reach this goal.

Management Pathway and Projected Budget Summary

To achieve the City's canopy cover goal, approximately 6,300 new trees will need to be planted within those 26 residential neighborhoods that are lacking the target canopy cover level (**See Table 2-6 in the Technical Assessment**). The City is proposing to achieve the canopy cover goal through a mixed private and public approach over the next 25 years which includes the following:

- Filling all 1,106 vacant tree sites in the targeted neighborhoods (44 trees per year)
- Identifying or potentially creating and planting up to 2,076 new tree sites in targeted neighborhoods (83 trees per year)
- Giving out up to 2,500 trees to residents to be planted in the targeted neighborhoods (100 trees per year)
- Developers planting a total of 625 new trees through the permit requirements of their development projects in targeted neighborhoods (25 trees per year)

This budget model also accounts for the City maintaining its standard tree services such as removing and replanting an average of 175 dead trees per year, watering and structurally pruning newly planted trees as part of a three-year establishment program and pruning an average of 4,670 mature trees per year to maintain a five-year pruning cycle.

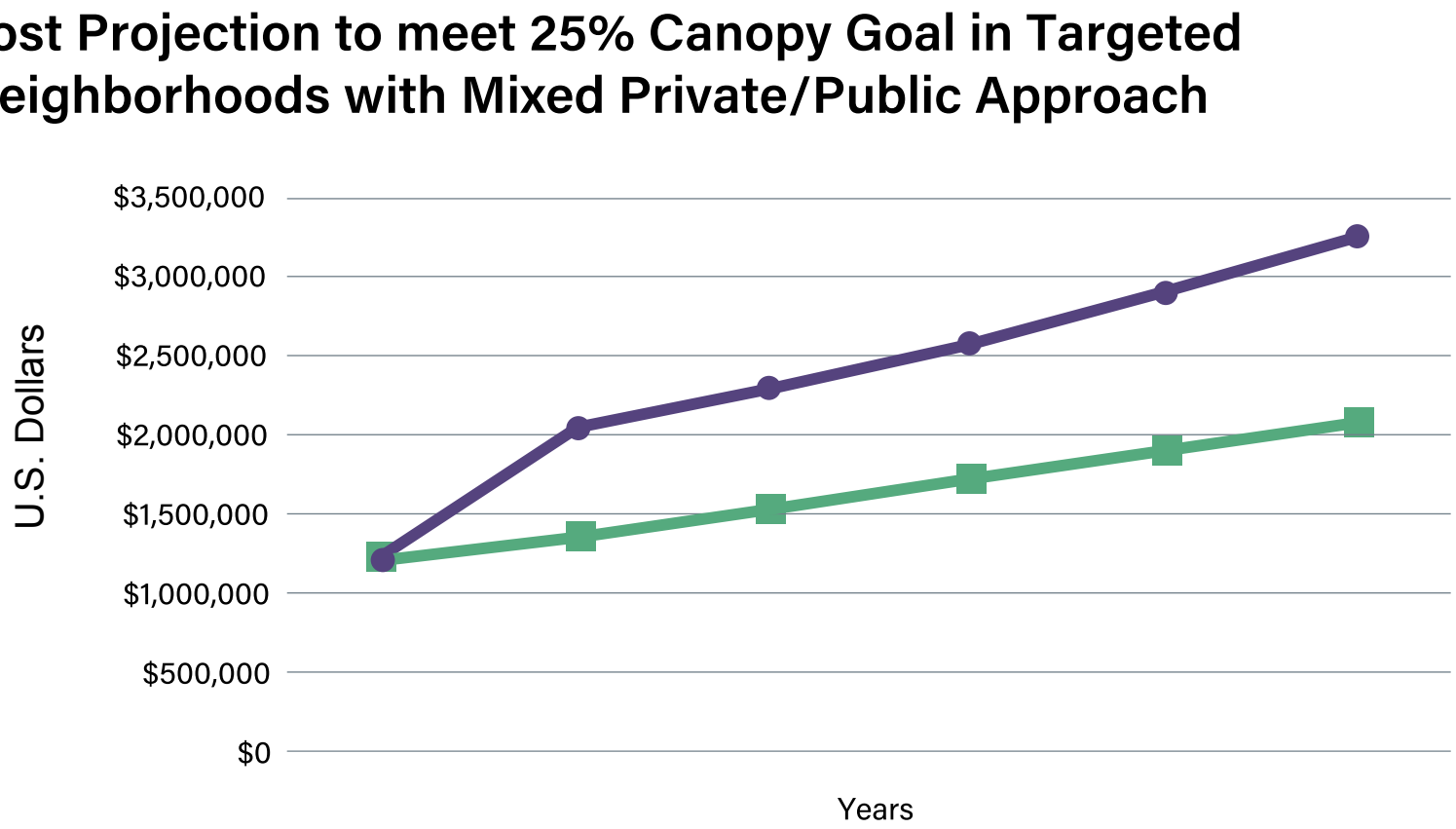
HERE IS A BREAKDOWN OF THE OVERALL PROPOSED PLANTING EFFORT, ON AN ANNUAL BASIS:

- *100 trees given away by City to the community*
- *25 trees planted by developers and businesses*
- *44 trees planted in existing vacant sites by the City*
- *83 trees planted in newly identified or created sites by the City*
- *175 trees removed and replaced by the City*

The planting efforts described in this section total from approximately 420 to 430 trees planted annually on both public and private land throughout the City of Pleasanton.

Based on these assumptions, the City would need to spend an estimated $61.6 million over the 25-year timeline, ranging from roughly $1.2 million annually at year one to $3.2 million annually at year 25, to achieve the canopy goal (Figure 1-9). While the year one projection is roughly equal in cost to the current average annual spending on the urban forestry program, as more trees are planted and needing to be maintained, the year 25 funding needed represents an estimated difference of over $1.2 million from the City's current budget, even when considering a three percent inflation adjustment. This would necessitate that the City identify potential future funding sources (**Appendix E**) to supplement the current urban forest program funding or consider alternate strategies, such as decreasing the establishment program to only one year or having the community take a larger role in the canopy cover goal.

Figure 1-9. Estimated Cost for achieving City's 25% Neighborhood Canopy Cover Goal with a Mixed Private/Public Approach



	1	5	10	15	20	25
Annual Budget Needed to Achieve Urban Forest Goal	$1,244,234	$2,046,179	$2,296,558	$2,567,265	$2,898,549	$3,248,415
Current Urban Forest Budget with 3% Annual Inflation	$1,207,916	$1,352,866	$1,534,053	$1,715,241	$1,896,428	$2,077,616

1.4.6 Highlights of Pleasanton's Trees Among Varied Landscapes

The City of Pleasanton has many areas with prominent tree canopy, and the following section highlights those areas to illustrate the differences in how different key areas are managed for the different types of urban forests.

1.4.6.1 Callippe Preserve Golf Course

The Callippe Preserve Golf Course located in the southern edge of the City contains 952 trees and is surrounded by open space and hiking trails. The golf course is a very different landscape than the other parks maintained by the City.

How it's Managed

The Callippe Preserve Golf Course is managed and maintained by a franchisee, CourseCo, Inc., under an Operator Agreement with the City. To protect this delicate ecosystem, the City responsibly sources its water from groundwater and the South Bay Aqueduct and from seasonal runoff collected in the pond at the bottom of the course. By focusing on water conservation and management, the City ensures the preservation of natural resources and supports the ongoing health of our local wildlife. Trees are an integral part of the golf course and not only add to the aesthetics of the course but also present challenges to golfers along with separating fairways and guiding the direction of the golfer's shots. The trees on the course are primarily pruned on an as needed basis when they interfere with the playability of a hole or grow low enough to interfere with irrigation or cart paths. Dead trees are removed on a routine basis. Tree maintenance is carried out on an annual or biennial basis by a contractor, although minor pruning may be done by maintenance staff.

Many of the trees planted during the construction of the course in 2004-2006 have failed to thrive and are relatively small for their age and species. This could be due to soil conditions and/or poor initial nursery stock. The course was also planted with many cottonwood trees (*Populus fremontii*) when constructed. This species of tree is somewhat short lived in general and is not drought tolerant. Multiple drought cycles and age have taken a toll on the cottonwoods, and many will require removal in the future. As the golf course approaches 25 years of service a concerted effort will be needed to plan for the removal and replacement of trees on the course while considering course design. When replanting, special effort should be given to the selection of nursery stock, planting hole preparation, and establishment.

Value to the Landscape:

Callippe Preserve Golf Course is more than just a place to play golf—it's a sanctuary for local wildlife such as the Callippe butterfly. The City shows dedication to environmental stewardship through the course design, which creates vital habitats for a variety of wildlife species. These habitats not only add to the course's natural beauty but also help maintain the area's ecological balance. There are many native habitat areas throughout the course, often following the contours of seasonal creeks and drainages. The golf course is designated as a Certified Audubon Cooperative Sanctuary by Audubon International. To reach certification, a golf course must demonstrate that they are maintaining a high degree of environmental quality in a number of areas including environmental planning, wildlife and habitat management, outreach and education, chemical use reduction and safety, water conservation, and water quality management.

Callippe Preserve Golf Course

1.4.6.2 Ken Mercer Sports Park

The Ken Mercer Sports Park located in the center of Pleasanton at 5800 Parkside Drive and is one of the largest parks in Pleasanton at 102 acres. The park has 76.5 acres of turf grass and contains 1,577 trees. The park is the home of many of the City's youth sports group programs. The park is a regional draw for several large softball, baseball and soccer tournaments hosted at the park each year. It also features a youth cricket field to support the emerging sport of cricket in the Bay Area.

How it's Managed

The park is maintained by Parks Division staff while the programming of the use of the park is overseen by the Library and Recreation Department. The crew maintaining the park is comprised of six full time staff and three part time staff, all of which are supported by a Parks Supervisor. Major maintenance activities include turfgrass management, irrigation inspections and repairs, ball field maintenance and preparation, tree work, playground maintenance and repair, and general landscape maintenance.

Value to the Landscape:

The Ken Mercer Sports Park is a great community asset. The park is not only the hub for organized youth athletics in the city but also a recreation destination for walking, jogging, and pick-up games. The many tournaments held at the park draw teams from around the region and west coast and the park is an unofficial ambassador for Pleasanton for those traveling to Pleasanton for the first time. The residents of Pleasanton are passionate about the park and have a vested interest in its maintenance and future success.


Ken Mercer Sports Park

1.4.6.3 Downtown Mainstreet Trees

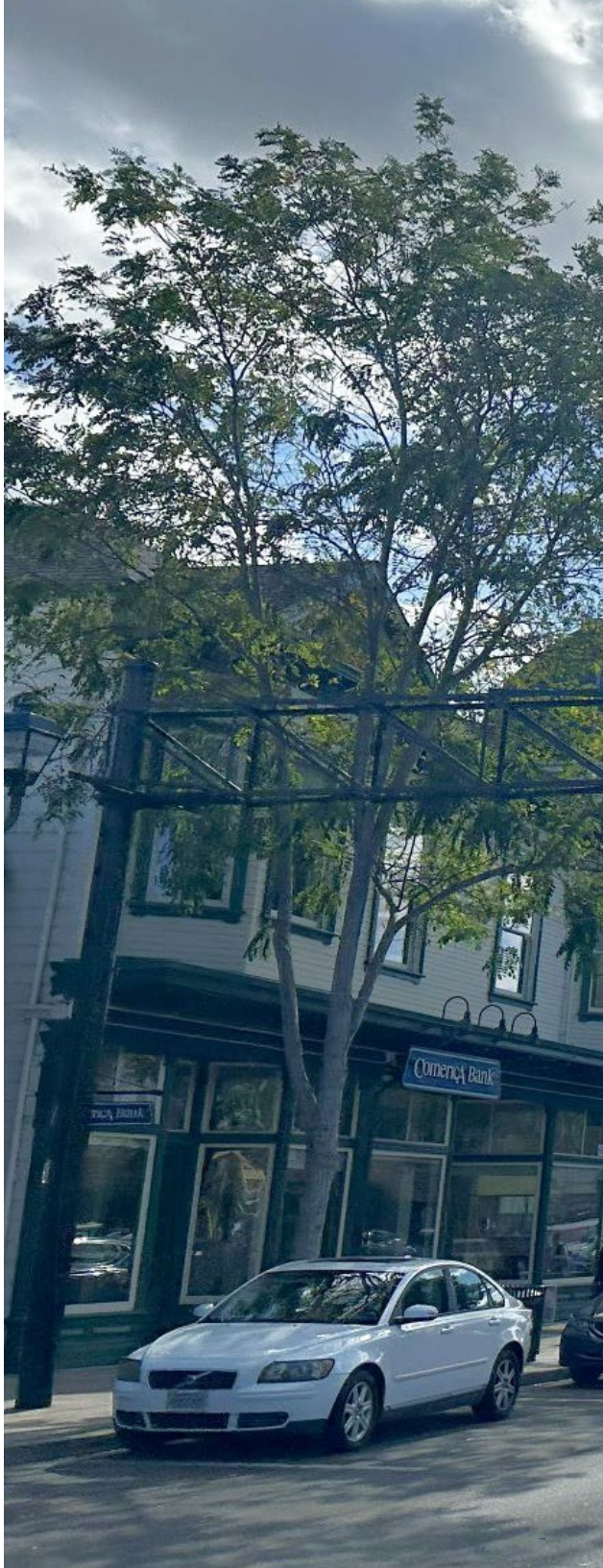
Main Street runs through the heart of Pleasanton and represents the City's character to both residents and visitors. The stretch of Main Street from Bernal Avenue to Del Valle Parkway contains 168 trees.

How it's Managed

The trees that line Main Street are pruned every two to three years or as needed if specific issues arise. The predominate species of tree on Main Street is the Purple Robe Locust (*Robinia pseudoacacia* 'Purple Robe'), which were planted in large numbers when the streetscape was revitalized in the mid-nineties. The locust trees were chosen for their fast growth, upright growth habit, and foliage characteristics. In recent years many of the locust trees have been removed due to decline and structural defects. A new tree species list specific for Main Street planting was created to guide the future tree replacements along this vital commercial corridor. The new tree species selected were chosen for their dependable track record in the City and for their size and growth habits. A variety of tree sizes were included to accommodate the often-constricted planting locations. Newly planted trees along Main Street are regularly watered during the first three years of establishment.

Value to the Landscape:

The trees that line Main Street help to define the character of the downtown by softening and greening the built environment. The trees also define the entrance to a well-cared for commercial district. The shade provided by the trees is welcomed by visitors as they walk around visiting shops and restaurants. The importance of the shade provided by the street trees has increased in the past several years with the post COVID-19 Pandemic expansion of outdoor dining and the closure of Main Street to vehicles on designated weekends from May through September.



Downtown Mainstreet

2

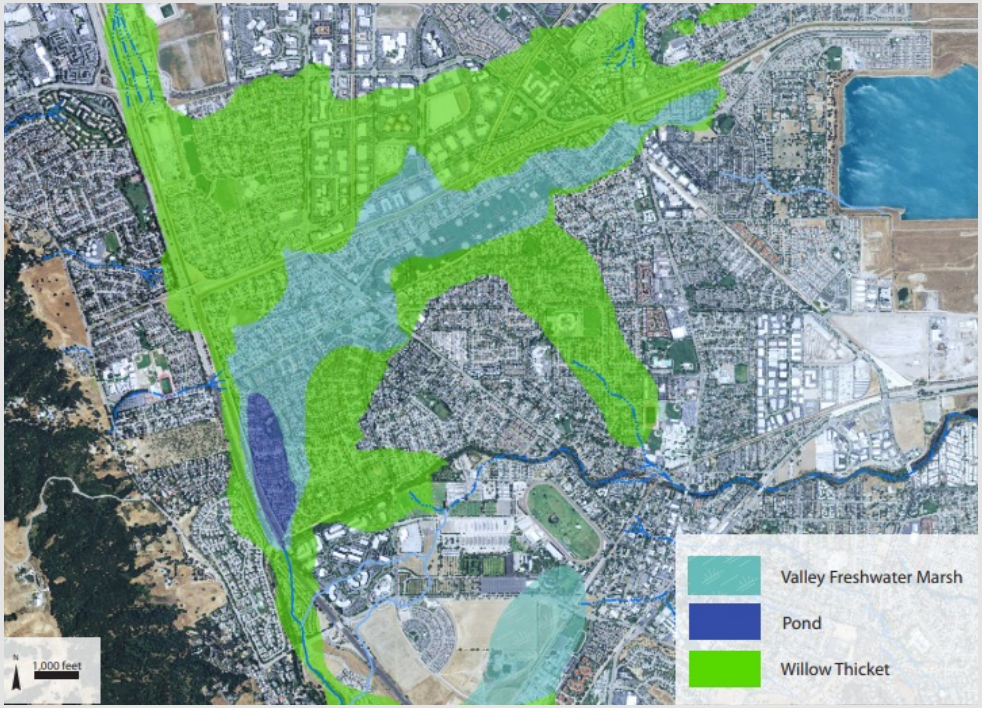
CONTEXT

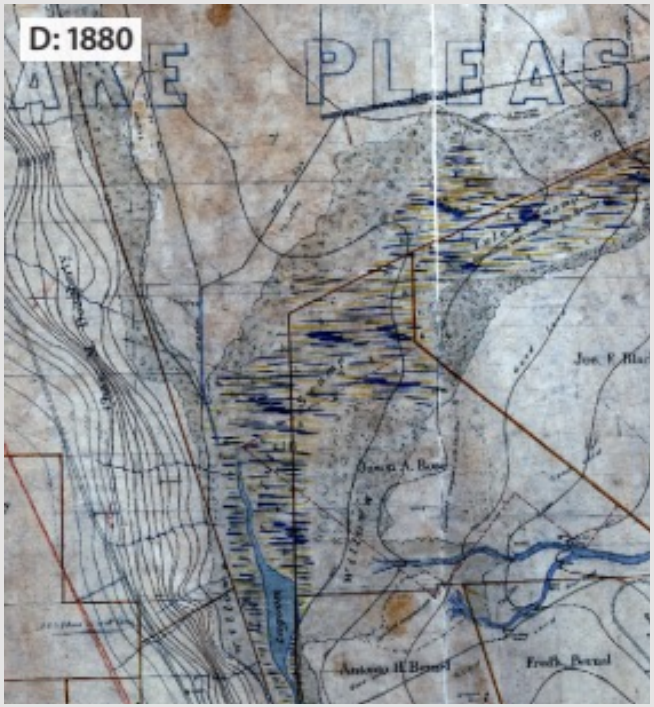
2.1 History

Pre-Founding

Pleasanton rests in the scenic Tri-Valley area of Alameda County, north of San Jose and east of San Francisco. Pleasanton is surrounded by the East Bay hills to the west, Altamont Hills to the east, and Diablo Range to the north and south. Historically, the Pleasanton area was located on a vast marsh complex surrounded by seasonal wetlands (**see Figure 2-1**) that supported a mix of open water ponds, freshwater marsh, and dense willow thickets, which provided habitat for a wide range of flora and fauna species.

Figure 2-1. 1880 Habitat map overlay showing where the historic marsh complex existed before the City was developed





Source: San Francisco Estuary Institute, 2013

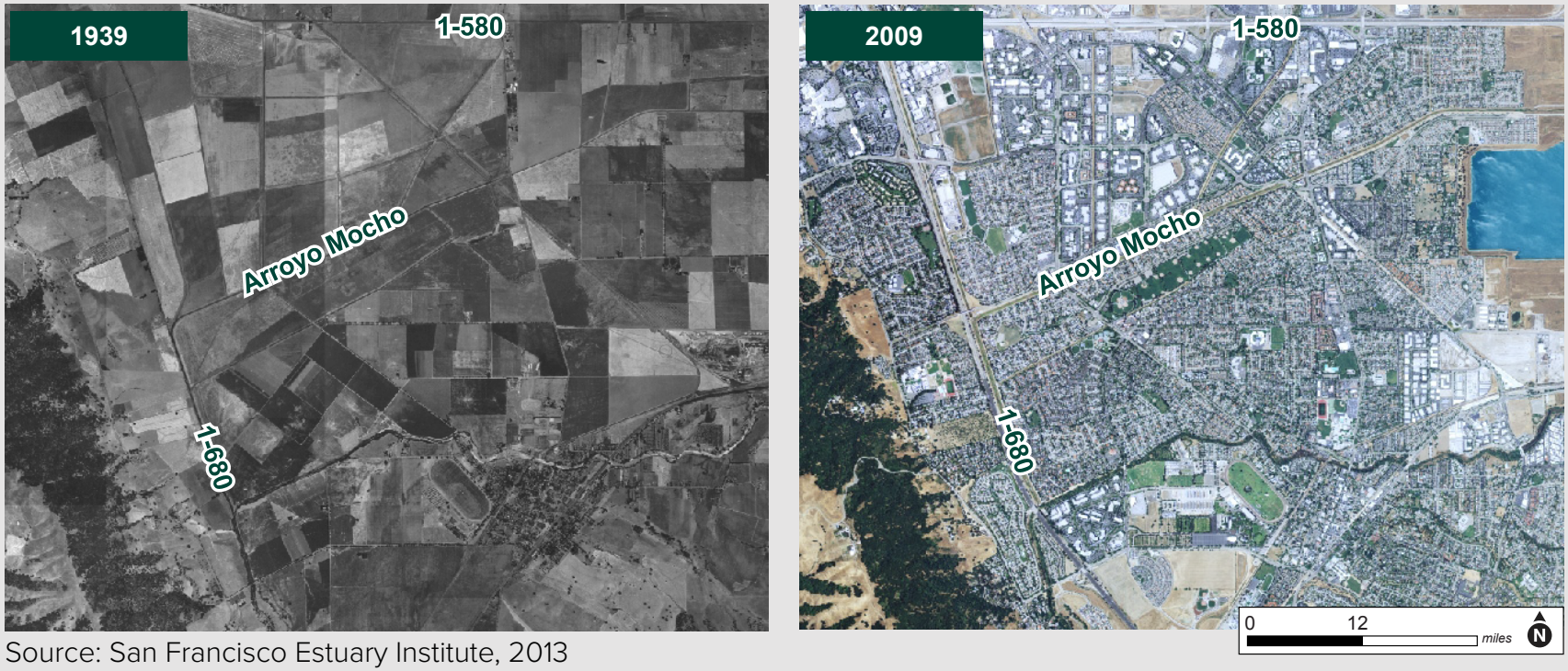
Figure 2-2. Historic photograph of Pleasanton showing scattered oaks and other trees

Source: San Francisco Estuary Institute, 2013

Founding and Development

In the mid-1800s, as agriculture took over, some marsh and wetlands were drained via a series of modified channels. The City was officially founded in 1894 and was a thriving community by 1900. By 1912, few wetlands remained in the Pleasanton area. Most trees grew along edges of the canals and written accounts document that most remnant oaks visible on historical aerial photographs (**Figure 2-2**) occur at such low densities that the area was best classified as grassland (SFEI 2013).The City likely lost additional trees growing in the grasslands as these areas were converted to ranching, dairy farms, hop fields, and vineyards. In the 1930s sand and gravel mining became an important and profitable industry, which likely would have impacted riparian trees and vegetation. Pleasanton experienced a large population boom in the 1960s and 1970s, resulting in a conversion of much of the agricultural land to residential and commercial land uses, and beginning the establishment of the City's urban forest. Another important event was the construction of the 850-acre Hacienda, a large business park, in the 1980s, which was built on old swampland, and established many trees in this important economic center of Pleasanton.

Figure 2-3. Paired aerial images from 1939 and 2009 showing the substantial land use transformation within Pleasanton.



Source: San Francisco Estuary Institute, 2013

Creation and Updates to the Tree Preservation Ordinance

The City of Pleasanton began prioritizing tree preservation when they created and adopted its first Tree Preservation Ordinance (Ordinance) in 1971. The Ordinance recognizes certain trees as “Heritage Trees” and protects them from removal, destruction or disfigurement on both public and private property. The Ordinance is responsible for protecting all trees in Pleasanton, regardless of species and is the primary reason that Pleasanton enjoys a mature canopy in many of its neighborhoods. Cited as one of the reasons Pleasantonians love their town, big trees have the Tree Preservation Ordinance to thank for protecting them over generations of change in the city.

The Ordinance has been updated a number of times since it was first adopted. In 1995, requirements were added to have pruning of Heritage trees be in accordance with ISA standards, and the penalty for removing a heritage tree without a permit was also modified to include the appraised value of the tree. In February of 1998, the permitted reasons for removal of a heritage tree were broadened and the penalty for unpermitted removal was further refined so that applicants weren't charged more than the appraised value of the tree, when those trees were appraised at a value less than $5,000 per tree. A month later in March of 1998, the Heritage Tree Board of Appeals was added to the Ordinance so that a staff decision regarding the denial of a tree removal permit could be challenged by the applicant without being required to appeal to City Council. A number of changes to the Ordinance were also made between 2011 and 2021, which are summarized in **Table 2-1** below:

Table 2-1. Updates to the Pleasanton Tree Preservation Ordinance From 2011 to 2021

Date	Ordinance Modification
March 2011	Modified to state only the property owner, or the property owner's representative, can apply for removal of a heritage tree located on their property. Also provided minor clarifications to appeals process.
May 2015	Language changed to provide staff some discretion regarding fines for illegal heritage tree removal.
August 2017	Clarified that denial of an application to remove a heritage tree can be appealed to the appeal board even when not associated with new development. Clarified tree removal requirements for new developments. Amended the appeal process to clarify rules associated with certified consulting arborists, noticing, mitigation, and penalties. Clarified the pruning guidelines
May 2018	Removed the requirement for formal written findings supporting the appeal board's decisions. Allowed appeals of penalties associated with illegal tree removal/pruning to be heard by the appeal board
May 2019	Clarified that leaf drop is not a nuisance and does not justify removal. Updated the appeal board hearing procedure. Provided discretion whether a tree report be required for new developments. Increased the bond amount paid by developers to ensure tree preservation as required by conditions of entitlement.
June 2021	Required tree planting somewhere on property when a heritage tree removal application is approved.

