TREE
MASTER PLAN

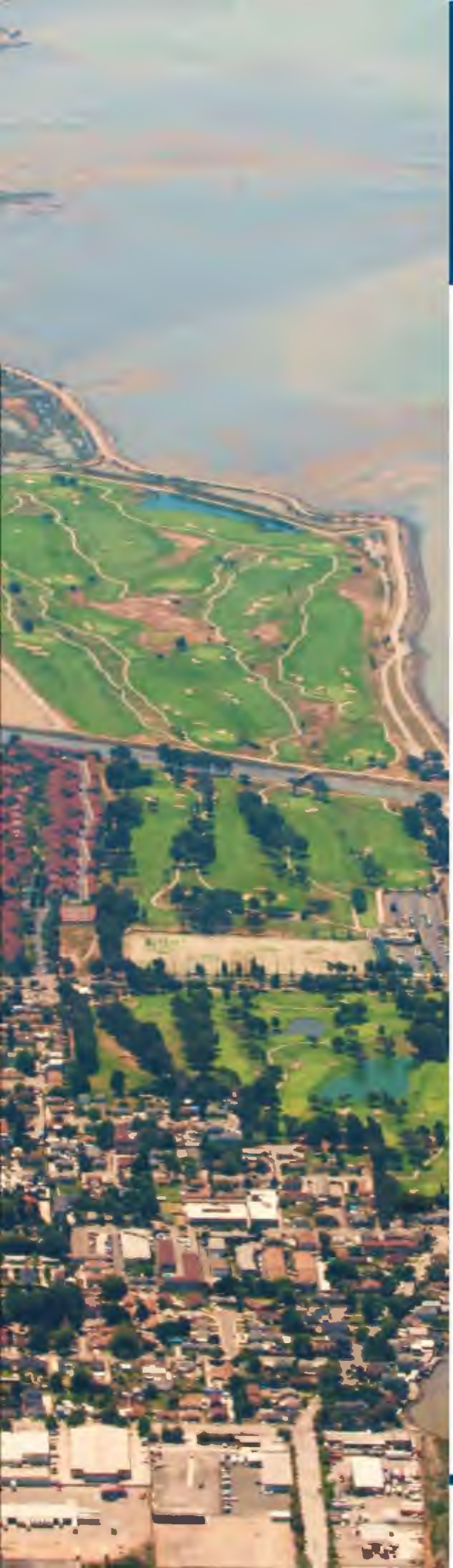
SAN LEANDRO, CALIFORNIA
December | 2024

CITY OF SAN LEANDRO
INCORPORATED 1872

PlanIT Geo™
developers of TreePlotter

URBAN FOREST INNOVATIONS INC

Arboreal



CITY OF
SAN LEANDRO

TREE MASTER PLAN

> A balanced (rather than exploitative) relationship with the environment; an economic system based on sharing rather than competing; a strong sense of family and community; social moderation and restraint; the opportunity for widespread artistic creativity; a way of governing that serves without oppressing; a deeply spiritual sense of the world: these are the very things many of us are currently striving to attain in our own culture. The irony is that while we look forward to a dimly-perceived future when such values might be realized, we have failed to understand that they existed in the not-so-distant past as the accomplishments not only of the Ohlones, but of Stone-Age people the world over."
>
> — Malcolm Margolin, The Ohlone Way: Indian Life in the San Francisco-Monterey Bay Area

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URBAN FOREST VISION STATEMENT

We envision a future where San Leandro's urban forest stands as a symbol of our collective dedication to sustainability, environmental stewardship, and inclusivity. We celebrate the diversity in our canopy, recognizing each tree's role in shaping our city's character. Through a unified commitment to tree equity, our urban forest fosters unity across all communities. By cultivating support and engagement, we ensure that our trees will thrive for generations, leaving a legacy of environmental stewardship and civic pride for every member of the San Leandro community.

PLAN SUMMARY

The City of San Leandro is proud to adopt this Tree Master Plan (TMP and/or "Plan") as a strategy for improving community resilience; redressing environmental justice in access to cleaner air, green spaces, and reduced exposure to urban heat island; proactively maintaining the urban forest; and mitigating the impacts of climate change.