As the many updates above show, the municipal code for the Ordinance has been modified on a routine basis, with most modifications designed to improve and provide clarity to the process. The City has enforced the Ordinance since its adoption through joint efforts by the Community Development and Public Works Departments. It is the responsibility of these staff to properly manage and enforce the municipal code chapter equitably. Staff strives to provide a transparent and consistent process regarding tree removal and penalties. Updates to the municipal code chapter are presented to City Council for approval as staff comes across unique situations and/or learns how to better handle processes. City staff worked with the City Council to update the Tree Preservation Ordinance again as part of the UFMP process to provide additional protections for native trees, improve the clarity of the overall ordinance, and align penalties and fees more closely with neighboring cities. The most recent version of the Tree Preservation Ordinance as of the adoption date of this document has been in effect since January 2025.

Pleasanton Today

Pleasanton currently holds the title of a Tree City USA, an honorary recognition by the Arbor Day Foundation, as trees continue to make up an important part of its overall character and provide many environmental benefits to its residents. While 25% city-wide canopy cover is a great achievement, the City needs to increase canopy cover in all census tracts to 25% to meet its CAP 2.0 goals of sequestering 1,200 metric tons of CO_2e by 2030 from UFMP-related efforts.

2.2 Developing the Pleasanton Urban Forest Master Plan

The City of Pleasanton began the process of developing the UFMP in March of 2023. The City Landscape Architect, Landscape Architect Assistant, and Parks Division Manager were the main staff responsible for overseeing the UFMP's development and provided important insights into the City's urban forestry practices, as well as the specific City standard documents and other data sets that were crucial for analysis. These City staff also coordinated with internal and external stakeholders, and co-hosted community engagement events which shed light on the community's interactions and perspectives around City trees. The following sections detail the analysis, community engagement activities, and processes involved in developing the UFMP:

2.2.1 Urban Forest Inventory and Analysis

Public Tree Inventory

Between June 2023 and March 2024, tree inventory data was collected for all City-managed trees, including along city sidewalks, medians, parks, City facilities, and the Callippe Preserve Golf Course. An accurate inventory helps determine the current condition and associated benefits of City trees and inform management recommendations.

Canopy Cover Analysis

High-resolution aerial imagery and LiDAR data from 2022 were developed into a land classification layer to determine the City's canopy cover. Canopy cover was then processed for the years 2012, 2018, and 2022 to identify total area covered by tree canopy from both City trees and private property trees over time. This analysis determined if the City's tree canopy is increasing, decreasing or remaining the same, and informed the canopy cover goals for the City of Pleasanton. See **Appendix F** for the full methodology on the Land Cover Classification and Canopy Change Analysis

2.2.2 Analysis of Budget, Current Plans, Policies, and Ordinances

A comprehensive review was conducted of Pleasanton's urban forestry program and related plans, policies, and ordinances to better understand the effectiveness of City tree management. This review included analyses of urban forest funding, staffing policy and procedure manuals, municipal plans, tree ordinances, design guidelines, and planning documents. Knowing and understanding the baseline conditions of these documents provides a guide for monitoring present achievements to compare to future urban forestry practices and goals.

Funding and Staffing

City staff interviews, contractor interviews and a comprehensive analysis of work records were used to discover trends, gaps, and high-cost areas that informed the Funding Pleasanton's Future Urban Forest Goals Analysis discussed in Section 1.4.6.

Policies and Ordinances

The Municipal Code Chapter 17.16 Tree Preservation (Tree Preservation Ordinance) was reviewed and updated as part of the UFMP process. The updated ordinance clarifies tree protections, tree replacement requirements, fees, and the overall tree removal permit process, and aligns with ISA Best Management Practices (BMPs).

Planning

The City of Pleasanton's General Plan, Climate Action Plan 2.0, Downtown Parks and Trails Master Plan, Pleasanton Downtown Design Guidelines, and Pleasanton best management practice details for tree planting, care, and pruning were reviewed for the development process. The UFMP directly supports these plans and provides updated urban forestry and tree-related information that should be incorporated as these plans are updated.

2.2.3 Department and Interested Party Interviews

City staff from various departments and the Hacienda General Manager, who manages the largest amount of commercial private property in the city, were interviewed to further inform the urban forest analyses (**Table 2-2**). Gathering input from various groups that impact urban forestry illuminated the core values of the community and informed key development processes of the UFMP. The City Departments, their position, and other interviewees are listed below, and a summary of the responses can be found in **Appendix G**.

Community Engagement Summary

What we learned

Pleasanton residents expressed a deep appreciation for trees and the many benefits they provide. One of their main concerns lies in the persistent infrastructure conflicts caused by tree roots. This underscores the critical need for thoughtful infrastructure design and repairs, species selection, and strategic spacing in future planting efforts to avoid sidewalk uplift and underground utility problems.

Providing the community with educational resources about infrastructure conflicts, why they occur, and how they can be avoided will be beneficial in increasing community advocacy for maintaining and increasing Pleasanton's urban tree canopy while bolstering UFMP implementation.

Table 2-2. Department and Interested Party Interview Participants

Department	Position
Public Works	• Streets and Signs Supervisor
	• Engineering Technician
	• Public Works Inspector
	• Parks Division
Landscape Architect Office	• Landscape Architect
Claims and Liability	• Assistant City Attorney
Public Works - Utilities	• Utilities Supervisor
Community Development	• Associate Planner
	• Traffic Engineer
Business Representative	• Hacienda General Manager

Interview questions included the following:

- ***What are the various tree and urban forest-related functions of your role?***
- ***How does your Department/Office/business interface with City departments that manage trees?***
- ***What are the most common issues with trees that you deal with or see in your Department?***
- ***What are the greatest challenges/opportunities facing the City's urban forest?***
- ***How do you envision the City's urban forest in 25 years?***

2.2.4 Community Engagement

Community outreach was a key step in understanding and amplifying the voices of Pleasanton's community. Initiated in the Summer of 2023, community members were engaged in outreach efforts that included the following activities and educational materials:

- Two Online Pleasanton Tree Surveys which were distributed at engagement events using a QR code. The results are presented in Appendix H. (686 responses total)
- Tabling at community events including farmers markets and summer concerts with educational material describing tree benefits
- Engaging the Pleasanton Youth Commission to gather ideas on effective engagement methods for youth culminating in a youth survey
- Pleasanton UFMP website (ptowntrees.org), detailing project updates, educational materials, public meeting notifications, and other community resources
- Social media outreach through the City of Pleasanton's channels
- An Urban Forest Summit to inform the community on the status of Urban Forest Management Plan, preliminary tree inventory and canopy cover analysis results, and community perspectives on the urban forest and Pleasanton's UFMP Vision Statement (approximately 50 attendees).
- Working Group (3 meetings, 8 members)

Working Group Meetings

The consultant team, seven key City staff, and one business leader formed a working group and met three times during the plan development process. These three meetings provided an opportunity for the consultant team to relay key findings to the working group, get feedback on the draft plan, and discuss and prioritize strategies and actions for addressing current issues and achieving Pleasanton's future urban forestry goals. The result was the creation of the UFMP's vision statement, guiding principles, and the strategic, implementation and monitoring plans, which can be found in the next section.

3

THE PLAN

VISION

Pleasanton's urban forest is a well-managed, vital resource providing social, economic, and environmental benefits which contribute to the community's quality of life, value, character, and beauty.

Guiding Principles

The Guiding Principles were created by the Working Group as themes that reflect the overall vision for Pleasanton's urban forest and help to direct the goals and objectives of the UFMP.

Table 3-1. Guiding Principles and Strategies

Guiding Principles

Guiding Principle	*Purpose / Strategy*
1 **A resilient community**	Proper species selection (right tree, right place) is fundamental to creating a thriving urban forest that can better withstand extreme heat and unpredictable weather conditions as well as threats from pests and diseases.
2 **A community invested in preserving and growing the Urban Forest**	Educating residents about the value that trees provide and the importance of protecting them through the tree preservation ordinance. Encouraging all members of the community to take a more active role in protecting, preserving, and growing the urban forest.
3 **City trees are funded and managed to maximize the benefits for the public**	The urban forest program needs to have consistent sufficient financial investment and staffing for the City to effectively manage its trees for the benefit of the public.
4 **Integrate trees from the start**	Prioritize the inclusion of trees and green spaces in the initial planning and design stages of every development project to maximize environmental benefits and reduce infrastructure conflicts. Trees should be considered essential infrastructure, not an afterthought.

The goals and actions below were created by the Working Group as specific, measurable strategies for achieving the City's vision for the urban forest. They are organized by the four Guiding Principles.

Table 3-2. Guiding Principle No. 1: A Resilient Community

GUIDING PRINCIPLE 1: *A Resilient Community* 1			
GOAL	**Action No.**	**Action**	**TIME FRAME**
1.1 - Achieve urban forest sustainability indicators of age, distribution, health condition, and relative performance index (RPI) by 2050.	**1.1A**	Every 5 years, complete an analysis of the tree inventory using iTree to calculate GHG emissions reductions from the city's tree inventory in alignment with CAP initiatives.	Ongoing / Every 5 years
	1.1B	Implement phased removal and replacement of undesirable species. As trees age and require replacement, replace with climate appropriate species identified by the Recommended Species List with the goal of planting the right tree in the right place.	Long (25 years)
1.2 - Residents will prioritize drought tolerant, climate and size appropriate species when planting on private property.	**1.2A**	Create and distribute informational materials with recommended drought tolerant and other climate appropriate species for private property to hand out at commonly attended public events, in addition to having resources on the City's website. Review private development plans to ensure properly sized trees are specified.	Short (5 years)

Table 3-2. Guiding Principle No. 1: A Resilient Community

GUIDING PRINCIPLE 1:
A Resilient Community 1

GOAL	Action No.	Action	TIME FRAME
1.3 - Maintain and grow a healthy and diverse urban forest to bring the canopy cover in each neighborhood to 25% by 2050.	**1.3A**	Annually plant 40 to 50 trees (in addition to planting replacement trees for any removals) on city-owned land and right of way.	Ongoing / Annually
	1.3B	Provide a three-year establishment care period for all newly planted trees.	Ongoing / Annually
	1.3C	Prioritize City tree planting and establishment care resources to neighborhoods with the lowest canopy cover and highest tree priority planting index scores as established in the UFMP. Achieve 25% canopy cover in all Pleasanton neighborhoods by 2050.	Long (25 years)
	1.3D	Fill at least 1,100 of the 4,000 City-managed vacant tree planting sites to create more tree-lined streets throughout Pleasanton by 2050. Assess all City managed properties to identify new viable tree planting locations and incorporate new viable sites into tree inventory.	Long (25 years)

Table 3-3. Guiding Principle No. 2: A community invested in preserving and growing the Urban Forest

GUIDING PRINCIPLE 2:
A community invested in preserving and growing the Urban Forest 2

GOAL	Action No.	Action	TIME FRAME
2.1— By 2035, engage at least 50% of residents through outreach and informational efforts on the City's UFMP and updated Tree Preservation Ordinance that is representative of all residential types and demographics within the City.	**2.1A**	Host a table with information about the benefits of the City's Urban Forest at an Arbor Day or Earth Day event each year. Inform residents how they can get involved in the Urban Forest.	Ongoing / Annually
	2.1B	Maintain an information webpage for education on the City's trees, and host urban forest data like canopy cover, tree inventory statistics, current legislation and annual trees planted and removed.	Ongoing / Annually
	2.1C	Develop guidelines and educational materials for planting and siting of trees to sequester carbon and highlight other benefits like reduced energy costs in support of the Climate Action Plan 2.0.	Short (5 years)
	2.1D	Host 3 workshops over the next 5 years to inform and educate residents on the updated Tree Preservation Ordinance with a target reach at least 1,000 people.	Short (5 years)
	2.1E	Provide educational information to commercial property owners on the benefits of trees for businesses to encourage commercial property owners to plant and maintain trees.	Short (5 years)
	2.1F	Create public map that identifies the Heritage trees throughout the City.	Medium (10 to 15 years)

Table 3-3. Guiding Principle No. 2: A community invested in preserving and growing the Urban Forest

GUIDING PRINCIPLE 2:
A community invested in preserving and growing the Urban Forest 2

GOAL	Action No.	Action	TIME FRAME
2.2 – Pleasanton has established volunteer groups, HOAs and nonprofit organizations that strive to improve and maintain the urban forest on private property.	**2.2A**	The City will aim to purchase and give away up to 100 trees/ seedlings per year to community members with tree planting and care information resources at tree giveaway events.	Ongoing / Annually
	2.2B	Host a shade tree giveaway event each year, in partnership with a utility or conservation district (Zone 7 Water Agency, PG&E, or Alameda County Resource Conservation District, etc.) for an annual tree giveaway.	Short (5 years) then Ongoing / Annually
	2.2C	Partner with a non-profit to increase tree planting on private property.	Short (5 years)
	2.2D	Implement a rewards or acknowledgement program for commercial properties with exemplary tree cover.	Short (5 years)
	2.2E	Reach out to HOAs, school districts and volunteer groups about opportunities to plant and maintain trees on private property.	Medium (10 to 15 years)

Table 3-4. Guiding Principle No. 3: City trees are funded and managed to maximize the benefits for the public

GUIDING PRINCIPLE 3: 3

City trees are funded and managed to maximize the benefits for the public

GOAL	Action No.	Action	TIME FRAME
3 — Develop the financial and human resources necessary to effectively manage the urban forest and implement the UFMP.	**3A**	Allocate adequate funding for the urban forest program over the next 25 years to achieve the plan goals.	Ongoing /Monthly
	3B	Maintain an updated inventory to reflect plantings, removals, pruning, and other maintenance.	Ongoing /Monthly
	3C	Explore the capacity of current positions or create an Urban Forest Division that's overseen by an Urban Forest Manager who is an arborist to coordinate with all City departments in implementation of the UFMP, urban forestry programming, and community engagement efforts (finding and applying for grants, educating public, coordinating with non-profits).	Short (5 years)
	3D	Explore potential partnerships with non-profits and community-based organizations (CBOs) to apply for grant funding (Workforce development, etc).	Short (5 years)
	3E	Explore ways to more proactively manage tree risk.	Short (5 years)
	3F	Explore developing an in-lieu fee program under the Tree Preservation Ordinance where permit applicants can pay into a mitigation fund designated for urban forest management when there is no suitable location for a mitigation/replacement tree on the applicant's property.	Short (5 years)
	3G	Expand reuse of urban wood for mulch on public land (See CAP goal E12).	Medium (10 to 15 years)

Table 3-5. Guiding Principle No. 4: Integrate trees from the start

GUIDING PRINCIPLE 4: *Integrate trees from the start* 4			
GOAL	**Action No.**	**Action**	**TIME FRAME**
4 — Trees are included in the beginning of the planning process to improve landscaped settings and habitat, maximize environmental benefits, and reduce infrastructure conflicts. Achieve a 25% increase in trees preserved through the development process after 10 years.	**4A**	Establish objective standards and streamlined procedures to review development plans, in the early stages of a project, for tree protection and planting, and mitigation measures/fees as necessary.	Short (5 years)
	4B	Increase the landscape and hardscape shade requirements for developers from the current standard of 20% to 25% (Section 5.106.12.2 and Section 5.106.12.3).	Short (5 years)

4

IMPLEMENTATION PLAN

The Implementation Plan below organizes the actions from the Strategic Plan into a prioritized list broken down by ongoing actions, high-priority short term actions to be completed in the first five years, medium term actions to be completed between years six through fifteen, and long-term actions to be completed between years 16 and 25.

TABLE KEY:
COST: $ Low (0-$25,000), $$ Medium ($25,000 -$50,000), $$$ High ($50,000 - $100,000)

Ongoing Actions

ACTION NO.	ACTION	COST	RESPONSIBLE PARTY	METHOD OF MEASUREMENT
1.3A	Annually plant 40 to 50 trees (in addition to planting replacement trees for any removals) on City-owned land and right-of-ways	$$	Parks	Number of new trees and replacement trees planted each year
1.3B	Provide a three-year establishment care period for all newly planted trees.	$$$	Parks	Number of trees provided with a three-year establishment care period.
2.1A	Host a table with information about the benefits of the City's Urban Forest at an Arbor Day or Earth Day event each year. Inform residents how they can get involved in the Urban Forest.	$	Landscape Architecture / Parks	Number of residents from each neighborhood who attended information events

Ongoing Actions

ACTION NO.	ACTION	COST	RESPONSIBLE PARTY	METHOD OF MEASUREMENT
2.1B	Maintain a webpage for community input on the City's trees, and host an interactive map, urban forest data like canopy cover, tree inventory statistics, current legislation and annual trees planted and removed.	$	Landscape Architecture	Website regularly updated and checked for community input
2.2A	The City will aim to purchase and give away up to 100 trees per year with tree planting and care information resources at tree giveaway events.	$	Landscape Architecture	Number of trees given away annually
3A	Allocate adequate funding for the urban forest program over the next 25 years to achieve the plan goals.	$$$	Landscape Architecture / Parks/City Council and Management	Annual funding should include additional resources for tree maintenance, arborist review for planning and development; implementation of the updated tree ordinance, and an expanded tree planting program over and above current funding levels. Funding may also go to a new position for an Urban Forest Manager.
3B	Maintain an updated inventory to reflect plantings, removals, pruning, and other maintenance.	$$	Landscape Architecture / Parks	City's tree inventory updated on a yearly basis at minimum.

Years 1–5 / High Priority Short Term Actions

ACTION NO.	ACTION	COST	RESPONSIBLE PARTY	METHOD OF MEASUREMENT
1.1A	Every 5 years, complete an analysis of the tree inventory using iTree to calculate GHG emissions reductions from the city's tree inventory in alignment with CAP initiatives.	$$$	Landscape Architecture	Results from analysis reported every 5 years
1.2A	In addition to having resources on the City's website, create and distribute informational materials with recommended drought tolerant and other climate appropriate species for private property to hand out at commonly attended public events.	$	Landscape Architecture	Number of new drought tolerant species planted on private property.
2.1C	Develop guidelines and educational materials for planting and siting of trees to sequester carbon and highlight other benefits like reduced energy costs in support of the Climate Action Plan 2.0	$	Landscape Architecture	Materials developed and distributed
2.1D	Host 3 workshops over the next 5 years to inform and educate residents on the updated Tree Preservation Ordinance with a target to reach at least 1000 people.	$	Landscape Architecture	Number of residents who attended information events

Years 1–5 / High Priority Short Term Actions

ACTION NO.	ACTION	COST	RESPONSIBLE PARTY	METHOD OF MEASUREMENT
2.1E	Provide educational information to commercial property owners on the benefits of trees for businesses to encourage commercial property owners to plant and maintain trees.	$	Landscape Architecture & Commercial Property Owners	Informational materials developed and number of commercial property owners reached.
2.2B	Host a shade tree giveaway event each year, in partnership with a utility or conservation district (Zone 7 Water Agency, PG&E, or Alameda County Resource Conservation District, etc.) for an annual tree giveaway.	$$	Landscape Architecture	Tree giveaway events hosted, or number of trees given away. Promotion of appropriate species to plant under utilities
2.2C	Partner with a non-profit to increase tree planting on private property	$	Landscape Architecture	Number of non-profits partnered with
2.2D	Implement a rewards or acknowledgement program for commercial properties with exemplary tree cover.	$$	Landscape Architecture	Establishment of rewards/ acknowledgement program, and number of rewards/ acknowledgments given

Years 1–5 / High Priority Short Term Actions

ACTION NO.	ACTION	COST	RESPONSIBLE PARTY	METHOD OF MEASUREMENT
3C	Explore the capacity of current positions or create an Urban Forest Team that's overseen by a dedicated Urban Forest Manager who is a certified arborist to coordinate with all City departments in implementation of the UFMP, urban forestry programming, and community engagement efforts. (Finding and applying for grants, educating public, coordinating with non-profits)	$$$	Public Works Director/ Landscape Architecture	The Urban Forest Manager position will be responsible for internal City coordination and external engagement with the community on tree management activities. The Urban Forest Manager will ensure progress towards the vision and goals of the UFMP, including increased public engagement, seeking grant and other funding, and developing ongoing partnerships with interested parties like non-profit organizations, the school district, and large landowners for urban forest efforts. This position should be placed in Public Works, which currently manages program budget and tree maintenance contractors
3D	Explore potential partnerships with non-profits and CBOs to apply for grant funding (e.g. Living Arroyos).	$	Landscape Architecture	Number of dollars of funding secured, or partnerships built with other non-profits
3E	The City will explore ways to more proactively manage tree risk.	$$	Landscape Architecture / Parks	Number of trees assessed for risk annually. No backlog of tree maintenance requests at the end of each month.

Years 1–5 / High Priority Short Term Actions

ACTION NO.	ACTION	COST	RESPONSIBLE PARTY	METHOD OF MEASUREMENT
3F	Explore developing an in-lieu fee program under the Tree Preservation Ordinance where permit applicants can pay into a mitigation fund designated for urban forest management when there is no suitable location for a mitigation/replacement tree on the applicant's property.	$$	Landscape Architecture	Adoption of an in-lieu fee program under the Tree Preservation Ordinance
4A	Establish objective standards and streamlined procedures to review development plans, in the early stages of a project, for tree protection and planting, and mitigation measures/fees as necessary.	$	Landscape Architecture	Objective standards developed for plan review process
4B	Increase the landscape and hardscape shade requirements for developers from the current standard of 20% to 25% (Section 5.106.12.2 and Section 5.106.12.3).	$	Landscape Architecture	Number of meetings hosted with the development community.

Years 6–15 / Medium Term Actions

ACTION NO.	ACTION	COST	RESPONSIBLE PARTY	METHOD OF MEASUREMENT
2.1F	Create a public map that identifies the Heritage and Protected trees throughout the City.	$$	Landscape Architecture	Map developed and updated quarterly
2.2E	Reach out to HOAs, school districts, and volunteer groups about opportunities to plant and maintain trees on private property.	$	Landscape Architecture	Number of HOAs, school districts, and volunteer groups contacted / Number of trees planted on private property through these voluntary efforts.
3G	Expand reuse of urban wood for mulch on public land (See CAP goal E12).	$$	Landscape Architecture / Parks	Increased use of urban wood mulch on public land

Years 16–25 / Long Term Actions

ACTION NO.	ACTION	COST	RESPONSIBLE PARTY	METHOD OF MEASUREMENT
1.1B	Implement phased removal and replacement of undesirable species. As trees age and require replacement, replace with climate appropriate species identified by the Recommended Species List with the goal of planting the right tree in the right place.	$$$	Landscape Architecture / Parks	Achieve a City-managed tree inventory comprising no more than 10% of one species, 20% of one genus with the exception of native species.
1.3C	Prioritize City tree planting and establishment care resources to neighborhoods with the lowest canopy cover and highest tree priority planting index scores as established in the UFMP. Achieve a 25% canopy cover in all neighborhoods by 2050.	$$	Parks	Percent increase in canopy cover in the neighborhoods with the highest tree priority planting index scores. Measure city-wide and Census tract canopy cover every 5 years using the latest published U.S. Forest Service canopy cover data. https://data.fs.usda.gov/geodata/rastergateway/treecanopycover/
1.3D	Fill at least 1,100 of the 4,000 City-managed viable tree planting sites to create more tree-lined streets throughout Pleasanton. Assess all City managed properties to identify new viable tree planting locations and incorporate new viable sites into tree inventory.	$$$	Parks	Number of vacant viable tree planting sites filled.

5

MONITORING PLAN

5.1 Assessing Our Progress

The City needs a way to track actions completed within the Implementation Plan to measure the progress it makes towards its urban forest goals. The Community Assessment and Goal-Setting Tool was created by the Vibrant Cities Lab just for this purpose. Vibrant Cities Lab is a collaboration of partners which includes the United States Forest Service, American Forests, and the National Association of Regional Councils, and serves as an online hub of urban forest and tree research, best practices, and planning tools (http://vibrantcitieslab.com). The Assessment and Goal-Setting Tool is based on research of urban forest sustainability and establishes criteria and indicators to measure urban forest sustainability. The tool is used as an assessment to define the City's current state of a specific area of urban forest sustainability. The user decides what the City's current state of the metric is, and then sets where the goal metric should be. Each metric is assigned a point value, and the City is assigned a "Total Current Score" and a "Gap Score," or how far off the current state is from the desired goal. A city that has a gap score between 20 to 40 is not far from achieving the goals of its urban forest program. Conversely, gap scores of 40+ indicates that a City is still implementing programs and policies to close the gap and develop a sustainable urban forest.

Pleasanton's first assessment was conducted on September 8, 2024, by City staff and the consultant team. **Table 5-1** reflects the results from the first assessment, which set the baseline for the City's "Total Current Score" at its pre-UFMP metrics. Staff used Vibrant Cities Lab's rating descriptions to determine Pleasanton's status (prior to the UFMP process) for the various categories and then chose the goals they want to achieve in each category to determine the gap between the two ratings.

Based on the first assessment, the City has a current rating of 31, with a gap score of 70. The City's UFMP monitoring plan should be based around the Vibrant Cities Lab Community Assessment and Goal Setting Tool and be retaken each year to track, measure, and highlight progress. The assessment can also be used to demonstrate successes and justify additional funding asks to City Council. After the completion of this UFMP, several of the responses that had significant gaps such as the lack of a UFMP (5) and an urban tree canopy assessment (5), will have already been achieved.

Table 5-1. Tree Canopy Goal Assessment Summary (Pre-UFMP)

Category	Current Rating		Goal Rating		Gap
Canopy cover	The existing canopy cover for entire municipality is 75%-100% of the desired canopy.	2	The existing canopy is >75%-100% of desired – at individual neighborhood level as well as overall municipality.	4	2
Inventory	Complete or sample-based inventory of publicly owned trees.	1	Inventory guides planning, management decisions.	2	1
Assessment Methodology	Low-resolution and/or point-based sampling of canopy cover using aerial photographs or satellite imagery, for example i-Tree Canopy.	2	Complete, detailed, and spatially explicit, high-resolution Urban Tree Canopy (UTC) assessment based on enhanced data (such as LiDAR) – accompanied by comprehensive set of goals by land use and other parameters; all utilized effectively to drive urban forest and green infrastructure policy and practice municipality-wide and at neighborhood or smaller management level.	4	2
Publicly owned trees	Complete tree inventory that includes detailed tree condition ratings.	2	Complete GIS tree inventory that includes detailed tree condition and risk ratings.	4	2
Publicly owned natural areas	Level and type of public use documented.	2	Ecological structure and function of all natural areas assessed and documented.	3	1

Table 5-1. Tree Canopy Goal Assessment Summary (Pre-UFMP)

Category	Current Rating		Goal Rating		Gap
Private property trees	Aerial, point-based assessment – capturing extent and location.	1	Bottom-up sample-based assessment, as well as basic aerial view.	4	3
Relative performance index by species	No information.	-1	All of the six most common species have higher RPI scores than the average of all species in the community.	4	5
Use of native vegetation	Use of native species is encouraged on a project-appropriate basis in all areas; invasive species are recognized and discouraged on public and private lands.	2	Native species are widely used on a project-appropriate basis in all areas; invasive species are proactively managed for eradication to the full extent possible.	4	2
Align municipal departments	Municipal departments/agencies recognize potential conflicts and reach out to urban forest managers on an ad hoc basis – and vice versa.	1	Municipal policy implemented by formal interdepartmental/interagency working teams on all municipal projects.	4	3
Engage residents in planning and implementation	Little or no citizen involvement or neighborhood action.	-1	Proactive outreach and coordination efforts by municipality and NGO partners resulting in widespread citizen involvement and structured engagement among diverse neighborhood groups.	4	5

Table 5-1. Tree Canopy Goal Assessment Summary (Pre-UFMP)

Category	Current Rating		Goal Rating		Gap
Environmental equity	Planting and outreach includes attention to low canopy neighborhoods or areas.	1	Proactive outreach and coordination efforts by municipality and NGO partners resulting in widespread citizen involvement and structured engagement among diverse neighborhood groups.	4	3
Trees acknowledged as vital community resource	Trees widely acknowledged as providing environmental, social, and economic services – resulting in some action or advocacy in support of the urban forest.	2	Urban forest recognized as vital to the community's environmental, social, and economic well-being.	4	2
Engage large private landowners and institutions	Municipality educates landowners, provides technical assistance, sets goals and provides incentives for managing resources in accordance with plan.	1	Tree management plans developed with input from community, and public access to the property's forest resource.	4	3
All utilities work with municipality, employ best management practices	Utilities employ best management practices, recognize potential municipal conflicts, and reach out to urban forest managers on an ad hoc basis – and vice versa.	2	Utilities are included in informal municipal teams that communicate regularly and collaborate on a project-specific basis.	3	1

Table 5-1. Tree Canopy Goal Assessment Summary (Pre-UFMP)

Category	Current Rating		Goal Rating		Gap
Green industry embraces goals, high standards	Some cooperation among green industry as well as general awareness and acceptance of municipality-wide goals and objectives.	1	Shared vision and goals and extensive committed partnerships in place. Solid adherence to high professional standards, and commitment to credentialing and continuing education.	4	3
Develop urban forest management plan	No urban forest management plan.	-1	New or recent urban forest and green infrastructure management plan which targets public tree planting sites, protection and maintenance based on assessment of anticipated benefits ranging from stormwater to heat island mitigation, public health, etc.	3	4
Cooperative planning with other municipalities	Municipalities have no interaction with each other or the broader region. No regional planning or coordination on urban forestry.	-1	Some urban forest planning and cooperation across municipalities and regional agencies.	2	3
Forestry plan integrated into other municipal plans	Urban forestry plan mentions how it could meet other municipal objectives or inform other planning efforts.	-1	Some urban forest planning and cooperation across municipalities and regional agencies.	2	3

Table 5-1. Tree Canopy Goal Assessment Summary (Pre-UFMP)

Category	Current Rating		Goal Rating		Gap
Urban forestry program capacity	Team has capacity in terms of trained staff and equipment to achieve many of the goals of the urban forest management plan.	2	Team has capacity and will in the future work to achieve all goals of the urban forest management plan, to maintain the resource over time, and adapt management as circumstances change.	4	2
Municipality-wide urban forestry funding	Funding sufficient for some proactive management based on urban forest management plan.	2	Sustained, long-term funding from multiple municipal, regional, and/or state agencies, along with private sources to implement a comprehensive urban forest management plan and provide for maintenance and adaptive management as circumstances change.	4	2
Growing site suitability	Municipality-wide guidelines for the improvement of planting site conditions and selection of suitable species.	2	All trees planted in sites with adequate soil quality and quantity, and with sufficient growing space and overall site conditions to achieve their genetic potential and thus provide maximum ecosystem services. Where growing conditions are poor, guidance provided on how to improve soil volume, quality, other factors.	4	2

Table 5-1. Tree Canopy Goal Assessment Summary (Pre-UFMP)

Category	Current Rating		Goal Rating		Gap
Tree establishment and maintenance	Limited planning and post-planting care. Planting takes place on plan-identified sites. None or only fragmentary planting and maintenance protocols.	1	Comprehensive tree establishment plan provides concrete guidance on most of the following criteria: site selection, size, age class, diversity of species, native plant choice, planting protocols, and young tree care.	4	3
Management of publicly owned natural areas	Only reactive management to facilitate public use, e.g. hazard abatement, trail maintenance.	1	Management plan in place for each publicly owned natural area to facilitate appropriate public use.	2	1
Policies that foster good urban forestry on private lands	Policies regarding stormwater, site and subdivision planning, zoning and other issues that affect private forests are included in management plan.	2	All relevant municipal policies require or incentivize adherence by private owners to standards incorporated in the plan. Incentives and sanctions applied when appropriate.	4	2
Tree protection policy and enforcement	Policies and practices in place to protect public trees, generally enforced. As a companion to the public tree care policy, community issues a guide to aid compliance for all affected agency staffs and contractors.	2	Integrated municipality-wide policies and practices to protect public and private trees, consistently enforced and with penalties sufficient to deter violations.	4	2

Table 5-1. Tree Canopy Goal Assessment Summary (Pre-UFMP)

Category	Current Rating		Goal Rating		Gap
Monitoring	Monitoring is infrequent and reactive to reported changes in tree health, site condition.	1	Monitoring adheres to the standards and protocols established by the Urban Tree Growth and Longevity network.	4	3
Tree risk management	Citizens and city staff report tree safety issues to the forestry department or manager (e.g., 3-1-1 system, online form, etc.). System tracks the time between damage report and mitigation action.	1	Includes "better" but with TRAQ-qualified contractors on city projects. Educate tree care companies and public about importance of TRAQ qualifications.	4	3
Urban wood and green waste utilization	The majority of green waste is reused or recycled – for energy, products, and other purposes beyond chips or mulch.	2	Comprehensive plan and processes in place to utilize all green waste one way or another, to the fullest extent possible.	4	2
	Total Current Score	**31**	**Total Goal Rating**	**101**	
				Total Gap Score	**70**

PART 2
TECHNICAL ASSESSMENT

1

URBAN FOREST MANAGEMENT PRACTICES

1.1 Introduction

While the Urban Forest Master Plan (UFMP) covers the key analyses on the current state of Pleasanton's urban forest, as well as the strategies and implementation steps for reaching the City's urban forest goals, the Technical Assessment provides a detailed account of Pleasanton's urban forestry program. The Technical Assessment addresses all facets of urban forestry in the City ranging from the administrative (budgeting, staffing, and policy) to field practices (nursery stock selection, tree establishment, infrastructure conflicts, pruning, and removals). Appendices related to tree management considerations are also included at the end of this document. For a comprehensive list of all recommendations for the City's urban forestry program, see **Appendix I.**

1.2 City Resources

1.2.1 Budget

Knowing where you are starting from is the first step in being able to plan for the future. This section highlights where and how much of the City's budget (on average) is spent on the maintenance and management of Pleasanton's urban forest. **Table 1-1** shows the total expenditures on tree care. Pleasanton's average annual urban forest program spending over the last six fiscal years was rough $1.2 million, which when divided by the City's most recent tree inventory of 23,348 trees, equates to spending roughly $51.74 per tree **Table 1-2** shows a comparison of what other California cities of both similar and larger size spend on the management of their public trees which ranges from $26 per tree in Napa to over change to say over $84 per in Rancho Cordova. There are many unique factors for each city in managing their urban forests which makes it challenging to directly compare one city's per-tree budget to another city, so a more useful metric comes from looking at what services Pleasanton is accomplishing with the funding it spends on its public trees. This is discussed further in Section 1.2.3 Annual Service Data. The increasing amount spent over the last four years by Pleasanton, a difference of over $687,200 when comparing the spending in FY 23/24 compared to FY 20/21, is due in part to extensive damage to trees caused by the previous winter's large storms, and also due in part to the rising costs of tree establishment, and maintenance work combined with the City's desire to maintain the same level of tree services each year. While the current urban forestry program spending is adequate to maintain the City's existing public trees in a healthy and safe condition, it is isn't enough to also grow the City's urban forest and meet the new canopy cover goal which is discussed further in the next section.

Table 1-1. Total Urban Forest Activity Expenditure by **Fiscal Year**

Fiscal Year	Total Spent
FY 23/24	$1,604,187
FY 22/23	$1,514,107
FY 21/22	$1,200,273
FY 20/21	$916,987
FY 19/20	$1,089,017
FY 18/19	$922,925
Six Year Average	**$1,207,916**

Table 1-2. Comparison of Municipal Urban Forest Management Funding

California City	Population	Annual Public Tree Budget	Number of Public Managed Trees	Tree Budget Allocation per Tree
Pleasanton	74,653	$1,207,916	23,348	$51.74
Comparison with Other Northern California Municipal Program				
Chico	130,178	$1,443,653	34,874	$41.40
Dublin	72,060	$900,000	14,000	$64.29
Napa	79,039	$1,299,900	50,000	$26.00
Rancho Cordova	73,147	$329,000	3,910	$84.14
Sacramento	501,334	$6,700,000	100,000	$67.00
San Francisco	874,961	$19,000,000	236,000	$80.51
San Ramon	84,929	$669,248	45,606	$14.68

Table 1-3 has the six-year average of tree maintenance activities separated by contractor and City staff labor. Outsourcing grid pruning work is frequently done by cities as it can generally be a cost-effective method to conduct municipal pruning activities by limiting a city's overhead costs for purchasing, maintaining, and having the space to store the large equipment needed to conduct the work. This also allows City staff to focus on other management activities that involve planning and interfacing with the public, like managing permits, responding to residents' service requests, and other arboricultural tasks.

Table 1-3. Six Year Average of Urban Forest Expenditures by the City

Urban Forest Task	Contractor Services	Department Staff	Totals	Annual Service Data
Pruning	$483,745	$91,273	$575,018	3,455 Trees Pruned
Removals	$67,834	$71,919	$139,753	226 Trees Removed
Management Activities	$16,150	$176,062	$192,212	11.6% of management time is spent on City managed trees
Storm Cleanup/ Emergency Work	$28,464	-	$28,464	Metrics contained within Trees Pruned and Trees Removed data above
Downed Tree Cleanup	-	$83,741	$83,741	Metrics contained within Trees Pruned and Trees Removed data above
Planting	-	$61,771	$61,771	151 Trees Planted
Establishment Care	-	$17,982	$17,982	254 Trees Watered
Other Expenses	$108,975	-	$108,975	-
Total	**$705,168**	**$502,748**	**$1,207,916**	

The budget data above highlights where current expenditures are going, and what each line items' average cost is over the past six years. Pairing this budget data with services provided allows City staff to more accurately predict future expenses. Currently, Pleasanton's urban forest program is 97% funded through the General Fund, and 3% percent funded through the Urban Forestry Fund. The Urban Forestry Fund is primarily funded through developer contributions from development projects within the City. **Appendix E** describes other potential funding sources to help meet urban forestry goals.

Table 1-4. Urban Forest Program Funding Sources for FY 2023-2024

Funding Source	Amount	Percent of Total
General Fund	$1,168,000	97%
Urban Forestry Fund	$40,000	3%

1.2.2 Funding Pleasanton's Future Urban Forest Goals

Determining How to Achieve the City's Canopy Cover Goal

Pleasanton's total canopy is currently averaging approximately 25% within the City's urban boundary. While this is considered above average for a city that was historically in a grassland setting (Nowak and Greenfield 2020), the canopy cover is not evenly distributed and falls below 25% in 26 of the 77 residential neighborhoods (See **Figure 2-3A**). Instead of setting a city-wide goal to increase canopy cover, Pleasanton plans to focus its resources into those areas with lower canopy cover and has set a goal to achieve 25% canopy cover across all neighborhoods over the next 25-years. This section highlights a management pathway the City can take to achieve the goal of having all neighborhoods within Pleasanton reach 25% canopy over the next 25 years.

Approximately 6,300 new trees will need to be planted within those 26 residential neighborhoods that are lacking the target canopy cover level (See **Table 2-6**). In the recent tree inventory of publicly managed trees, only 1,106 vacant sites were identified as being readily available for planting in the 26 targeted neighborhoods, though there may be other potential available planting spaces for trees not yet identified in the City's parks within these neighborhoods, which is discussed below. This leaves approximately 5,200 trees that will need new planting locations.

Creating new tree wells in urban areas requires removing impermeable surfaces on public property and is often a long-term and costly planning effort. While there may be a few opportunities to increase the canopy cover on streets in these neighborhoods that currently have few street trees such as the western-most portion of West Las Positas Boulevard, most of the public land in Pleasanton is already developed for crucial city infrastructure, limiting the space that can be converted to a new tree site. These limitations on public land highlight the importance of residents and businesses planting and maintaining trees on their private properties. Private property trees will play an important role in achieving the City's goal of getting targeted neighborhoods to reach 25% canopy cover in 25 years.

Residential Tree Give-Away Program

To incentivize and reduce the barrier of entry into tree ownership, Pleasanton will set out to create an annual tree give-away program where the City would purchase young trees/ saplings to give out to its residents in targeted neighborhoods. The tree give-away program will help the City progress towards elevating targeted neighborhoods to reach canopy evenness with the rest of the City and build the shared experience of tree planting within the community and reaching a common

goal. Depending on the year, the City will aim to give away approximately 100 trees annually to the community in these target neighborhoods to reach the canopy goal.

Businesses and Developer Contributions

Businesses and developers can also support the City's tree planting goal by planting and maintaining trees on their properties. Based on current development projects that are either approved or in the planning phase within the targeted neighborhoods, the City predicts that an average of 25 trees will be planted annually as part of the project design requirements. The City estimates that on a city-wide basis, developers have planted close to 200 trees per year on average due to requirements of their development plan process. Currently, this data is not consistently tracked as part of the urban forestry program, and collecting this data in the future will allow the City to better track progress towards their city-wide canopy cover goal, and better understand the annual contributions from development projects to tree canopy.

Management Pathway and Projected Budget Summary

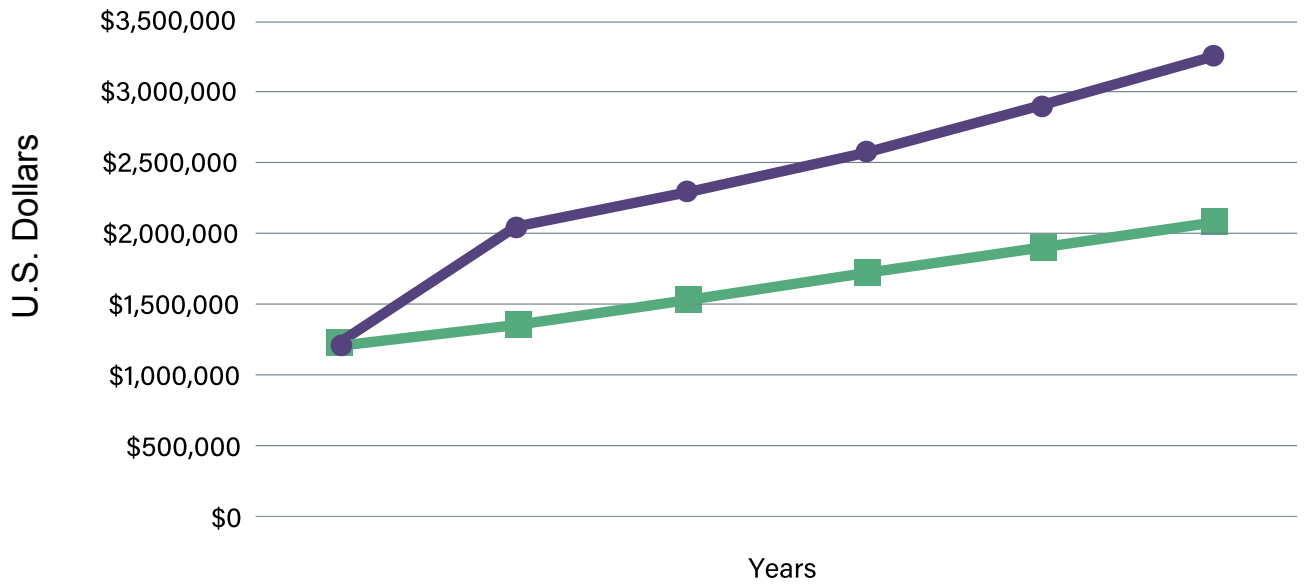
Given the assumptions above which include the City filling 1,106 vacant tree sites, giving out a total of 2,500 trees to residents in target neighborhoods, and developers planting a total of 625 trees over the next 25 years, this still leaves 2,076 trees to be planted across the 26 neighborhoods. Different strategies are discussed below which will impact the actualized cost for the City, but to simplify the budget model, we have projected the cost for the City to create the remaining 2,076 new tree sites in these neighborhoods which are needed to meet the canopy cover goal. In addition to the new trees planted, this budget model also accounts for the City maintaining its standard tree services such as removing and replanting an average of 175 dead trees per year, watering and structurally pruning newly planted trees as part of a three-year establishment program and pruning an average of 4,670 mature trees per year to maintain a five-year pruning cycle.

Based on these assumptions, the City would need to spend an estimated $61.6 million over the 25-year timeline, ranging from roughly $1.2 million annually at year one to $3.2 million annually at year 25, to achieve the canopy goal (**Figure 1-1**). This is in contrast to a business-as-usual estimate for the City to spend $30.7 million over the next 25 years to maintain the existing level of urban forestry services without growing the canopy. While the year one projection is roughly equal in cost to the current average annual spending on the urban forestry program, as more trees are planted and needing to be maintained, the year 25 funding needed represents an estimated difference of over $1.2 million from the City's current budget, even when considering a three percent inflation adjustment. This would necessitate that the City identify potential future funding

sources (see **Appendix E**) to supplement the current urban forest program funding or consider alternate strategies such as decreasing the establishment program to only one year or having the community take a larger role in the canopy cover goal.

Figure 1-1. Estimated Cost for achieving City's 25% Neighborhood Canopy Cover Goal with a Mixed Private/Public Approach

Cost Projection to meet 25% Canopy goal in Targeted Neighborhoods with Mixed Private/Public Approach



	1	5	10	15	20	25
Annual Budget Needed to Achieve Urban Forest Goal	$1,244,234	$2,046,179	$2,296,558	$2,567,265	$2,898,549	$3,248,415
Current Urban Forest Budget with 3% Annual Inflation	$1,207,916	$1,352,866	$1,534,053	$1,715,241	$1,896,428	$2,077,616

Here is a breakdown of the overall proposed planting effort, on an annual basis:

- 44 trees planted in existing vacant sites by the City
- 83 new tree sites created and planted by the City (* See the following section for how this could change)
- 175 trees removed and replaced by the City
- 100 trees given away by the City to the community in target neighborhoods
- 25 trees planted by developers and businesses in target neighborhoods
- The planting efforts described in this section total approximately 425 to 430 trees planted annually on both public and private land throughout the City of Pleasanton.

Alternative Strategies That May Impact the Proposed Management Pathway and Cost to the City

There are several alternative strategies that the City can take to encourage the community to take a bigger role in meeting the canopy cover goal. Engaging community members to plant trees on residences, commercial properties, and schools, will decrease the need for the City to create new plantable vacant sites in developed public spaces. This would lead to significant cost savings for the City, as they would no longer be responsible for tree establishment and maintenance of these trees, as well as benefiting the residents.

Opportunities in Parks and Open spaces

As previously mentioned, there are likely several vacant tree sites that are yet unidentified in Pleasanton's parks, and on some streets. There are 16 parks and two open space areas totaling 446 acres (and averaging 42% canopy cover) within or directly adjacent to the 26 targeted neighborhoods, which likely have some available planting spaces for new trees. While this wouldn't reduce costs for establishment care and long-term maintenance, it would reduce the costs of breaking concrete to create new tree sites in developed areas which is estimated to cost the City $880 per site using California Conservation Corps estimates. Park staff should plan to set aside extra time to identify and map additional planting spaces within these parks and open spaces, as well as to look for opportunities to replace smaller trees with larger canopy trees in parkways, medians, and rights-of-way, so that each space is being maximized where appropriate.

Opportunities in Schools

Schools may be another participant in the canopy cover goal and may provide additional space for trees to grow in these neighborhoods. There are seven schools totaling 109 acres that are within or directly adjacent to the 26 targeted neighborhoods, averaging only 11% canopy cover in the

student zones (Green Schoolyards America 2024). The City hasn't previously worked with schools for tree planting, so City staff would need to set aside a significant amount of time to conduct outreach to the seven schools within the targeted neighborhoods, as well as to research grants that may be available to these schools such as the Green Schoolyards grant program (See **Appendix E**). In addition to having schools plant trees on school property, the City may be able to purchase additional trees for the schools that the teachers could then give away to their students for planting in the yards of the student's homes.

Opportunities for More Residential Front Yard Trees

A third strategy that the City may consider is implementing a front yard ordinance that would require residents to plant and maintain at least one tree in their residential front yards. While the City encourages its residents to voluntarily plant and maintain trees in their front yards, a stronger approach could be taken with a front yard ordinance, but this may come with pushback from the community. The City of Hayward currently has requirements in their Zoning Ordinance under the Minimum Design Standards section 10-1.204 that each front yard and side street yard have a minimum of one 15-gallon tree planted for low density residential, and residential natural preservation districts. Other cities such as San Jose, Temecula, and Claremont have language in their municipal code that assigns property owners the responsibility to water and maintain the street trees that are in front of their property. Pleasanton may find that starting with a tree giveaway program paired with outreach, education on the benefits of trees, and the provision of informational materials for how to plant and care for a tree, may be a more successful strategy for getting more residents to plant trees in their front yards. If there is still a need to get more residents to plant trees on private property after this initial effort, then a front yard ordinance could be considered.

Opportunities for Cost Savings from Tree Establishment

A large portion ($30.7 million or 50%), of the total cost in the budget model comes from the establishment program that is recommended the City implement for newly planted trees, which would include watering and structural pruning for three years. The City, in most cases, waters newly planted trees for the first three growing seasons, but does not conduct structural pruning. Maintaining the longer watering period should result in higher survival rates for young trees that have to make it through Pleasanton's hot summers, and structural pruning can eliminate problems like co-dominant leader stems early on, which can reduce mature tree pruning costs in the future. It should be noted that the City hand-waters a little over 200 newly planted trees each year, and

waters the remaining newly planted trees with turf-irrigation (a much cheaper watering method) to achieve the three-year watering practice. Because we don't have a good way of estimating what portion of the new trees planned for the target neighborhoods will have turf irrigation, the watering costs in our budget projection to achieve the urban forestry goals are conservative estimates and assume all new trees will be hand-watered for three years The City would have additional cost savings for any new trees that can be planted in areas with turf irrigation, within the target neighborhoods. If the City is not able to find sufficient additional funding to meet the projected urban forestry program funding gap, the City may need to consider reducing the establishment program to two years and planting more drought resistant tree species.

Recommendation:

- The City should first focus on filling the 1,106 vacant sites in the target neighborhoods along with creating the tree-giveaway program for private residences.
- The City should also explore opportunities to reduce the number of new tree sites to be created by identifying any undocumented vacant sites that already exist in parks, medians, parkways and rights-of-way.
- Identify which public tree sites with smaller trees can be replaced with larger canopy tree species, without creating infrastructure conflicts.
- Create and maintain a standardized system for tracking tree plantings by private residents and businesses.
- Focus on building relationships with target schools and research funding opportunities like the Green Schoolyards grant program that may be able to provide resources for tree planting projects, outreach and education in the target neighborhoods.

- Analyze the success of the initial tree giveaway programs and consider whether creating a new front yard ordinance is needed.
- Consider whether to reduce the length of the tree establishment program to save additional costs.

1.2.3 Staffing

1.2.3.1 Current Staffing

The City uses a combination of in-house employees and external contractors to manage and maintain the urban forest. **Table 1-5** details the City's tree-related staff positions. Within Pleasanton's Parks Department, there are 40 positions, eight of which are part-time to assist with mostly additional park maintenance work during the busy park use season (April through August). Because 85% to 90% of the workload for the Parks staff listed in Table 1-5 consists of non-tree-related duties, Pleasanton has a relatively low total number of FTE staff to carry out urban forestry work, and relies on contractors to keep the level of urban forestry services consistent.

The primary work of the current tree maintenance contractor is street tree pruning (62% of contracted work) and removals (10% of contracted work). City staff are being utilized across a wider range of urban forest tasks from planting, establishment care, pruning, removals, and tree debris clean up. The most expensive line item for City staff is management-related activities at 29% in FY23/24, followed by pruning and planting activities at 19% and 16%, respectively. Providing additional details in future work records categorized as 'management-related' activities will allow for a more comprehensive analysis on the City's urban forestry tasks and associated funding.