Plan Purpose

Redress Inequities

Only 8% of San Leandro is covered by tree canopy, and that canopy is not distributed evenly across our neighborhoods. The history of racial segregation in the United States, exclusionary housing policies, redlining, and forced removal of Indigenous communities coincide with the inequitable distribution of tree canopy in San Leandro today. These systemic injustices have resulted in vulnerable communities who are disproportionately exposed to the impacts of climate change, such as flooding, urban heat islands, and poor air quality. The City of San Leandro is prioritizing strategies to distribute a variety of trees to areas that have historically received less urban forest investment.

Proactive Maintenance and Growth

Over 16,000 trees line San Leandro's streets, creating a sense of place for community members and serving as a critical piece of the City's infrastructure system. Planting trees is one of many strategies that can help to mitigate climate issues, and trees are the only example of infrastructure that increases in value after installation. As trees mature, they provide shade, clean the air, and reduce stormwater. Research shows that emotional, psychological, and physical health all improve with the presence and proximity of trees. These urban trees require proactive maintenance to thrive in the harsh and ever-changing conditions of an urban environment.

Ecosystem Benefits for All

A healthy and resilient urban forest does not appear overnight. It is planted based on the common practices, plans, and policies of today, maintained by the next generation's tree stewards, and enjoyed by our grandchildren. With smart planning and equitable policies, all residents can benefit from tree canopy. Trees are critical urban infrastructure that are essential to public health and well-being. The City has identified areas where there are the greatest socioeconomic needs, lack of tree canopy, highest heat severity, and highest pollutant levels. This shaped the development of the priority planting locations. By focusing investment in these neighborhoods, the City can not only address environmental justice issues, but bring about much needed tree benefits to frontline communities.

While tree planting efforts are key to this initiative, it is equally as important to factor in post-planting care and community stewardship. With care and deliberate planning, the urban forest can grow in value over time and contribute to shared improvements in public health, resilience, and wellbeing. The contents of this Tree Master Plan reflect a shared commitment from the City, its partners, and the community to manage and grow a sustainable and equitable urban forest.

Plan Approach

The City of San Leandro is prioritizing strategies to distribute a variety of trees to areas that have historically received less urban forest investment. While tree planting efforts are key to this initiative, it is equally as important to factor in post-planting care and community stewardship. With care and deliberate planning, the urban forest can grow in value over time and contribute to shared improvements in public health, resilience, and wellbeing. The contents of this Tree Master Plan reflect a shared commitment from the City, its partners, and the community to manage and grow a sustainable and equitable urban forest.

STRATEGIC PLANNING

This strategic planning process was used during the development of the Tree Master Plan. The framework of goals, objectives, actions, and strategies to guide San Leandro through implementation in the coming years. Recommendations were developed based on data analysis, local stakeholder input, an urban forest program audit, regional context via benchmarking, industry standards, and best management practices. The Plan is intended to be revisited periodically and adapted to reflect changes in the region over time.

Plan Framework

Community Forest Ethos

In pursuit of redressing tree canopy inequities, this Tree Master Plan is centered in "Community Forestry Ethos," a concept suggested in the 2022 paper, Not by Trees Alone: Centering Community in Urban Forestry. Community Forestry Ethos centers "the needs, capacities, and priorities of historically marginalized communities at the heart of the work of creating more just sustainable cities" (Campbell et al., 2022). It is intended to prioritize BIPOC (Black, Indigenous, and People of Color) and frontline communities who are disproportionately impacted by climate change and unjust policies.

Key Themes Align with Tree Master Plan Goals

The three key themes of Community Forestry Ethos guided the development of the Tree Master Plan's goal areas: people, performance, and planning, which are carried through to the key performance indicators and implementation framework.

PEOPLE

COMMUNITY FOREST ETHOS: Supporting human capacity and care (investments in people and organizations)

TMP GOAL: Foster a culture of inclusive tree stewardship through robust education, partnerships, and capacity-building opportunities that empower all community members to build tree equity.