Table 1-5. City of Pleasanton Tree-Related Staff Positions and Their Cost

Type	Salary + Fringe	Number of positions	Number of FTEs	Total Labor Costs
Parks Maintenance Supervisor	$247,520	3	0.81	$200,491
Parks Lead Worker	$220,480	6	0.72	$158,746
Parks Maintenance Worker II	$197,600	12	0.72	$142,272
Parks Maintenance Worker I	$160,160	9	0.72	$115,315
Park Maintenance Aide (Part Time)	$34,125	8	0.72	$24,570
Landscape Architect	$250,494	1	0.2	$50,099
Landscape Architect Assistant	$179,210	1	0.75	$134,407
Total	–	**40**	**4.64**	**$825,900**

Figure 1-2 provides a snapshot of the Parks Department's organizational chart. As noted previously, only 10% to 15% of the workload for Parks department staff is related to trees.

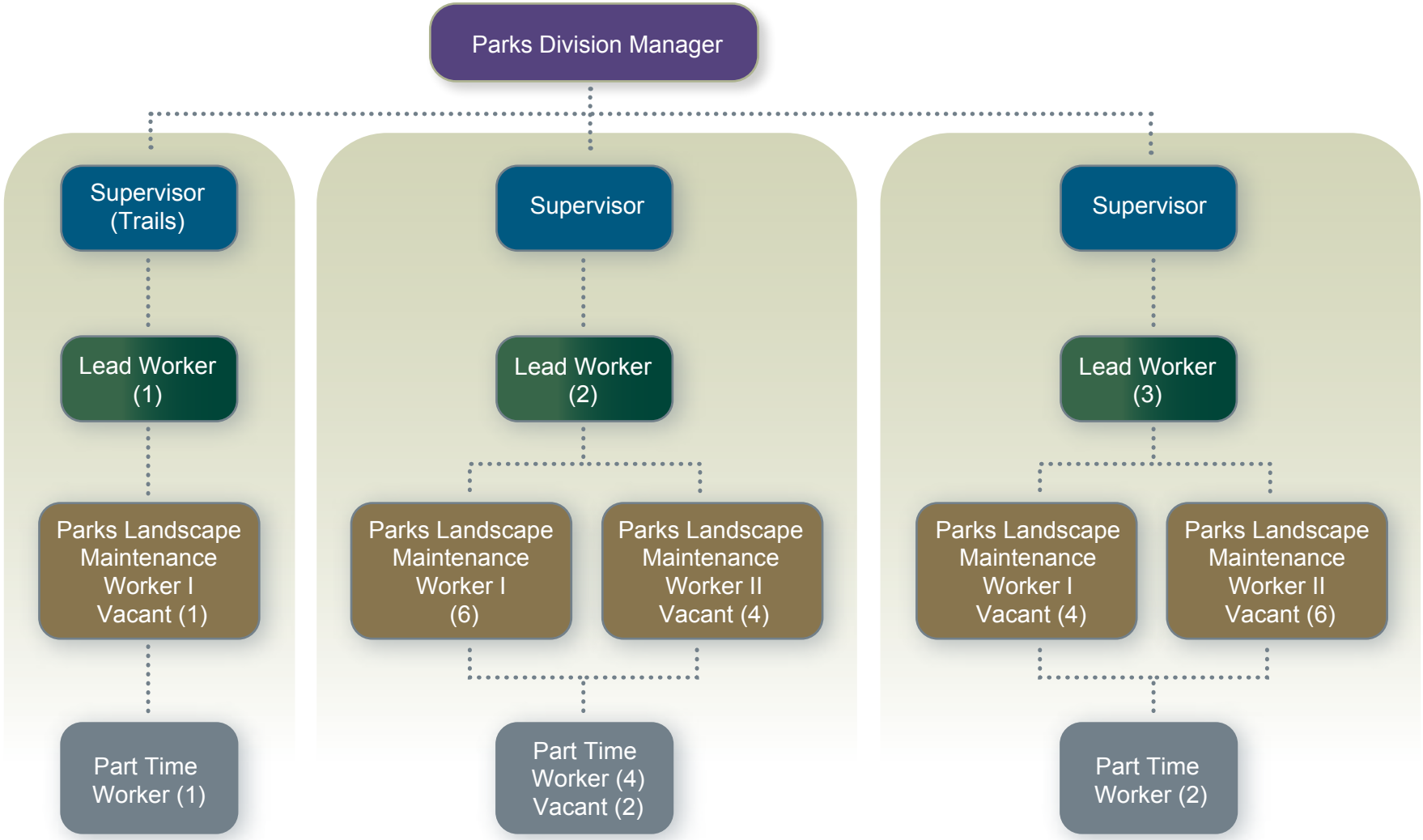


Table 1-6 compares Pleasanton's FTEs related to tree management to other Cities of comparable sizes. Pleasanton's 4.64 FTEs are slightly lower than the average number of FTEs reported by cities of similar size in the 2016 Hauer and Peterson study regarding municipal tree care and management. This can largely be explained by the fact that, like some of the other cities listed in **Table 1-6**, Pleasanton utilizes contractors for all its street tree maintenance work. It follows that the City only has the equivalent of a few full-time staff to carry out the remaining urban forestry work which includes tree planting and establishment care work throughout the city and tree maintenance work in parks. Pleasanton should continue to track and use their annual tree service data (presented in the next section), to determine if the current number of FTEs and contracted work are sufficient to provide the level of service desired by the City as well as sufficient to achieve future canopy cover goals (discussed in Chapter 2).

Table 1-6. Comparison of Municipal Urban Forest Management Staffing

California City	Population	Number of Publicly Managed Trees	Number of FTEs related to tree management
Pleasanton	74,653	23,348	4.64
Hauer and Peterson 2016b (87 Survey respondents)	50,000 – 99,999	30,036	6.27
Chico	130,178	34,874	9.25
Redding	95,542	20,600	2.58
Oxnard	208,154	48,806	4.57
San Ramon	84,929	45,606	1.0
Temecula	115,202	30,715	0.40

1.2.3.2 Current Staffing Challenges

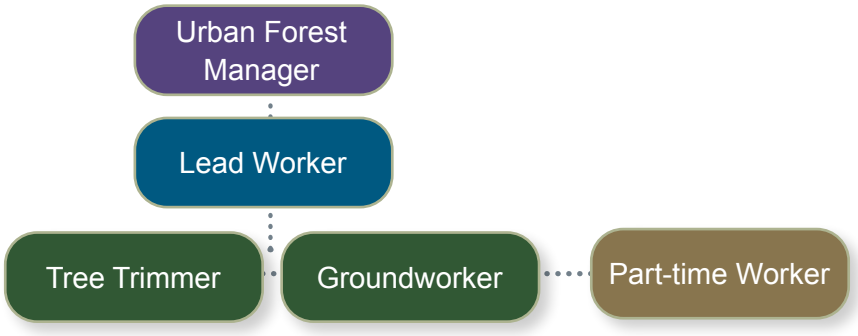
The City currently implements its urban forestry programs, including enforcement of the tree preservation ordinance, through joint efforts by the Community Development and Public Works Departments. Most of the enforcement and response has been handled by the City's Landscape Architecture Division which has two staff people (a Landscape Architect and a Landscape Architect Assistant). In addition to the various tasks that the Landscape Architecture Division is responsible for, including managing Capital Improvement Projects, Maintenance of the City's Landscape and Lighting Maintenance Districts, plan review for both Planning and Building Departments and Landscape Inspections as well as master planning, the division also reviews and responds to all tree removal permit applications, pruning and removal violations as well as a number of other tree related services and programs the City provides including an annual Arbor Day Celebration and maintaining the City's Tree City USA status .

In addition to the work done by the Landscape Architecture Division, the Parks Division is also heavily involved in tree care, maintenance, and response. The tasks associated with tree care fall on many individuals within the Parks Division and range from disaster response to proactive tree care. While many individuals touch trees in their everyday work, there is no dedicated team of tree care professionals within the City organization. This leaves all the work associated with trees to be performed by members whose primary responsibilities are not tree focused. This system means that tree care management and response is more often reactive instead of proactive. The City would benefit from a dedicated team of professionals to be responsible for the tree care program. Doing this would allow Pleasanton to more effectively meet its tree service standards and urban forestry goals.

Recommendation:

- Explore the capacity of current positions or create a new Urban Forestry Team that's overseen by a dedicated Urban Forest Manager (who is a certified arborist) to coordinate with all City departments on implementation of the UFMP and to oversee urban forestry programming, tree care and management, and community engagement efforts including finding and applying for grants, educating the public, and coordinating with non-profits. **See Figure 1-3**

Figure 1-3. Recommended Urban Forestry Team



1.2.4 Annual Tree Service Data

Keeping current and detailed records on the total number of pruning, plantings, and other services performed by the City allow for the City's Urban Forestry-related staff to track service trends of the City-managed tree inventory. It will also allow the City to determine gaps between the current level of tree service and the ideal level of tree service it wants to provide based on its UFMP goals. **Table 1-7** shows five current annual tree service metrics and how they measure up to current tree service goals.

One tree service metric that the City is performing well is keeping up with the removal of dead trees in a timely manner. The City reported that, in most cases, dead trees are removed within four to eight weeks of the removal request, and there are no remaining removal requests by the end of the year. **Table 1-7** also illuminates a few metrics where the City is not meeting their tree service standards, which includes tree planting and establishment care. Based on the last six years of data, an average of 151 trees are planted and 254 trees are watered annually by the City. To meet a three-year establishment and watering period goal, around 675 trees would need to be watered annually. The lack of a formal three-year establishment program and insufficient watering of newly planted trees could be a potential reason why the City's annual removals (average of 226 per year) are outpacing their tree plantings (average of 151 per year).

Another area where the City could improve adding structural pruning for new trees, which it doesn't currently conduct. Structural pruning can save costs down the line because it is easier, less expensive, and more beneficial for trees to address a structural problem using a pair of pruners when that tree is young versus needing to address a structural problem when the tree is matured, which may involve much more equipment and staff time. Generally, newly planted trees need one to two years to establish in their new environment once planted (Gillman 1997), but then should receive structural pruning once a year for two to three years, and then once again in two to three years later before it's 'graduated' to the mature tree inventory. Continuing to track and analyze the service data regularly will allow the City to better measure its progress toward achieving its tree service standards and goals. The City does not currently have a pest management program. Having this type of program is an important prevention measure to mitigate tree loss if an invasive pest enters the City's urban forest.

Table 1-7. Annual Service Data, Goals, and Gaps

	Tree Planting	Establishment Care	Tree Pruning	Dead Tree Removals
Current Service (Average of last 6 years)	An average of **150 tree**s are planted annually	On average, approximately **250 tree are** hand-watered and 425 trees are watered through turf irrigation annually	The City currently operates a 5-year pruning cycle, with approximately **3,455 trees** pruned per year, but with no structural pruning of young trees	Approximately **225 trees** are removed per year
Current Annual Service Goal	Replace all trees removed annually (**225 trees** on average) *Note this number may increase up to 320 trees per year as the City's tree inventory increases, assuming a 1% mortality rate)	**675 trees** watered annually (newly planted trees watered for first 3 years multiplied by 225 trees per year)	Achieve a 5-year mature tree pruning cycle based on the City's 2024 tree inventory of 23,722 trees and perform structural pruning on the previous three years of newly planted trees totaling trees annually in 2024	No dead trees left standing at end of year (225 trees on average annually)
Gap to Current Service Goal	**75 additional trees** planted annually	Currently meeting the Service goal for watering of new trees	The City is currently meeting their mature tree 5-year pruning cycle goal, but is **missing structural pruning on the previous three years of newly planted trees** annually	Currently meeting the Service goal

1.3 Management Practices

1.3.1 Tree Planting

Trees along streets and in parks are dependent on human intervention, unlike trees in wildland areas that can rely on natural recruitment and disturbance. More trees must be planted than removed if the urban forest is to thrive and grow. Best management practices for tree planting, spacing guidelines, and recommendations for replacement based on the stature of the removed tree can be found in **Appendix J**.

Current practices

Currently, vacant tree sites are prioritized for planting based on resident requests. A few tree options that would be suitable for the site are presented to the property owner for selection. Once selected, the ground is prepped and the tree is planted by the City's Park's department staff. The planting is done in conformance with City standard detail 806 from the City Standards and Specifications book, 2024 edition. Watering for establishment is scheduled and added to the rotation and will be watered by a City of Pleasanton seasonal employee. The past six years of City work records reveal that the number of trees planted (773 trees) is only 57% of the number of trees removed (1357 trees), which is equivalent to losing an average of 75 trees per year.

According to the City's inventory data, 85.6% of the mapped tree planting sites are currently occupied. New sites must be identified and developed to reach the target canopy cover. At present, the City does not have the staff, or extra time with existing staff, to actively identify new planting locations. The primary focus is on care required for young tree establishment. (See: Establishment Care, section 1.3.2).

Recommendations

- Ensure replacements are planted within the same year that a tree is removed
- Plant trees in all sites allocated for trees.
- For detailed information on the number of trees required to achieve canopy cover goals and the specific areas of the city where tree plantings should be concentrated, please refer to Chapters 2 and 3 of this technical assessment.

Tree Selection

Each species of tree has its own unique set of characteristics like flower type, crown shape, and growth rate. Tree species also vary in their needs for water, space, soil, and light for health and growth. Tree and site issues may occur when a tree species and it's planting site do not match, like a shortened life span, raised sidewalks, or conflicts with overhead powerlines. Because of this, it is crucial to select a tree with characteristics appropriate for the site as well as to build appropriate sites for desired trees.

Current Practices

The City maintains a recommended plant list that includes species-specific information including water use and size classification. With State-mandated water restrictions, anticipated temperature increases and extended drought periods, the species list has been evaluated to ensure that the city plants trees that are expected to be able to survive in a hotter and drier climate. **Appendix C** is an updated list for recommended tree species specific to the City of Pleasanton's landscape. It was developed by using the following parameters:

- A preference for trees that are rated as very low or low by the Water Use Classification of Landscape Species (WUCOLS)
- Inclusion of well-adapted local and regionally native species.
- Diverse planting size requirements to allow for various tree planting locations
- A diversity of species available for each site type to achieve species diversity standards
- Options to reflect existing neighborhood character
- Species in the City's current tree inventory were considered and removed if they are known as high water users or deemed invasive by California Invasive Plant Council.

Recommendations

- Tree planting should start with a site analysis. Once site characteristics are understood, consult the updated tree list to find an appropriate species that matches the site conditions. Please note that the tree list should be re-evaluated from time to time as more information is learned about specific species performance in Pleasanton as well as to add new cultivars or varietals of climate adapted species.
- Develop and maintain a set of notes on the species list and regularly evaluate city tree species that are especially beneficial or problematic, and suitability for specific locations within the city.
- Maintain species diversity of the City's tree inventory.

1.3.2 Establishment Care

Establishment care refers to the maintenance actions that are taken to ensure a newly planted tree can successfully grow. These actions typically include:

- supplemental watering
- keeping the watering basin free of weeds and debris
- adjusting stakes and ties
- structural pruning
- adding mulch

The amount of time a tree will need establishment care can vary based on species selection, site characteristics, and the presence of the above actions. Pleasanton historically experiences mild, wet winters and hot, dry summers. It is expected that future climate conditions will make these seasonal conditions more variable, with more extreme weather events, extended periods of drought, and severe heat. Based on these factors, three years of establishment care is a recommended time-frame to ensure newly planted trees successfully transplant into the landscape. Industry best management practices for establishment care can be found in **Appendix J**.

Current Practices

The expansion of tree planting establishment efforts has been significantly hindered by limited budget and labor allocations. This constraint has resulted in the City not being able to plant as many new trees as the number of trees they are removing annually. If the City is to achieve its canopy goal of all neighborhoods reaching 25% cover, there will be an even larger need for establishment care and watering as more trees are planted every year. Just to fill the 1,100 existing vacant trees sites in the 26 target neighborhoods, the City will need to plant 44 additional trees a year for 25 years, on top of the regular tree replacements. There will likely be additional trees that the City will need to plant to reach the canopy goal, depending on the level of participation from the residents, businesses, developers, and schools.

In FY 23/24 the City allocated $24,096 to establishment care activities to maintain 290 newly planted trees, for a per-tree establishment cost of $83. **Table 1-8** is based on three years of establishment care and represents the number of trees the City should be caring for during FY2023-2024, and the level of funding required under this scenario, using the three most recent years of tree plantings. An increase in funding (over double the current spending) for establishment care is needed to maintain and water all newly planted trees for the full three years.

Recommendations

- Provide a standardized baseline for establishment care that is within budget. Prioritize watering above all else.
- Implement young tree pruning practice as described in **Appendix I**
- Allocate a long-term funding stream toward establishment care, estimated between roughly $1.01 million and $1.59 million per year for a three-year program.

Table 1-8. City Managed Trees Receiving Establishment Care by Year and Cost

	FY 2021 - 2022	FY 2022 - 2023	FY 2023 - 2024	FY2022-2024 3-year Totals
Trees	249	200	290	739 trees
Cost	$17,907	$16,183	$24,096	$58,186

1.3.3 Tree Pruning

Maintaining the health and structure of trees is a key aspect of urban forest management. Regular pruning and inspections help ensure trees can grow into healthy canopies and damaged limbs can be removed in a timely manner. Structural pruning for young trees is especially important as it promotes strong trunk development, strong branch attachments, and reduces the need for more expensive and extensive pruning as the tree matures. Urban forest managers play a crucial role in maintaining trees and ensuring they remain a healthy and valuable part of the urban landscape.

A 5-year to 7-year pruning and inspection cycle is considered ideal for municipal arborists managing a city tree inventory, balancing the need for safety with resource constraints (Miller et al. 1981). Trees vary in their growth patterns, structure, and pruning needs so a skilled urban forestry manager can determine where best to allocate resources. Guidelines for tree pruning can be found in **Appendix J**.

Table 1-9. Average Cost to Prune a Street Tree in Fiscal Year 23/24

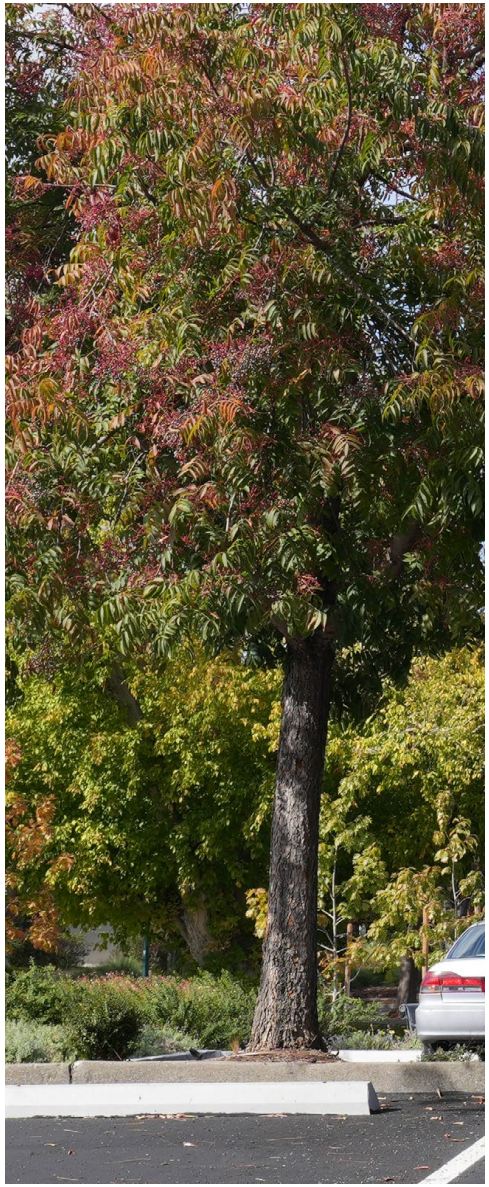
Trees Pruned	City Spending	Contracted Labor	Total Spending	Per Tree Cost
4422	$133,440	$530,640	$ 664,080	$150.17

Current Practices

In Pleasanton, street trees are currently divided into maintenance districts and mature trees are pruned on a 5-year cycle by the tree maintenance contractor for clearance. The City does not have an established structural pruning practice. Trees in City-managed parks are not on a defined pruning cycle since trees in parks generally have less interaction with people and infrastructure. The City has noted that while a pruning cycle for park trees may not be feasible at this time, there is a need for regular monitoring of tree health and structural defects. **Table 1-9** represents that in fiscal year 23/24 the City spent an average of $150 to prune each street tree. The City would like to keep the current five-year pruning cycle, but may be able to reduce mature tree pruning costs if they spend more on structural pruning of young trees. Structurally pruning significantly reduces the need to prune large trees in the future for structure, which would allow the City to use those extra funds on other goals like increasing tree plantings and establishment care.

Recommendations

- Conduct structural pruning while trees are young and developing branching structure (Gilman 2002). This pruning method helps to correct structural defects when the tree is smaller, therefore reducing the labor costs and trauma to the tree. Structural pruning offers an opportunity to increase tree safety without significantly increasing City funding for tree maintenance.
- Develop a periodic park tree risk assessment program. Trees with conditions that present a greater risk than the city is willing to accept should be promptly mitigated through pruning or removal.
- Consider formally adding young tree pruning into the City's establishment care program as discussed in Section 1.3.2.



1.3.4 Infrastructure Conflicts

An infrastructure conflict exists when the proximity of a tree's canopy, roots, or trunk poses a risk of damage to adjacent buildings, roofs, roads, sidewalks, curbs, gutters or sewer lines. **Appendix K: Tree and Sidewalk Conflict Solutions** provides guidelines for decision-making when various tree-related infrastructure conflicts arise, and **Appendix L: Sidewalk Solutions** provides specific options to mitigate conflict between a tree and sidewalk damage.

Current Practices

The most common tree and infrastructure conflicts in Pleasanton involve tree roots impacting sidewalks, sewer lines, curbs, or gutters. The Operations and Maintenance - Streets and Signs Division of Public Works is responsible for addressing sidewalk repairs in Pleasanton and was not able to provide specific annual costs for tree-related infrastructure repairs due to a lack of available records on these costs. A study by McPherson (2000) indicates that California cities allocate approximately 30% of their tree budgets to addressing infrastructure conflicts, which includes mitigative tree work, prevention, and litigation. Similarly, about 30% of all liability claims filed against the City of Pleasanton are related to these tree infrastructure conflicts.

Recommendations:

- Proper species selection in the planting phase will help minimize the frequency of costly infrastructure conflicts. Refer to **Appendix C: Recommended Tree Species List**.
- Consult **Table 1-10** to determine the most appropriate mitigation option when presented with an infrastructure conflict. Also refer to **Appendix K: Tree and Sidewalk Conflict Solutions**.

Table 1-10. Infrastructure Conflict Action Menu

Solution Category	Solution	Description
Conflict Prevention	**Right tree, right place**	Available soil volume, presence of existing infrastructure, and site conditions should be deciding factors when selecting species for tree planting projects.
Infrastructure Adaptations	**Expand tree well space**	Large trees require large areas to grow at the ground level. Expanding tree wells to provide growing space can help avoid conflicts with sidewalks.
	Alternative sidewalk materials	Technological advancements for sidewalks, such as rebar concrete reinforcement, pervious pavement, and flexible joints, continue to be developed and may provide adaptive solutions.
	Curved or offset sidewalks	Rebuild sidewalks to curve around planting areas, allowing the trees more space to grow.
	Bridging	A bridged surface that does not require compacted subgrade can replace a damaged sidewalk.
	Root control devices	Root control devices are designed to guide roots underground and away from surface-level infrastructure. Note that root barriers are least effective in poorly aerated soils that are commonplace in the built environment (Randrup et al. 2001; Gilman 1996).
Tree Work	**Root pruning**	Root pruning should conform to the City's standards and specifications which is regularly updated by the City's Engineering Division. When possible, an arborist should be involved in making decisions regarding root pruning.
	Removal	In some cases, tree removal is the only feasible option and should only be approved when all other options have been considered and determined to not be viable to resolve the infrastructure conflict.

1.3.5 Tree Removal

Dead, dying, damaged, and diseased trees represent an inherent elevated level of risk to the public, making a City's tree removal program an important component of public safety (Miller et. al 2015). In other situations, the need for tree removal isn't as clear. Decisions regarding tree removal are often tied to the willingness of a city to explore alternatives like sidewalk redesign, root pruning, and other preservation methods like those presented in **Table 1-10** above. While it is not possible to preserve all trees in every instance, the City desires to preserve existing trees, which is a positive step to maintaining existing canopy cover. Community involvement in tree removal is crucial to ensure transparency and prioritize preservation efforts. Additionally, considering the environmental impact of tree removal, such as habitat loss and reduced air quality, is essential. Implementing a robust tree replacement strategy is also a key component of a tree removal strategy.

Current Practices

City staff report that the most common reasons for tree removal in Pleasanton occur due to proposed development, declining tree health, and dead trees. The City ensures that the majority of trees are removed within four to eight weeks of the removal request and that there is no backlog of trees on the removal list by the end of the fiscal year**. Appendix J** provides information on how to protect trees during construction and development.

Recommendations

- Ensure all trees listed for removal are removed within one month to limit the City's potential liability from tree claims.
- Prioritize alternatives to tree removal, such as sidewalk redesign and root pruning. These methods can help preserve existing trees and maintain urban canopy cover.
- Implement replacements for all City trees removed at a 1:1 ratio or greater.
- Evaluate the environmental consequences of tree removal, such as habitat loss and reduced air quality. This assessment can guide decisions to minimize negative impacts.

Figure 1-4. A bench at the Pleasanton Cultural Arts Center that was crafted from a recycled black locust tree (left) and tree stools made from a removed tree at Alivso Adobe Community Park (right).

1.3.6 Urban Wood Reuse

Developing an urban wood reuse program contributes to a sustainable urban forest and extends the environmental services of a tree after it's been removed. Trees used as lumber or artisan wood products will continue to store carbon instead of releasing it into the atmosphere. An urban wood reuse program also diverts tree debris that would otherwise populate landfills and avoids the production of greenhouse gas emissions during traditional disposal processes. The remaining organic material can be used as mulch around trees and in landscapes to develop healthy soil and increase water retention. Creative reuse of urban wood can significantly enhance community character by transforming discarded or fallen trees into functional and artistic pieces, such as benches and sculptures. This approach not only promotes sustainability but also fosters a sense of local identity and pride.

Current Practices

The City of Pleasanton uses the mulch generated from tree work as landscaping material for parks and medians. The City's Climate Action Plan (CAP) has set forth a goal to manage the amount, source, placement, and timing of plant nutrients and soil amendments in City parks, green spaces, and natural areas through actions such as applying recycled wood mulch from tree trimmings into planters, medians, and tree wells and leaving green waste on-site to the extent feasible. The City has also repurposed wood such as in 2017, when the City recycled a black locust tree to craft a bench for a public plaza in front of the Cultural Arts Center on Black Avenue (**Figure 1-3**).

Recommendations

- Consider alternative and creative uses for urban wood repurposing, such as partnership projects with local schools, artisans, and lumber mills. Utilize the City's contractor, West Coast Arborists, in this capacity as they have capabilities for milling.
- Encourage tree contractors to provide mulch to residents or consider establishing mulch giveaway locations throughout the City. Another resource to inform residents about is the website **chipdrop.com**. Note: mulch should not be given away or installed in areas defined as very high severity fire zones by CalFire **(see Appendix A)**.

1.3.7 Tree Risk Inspections

Living with trees and the countless benefits they provide to our urban areas also involves acknowledging some potential risks associated with trees. The urban forest is interwoven with people, homes, cars, and infrastructure that may be impacted by tree failures. The risks associated with trees can be minimized through routine monitoring and appropriate mitigation efforts. **Appendix J** provides more details on tree risk assessment and the ISA TRAQ program.

Current Practices

The City of Pleasanton experiences most tree and branch failures during storm and high wind events, but tree failures can occur in any weather condition. The unpredictable nature of tree failures imposes a need for a more systematic approach to tree management. The City does not have a routine tree risk assessment protocol but inspects trees in response to work orders submitted by residents, hazardous conditions recognized by staff, or after a tree has a limb failure. **Appendix J** describes findings regarding tree care in high wind areas.

Recommendations

- Implement tree risk assessment and mitigation procedures developed by the International Society of Arboriculture (Smiley et. al. 2017).
- Develop a periodic tree risk assessment program to inspect City trees, focusing on trees in high target areas.
- Consider risk when prioritizing trees for removal and replacement. Utilize the City's contractor, WCA, in this capacity as they have capabilities
- Follow CalFire recommendation of not using mulch in fire zones

1.3.8 Tree Maintenance Responsibilities

There are some trees in the city where the management responsibility is unclear. Examples include trees that grow on property boundaries, trees planted by residents in the right-of-way without permits, and trees in waterways and wetlands.

Current Practices

Public Works determines whether the City is responsible for tree maintenance when management responsibility issues arise. This determination is based on past practices, and research of existing documents or agreements regarding maintenance.

Recommendations

- Utilize **Appendix L**: Tree Maintenance Responsibilities as a guideline to determine tree maintenance responsibilities.

2

STATUS OF THE URBAN FOREST (PUBLIC AND PRIVATE TREES)

2.1 Historical Context

The City of Pleasanton is located in the Amador Valley, east of the San Francisco Bay. The City resides over a former large marsh complex, surrounded by grasslands and oak woodland hills. Before European influence, most trees grew in the riparian areas along the various waterways that ran through the valley and in the hills to the west of the City, with only a relatively sparse coverage of oak trees in the flatter grassland areas (SFEI 2013). After the arrival of the first European settlers, the marshes and wetlands were largely drained, and the land was converted to farmland and ranches. The City had a big population boom in the 1960's and 1970s, resulting in conversion of much of the agricultural land to residential and commercial land uses. In 1971, the City really began prioritizing tree preservation when they created and adopted its first Tree Preservation Ordinance (Ordinance) in 1971, which has since gone through a number of updates. In the 1980s, construction began on the 850-acre Hacienda (business park) which converted old swampland to the largest commercial area in the City. Pleasanton today is recognized as a Tree City USA by the Arbor Day Foundation and has achieved 25% canopy cover city-wide. The City is aiming now to increase canopy cover in all residential neighborhoods to 25% which will also increase city-wide canopy cover in alignment with CAP 2.0 goals.

2.2 Urban Tree Canopy

The urban tree canopy provides multiple environmental services and economic value to the surrounding community. A robust tree canopy that is equitably distributed helps to create a healthier, more resilient community, and the environmental benefits and services received from the urban forest increase as tree canopy increases (Clark, et al. 1997). Conversely, low canopy cover may be an indicator for, and can result in, increased vulnerability to pollution, extreme heat, and associated health issues (Wolf 2020). Trees contribute to cleaner, healthier air in urban environments through direct pollution removal (e.g., uptake via leaf stomata or intercepting airborne particles), air temperature reductions (e.g., transpiration), and reduction of urban heat islands, building energy consumption and consequent energy emissions (e.g., temperature reductions provided by tree shade). These community enhancements provided by tree canopy cover improve the quality of life for residents and for those who work or visit Pleasanton.

This section of the Technical Assessment provides a review of the historical and existing canopy cover, and identifies priority areas for increasing tree canopy by evaluating the distribution of the tree canopy across the City. The canopy

cover analysis establishes the baseline condition from which to develop short-term and long-term goals and objectives for maintaining and growing healthy and large trees and increasing tree canopy to maximize resident enjoyment of the environmental services provided by trees.

The following sections describe the current status of the City's tree canopy and provide recommendations that can help advance the City toward maintaining existing tree canopy and achieving a more equitable canopy cover that improves the community.

2.3 Canopy Cover Assessment

A City-wide land cover classification and canopy cover assessment was conducted for Pleasanton using 2022 aerial imagery. This assessment included a canopy change analysis that compared the 2022 canopy results with data from 2012 and 2018 to identify trends and changes in urban tree canopy cover over time. See **Appendix F** for the methodology on the Land Cover Classification and Canopy Change Analysis.

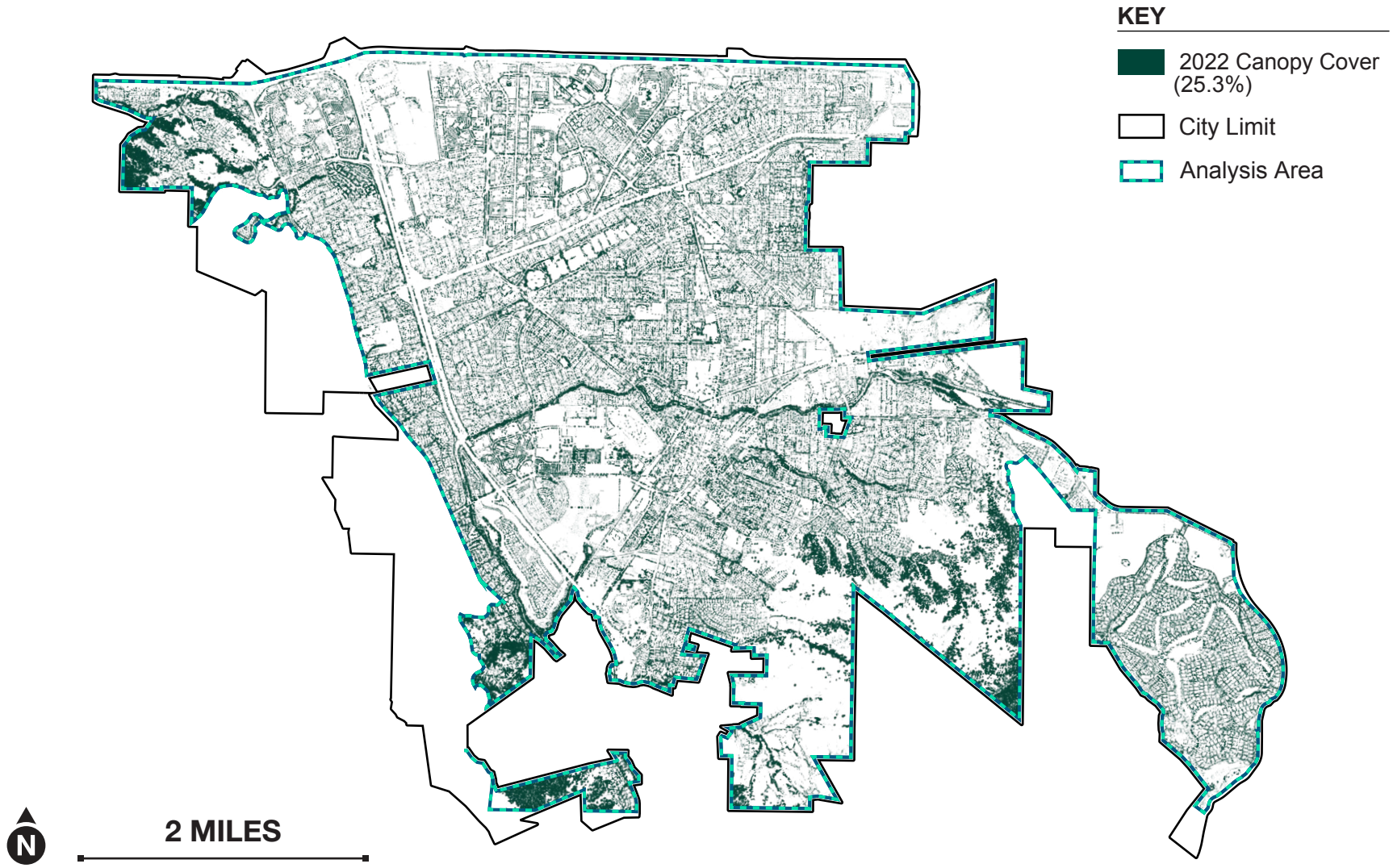
Land Cover Results

The land cover percentages for 2022 are presented in **Table 2-1**, with the canopy cover illustrated in **Figure 2-1**.

Table 2-1. 2022 Land Cover

Land Cover Type	Acres	Land Cover Percent (%)
Canopy	3,472	25.3%
Low-Medium Vegetation	2,370	17.3%
Bare Ground	1,920	14.0%
Impervious Surfaces	5,809	42.3%
Water	149	1.1%

Figure 2-1. Canopy Cover Map



Canopy Change Analysis Results

The canopy change analysis between 2012 and 2022 revealed a notable increase in canopy cover over the decade, as detailed in **Table 2-2**.

Table 2-2. Canopy Cover Change (2012-2022)

Year	Canopy Acres	Canopy Percent
2012	2,544	18.5%
2018	2,567	18.7%
2022	3,472	25.3%

- **Absolute Change:** The canopy cover increased by 928 acres from 2012 to 2022, representing a 6.8% increase in the total canopy area.

  [**Absolute Change** = **2022 canopy - 2012 canopy**]

- **Relative Change:** The canopy cover percentage increased by 36.5 % over the same period, indicating a substantial improvement in the proportion of urban areas covered by trees.

  [**Relative Change** = **Absolute Change/2012 canopy**]

Tables 2-3, 2-4, and 2-5 present the canopy cover data categorized by land use, council districts, and tree maintenance districts. This analysis highlights how canopy cover has evolved across different areas within the City from 2012 to 2022.

Table 2-3. Canopy Cover by Land Use

Land Use Type	Canopy Percent (2012)	Canopy Percent (2022)	Absolute Change
Roadways/Train Stations	7.9%	8.1%	0.2%
Community Facility / Parks	13.0%	15.3%	2.3%
Industrial Commercial Offices	15.9%	19.4%	3.5%
Mixed Use	17.7%	21.9%	4.2%
Open Space	19.0%	27.9%	8.9%
Residential	20.2%	27.5%	7.3%

Table 2-4. Canopy Cover by Council District

Council District	Canopy Percent (2012)	Canopy Percent (2022)	Absolute Change
1	18.4%	22.9%	4.5%
2	18.7%	23.7%	5.0%
3	19.8%	25.6%	5.8%
4	17.6%	27.7%	10.1%

Figure 2-2. Canopy Cover by Council Districts Map

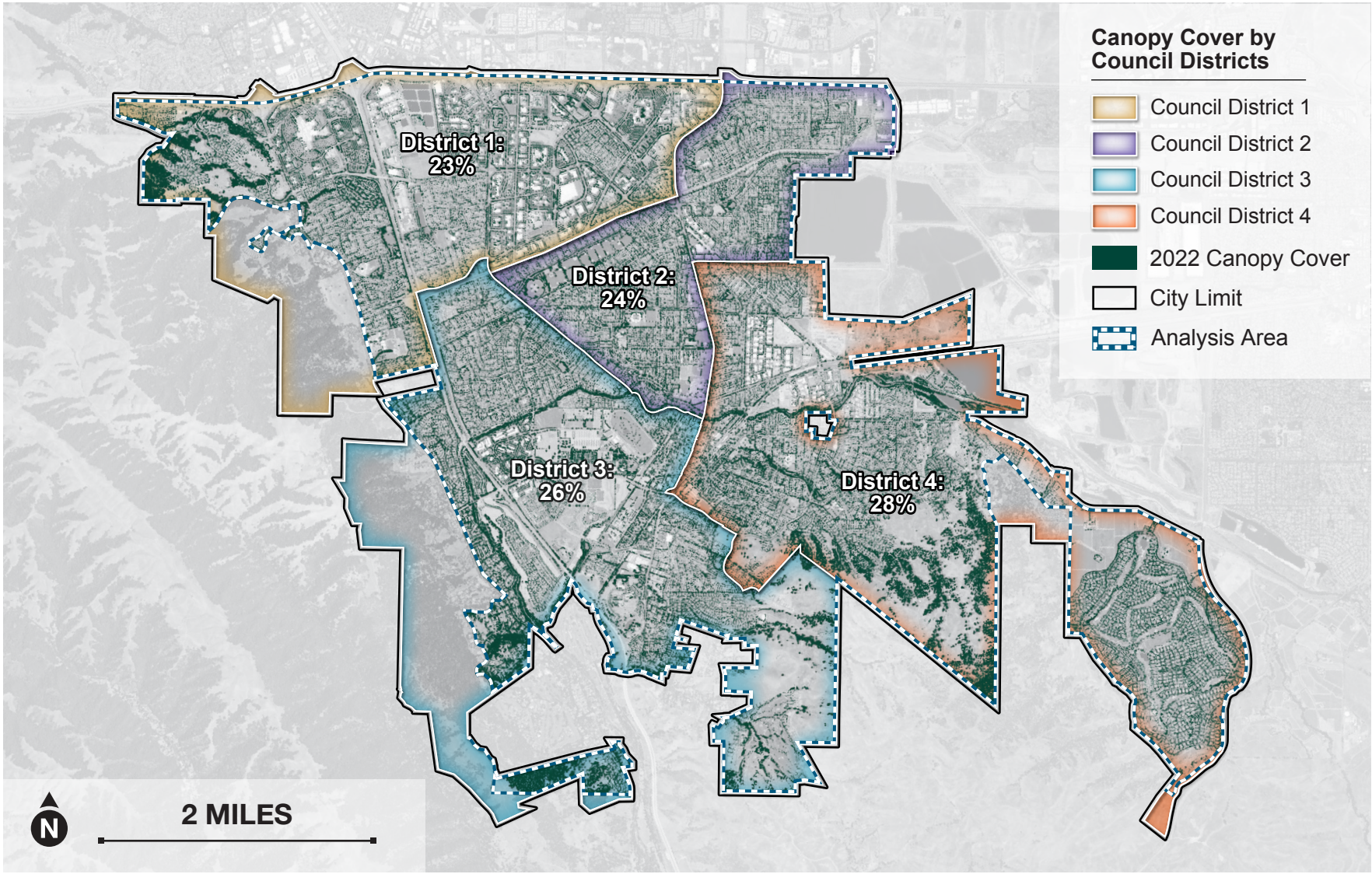


Table 2-5. Canopy Cover by Tree Maintenance District

Tree Maintenance District	Canopy Cover Percent (2012)	Canopy Percent (2022)	Absolute Change
1	22.8%	27.6%	4.8%
2	22.7%	29.8%	7.1%
3	14.9%	24.3%	9.4%
4	13.9%	17.9%	4.0%
5	21.1%	25.4%	4.3%
6	21.8%	25.4%	3.6%
7	22.7%	26.1%	3.4%
8	24.0%	26.2%	2.2%
9	12.4%	18.8%	6.4%
10	19.6%	25.8%	6.2%
11	9.6%	15.9%	6.3%
12	15.1%	30.0%	14.9%
13	16.4%	21.1%	4.7%
17	7.9%	16.6%	8.7%

Neighborhoods

Among the 77 neighborhoods within the analysis boundary, 72 experienced an increase, in absolute canopy change percentage terms, ranging from 0.7% to 22.7%, with Ruby Hill recording the largest increase at 22.7%. Only one neighborhood, Jensen Tract, saw a decrease of 0.2%. The average canopy across neighborhoods increased from 23.0% in 2012 to 29.8% in 2022. These results provide valuable insights for the City to focus efforts on targeted areas that require canopy enhancement.

Parks

Of the 48 parks within the analysis boundary, 39 experienced an increase ranging from 0.8% to 22.5%, while nine parks experienced a decrease ranging from 0.2% to 19.8%. Vintage Hills Park saw the largest increase at 22.5%, whereas Civic Park experienced the largest decrease at 19.8% due to the loss of the mature American Elm trees to Dutch Elm Disease. The average canopy cover across all parks was 36.5% in 2012 and 41.9% in 2022.

Potential Reasons for Canopy Cover Increase

The results reveal an overall increase in canopy cover across all examined delineations from 2012 to

2022. Several factors may contribute to this observed increase. Improved data quality over the years plays a role, with 2022 data providing a finer resolution of 0.076 meters (0.25 U.S. survey feet) compared to the 1-meter resolution in 2012 and 0.6-meter resolution in 2018. This enhanced resolution, coupled with the use of LiDAR technology in 2022, likely enabled more precise detection and measurement of tree cover. The findings indicate a notable expansion of Pleasanton's urban forest, although further analysis could be conducted to identify specific areas of increased growth and better understand the factors driving this expansion. Other factors that have likely contributed to this observed increase include younger trees maturing in the urban forest, improved tree ordinance enforcement practices, and the Green Building code requiring more trees in parking lots and the many large private development projects over the last decade to preserve and plant more trees. The City will need to continue to improve management actions, like achieving its goal to replace all trees that are removed annually and plant an additional 44 trees each year over the next 25 years to fill the 1,100 vacant City-owned tree sites in target neighborhoods to maintain growth of its urban forest. Prioritizing these efforts in neighborhoods with lower canopy levels will help progress towards an equitable distribution of the urban forest.

Figure 2-3A. Canopy Cover by Neighborhood Map

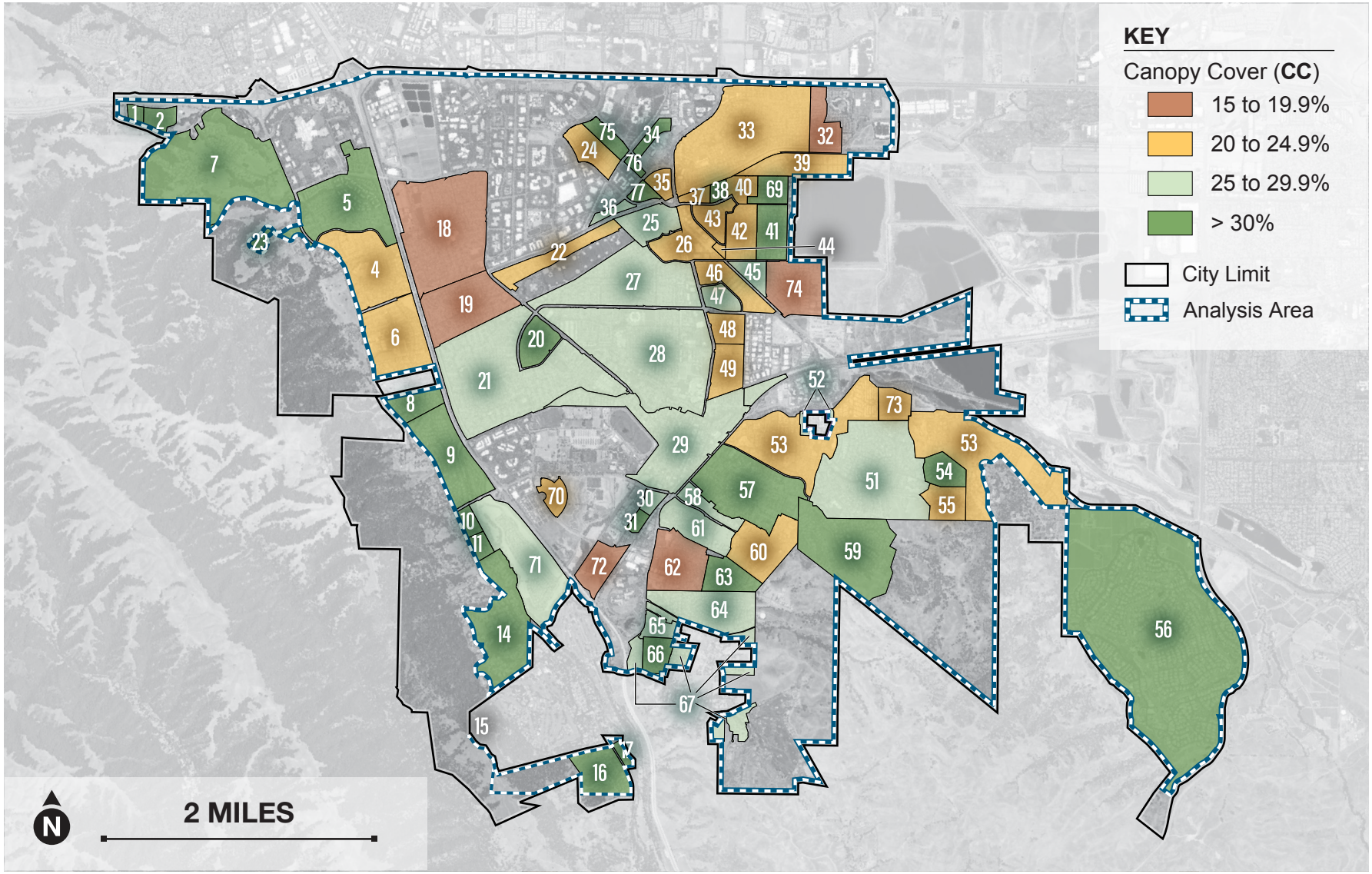


Figure 2-3B. Canopy Cover by Neighborhood Map

ID	Neighborhood Name	CC	ID	Neighborhood Name	CC	ID	Neighborhood Name	CC
1	Canyon Creek	35%	29	Downtown	27%	54	Foxbrough Estates	35%
2	Canyon Meadows	38%	30	Civic Square	30%	55	Grey Eagle Estates	21%
4	North Muirwood	25%	31	Ridgeview Commons	40%	56	Ruby Hill	35%
5	Stoneridge	33%	32	California Somerset	19%	57	Pleasanton Heights	33%
6	South Muirwood	24%	33	Pleasanton Meadows	21%	58	Old Towne	26%
7	The Preserve	44%	34	Hacienda Gardens	36%	59	Kottinger Ranch	37%
8	Foothill Knolls	38%	35	Las Positias Garden Homes	20%	60	Bonde Ranch	21%
9	Laguna Oaks	34%	36	Verona	29%	61	Mission Hill	26%
10	Foothill Place	44%	37	Belvedere	22%	62	Mission Park	19%
11	Laguna Vista	41%	38	Gatewood	39%	63	Lund Ranch	31%
14	Golden Eagle Farms	55%	39	Stoneridge Park	23%	64	North Sycamore	30%
15	Castlewood	78%	40	Stoneridge Orchards	21%	65	Rosepointe	26%
16	Oak Tree Farms	50%	41	Mohr-Martin	32%	66	Carriage Gardens	41%
17	Oak Tree Acres	51%	42	Mohr Park	24%	67	Happy Valley	27%
18	Val Vista	16%	43	Pleasanton Village	24%	69	Walnut Glen	31%
19	Valley Trails	19%	44	Sycamore Place	25%	70	Walnut Hills	21%
20	Country Fair	30%	45	Rosewood	27%	71	Pleasant Ridge	28%
21	Del Prado	25%	46	Heritage Valley	23%	72	Canyon Oaks	16%
22	Parkside	23%	47	Danbury Park	28%	73	Shadow Cliffs	22%
23	Moller Ranch	40%	48	Amador Estates	21%	74	Ironwood	20%
24	Valencia/Siena/Avila	25%	49	Jensen Tract	24%	75	Archstone	30%
25	Amberwood/Wood Meadows	29%	50	California Reflections	25%	76	Hacienda Commons	36%
26	Willow West	24%	51	Vintage Hills	25%	77	Springhouse	39%
27	Birdland	27%	52	Remen Tract	27%			
28	Pleasanton Valley	27%	53	Vineyard Avenue	23%			

2.4 Increasing Canopy Cover

The new City goal to reach 25% canopy cover in every residential neighborhood in 25 years was established based on the canopy cover analysis, a financial analysis, and discussions with City staff. Currently, there are 26 of 77 neighborhoods in Pleasanton that are under 25% canopy cover. To reach 25% canopy cover in every neighborhood, strategic planning and sustained efforts are necessary. The canopy cover increase analysis identifies the total number of new trees required to in each neighborhood to meet this objective over the next 25 years. These planting efforts consider varying tree species and canopy sizes, ensuring a diverse and resilient urban forest.