PERFORMANCE

COMMUNITY FOREST ETHOS: Re-envisioning the functions of the urban forest (productive systems and biocultural approaches)

TMP GOAL: Measure and track the performance of San Leandro's urban forest in an effort increase the quality and quantity of trees, the benefits provided by trees, and the resources dedicated to tree management.

PLANNING

COMMUNITY FOREST ETHOS: Community organizing beyond the green silo (intersectional and cross-sectoral approaches)

TMP GOAL: Develop and implement plans, policies, and procedures that reflect the community's priorities, are driven by data, and proactively tackle issues facing trees in San Leandro.

INTRODUCTION

"Between every two pine trees there is a door leading to a new way of life."

— John Muir

Local Context

San Leandro's urban forest reflects a layered history of the land, as well as an evolution of the role of trees in the region. The City of San Leandro acknowledges that the land we call San Leandro today is the homeland of the Chochenyo and the Mewukma Ohlone Tribe.

History of the Land

The Jalquin and Yrgin People who lived in this area developed deep local knowledge of the grasslands and oak savannas. They used controlled burns and other techniques to increase yields and steward the land. Today, the Muwekma Ohlone Tribe and other familial descendants of the Verona Band retain and share this local knowledge.

There have been many changes to the landscape here since the early 1800s. At least six Muwekma Indian rancheria communities emerged in the 1830s-1860s in East Bay, one of which was located in the areas of modern-day San Leandro. In the early 1900s, cherry orchards were planted and cultivated, with San Leandro's first cherry festival in 1909 to celebrate a particularly bountiful harvest.

The San Leandro Dahlia Society formed and held its first show in 1925, with many of the farmlands turned to floriculture by the early 1930s, and the city embraced their new title as the "City of Sunshine and Flowers."

During the 1950s-1960s, San Leandro became known as the "City of Industry" as agricultural lands were quickly paved over to make room for industry and economic growth.

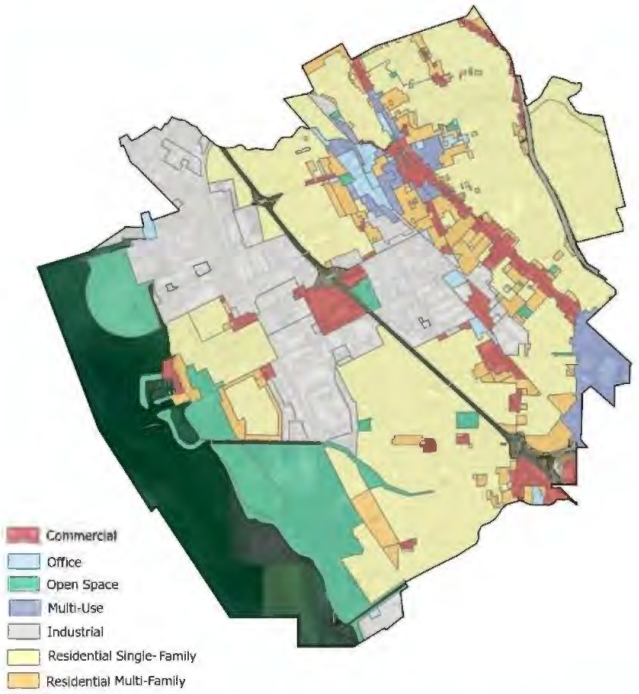
Local Context

Modern-Day San Leandro

Today, the land we call San Leandro is highly urbanized, with an estimated 60% of the city's land covered by impervious surfaces. The majority of San Leandro is zoned for single-family and duplex housing, which bodes well for trees, since residential areas provide great opportunity for trees to live long healthy lives with space for adequate growth.

The prevalence of industrial zoning poses a challenge to the urban forest, as industrial areas fulfill economic needs but provide less opportunity for green space and are associated with higher levels of pollution. As San Leandro accommodates a growing population with development and redevelopment, open space conservation and tree preservation efforts will be key to ensuring that trees will continue to thrive.