Table 2-6 presents the total number of new trees per mature canopy size that would need to be planted in each neighborhood over the next 25 years to achieve 25% canopy cover in each of the targeted neighborhoods. Assuming a combination of tree sizes, planting approximately 6,262 trees over the next 25 years would progress the City toward achieving this canopy goal. As the City implements this goal, they will need to monitor progress, and adjust strategies to stay on track toward the 2050 target. See Appendix F for the methodology on the Canopy Cover Analysis. A number of Pleasanton neighborhoods, including Canyon Oaks, Val Vista, Mission Park, and California Sommerset, have significantly lower canopy cover than the 25.3% average. The reasons for this vary by neighborhood, but are primarily related to a lack of street trees due to the sidewalks being located directly adjacent to the street. A few of the neighborhoods, such as Canyon Oaks, have large open spaces without much canopy cover.

Table 2-6. Total Number of Trees Needed to Increase Canopy Cover in Targeted Neighborhoods

Map ID	Neighborhood Name	Current Canopy Cover %	20 ft diameter canopy	30 ft diameter canopy	40 ft diameter canopy	50 ft diameter canopy	Total Trees
18	Val Vista	15.5	1,010	273	155	322	1,760
72	Canyon Oaks	15.5	211	63	36	34	344
19	Valley Trails	18.9	237	64	37	120	458
32	California Somerset	19.0	113	24	14	40	191

Table 2-6. Total Number of Trees Needed to Increase Canopy Cover in Targeted Neighborhoods

Map ID	Neighborhood Name	Current Canopy Cover %	20 ft diameter canopy	30 ft diameter canopy	40 ft diameter canopy	50 ft diameter canopy	Total Trees
62	Mission Park	19.4	285	71	40	38	434
74	Ironwood	19.7	194	58	33	55	340
35	Las Positas Garden Homes	20.2	43	13	8	7	71
55	Grey Eagle Estates	20.5	91	27	16	15	149
48	Amador Estates	20.5	68	21	12	11	112
60	Bonde Ranch	20.7	166	51	27	38	282
33	Pleasanton Meadows	20.8	581	161	74	126	942
70	Walnut Hills	20.9	46	14	8	8	76
40	Stoneridge Orchards	21.0	49	15	18	8	90
73	Shadow Cliffs	21.6	52	15	10	8	85
37	Belvedere	22.2	16	5	3	3	27
46	Heritage Valley	22.7	40	8	6	5	59
39	Stoneridge Park	22.8	0	0	0	39	39
22	Parkside	23.0	47	14	8	13	82
53	Vineyard Avenue	23.4	234	62	49	90	435

Table 2-6. Total Number of Trees Needed to Increase Canopy Cover in Targeted Neighborhoods

Map ID	Neighborhood Name	Current Canopy Cover %	20 ft diameter canopy	30 ft diameter canopy	40 ft diameter canopy	50 ft diameter canopy	Total Trees
26	**Willow West**	23.5	34	7	5	15	61
49	**Jensen Tract**	23.6	33	10	6	6	55
42	**Mohr Park**	23.7	57	10	6	6	79
24	**Valencia/Siena/Avila**	23.8	26	8	5	5	44
6	**South Muirwood**	24.1	0	0	0	30	30
43	**Pleasanton Village**	24.3	0	0	0	6	6
4	**North Muirwood**	24.7	0	0	0	11	11
Total Trees			**3,633**	**994**	**576**	**1,059**	**6,262**

2.4.1 Private Property

While the City plays a large role in increasing canopy cover across Pleasanton through the management of public trees, the health and growth of an urban forest are also greatly influenced by actions taken on private property. The canopy cover analysis shows that 70% (2,446 acres) of the City's total canopy cover is located on private property, with the remaining 30% (1,027 acres) located on public land and rights-of-way. The City of Pleasanton is committed to the preservation of trees throughout the community, recognizing that residents play a crucial role in maintaining and growing the urban forest. Individuals are encouraged to actively engage in urban forestry by maintaining healthy trees on

residential properties, participating in tree planting events, and speaking up for tree preservation in public forums.

Current Practices

The City of Pleasanton has a long history of preserving Protected trees, City-owned trees, and trees planted as a condition of approval alongside development. The City's municipal code includes permit requirements to remove such trees and a set of conditions that must be met for trees to be removed.

The City also provides helpful resources to community members on the City website. Resources include tree selection and a standard planting detail, a list of qualified arborists, and supporting documents that help community members understand tree policy within the City of Pleasanton.

Recommendations

- Host a series of outreach events to help the community understand the new tree ordinance.
- Host annual tree education events centered around the UFMP initiatives, the tree ordinance, and tree plantings.
- Create a tree/seedling giveaway program and aim to give out 100 trees per year to residents living in neighborhoods that most need more canopy
- Consider implementing an in-lieu fee and alternatives when protected trees are removed and on-site replacement is not feasible.
- Consider requiring a front yard tree for every residential property.

While the previous sections focused on the entire urban forest (public and private trees), the analyses of the following sections (2.5 through 2.8) are based on only the public trees that the City manages.

2.5 Species Diversity (City Managed Trees Only)

Cities with tree inventories that have low species diversity are more susceptible to invasive pests, pathogens, and significant weather events. California acquires a new invasive pest approximately once every 60 days (Sutherland 2014). While not all introduced invasive species result in destructive losses to urban forests, an important strategy to increase resiliency to threats is to foster a diverse urban forest. For example, Dutch Elm Disease wiped out many of the American Elm trees throughout the United States in the mid-1900s after it was accidentally introduced in the 1930s.

An urban forest that loses many of its trees from pests and pathogens due to low species diversity will have direct implications on public health. Loss of trees in an urban forest means loss of the benefits provided by those trees, including shade on hot days, reduction of the heat island effect,

stormwater capture, improved air quality, and aesthetic, financial, and social benefits.

To improve the resilience of the urban forest, a city's tree inventory should contain no more than 10% of any one species, 20% of any one genus, or 30% of any one family (Miller and Miller 1991; Richards 1993; Ball 2007). These recommendations provide useful guidelines to measure the vulnerability of the City's tree population. Pleasanton's 23,722 City-managed trees are composed of 113 genera and 250 species. The top 10 genera and species are shown in **Tables 2-7 and 2-8**. Sustainability goals are as follows:

- **Sustainability Goal (Genus):** No genus represents more than 20% of inventory.
- **Sustainability Goal (Species):** No species represents more than 10% of inventory.

An exception to the genus and species goals above are for native species such as oaks, which may exceed the recommended sustainability goals. The City and community have put a high value on native species as these trees are naturally adapted to Pleasanton's local environment and climate, and provide habitat to a wide variety of native animals. The oak genus *Quercus* currently makes up just over 20% of the inventory and the two most common oak species (coast live oak and valley oak) within the City make up 9.4% and 7.2%, respectively, of the overall species in the inventory. Another exception to consider for the City are tree species that already have a proven history of resiliency in Pleasanton's urban landscape, which might include species that have already survived extreme heat and drought periods, recovered from pest infestations, or that have successfully grown in limited spaces with suboptimal soil volume.

Table 2-7. Genus Diversity

Rank	Genus	Number of Trees	Percentage of Inventory
1	*Quercus*	4,772	20.1%
2	*Platanus*	2,982	12.6%
3	*Sequoia*	2,010	8.5%
4	*Pistacia*	1,609	6.8%
5	*Lagerstroemia*	1,451	6.1%
6	*Fraxinus*	1,265	5.3%
7	*Liquidambar*	984	4.1%
8	*Pyrus*	967	4.1%
9	*Acer*	705	3.0%
10	*Pinus*	504	2.1%
Total		**17,249**	**72.7%**

Table 2-8. Species Diversity

Rank	Botanical Name	Common Name	Number of Trees	Percentage of Inventory
1	*Platanus × hispanica*	London plane	2,732	11.5%
2	*Quercus agrifolia*	Coast live oak	2,225	9.4%
3	*Sequoia sempervirens*	Coast redwood	2,010	8.5%
4	*Quercus lobata*	Valley oak	1,704	7.2%
5	*Pistacia chinensis*	Chinese pistache	1,608	6.8%
6	*Lagerstroemia indica*	Crape myrtle	1,449	6.1%
7	*Liquidambar styraciflua*	American sweetgum	984	4.2%
8	*Pyrus calleryana*	Callery pear	795	3.3%
9	*Fraxinus angustifolia*	Raywood ash	632	2.7%
10	*Celtis sinensis*	Chinese hackberry	416	1.8%
Total			**14,555**	**60.2%**

2.6 DSH Distribution

The most common and least invasive method to approximate the age of a living tree is to measure the trunk diameter at 4.5 feet above the ground (diameter at standard height [DSH]). Since trees vary in size and growth patterns, knowledge about specific species growth patterns is also required. General age recommendations suggest an urban forest have a distribution of immature trees (40%) to replace failing or aging ones, young (30%) and middle-aged (20%) trees to provide the bulk of economic and environmental benefits, and relatively fewer mature trees (10%) that have most of their life behind them but provided significant environmental benefits for many years (Morgenroth et al. 2020; Richards 1983).

Table 2-9 shows the DSH distribution of all trees in the 2024 City inventory compared to the recommended DSH distributions. The age classes of the City's trees are not substantially different from the recommended distributions discussed above. There is a lower than recommended percentage (12%) of middle-aged trees, but the City's population of immature (28%) and young (51%) trees are anticipated to adequately replace mature trees as they reach the end of their life. The current distribution, with a higher proportion of young and immature trees, suggests that the City is well-positioned to sustain its urban canopy over time. However, the low percentage of middle-aged trees could lead to a temporary gap in ecosystem services. This gap occurs as mature trees decline and are removed before younger trees can fully replace their canopy and environmental benefits. Middle-aged trees are crucial as successors to mature trees, ensuring a steady transition and continuity in providing benefits like air quality improvement and carbon sequestration.

Recommendations:

- Develop a detailed tree planting succession plan that identifies areas with a high concentration of mature trees and schedules the planting of younger trees nearby. This ensures that as mature trees decline, there are already younger trees in place to take over.
- Develop long-term planting plans aimed at maintaining the age diversity recommendations shown in **Table 2-9**.

Table 2-9. DSH Distributions in the Pleasanton Inventory

Sustainability goal: *Age classes of trees are sufficiently distributed to ensure environmental benefits continue*				
Age Category	**DSH** *(inches)*	**Number of Trees**	**% of inventory**	**Recommended Percentage of Tree Inventory**
Immature	1–6	6,564	28%	40%
Young	7–18	12,144	51%	30%
Middle-aged	19–24	2,740	12%	20%
Mature	25+	2,219	9%	10%

Source: City of Pleasanton Tree Inventory (Dudek 2024); Richards 1983.

2.7 Tree Condition and Relative Performance Index

Trees that are healthy with good trunk and branch structure generally have a lower risk of failure and contribute to a safer City. To determine tree condition, arborists conducting the City's tree inventory rated trees on a scale based on visible characteristics of health condition and canopy structure (**Table 2-10**). Pursuant to the Council of Tree and Landscape Appraisers' "Guide for Plant Appraisal," tree health and structure were evaluated with respect to five distinct tree components: roots, trunk, scaffold branches, small branches, and foliage. Each component of the tree was assessed with regard to health factors such as insect or pathogen damage, mechanical damage, presence of decay, presence of wilted or dead leaves, and wound closure. Tree health and structure were graded as good, fair, poor, critical, or dead, with good representing no apparent problems and dead representing a dying or dead tree. Good condition trees exhibit acceptable vigor, healthy foliage, and adequate structure and lack any major maladies. Fair condition trees typically have few maladies but declining vigor. Trees in poor and critical condition exhibit declining vigor, unhealthy foliage, poor branch structure, and excessive lean. This method of tree condition rating is comprehensive and results in ratings that are useful for determining the status of trees based on common urban forestry standards.

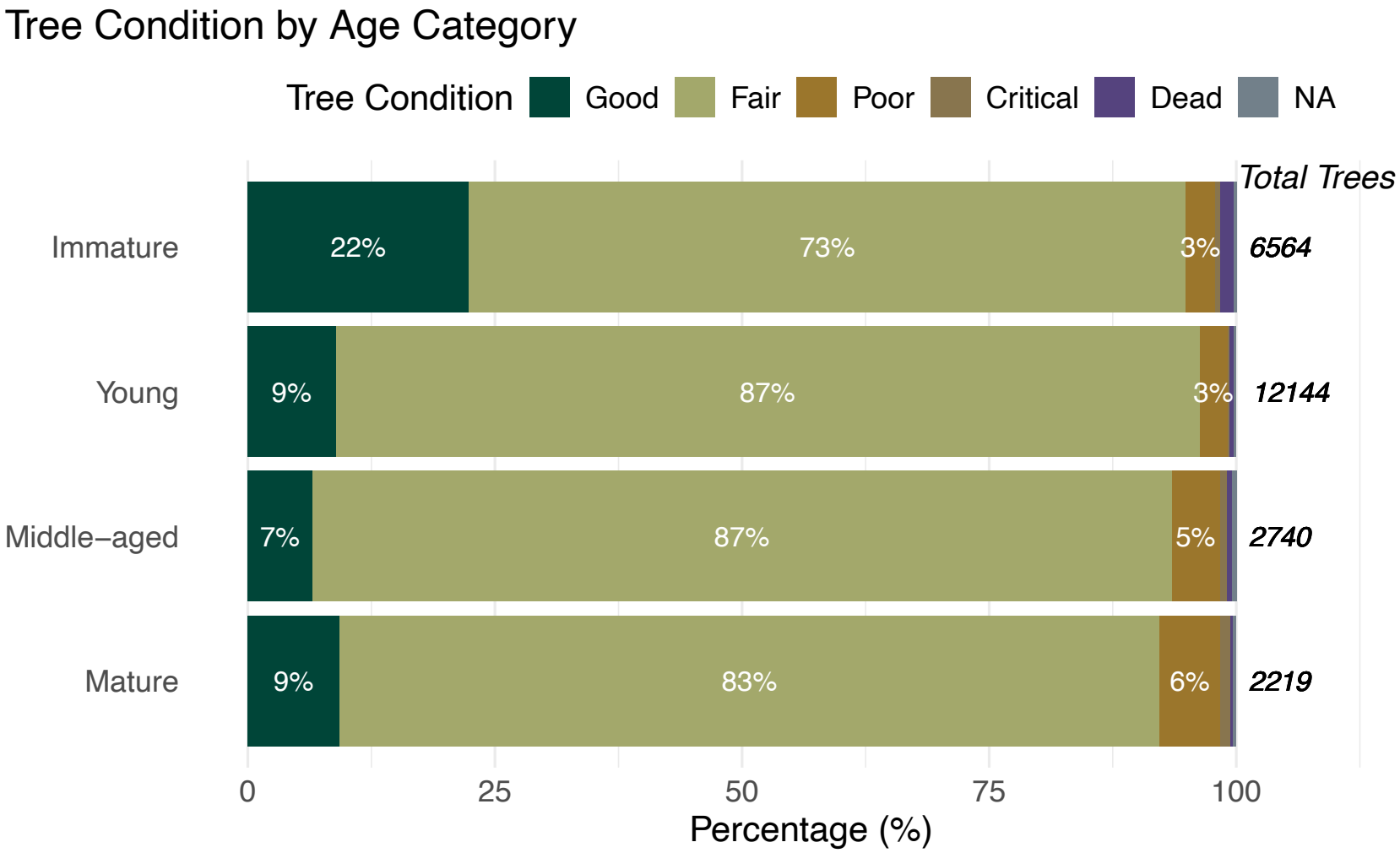
Tree condition of the City's inventory varied, with roughly 12% rated as good, and 83% as fair, and 4% rated poor, critical, or dead. The most common health defects observed in these trees included drought stress, decay, and poor root function, and various pest and pathogen problems. The most common structure defects included cavities, dead limbs or branches, leaning, topping, and issues with branch unions and root systems. **Table 2-11** shows that the relative distribution of the various tree conditions is mostly the same for all age categories. The only exception to this is that immature age trees (the trees that have been most recently planted by the City) have the highest relative percentage of trees in 'good' condition at 22% (compared to 7% and 9% for the other age categories) and the lowest relative percentage of trees in 'fair' condition at 73% (compared to 83%, 87%, and 88% for the other age categories). This distribution of conditions makes sense for immature trees as 1) they should be starting in a good condition coming straight from the tree nursery, and 2) they haven't developed mature canopies that might have more obvious structural issues or outgrown their planting spaces. Mortality of these immature trees is likely between 1 and 5% depending on how many of these trees in the 'critical' and 'poor' categories survive to maturity.

Table 2-10. Tree Conditions of the Pleasanton Inventory

Condition	Number of Trees	Percent
Good	2,934	12.4%
Fair	19,642	82.8%
Poor	803	3.4%
Critical	108	0.5%
Dead	159	0.7%

Source: City of Pleasanton Tree Inventory (Dudek 2024)

Figure 2-4. Tree Condition and Age



Percentages less than 1% are unlabeled.

Table 2-11. Tree Conditions by Tree Age of the Pleasanton Inventory

Age Category	Tree Condition - # of Trees (% of Total Age Category)					
	Good	Fair	Poor	Critical	Dead	Total
Immature	1,468 (22%)	4,763 (73%)	191 (3%)	36 (1%)	93 (1%)	6,564
Young	1,080 (9%)	10,614 (88%)	341 (3%)	29 (0.2%)	52 (0.4%)	12,144
Middle-aged	179 (7%)	2,382 (87%)	133 (5%)	20 (1%)	14 (1%)	2740
Mature	206 (9%)	1,841 (83%)	136 (6 %)	23 (1%)	6 (0.3%)	2219

Because tree condition ratings are qualitative, a single tree's rating may differ depending on each inventory arborist. While the 2024 inventories were not conducted by the same individuals, it can be useful to broadly compare the findings.

The Relative Performance Index (RPI) can help identify species that are doing well or those that may need further analysis and management recommendations to improve vigor. RPI is calculated by dividing the percentage of trees in a single species that were categorized in good condition and by the percentage of all trees in the inventory that were in good condition. Species with an RPI of 1 or higher are performing as well or better than the entire population. Species with an RPI less than 1 are performing below the entire population (**Table 2-12**). A sustainability goal that the City should strive for is for all six of the most common species to have higher RPI scores than the average of all species in the public tree inventory (RPI of 1.0 or higher). This could be achieved through a number of strategies including using a strategic planting plan to guide the selection of the appropriate tree species type and size for a given planting site, by including structural pruning of young trees into the establishment care program which should help improve structure as the tree matures, and in drought years, implementing a supplemental watering program for those trees that seem to be most affected.

Table 2-12. Relative Performance Index for the Six Most Common Species in Pleasanton's Inventory

Relative Performance Index (RPI) **Goal:** Six Most Common Species have an RPI Score of 1.0 or Higher			
Rank	**Botanical name**	**Common name**	**RPI**
City Inventory			**Entire Inventory Average 1.76**
1	*Platanus x hispanica*	London plane	**0.7**
2	*Quercus agrifolia*	coast live oak	**2.4**
3	*Sequoia sempervirens*	coast redwood	**0.1**
4	*Quercus lobata*	valley oak	**2.7**
5	*Pistacia chinensis*	Chinese pistache	**0.8**
6	*Lagerstroemia indica*	crape myrtle	**0.6**
RPI Average			**1.22**

Source: City of Pleasanton Tree Inventory (Dudek 2024)

The City of Pleasanton is not currently meeting the recommended RPI goal as the City's top six tree species average score is currently 1.22, and the average score for the entire tree inventory is 1.76. While the City's two most common oak species have RPI scores greater than 2.0, the other four of the six most common tree species in Pleasanton have RPI scores below the overall average. The first and third most common tree species in the City inventory, *Sequoia sempervirens* has the lowest RPI score of 0.1, and is considered unsuitable for Pleasanton's predicted future climate without supplemental watering (McBride and Lacan 2022). Although *Platanus x hispanica* and *Lagerstroemia indica* both have RPI scores below 1, these two tree species are staples within Pleasanton and there are many examples of these two species performing well even in tough conditions, such as the *Platanus x hispanica* trees that have survived without irrigation along Bernal Avenue (**See Figure 1-7 in Part 1**)

Recommendations

- The City should enhance maintenance practices with targeted care such as improved watering, pruning, and pest management. Increased monitoring will help address health issues promptly. For persistently unhealthy species, phased replacement with species that typically have higher RPI scores is recommended.

3

CANOPY COVER AND EQUITY

3.1 Why Canopy Cover Matters

As one of the City's biggest and most valuable assets, its important that the City efficiently and equitably manages the urban forest so that everyone in Pleasanton can receive its environmental, economic, and quality of life benefits. Urban forest canopy cover can be inequitably distributed throughout a community and different demographic groups can experience wide ranges of canopy cover, with sparse canopy cover often occurring in socioeconomically disadvantaged areas. While Pleasanton doesn't have any census tracts classified as disadvantaged communities, there are several neighborhoods that have less canopy cover than the City-wide average of 25%. Residents in areas with lower canopy cover experience fewer benefits from the urban forest, such as cooler temperatures from shade, cleaner air and water, access to green space, stormwater mitigation, improved physical and mental health, and increased property values (American Forests, 2024, Wolf 2007).

A City must address neighborhoods that lack tree canopy cover to ensure that everyone in the community is able to experience the benefits of trees. Tree-lined streets should be considered an essential aspect of providing a high quality of life for residents, and it is crucial that Pleasanton continues to promote the equitable distribution of its canopy cover so that those tree-related benefits can be experienced by all for generations to come.

Tree equity in Pleasanton was evaluated by assessing the results of the canopy cover study against public data sources and tools, including urban heat island data (Trust for Public Land 2023), pollution burden data (CalEnviroScreen 2021), and tree equity score (American Forests 2021).

3.1.1 Urban Heat Islands

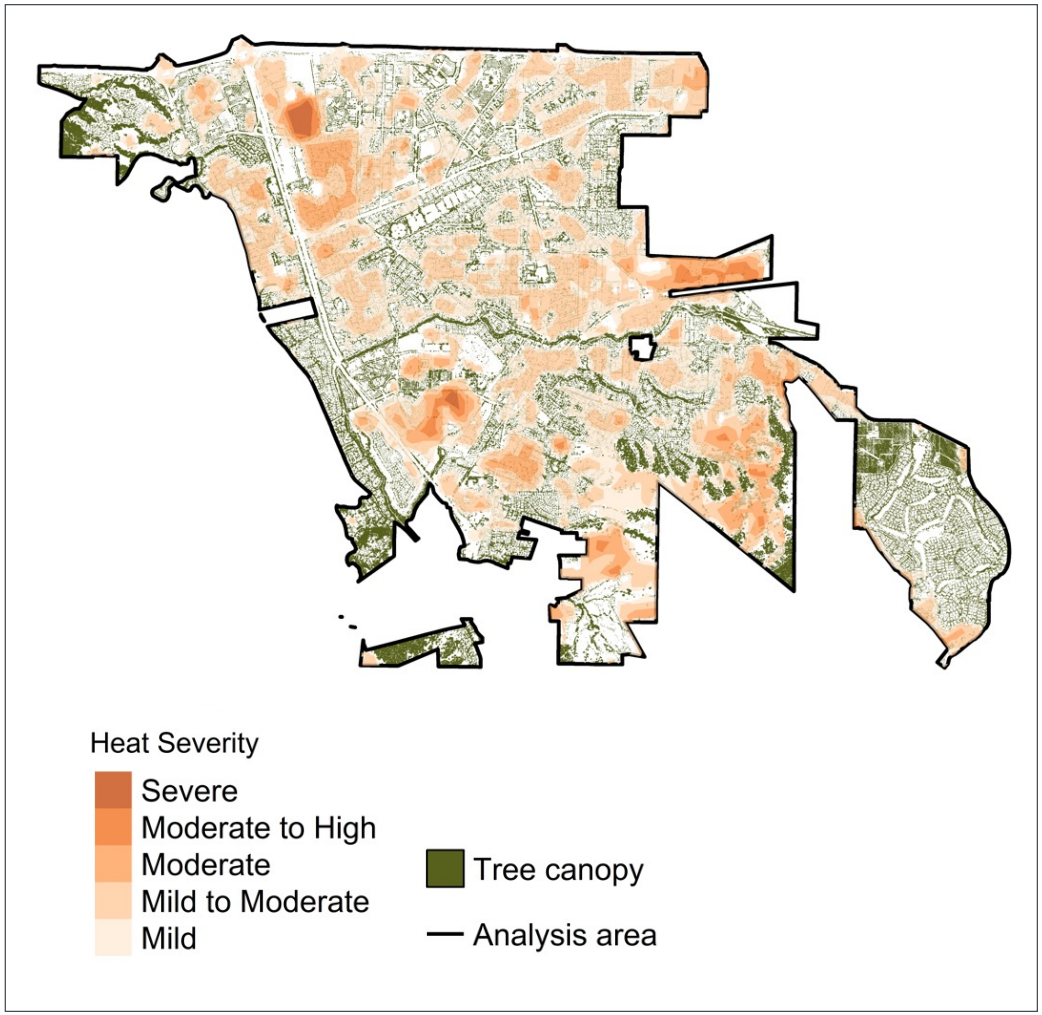
The urban heat island (UHI) effect occurs when urban areas experience higher temperatures relative to surrounding non-urban areas. Multiple factors contribute to the urban heat island effect, including increased impervious surfaces, lack of vegetation, and increased pollutant levels. Impervious surfaces, such as asphalt, concrete, buildings or roofs, absorb the sun's heat during the day, and can reach temperatures that are 50°F to 90°F hotter than the surrounding air temperature (EPA 2021). Lack of vegetation not only limits cooling effects but also exacerbates air pollution by preventing the dispersion of pollutants trapped by tall buildings. The combination of increased temperatures and emissions contribute to compromised human health and comfort, leading to increased incidences of heat-related illness and deaths (EPA 2020).

Urban trees and vegetation offer a significant countermeasure to the UHI effect. By providing shade and facilitating evapotranspiration, trees can lower surface temperatures by 20°F to 45°F (11°C to 25°C) compared to areas without tree cover (Loughner et al. 2012). Additionally, appropriately placed trees can lower building temperatures and reduce energy demand by up to 35% (EPA 2021). The effectiveness of these cooling benefits depends on the extent and distribution of canopy cover across different urban areas.

Analysis of the City's census tracts reveals a relationship between canopy cover and the severity of heat islands. Heat severity is quantified on a scale from 1 to 5, where 1 represents mild heat areas, and 5 signifies severe heat areas (Trust for Public Lands 2023). **Figure 3-1** visualizes the overlap of heat islands and canopy cover across the City.

The map highlights that while all tracts experience UHI effects, those with lower canopy cover tend to have increased heat island severity. This underscores the importance of enhancing urban tree canopy to mitigate heat island impacts. By increasing canopy cover, cities can effectively reduce temperatures, improve air quality, and promote better overall public health.

Figure 3-1 . Urban Heat Island and Canopy Cover

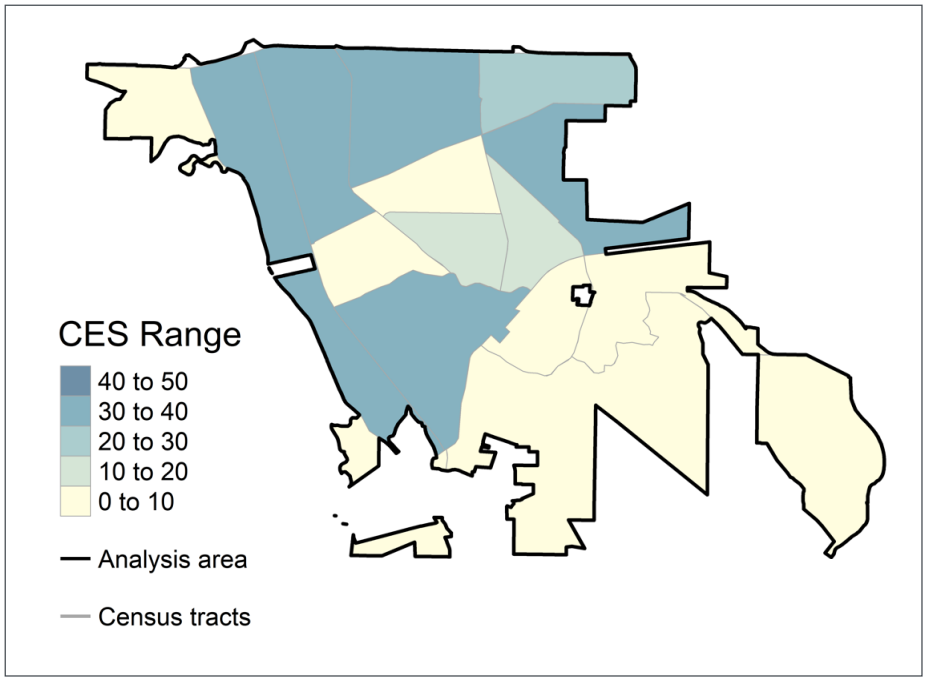


3.1.2 CalEnviroScreen

CalEnviroScreen, an online mapping tool created by the Environmental Protection Agency, identifies pollution burden and vulnerability to the health effects of pollution in California communities (OEHHA 2018). The tool uses environmental, health, and socioeconomic information to identify the inequities associated with pollution throughout the state. CalEnviroScreen scores are calculated using 21 statewide indicators to characterize Pollution Burden and Population Characteristics. The Pollution Burden indicators represent the potential exposures to pollutants and the adverse environmental conditions caused by pollution, while the Population Characteristics indicators represent biological traits, health status, or community characteristics that can result in increased vulnerability to pollution. The data is presented via scores that are mapped by census tract. The scale for vulnerability is shown in percentage ranges, from 1-10% (least vulnerable) to 90-100% (most vulnerable).

CalEnviroScreen 4.0 was used to evaluate the Pleasanton's pollution burden (shown in **Table 3-2**) and the results are further discussed below. **Figure 3-2** depicts the CalEnviroScreen scores for Pleasanton's census tracts. Of the 14 census tracts that are included within the Pleasanton analysis boundary:

Figure 3-2. CalEnviroScreen Map



- Five census tracts (approximately 41% of residents) in Pleasanton had a CalEnviroScreen percentile score between 30 and 40%.
- Three census tracts (approximately 16% of residents) scored between 10 and 21%.
- The remaining 6 census tracts (approximately 42% of residents) scored below 10%.
- There are no census tracts in the City that scored above 40%.

The CalEnviroScreen data indicates that all of Pleasanton's residents live in a census tract that has a low vulnerability to pollution. The census tracts with scores between 30% - 40% are largely located along major roads and highways that pass through the City (US 580 and US 680) or contain some major commercial or industrial center indicating that proximity to these roadways and frequented commercial areas contributes to a greater vulnerability to pollution. While it is challenging to plant trees along highways and commercial and industrial areas, targeted green infrastructure projects and strategic plantings in surrounding areas would provide benefits in mitigating pollution and improving overall air quality.

3.1.3 Tree Equity Score

To prioritize tree planting initiatives that address existing gaps in tree canopy cover, the Tree Equity Score can identify neighborhoods within census block groups that could benefit from more green spaces. The Tree Equity Score (TES) metric was developed by American Forests, a nonprofit organization dedicated to increasing tree canopy in urban, rural, and natural areas.

Figure 3-3. Distribution of Tree Equity Scores **Source:** American Forests (2023).

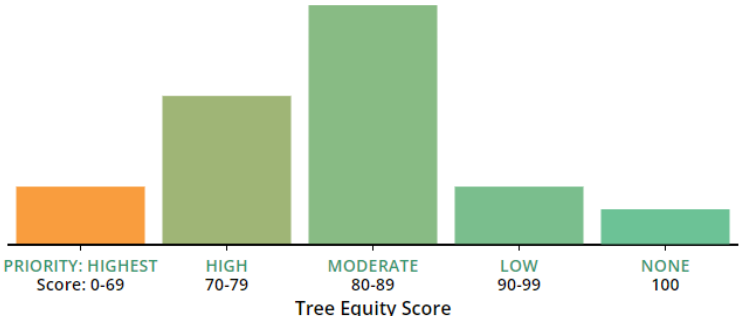
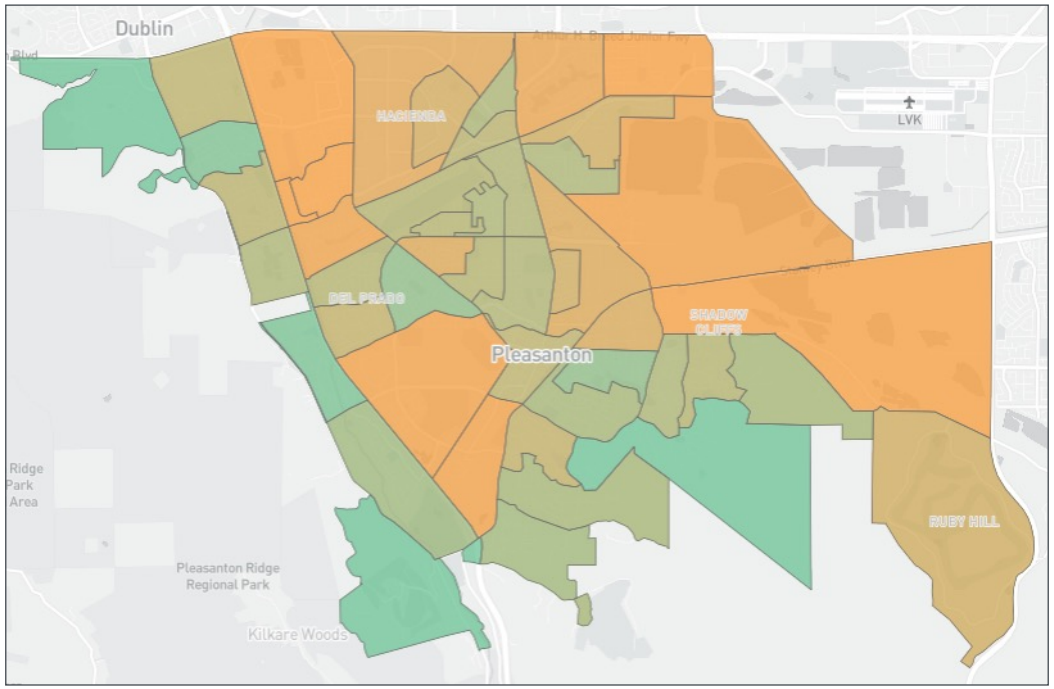


Figure 3-4. Tree Equity Score Map



The variables used when calculating the Priority Index as part of the Tree Equity Score include canopy cover, climate, health, and socioeconomic data, such as percentage of population below 20% of the poverty line, unemployment rate, and urban heat severity (American Forests, 2024). The TES is calculated by multiplying the Gap Score by the Priority Index. A lower TES indicates a greater priority for tree planting and protection. The TES for Pleasanton was evaluated to assess how well the benefits of urban tree canopy are distributed across different census block groups (neighborhoods).

The target score established by American Forests for a City to achieve Tree Equity is a minimum of 75. Overall, Pleasanton has a TES of 81. Ten out of 47 neighborhoods have a TES below 75. Based on the information provided in the TES report, the average canopy cover across these 10 neighborhoods is 13.4%, which is notably lower than the City-wide canopy cover of 25.3%. The 10 neighborhoods have scores ranging from 56 to 73, indicating a high priority for tree equity. The distribution of TES for the City of Pleasanton is displayed in **Figure 3-3**. **Figure 3-4** depicts the TES scores for Pleasanton's neighborhoods.

The neighborhoods with a TES below 75 are clear targets for prioritized planting initiatives. These areas have socioeconomic challenges and lower canopy cover, making them ideal candidates for urban greening efforts to improve environmental and social outcomes.

3.2 What Environmental Equity Means to Pleasanton

The City of Pleasanton recognizes that equitable access to the benefits of trees is essential for improving the quality of life and public health across all its neighborhoods. Pleasanton's commitment to environmental equity involves ensuring that all residents, regardless of where they live, have access to the advantages provided by a robust urban canopy. The City's overall TES of 81 indicates that while Pleasanton generally has a well-distributed canopy, there are specific neighborhoods where improvements are needed. These areas with lower TES scores, often experiencing higher UHI effects and greater socioeconomic and pollution burdens, are priority targets for urban greening initiatives.

Recommendations:

- To address these disparities, the City should focus on investing in neighborhoods with the highest canopy needs. This involves engaging residents in the process of expanding and maintaining their local tree canopy and preserving existing mature trees. By prioritizing resources where they are needed most, Pleasanton can reduce canopy gaps and ensure that all residents benefit from the urban forest.

4

ANALYSIS OF CURRENT PLANS, POLICIES, AND ORDINANCES

This section provides a review of the Pleasanton's current plans, design standards, and ordinances, as well as new state laws, and how they relate to City's management of the urban forest. The recent update of the City's Tree Preservation Ordinance is highlighted here and the full review of the City's other relevant planning documents, including the General Plan, Climate Action Plan, and Trails Master Plan, can be found in **Appendix M**.

4.1 Tree Preservation Ordinance

Pleasanton's Tree Preservation Ordinance is codified in the City's Municipal Code Chapter 17.16 Tree Preservation. **Table 4-1** presents the analysis and revisions to the specific sections of the ordinance code. All other sections are considered to either be in line with best management practices, or are procedural matters defined at the discretion of the City.

Table 4-1. Chapter 17.16 Tree Preservation Ordinance Updates

Chapter 17.16 Heritage Tree Preservation Ordinance	
Section	**Comment**
Section 17.16.006 Definitions	The largest changes were new definitions for "Heritage Tree" and "Protected Trees." A new special classification for Protected Trees was created for trees that are native to Pleasanton which are protected at 37 inches in circumference. All other (non-invasive) tree species are now protected at 55 inches in circumference and the height criterion of 35 feet was removed from the definition of Heritage and Protected Trees. Definitions were added for "Consulting Arborist", "Director", "Emergency", and "Significant Impact."
Section 17.16.010 Permit - Required	The text "effectively remove" was added to section A to clarify definition in place of "remove, destroy, or disfigure."

Table 4-1. Chapter 17.16 Tree Preservation Ordinance Updates

Chapter 17.16 Heritage Tree Preservation Ordinance	
Section	**Comment**
Section 17.16.020 Permit - Procedure	Language modified in section A to replace "Engineering Department" with "Director." A number of changes were made to this section to make the ordinance easier to understand. New conditions were added to provide more flexibility to accommodate resident's needs including, permit categories for high fire risk, ADU construction, and damage from trees to utilities or structures. Tree replacement requirements were added at a minimum of a 1:1 ratio.
Section 17.16.040 Appeals	Section title changed to remove the words "not involving new development" Added new item regarding cost of the appeal which states: "The cost of the appeal shall be the same as the cost to appeal a Planning decision as listed in the current City of Pleasanton Master Fee Schedule and shall be refunded if the appeal is successful."
Section 17.16.050 New property development	Under sections A and B, text was added to clarify the requirements of the property owner/developer. Under item C, the $5,000 penal sum was replaced with "$100 for each inch circumference of the tree's trunk (when measured 54" above grade)," and the maximum penal sum was increased from $100,000 to $200,000. The following sentences were added to the end of the section: "The Director may require an additional time period beyond one year should the trees show signs of decline post construction. Such requirement would be in writing and would be in lieu of penalties."

Table 4-1. Chapter 17.16 Tree Preservation Ordinance Updates

Chapter 17.16 Heritage Tree Preservation Ordinance	
Section	**Comment**
Section 17.16.070 Protection of existing trees	Items A through E, which discussed best management practices and required precautions to protect trees during construction, where replaced with more general language stating all persons shall comply with "The current version of the City Standard Details and Specifications for tree protection." "Certified Arborist" was replaced with "Consulting Arborist." A new category for "minor development" was added to make it more straightforward for applicants to get a permit for minor construction improvements that allow for the economic enjoyment of the property (e.g. ADUs, or swimming pools, etc).
Section 17.16.080 Pruning and maintenance	Language was added to clarify that all pruning shall be performed "under the supervision of an International Society of Arboriculture (ISA) certified arborist" using pruning guidelines "established by ISA." The last sentence discussing developments that require a tree report was removed.
Section 17.16.090 Public utilities	Under Item A, the language "obtain permission from the director..." was replaced with, "notify the City and obtain an encroachment permit."
Section 17.16.100 Insurance requirements	Language was added to further clarify licenses and insurance requirements for contractors involved with pruning Protected trees.
Section 17.16.110 Penalties	This section title and all relevant similar language in Item B was altered to remove the word "fines," so it now just says "penalties" and text was replaced to clarify the actions resulting in penalties. The penalty structure was amended so that now penalties are more specific to each situation.

4.2 Review of CityDesign Guidelines and Standard Details

4.2.1 City of Pleasanton Design Guidelines

Pleasanton uses different policies to guide how landscaping should be done for new projects. These policies come from the City's planning code, the Tree Preservation Ordinance (Chapter 17.16), and through stipulations in wildfire safety plans that are required for certain development projects. While Pleasanton does not have one standard document with all landscape design standards, the City does have a set of tree establishment details which are discussed below in **Table 4-2.**

Standard Details: The below table summarizes where Pleasanton's details are not in compliance with ANSI standards and ISA best management practices.

Recommended Additional Standard Details:

- Nursery Stock Standards
- Spacing Guidelines
- Young Tree Establishment
- Pruning Guidelines
- Planting guidelines that take into account space and soil volume limitations, infrastructure conflicts, and exposure of the property.

Table 4-2. Pleasanton Tree Establishment Details

Document	Context	Recommended Update
Tree Planting Detail 806	(2) 1" Wide x 30" recycled tire rubber tree tie in figure 8 pattern; 2 per tree	It is recommended that the rubber tree tie is secured loosely, allowing the tree to sway. (Swaying when the tree is younger encourages the tree to develop a tapered trunk better suited for high wind events)
	Temporary watering basin: 4" high berm x minimum 3' diameter. (Not to be used in turf areas)	Consider adding the following language: "Berms should be periodically expanded so the full root zone is watered and can be removed when the establishment care/ watering period is over."
	Well-developed root ball	Not descriptive enough for non-specialists to discern. May be beneficial for the city to have an additional detail for nursery stock standards (See **Appendix J**).
	Native soil, compacted to 85% or undisturbed	Consider clarifying that the soil filled back into the planting hole should be compacted, but the soil beneath tree planting hole should be uncompacted and undisturbed.
	Fertilizer tablets per specifications	Consider removing from city standards. A consistent supply of mulch every 2-3 years is generally sufficient for nutrient provision. (ISA BMPs state that fertilizer generally does not aid in establishment, and fertilizer tablets are only necessary if soil tests report low nutrient levels).
	3" layer of wood mulch, hold mulch back a minimum of 3" from trunk	Consider adding replenishment of mulch as needed on an annual basis.
	Trees may require root barrier if planted within 8 ft. of paved areas, subject to City Landscape Architect.	Recommended that the city has a separate and more elaborate resource regarding spacing guidelines.
Root Barrier Detail 807	General Comment	If the city struggles with root barrier performance, it may be a function of soil aeration. Tree root growth is largely dependent on availability of oxygen within the soil. Trees resist growing roots deep into soil if the soil is poorly aerated. Since root barriers guide roots downward, they are least effective in poorly aerated soils, which are commonplace in the urban environment.

Table 4-2. Pleasanton Tree Establishment Details

Document	Context	Recommended Update
Root Pruning Detail 824	2" diam. and larger roots within 8' of trunk must be approved by the construction inspector for grinding or removal.	Replace "Construction Inspector" with "Certified Arborist"
Tree Protection Detail 829	Tree Protection Zone (TPZ)	Consider adding specifications for a TPZ which should be at least 1.5 inches wide per every inch DSH, rather than just having the protected area be equal to the dripline of the tree.
	Height of TPZ Fencing	Consider adding specifications that the TPZ fencing must be four to six feet tall.
	5" of Mulch	Generally, mulch is only required when a protective fence cannot be installed around the tree. Consider adding a note that the mulch should be reduced to 2 to 4 inches after the completion of the project.
	Inspection and Monitoring	Consider adding a requirement for an ISA Certified Arborist to be present on site to inspect and monitor trees that are impacted during construction, maintenance, or renovation activities.

4.3 Other Laws Pertaining to Trees

Assembly Bill 1572 Non-functional Turf Ban

Assembly Bill 1572 prioritizes potable drinking water over other water uses and states that, "The use of potable water to irrigate nonfunctional turf is wasteful and incompatible with state policy relating to climate change, water conservation, and reduced reliance on the Sacramento-San Joaquin Delta ecosystem." Because this bill affects all land uses except for single-family residential, the City will be

removing all non-functional turf on City property over the next few years and public trees in those areas will no longer receive the irrigation that was associated with the turf. To account for this loss of automated sprinkler irrigation, the City should consider installing drip irrigation or instituting a summer deep watering program for new and young trees. In addition, the City should also increase efforts for planting more trees on private property, to make up for any potential future tree deaths resulting from the lost sprinkler irrigation.

Solar Shade Control Act

The Solar Shade Control Act (Sections 25980 – 25986 of the Public Resources Code) was originally passed by the California state legislature in 1978 to give solar collectors access to sunlight, and limit shading from trees and shrubs. Under this Act, "a tree or shrub cannot cast a shadow greater than 10 percent of a solar collector absorption area upon that solar collector surface at any one time between the hours of 10 a.m. and 2 p.m. local standard time if the tree or shrub is placed after installation of a solar collector." The Act was amended in 2009 to allow for trees that may be partially or fully shading solar collectors to remain if they were planted before the solar collector was installed.

Under Section 25984, this Act also does not apply to the replacement of a tree or shrub that had been growing prior to the installation of the solar structure, or a tree or shrub that is subject to a city or county ordinance, such as Pleasanton's Tree Preservation Ordinance. Therefore, a resident that wants to remove a tree that is covered under the current Heritage Tree Ordinance to install solar collectors, would not be exempt from getting a tree removal permit.

California Green Building Standards Code, Title 24, Part 11 (CALGreen)

Under Chapter 5 of the California Green Building Standards Code which specifies requirements for Nonresidential Mandatory Measures, section 5.106.12 (Shade Trees) requires that certain areas be covered with tree shade within 15 years of the project. Surface parking areas must have trees installed that provide shade over 50 percent of the parking area, while landscape areas and hardscape areas must be planted with trees that provide shade for at least 20 percent of those respective areas within 15 years. Both surface parking areas and hardscape areas can have solar collector shade structures or other roofed shade structures as an alternative to shade trees

5

COMMUNITY ENGAGEMENT

Community outreach was a key step in the development process of the UFMP to hear from Pleasanton's community. Kicking off in the Summer of 2023, residents and businesses were engaged in outreach efforts that included the following activities and educational materials:

- Two (2) online Pleasanton tree surveys (686 responses total).
- Tabling at community events including two (2) farmers markets and one (1) summer concert in the park event with educational flyers describing tree benefits, and a QR code linking to the tree survey.
- Presenting on the UFMP for the Pleasanton Youth Commission and gathering ideas on how to better engage Pleasanton's younger population.
- Pleasanton UFMP website (ptowntrees.org), detailing project updates, educational materials, public meeting notifications, community resources, and the results of City's tree inventory.
- Social media outreach through the City of Pleasanton channels (E-newsletters, Instagram, Facebook).
- An Urban Forest Summit hosted in tandem with a Pleasanton Earth Day event to inform attendees on the status of Urban Forest Master Plan, preliminary tree inventory and canopy cover analysis results, and to gather general feedback on the urban forest and Pleasanton's UFMP Vision Statement (Estimated 30 attendees).
- Working Group (3 meetings, 8 members).

5.1 Summary of Public Input

5.1.1 Online Surveys

Two online surveys were created to identify the public's perception and understanding of the City's trees, and to offer a space for public feedback on the City's Tree Preservation Ordinance. The first 22-question survey was open between August 1, 2023 and October 31, 2023, and was distributed through various City social media outlets, local newspapers, farmers markets, and the public library. Due to the low number of responses from respondents under the age of 25, a second survey was created and targeted outreach to Pleasanton's younger residents. It was presented to the City's Youth Committee, school administrators, and teachers, and was open from February 1 through March 26, 2024.

The first survey had a total of 603 respondents, and the second survey had a total of 83 respondents. Of the combined 686 respondents, 69% live in Pleasanton, 27% work in Pleasanton, and 8% go to school in Pleasanton (**Table 5-1**).

Table 5-2 highlights other relevant survey respondent demographics, and how they compare to City data from the US Census Bureau. The survey responses may reflect the opinions of Pleasanton's residents that are older, more likely to be homeowners, and received a higher degree of education than the average demographics of the City's residents. During the implementation phase of the UFMP, it will be important to continue to outreach to City residents to ensure that diverse perspectives are heard and valued.

Table 5-1. Percentage of Survey Respondents Who Live, Work, or go to School in Pleasanton

Response	Percent of Respondents
Live in Pleasanton	69%
Work in Pleasanton	27%
Go to school in Pleasanton	8%

Source: Pleasanton UFMP Public Surveys 2023 - 2024

Table 5-2. Demographics of Survey Respondents Compared to Demographics of the City of Pleasanton

Category	Demographics of Survey Respondents		U.S. Census Demographics of City of Pleasanton 2020	
Age	65 or older	31%	65 or older	16%
Age	Under 18	9%	Under 18	24%
Housing Type	Single family home	89%	Single family home	65%
Housing Status	Homeowner	80%	Homeowner	68%
Education	Bachelor's degree or higher	74%	Bachelor's degree or higher	68%

Source: U.S Census Bureau 2020

5.1.1.1 Survey Results and How the UFMP Addresses Concerns Raised by Respondents

The results of the survey are summarized below in **Table 5-3,** along with related recommendations in the UFMP that address topics raised in survey responses. (Please note: Table 5-3 focuses on only the responses from survey participants that were in agreement with each topic. The full survey results, including the neutral and disagreement comments are included in **Appendix H**. The City and the Working Group, discussed in Section 5.1.3, used feedback from the survey and other in-person engagement events to guide the goals and actions of the UFMP Strategic Plan. The City takes the feedback from community engagement seriously and will use the UFMP as a road map to address the biggest concerns raised by the community around trees and the urban forest over the next 25 years including providing residents and business a recommended tree species list, planting more native tree species in public spaces, and providing tree removal permit exemptions for residents living in high fire hazard severity areas.

Table 5-3. Summary of Online Survey Responses and UFMP Recommendations

Topic	What Survey Respondents Said	UFMP Recommendations
Views on the City's street trees	▪ 86% of survey respondents are in support of having street trees in their neighborhoods ▪ 50% of survey respondents said they would like to see more trees planted along sidewalks and streets	▪ The City has set a goal to fill 1,100 vacant street tree sites in target neighborhoods over the next 25 years.
Top benefits of trees	▪ 84% of survey respondents believe that shade and cooling of neighborhoods is the most important benefit trees provide in Pleasanton	▪ The City has set a goal to achieve 25% canopy cover in all neighborhoods and will prioritize resources in those neighborhoods with the least canopy with a focus on establishing larger shade trees.
Top Priorities for the Urban Forest	▪ 43% of survey respondents believe that the planting more native trees which enhance wildlife habitat is the top priority of the Pleasanton Urban Forest Master Plan	▪ The updated Tree Preservation Ordinance (Ch.17.16) now has better protections for native tree species. The City has also added more native species to its recommended tree species list (**Appendix C**).