SAN LEANDRO ZONING CATEGORIES



Natural Resources Today

The City of San Leandro makes deliberate effort to maintain its natural resources, with the San Francisco Bay waterfront on the west side of the city, Chabot Park in the northeast, and San Leandro Creek running between the two. These ecological resources play a vital role in the balance of San Leandro's urban forest today. The City balances the restoration needs of these verdant natural areas with the maintenance needs of intentionally planted tree-lined streets, trees in yards, and manicured commercial landscapes. With this Tree Master Plan, the City of San Leandro is planning to protect these pockets of natural resources as the city evolves and ensure that trees will continue to be a beautiful and healthy component of this livable community.

Local Context

Aligning with San Leandro's Existing Plans

San Leandro's urban forest is a vital public asset that has been highlighted in existing City plans and community efforts. The City's Climate Action Plan (CAP), Green Infrastructure Plan, and the General Plan have paved the way for this TMP by recognizing the role of trees and the benefits they provide in San Leandro. Through the adoption of this Trees Master Plan, the City of San Leandro is taking a vital step in redressing inequities and growing a resilient urban forest for generations to come.

The following are some of the key urban forestry references in policies and plans. This TMP aligns with these existing efforts, reducing the risk of wasted resources and building momentum for projects that support urban forestry goals. A total of 45 documents and resources were reviewed and indexed as part of the information discovery process, and some of the key ones identified below.

2035 General Plan

- Urban Greening
- Environmental Justice
- Community Outreach
- Parks and recreational facilities
- Removal of Hazardous Trees
- Open Space and Carbon Emissions
- Street Trees

Climate Action Plan, 2021

- Carbon sequestration
- Climate Adaptation
- Resilience of vulnerable communities
- Public-private partnerships

Green Infrastructure Plan, 2019

San Leandro Creek Trail Master Plan, 2017

Bicycle and Pedestrian Master Plan, 2018 and 2024

Recreation and Parks Master Plan, 2024

Local Context

San Leandro Creek

San Leandro Creek is a nearly 22-mile-long stream that begins in the densely forested hills east of Oakland and outflows into San Leandro Bay. Along the way it flows through the City of San Leandro for 2.1 miles and forms the border between San Leandro and the City of Oakland for another 1.8 miles.

While most urban streams in the East Bay have been heavily channelized and culverted, San Leandro Creek is one of the rare few that remains uncovered. As such, San Leandro Creek is a valuable natural resource to the community and there are ongoing efforts, such as the work of the nonprofit Friends of San Leandro Creek, to restore and enhance the environmental, recreational, and cultural value of the creek.

San Leandro Creek is also a source of concern in the context of urban forest management. The native oaks and willows that historically lined the creek have been supplanted by invasive eucalyptus trees. The large eucalyptus trees have damaged infrastructure. The management of the trees along San Leandro Creek is currently a jurisdictional gray area and these trees were not included in the 2022 inventory. Discussions on the responsibility for maintaining the trees along San Leandro Creek are ongoing.

Benefits of Trees

Each tree in San Leandro provides a multitude of benefits, and the City of San Leandro developed this Tree Master Plan to redress inequities and ensure that tree canopy benefits reach all community members. Results of the urban tree canopy study included in this Plan show that areas with dense tree canopy cover are concentrated in northeast San Leandro. Areas with lower tree canopy cover are faced with hotter temperatures, more pollution, and greater risks to public health. It is vital that vulnerable populations are extended tree canopy that can help to alleviate the risks and impacts of climate change and the urban heat island effect

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MENTAL HEALTH

People without views of nature from their desks claimed 23% more sick days than workers with views of nature.

WILDLIFE HABITAT

Planting and protecting trees provides habitat for hundreds of birds and small animals.

CLEANER AIR

Roadside trees reduce nearby indoor air pollution by more than 50%.

ENERGY SAVINGS

Residents and businesses can save up to 50% on hot-day energy bills.

STORMWATER MANAGEMENT

Contiguous tree canopy is estimated to intercept 4" of rain over 1 acre in a typical year— about 108,000 gallons.

CARBON SERVICES

In one year, an acre of mature trees absorbs the amount of CO2 produced by a car driven 26,000 miles.

Benefits of Trees

Quality of Life

Neighborhoods with generous canopies of trees are uplifting and good for public health. Greater contact with natural environments correlates with lower levels of stress, improving performance. Students' concentration levels go up when they can look out onto a green landscape. Studies show that children with attention deficit disorder function better after activities in green settings. A green environment also improves worker productivity.

People drive more slowly and carefully through tree-lined streets, because trees create the illusion of narrower streets. One study found a 46% decrease in crash rates across urban arterial and highway sites after landscape improvements were installed. Faster drivers and slower drivers both drove at decreased speeds in the presence of trees. Trees reduce noise pollution, buffering as much as half of urban noise. By absorbing sounds, a belt of trees 100 feet wide and 50 feet tall can reduce highway noise by 6 to 10 decibels. Buffers composed of trees and shrubs can reduce 50% of noise.

Benefits of Trees

Urban Cooling

As natural screens, trees can insulate homes and businesses from extreme temperatures, keep properties cool, and reduce air conditioning utility bills. A deciduous tree covering 20% of a house results in annual cooling savings of 8 to 18% and annual heating savings of 2 to 8%. By planting shade trees on sunny exposures, residents and businesses can save up to 50% on hot-day energy bills.

Broad canopy trees lower temperatures by shading buildings, asphalt, and concrete. They deflect radiation from the sun and release moisture into the air. The urban heat island effect is the resulting higher temperature of areas dominated by buildings, roads, and sidewalks. Cities are often 5° to 10°F hotter than undeveloped areas, because hot pavement and buildings have replaced cool vegetated land. Shade trees can reduce asphalt temperatures by as much as 36°F, which diminishes fumes and improves air quality. Shaded streets last longer and require far less pavement maintenance, reducing long-term costs.

Benefits of Trees

Reduction of Greenhouse Gas Emissions (GHG)

Earth's climate is rapidly changing due to an increase of greenhouse gases (GHG) such as carbon dioxide (CO2), methane (CH4), and nitrous oxide (N2O) which are emitted from human activities such as transportation, industry, and power generation. These are primary contributors to increased temperatures in urban areas. Trees absorb carbon dioxide and store carbon in wood, which helps to reduce greenhouse gases and the harmful impacts of climate change.

Carbon sequestration is the removal of carbon dioxide from the air by trees (and all plant life), while carbon storage is the amount of carbon already deposited in woody parts of vegetation. In addition to carbon dioxide, trees' leaves or needles absorb pollutants, such as ozone, nitrogen dioxide, sulfur dioxide, and some particulate matter. It is estimated that trees in the United States store 700 million tons of carbon valued at $14 billion with an annual carbon sequestration rate of 22.8 million tons, valued at $460 million annually.

Benefits of Trees

Ecosystem Restoration

A tree's fibrous roots are premier pollution filtration and soil erosion prevention systems. Intensely urbanized areas are covered with impermeable surfaces. A healthy urban forest can reduce annual storm water runoff by up to 7%. Highly efficient trees also utilize or absorb toxic substances such as lead, zinc, copper, and biological contaminants, reducing the demand on local stormwater filtration systems.

By cleaning the water and air, trees create a safe and healthy space for wildlife. Planting and protecting trees can provide habitat for hundreds of birds and small animals. Habitat fragmentation can be devastating to animals, particularly those in need of safe passage for migration. Urbanization and the destruction of valuable ecosystems have led to the decline of many species. By adding trees, particularly native trees, valuable habitat can be restored, corridors can be reestablished, and preservation areas can provide sustainable space for a variety of wildlife species.

PRIORITIZING TREE EQUITY

"We don't experience natural environments enough to realize how restored they can make us feel, nor are we aware that studies also show they make us healthier, more creative, more empathetic and more apt to engage with the world and with each other. Nature, it turns out, is good for civilization."

—Florence Williams, The Nature Fix: Why Nature Makes Us Happier, Healthier, and More Creative

Centered in Equity

With this Tree Master Plan, the City of San Leandro is striving to increase community resilience holistically by centering the urban forestry program in tree equity. It is essential to first understand the baseline conditions of the urban forest, which includes condition of San Leandro's trees, as well as the programming and resources that support the urban forest.