Table 5-3. Summary of Online Survey Responses and UFMP Recommendations

Topic	What Survey Respondents Said	UFMP Recommendations
Top Challenges Facing Trees	▪ 67% of survey respondents believe drought and water restrictions are the biggest threat facing trees in their neighborhood	▪ The UFMP recommends that the City increase the number of years that it waters newly planted public trees to maximize survival rates. The UFMP also provides recommendations on drought tolerant tree species that the City should include in their regular tree plantings. See **Appendix C.**
Opinions on the Tree Preservation Ordinance	▪ 51% of survey respondents support the level of tree protection that the current ordinance provides	▪ The City has recently updated the Tree Preservation Ordinance with several improvements through the UFMP process, including adding greater protections for native trees, while also making it easier for applicants to apply for tree permits for minor development projects such as the construction of ADUs. See **Table 4.1** in the Technical Assessment.
	▪ 47% of survey respondents believe that the City effectively protects its trees	
Cost of tree watering and maintenance	▪ 39% of survey respondents said lower water costs to water trees would make them more inclined to plant a tree on their property.	▪ The UFMP points out that it typically costs $10 or less to water a tree in a year and the need for the City to educate residents about this fact.
	▪ 34% of survey respondents said assistance with cost to maintain and prune trees would make them more inclined to plant a tree on their property.	▪ The UFMP recommends the City create and distribute informational materials on how to plant and maintain a tree on private property. These materials would include information on structural pruning when the tree is young, which can reduce the need for pruning when the tree matures.

Table 5-3. Summary of Online Survey Responses and UFMP Recommendations

Topic	What Survey Respondents Said	UFMP Recommendations
Opportunities for community involvement	▪ 38% of survey respondents are willing to attend a tree education workshop (in person or virtual)	▪ The UFMP has set a goal to reach 50% of residents through outreach and informational efforts on the City's UFMP and updated Tree Preservation Ordinance over the next 5 to 10 years.
	▪ 30% of survey respondents are willing to participate in a community tree planting event	▪ The UFMP recommends the City partner with a non-profit to increase voluntary tree planting on private property.
Planting and maintaining trees on private property	▪ 53% of survey respondents are willing to water a newly planted tree for up to three years on or near their property, without financial incentives from the City. ▪ 45% of survey respondents are willing to plant, maintain, and care or a tree on their property, without support from the City.	▪ The UFMP recommends the City create a tree-giveaway program with the goal of purchasing and giving away up to 100 trees/seedlings per year to targeted neighborhoods lacking canopy cover.
Tree species recommendations	▪ 47% of survey respondents said having tree species suggestions for trees that don't damage sewer pipes/sidewalk/driveways would make them more willing to plant a tree on their property.	▪ The recommended tree list (**Appendix G**) was updated through the UFMP process and includes a species selection guide as well as information on hardscape damage potential.

5.1.2 Urban Forest Summit

The Urban Forest Summit was held in tandem with the Earth Day event at the Pleasanton Public Library on April 20, 2024. The Project Team had three tables with information on poster boards that introduced residents and other attendees to the UFMP, provided preliminary inventory and community survey data analysis, and created a venue for residents to voice their opinions and perceptions about the City's urban forest. The Urban Forest Summit was attended by approximately 30 individuals who stopped by the tables and/or participated in one of the poster board activities.

Attendees were asked if they were willing to provide input about their experiences with Pleasanton's trees, and the first poster board activity instructed attendees to write down their responses to three questions on sticky notes and place each note to the poster board. The questions were:

1. How can we get more trees on private property?
2. How can we help preserve / maintain the existing Urban Forest?
3. How can we get more residents involved with Pleasanton's Urban Forest?

The sticky note responses were typed up and organized by theme. Responses are detailed in **Table 5-4** and **Figures 5-1.**

Table 5-4. Urban Forest Summit Engagement Responses

1. How can we get more trees on private property?

Financial Incentive

- Water credit for residents
- More incentives for developers and homeowners
- Make trees less expensive to plant
- Apply for grants with specifications of tree and support with planting

Recognition

- "Friend of the Forest" Recognition / Sign for front yard

Education / Consultation

- Consultation on proper tree species for property
- Online training for proper planting
- Recommend gardeners who can plant and maintain the trees
- Address concerns with trees and solar panel conflicts

Assistance from Volunteers

- Have boy scout or girl scout troop help with planting trees
- Host a tree planting day

2. How can we help preserve / maintain the existing Urban Forest?

Funding and Resources

- Help source water during a drought
- Donate trees when they get too big

City Planting Efforts

- Plant more trees
- More trees, more fresh air to breathe

Species selection

- Grow more drought resistant trees
- Plant trees that don't cause allergies
- Don't plant magnolia trees due to the difficulty in cleaning up large leaves
- Don't plant spikey ball trees (Liquidambar)
- Plant trees that don't damage sidewalks
- We need trees to climb that don't have sap, pine trees are ok, but not for climbing

Better Maintenance and Replacement

- Maintain existing trees better
- Faster replacement of dead trees
- Plant trees for every tree removed
- Help trees make more oxygen for us
- Cleaning up of oak acorns that have fallen on St John street which pose a tripping hazard

Increased trees in specific locations

- More trees and shade needed at Pleasanton Middle School
- More trees at Pleasanton schools
- Fairlands needs more street trees
- More trees over bike trails
- More big shade trees along major roadways

Better Tree Protections

- Protect larger trees, neighbors cut down trees
- Don't cut down trees

Education

- Educate residents regarding the importance of trees
- Provide tree pruning knowledge
- Educate how to care for private trees
- Neighbors planted trees after we did, lead by example
- Make friends with a tree
- Better outreach and education to make people care about their trees
- Spread the word about how important trees are
- Don't litter

Limits to Urbanization Expansion

- Prevent over-urbanization
- Less housing development

Studies

- Do a benefit analysis of how Muir Park is used

Table 5-4. Urban Forest Summit Engagement Responses

3. How can we get more residents involved in Pleasanton's Urban Forest?
Volunteer Events ▪ Hold more volunteer events ▪ Volunteer events for kids
Education and Outreach ▪ Need more public information for UFMP ▪ Education on tree care for the public ▪ Inspire people and kids by revealing the importance of forests ▪ Come to Alviso Adobe Community Park ▪ Come to sporting events and advertise there
School Involvement ▪ Get schools involved ▪ Come to schools ▪ Offer volunteer hours for students
Conflicts with Trees and Solar ▪ Address concerns over solar panel conflicts

Figure 5-1. Attendee Post-It Response to Urban Forest Summit Poster Activities

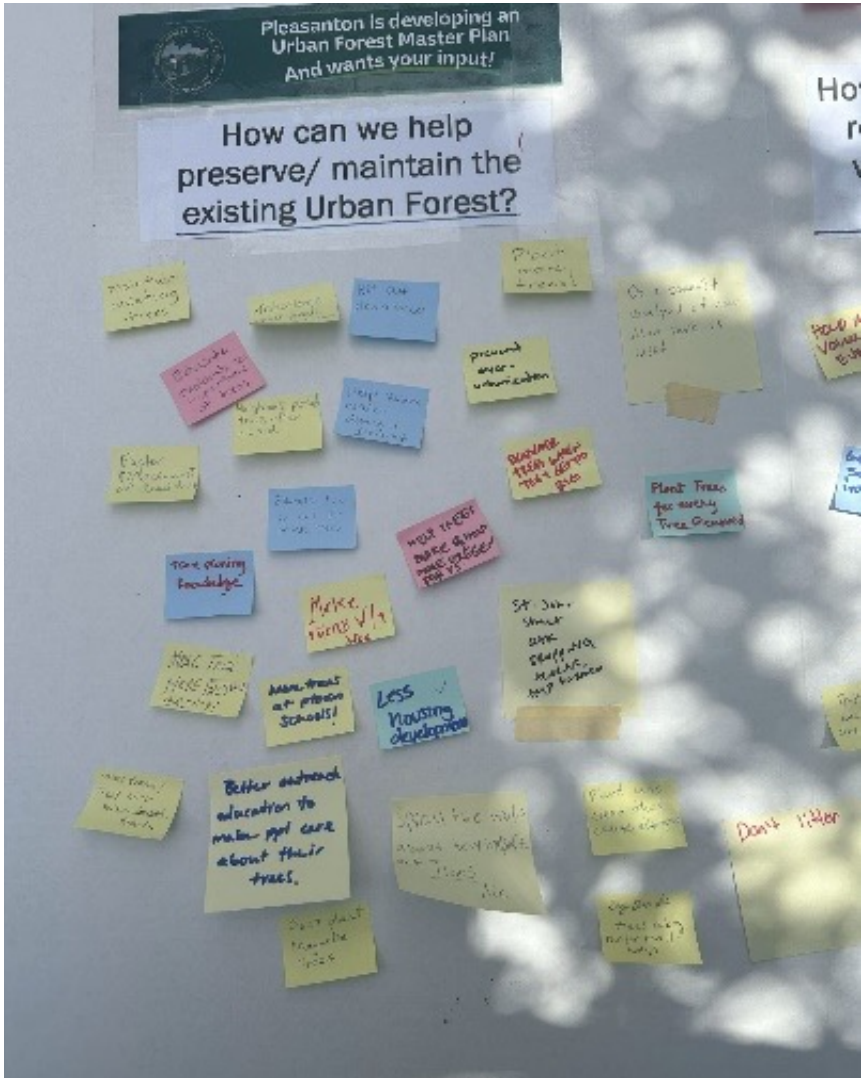
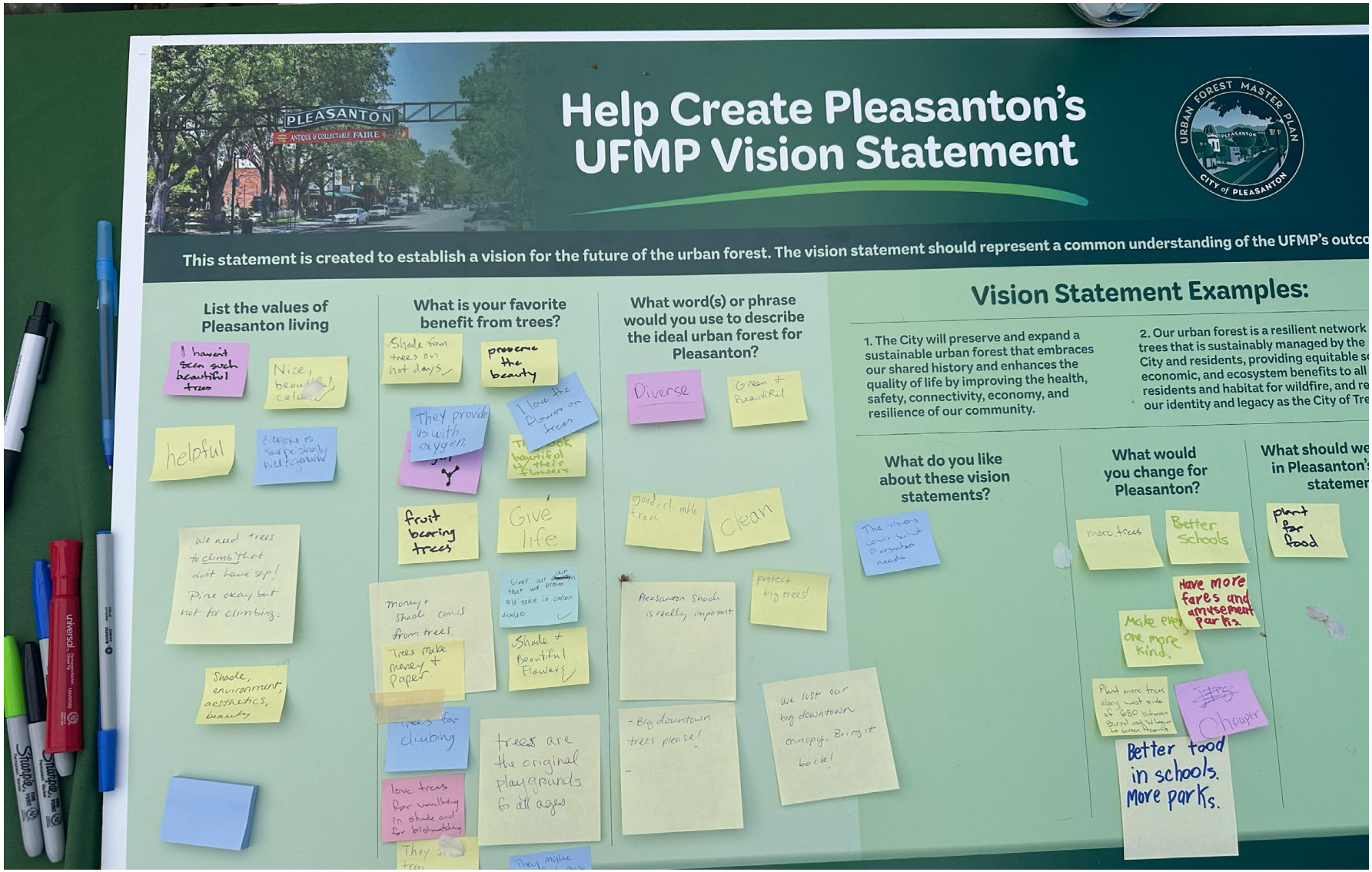


Figure 5-1. Attendee Post-It Response to Urban Forest Summit Poster Activities



The second Urban Forest Summit activity was having attendees provide feedback and ideas for the City's UFMP Vision Statement (**Table 5-5**). The feedback received for these questions was incorporated into the development of the UFMP's vision statement.

Table 5-5. Guided Vision Statement Brainstorming Activity Responses

Values of living in Pleasanton	What is your favorite benefit from trees?	What word(s) or phrase would you use to describe the ideal urban forest for Pleasanton
▪ Beautiful trees ▪ Nice, beautiful, calm ▪ Helpful (people) ▪ Everyone is surprisingly nice and genuine ▪ Shade, environment, aesthetics, beauty	▪ Shade from trees on hot days ▪ Preserving the beauty (of the City) ▪ They provide us with oxygen and take in carbon dioxide ▪ The flowers on trees ▪ Fruit-bearing trees ▪ Trees give life ▪ Trees for climbing ▪ Trees are the original playground for all ages ▪ Paper is made from trees ▪ Love trees for birdwatching ▪ Trees make me feel more connected to life. ▪ Trees are cool	▪ Diverse ▪ Green and beautiful ▪ Sustainable with climate change ▪ Good, climbable trees ▪ Clean ▪ Importance of shade from trees ▪ Protection of big trees ▪ Big downtown trees

5.1.3 Working Group

The City's UFMP Working Group was formed to bring together City staff from multiple departments and a representative from the City's commercial sector to help advise the UFMP's development. A list of the Working Group's members is included in Table 5-6. Three working group meetings were held between May 2024 and September 2024, and each meeting was facilitated by the consultant team.

Table 5-6. Pleasanton's Urban Forest Master Plan Working Group Members

Name	Affiliation	Area of Expertise
Sarah Hosterman	City of Pleasanton	Landscape Architect Assistant (City Arborist)
Matthew Gruber	City of Pleasanton	Landscape Architect
Giacomo Damonte	City of Pleasanton	Parks Division Manager
Brian Fiorio	City of Pleasanton	Park Maintenance Supervisor
Victor Cazarez	City of Pleasanton	Park Maintenance Supervisor
Tim Annear	City of Pleasanton	Park Maintenance Supervisor
Megan Campbell	City of Pleasanton	Associate Planner
Myer Walden	City of Pleasanton	Program Assistant
James Paxon	Hacienda General Manager	Commercial Sector

6

REFERENCES

American Forests. 2021. “Tools, Research, Reports, & Guides: Tree Equity Score.” Accessed January 26, 2021. https://www.americanforests.org/tools-research-reports-and-guides/ tree-equity-score/.

American Forests. 2024. “Tree Equity.” Americanforests.org, 8 July 2024, Accessed August 22, 2024. www.americanforests.org/our-programs/tree-equity/.

Arbor Day Foundation, Tree City USA webpage. Accessed May 24, 2024. https://www.arborday.org/programs/treecityusa/

Ball, J., S. Mason, A. Kiesz, D. McCormick, and C. Brown. 2007. “Assessing the Hazard of Emerald Ash Borer and Other Exotic Stressors to Community Forests.” Arboriculture & Urban Forestry 33(5): 350–359.

Cayan, (Scripps Institution of Oceanography). 2018. Climate, Drought, and Sea Level Rise Scenarios for the Fourth California Climate Assessment. California's Fourth Climate Change Assessment, California Energy Commission. Publication Number: CNRA-CEC-2018-006.

City of Pleasanton. 2022. “Climate Action Plan 2.0.” City of Pleasanton, Adopted February 2022. www.cityofpleasantonca.gov/our-government/key-initiatives/climate-action-plan/.

Clark, J.R., Matheny, N.P., Cross, G. and Wake, V., 1997. A model of urban forest sustainability. Journal of arboriculture, 23, pp.17-30.

CUFR (Center for Urban Forestry Research). 2005. The Large Tree Argument: The Case for Large-Stature Trees vs. Small-Stature Trees. https://www.fs.fed.us/psw/topics/urban_forestry/ products/cufr_511_large_tree_argument.pdf.

Donovan, Geoffery H. and Butry, David T. 2009. The value of shade: Estimating the effect of urban trees on summertime electricity use. Energy and Buildings, Vol: 41, Issue 6, pp 662-668. https://www.sciencedirect.com/science/article/pii/S037877880900005X

EPA (U.S. Environmental Protection Agency). 2019. “Using Trees and Vegetation to Reduce Heat Islands.” Last updated December 16, 2019. Accessed January 26, 2021. https://www.epa.gov/heatislands/using-trees-and-vegetation-reduce-heat-islands.

EPA. 2020. “Heat Island Effect.” Last updated December 9, 2020. Accessed January 27, 2021. https://www.epa.gov/heatislands.

Gilman, E.F. 1997. Trees for Urban and Suburban Landscapes. Delmar Publishers, Albany, NY

REFERENCES

Gilman, Edward F. 2002. An Illustrated Guide to Pruning. 2nd ed. Albany, NY, Delmar Publishing.

Green Schoolyards America. 2024. California Schoolyard Tree Canopy Equity Study. Accessed online April 4, 2025. https://www.greenschoolyards.org/tree-canopy-equity

Hauer R. J. and Peterson W. D. 2016. Municipal Tree Care and Management in the United States: A 2014 Urban & Community Forestry Census of Tree Activities. Special Publication 16-1, College of Natural Resources, University of Wisconsin – Stevens Point. Hilbert, Deborah R., et al. "Urban tree mortality: A literature review." Arboriculture & Urban Forestry (AUF) 45.5 (2019): 167-200.

Leahy, L., Scheffers, B., Williams, S., and Andersen, A., 2021. Arboreality drives heat tolerance while elevation drives cold tolerance in tropical rainforest ants. Ecology Vol 103:1.

Levy, R. (1978). Costanoan. Handbook of North American Indians, 8, 485-495.

Locke, D.H., B. Hall, J.M. Grove, S.T.A. Pickett, L.A. Ogden, C. Aoki, C.G. Boone, and J.P.M. O'Neil-Dunne. 2021. "Residential housing segregation and urban tree canopy in 37 US Cities." npj Urban Sustainability 1, 15. https://doi.org/10.1038/s42949-021-00022-0.

Loughner, C., D.J. Allen, D.L. Zhang, K.E. Pickering, R.R. Dickerson, and L. Landry. 2012. "Roles of Urban Tree Canopy and Buildings in Heat Island Effects: Parameterization and Preliminary Results." Journal of Applied Meteorology and Climatology 51(10): 1775–1793. https://doi.org/10.1175/JAMC-D-11-0228.1.

Love N.L., Nguyen V., Pawlak C., Pineda A., Reimer J.L., Yost J.M., Fricker G.A., Ventura J.D., Doremus J.M., Crow T., Ritter M.K. 2022. Diversity and structure in California's urban forest: What over six million data points tell us about one of the world's largest urban forests. Urban Forestry and Urban Greening, 74, Article 127679, 10.1016/j.ufug.2022.127679

McPherson, E. Gregory. 2000. Expenditures associated with conflicts between street tree root growth and hardscape in California, United States. Journal of Arboriculture, 26(6), 289-297.

McPherson, E.G., N. van Doorn, and J. de Goede. 2016. "Structure, Function and Value of Street Trees in California, USA." Urban Forestry & Urban Greening 17: 104–115.

McPherson, E. Gregory; Xiao, Qingfu; van Doorn, Natalie S.; de Goede, John; Bjorkman, Jacquelyn; Hollander, Allan; Boynton, Ryan M.; Quinn, James F.; Thorne, James H. 2017. The structure, function and value of urban forests in California communities. Urban Forestry & Urban Greening. 28: 43-53.

Miller, R.W, R. Hauer, and L. Werner. 2015. Urban Forestry Planning and Managing Urban Greenspaces Third Edition. Waveland Press. ISBN 10: 1-4786-0637-1.

Miller, R.H., and R.W. Miller. 1991. "Planting Survival of Selected Tree Taxa." Journal of Arboriculture 17(7): 185–191.

Miller, R.W. and W.A. Sylvester. 1981. "An Economic Evaluation of the Pruning Cycle." Journal of Arboriculture 7(4): 109-112.

Morgenroth, J., D.J. Nowak, and A.K. Koeser. 2020. "DBH Distributions in America's Urban Forests—An Overview of Structural Diversity." Forests 11(2): 135. https://doi.org/10.3390/f11020135.

Nowak, David J., and Eric J. Greenfield. "The Increase of Impervious Cover and Decrease of Tree Cover within Urban Areas Globally (2012–2017)." Urban Forestry & Urban Greening, vol. 49, Mar. 2020, p. 126638, https://doi.org/10.1016/j.ufug.2020.126638.

O'Brien, L. E., Urbanek, R. E., & Gregory, J. D. 2022. Ecological functions and human benefits of urban forests. Urban Forestry & Urban Greening, 75, 127707. OEHHA. 2018. https://www.sciencedirect.com/science/article/abs/pii/S1618866722002503

Pleasanton Chamber of Commerce. 2024. "History of Pleasanton." Pleasanton.Org, www.pleasanton.org/history-of-pleasanton/.

Richards, N.A. 1983. Diversity and stability in a street tree population, Urban Ecology, Volume 7, Issue 2, 1983, Pages 159-171, ISSN 0304-4009, https://doi.org/10.1016/0304-4009(83)90034-7.

Richards, N.A. 1993. "Reasonable Guidelines for Street Tree Diversity." Journal of Arboriculture 19(6): 344–350.

San Francisco Estuary Institute (SFEI). 2013. "Alameda Creek Watershed Historical Ecology Study." The San Francisco Public Utility Commission, Alameda County Flood Control & Water Conservation District, Feb. 2013, www.sfei.org/documents/alameda-creek-watershed-historical-ecology-study.

Smiley, Thomas E., Matheny, Nelda, Lily, Sharon. 2017. Best Management Practices - Tree Risk Assessment, Second Edition. International Society of Arboriculture.

Sutherland, A. 2014. “Invasive Pests of Concern for California’s Urban Agriculture Systems,” Pests in the Landscape (Blog), University of California Agriculture and Natural Resources, https://ucanr.edu/blogs/blogcore/postdetail.cfm?postnum=15606. Accessed May 20, 2021.

Teixeira, Lauren. 1997. The Costanoan/Ohlone Indians of the San Francisco and Monterey Bay Area, A Research Guide. Menlo Park, California: Ballena Press Publication.

Trust for Public Land. 2022. Urban Heat Island Severity of US Cities. Web Mapping Application. https://www.arcgis.com/home/item.html?id=1b6cad6dd5854d2aa3d215a39a4d372d.

U.S. Census Bureau, Quick Facts: Pleasanton, CA. https://www.census.gov/quickfacts/fact/table/pleasantoncitycalifornia/POP010220. Accessed June 12, 2024.

USFS (United States Forest Service). 2020. i-Tree Eco [online software]. https://www.itreetools.org/tools/i-tree-eco.

Vogt, Jess, Richard J. Haur, Burnell C. Fischer. 2015. The Costs of Maintaining and Not Maintaining the Urban Forest: A Review of the Urban Forestry and Arboriculture Literature.). Arboriculture & Urban Forestry 41(6): November 2015.

Wolf, K.L. August 2007. City Trees and Property Values. Arborist News 16, 4: 34-36. Accessed. November 5, 2024. https://www.naturewithin.info/Policy/Hedonics.pdf

Wolf, Kathleen L., Sharon T. Lam, Jennifer K. McKeen, Gregory RA Richardson, Matilda van Den Bosch, and Adrina C. Bardekjian. 2020. "Urban trees and human health: A scoping review." International journal of environmental research and public health 17, no. 12: 4371.

Ziter, C.D., E.J. Pedersen, C.J. Kucharik, and M.G. Turner. 2019. “Scale-dependent interactions between tree canopy cover and impervious surfaces reduce daytime urban heat during summer.” Proceedings of the National Academy of Sciences Apr 2019, 116 (15) 7575-7580; https://www.pnas.org/content/116/15/7575.

Acronyms and Abbreviations

Acronym/Abbreviation	Definition
ADA	Americans with Disabilities Act
ANSI	American National Standards Institute
BMP	Best Management Practices
CAP	Climate Action Plan 2.0
CBO	Community-Based Organization
City	City of Pleasanton
CPUC	California Public Utilities Commission
DSH	Diameter at Standard Height
FTE	Full Time Equivalent
FY	Fiscal Year
GHG	Greenhouse Gas
GP	General Plan
HOAs	Homeowners Associations
ISA	International Society of Arboriculture
KPI	Key Performance Indicator
PG&E	Pacific Gas and Electric Company
PW	Public Works
ROW	Right-of-way
TA	Technical Assessment
TRAQ	Tree Risk Assessment Qualified
UFMP	Urban Forest Master Plan
USFS	United States Forest Service
WCA	West Coast Arborists
WUI	Wildland Urban Interface/Intermix
WUCOLS	Water Use Classification of Landscape Species

PREPARED BY **DUDEK**