An urban forest audit was conducted to gain a comprehensive understanding of the current state of the urban forest (including any disparities or inequities that may exist), identify areas of need, and develop targeted strategies to address challenges and gaps in services.

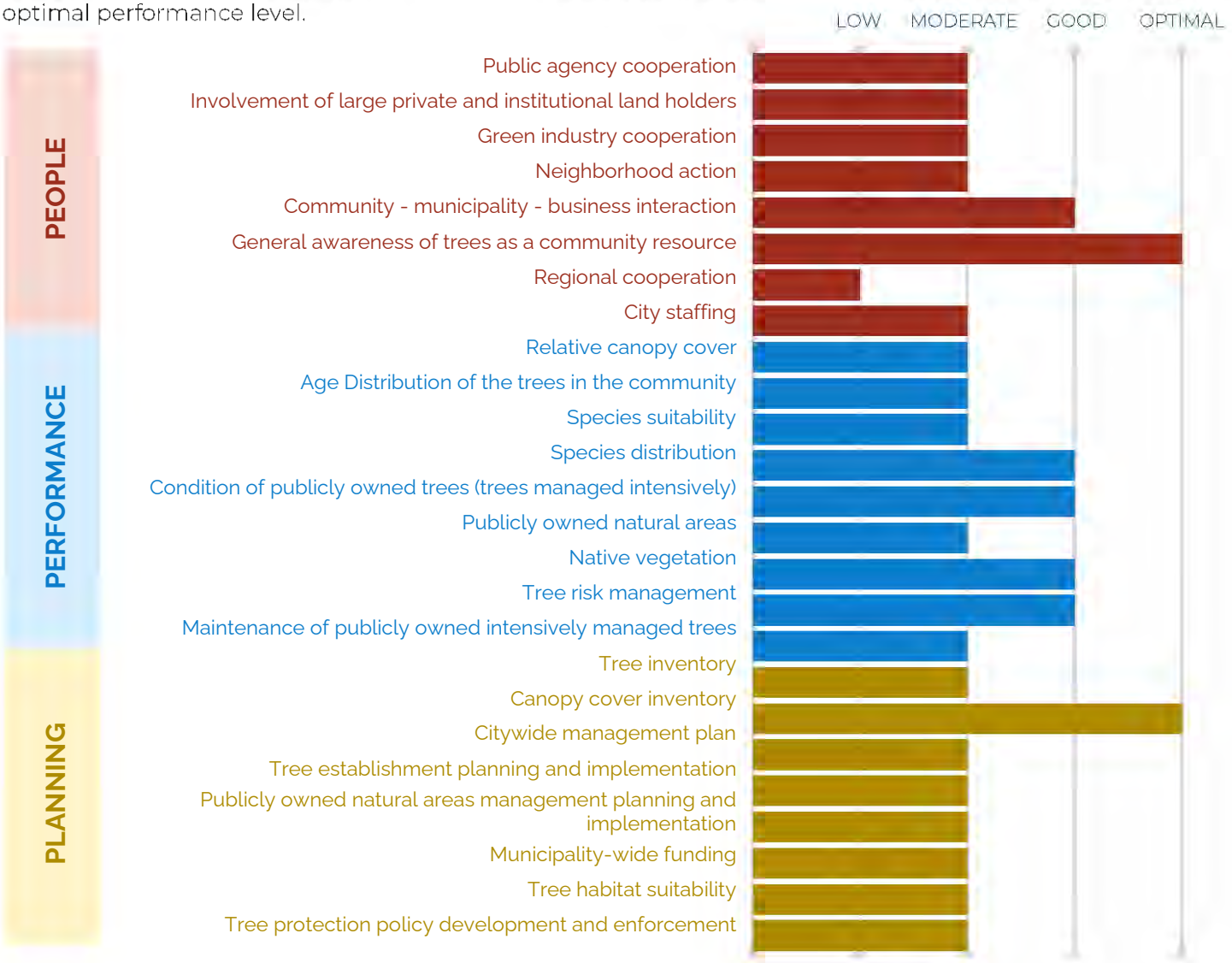
A tree canopy assessment, urban heat assessment, and public tree inventory provide detailed information about the distribution, health, and accessibility of trees across different neighborhoods within the city. This baseline provides a solid foundation for implementing equitable urban forestry initiatives that ensure all residents have access to the benefits of trees. It also allows for the measurement of progress over time, ensuring that efforts to promote equity in urban forestry are effective and sustainable in the long term.

THEME	COMMUNITY FOREST ETHOS	TREE MASTER PLAN GOAL
PEOPLE	Support human capacity and care (investments in people and organizations)	Foster a culture of inclusive tree stewardship through robust education, partnerships, and capacity-building opportunities that empower all community members to build tree equity.
PERFORMANCE	Re-envision the functions of the urban forest (productive systems and biocultural approaches)	Measure and track the performance of San Leandro's urban forest in an effort increase the quality and quantity of trees, the benefits provided by trees, and the resources dedicated to tree management.
PLANNING	Community organizing beyond the green silo (intersectional and cross-sectoral approaches)	Develop and implement plans, policies, and procedures that reflect the community's priorities, are driven by data, and proactively tackle issues facing trees in San Leandro.

Urban Forest Program Audit

The criteria and key performance indicators (KPI) used to assess San Leandro's urban forest were derived from the "Indicators of a Sustainable Urban Forest," a comprehensive resource and program assessment tool for urban forestry programs (Clark, et al., 1997; Kenney, et al., 2011). The 25 criteria and indicators apply urban forestry industry standards and best management practices to evaluate and rate trees, how they are managed, and the level of community involvement in the urban forest.

The criteria were organized by the three TMP themes: people, performance, and planning. San Leandro's performance level was rated as low, medium, high, or optimal based on data analysis, existing conditions, and feedback from the City's project team and department staff. The areas of low and medium performance are areas of opportunities that, with active support and investment, could be actively enhanced to a high or optimal performance level.



Audit Results

AUDIT RESULTS: PEOPLE				
#	Criteria	Criteria Objective	Level Achieved	Indicator Achieved
1.1	Public agency cooperation	Ensure all city department cooperate with common goals and objectives.	Moderate	Common goals but no cooperation among departments and/or agencies.
1.2	Involvement of large private and institutional land holders	Large private landholders embrace citywide goals and objectives through specific resource management plans.	Moderate	Educational materials and advice available to landholders.
1.3	Green industry cooperation	The green industry operates with high professional standards and commits to citywide goals and objectives.	Moderate	General cooperation among nurseries, tree care companies, etc.
1.4	Neighborhood action	At the neighborhood level, community members understand and cooperate in urban forest management.	Moderate	Isolated or limited number of active groups.
1.5	Community - municipality - business interaction	All community members in the community interact for the benefit of the urban forest.	Good	Informal and/or general cooperation.
1.6	General awareness of trees as a community resource	The public understands the role of the urban forest.	Optimal	Urban forest recognized as vital to the community's environmental, social, and economic well-being.
1.7	Regional cooperation	Provide for cooperation and interaction among neighboring communities and regional groups.	Low	Communities cooperate independently.
1.8	City staffing	Employ and train adequate staff to implement citywide urban forestry plan.	Moderate	No training of existing staff.

Audit Results

AUDIT RESULTS: PERFORMANCE				
#	Criteria	Criteria Objective	Level Achieved	Indicator Achieved
2.1	Relative canopy cover	Achieve climate-appropriate degree of tree cover, community-wide	Moderate	The existing canopy cover equals 25%–50% of the potential.
2.2	Age Distribution of the trees in the community	Provide for uneven aged distribution citywide as well as at the neighborhood level.	Moderate	Any size class represents between 50% and 75% of the tree population.
2.3	Species suitability	Establish a tree population suitable for the urban environment and adapted to the regional environment.	Moderate	50% to 75% of trees are of species considered suitable for the area.
2.4	Species distribution	Establish a genetically diverse tree population citywide as well as at the neighborhood level.	Good	No species represents more than 10% of the entire tree population citywide.
2.5	Condition of publicly owned trees (trees managed intensively)	Detailed understanding of the condition and risk potential of all publicly- owned trees.	Good	Complete tree inventory that includes detailed tree condition ratings.
2.6	Publicly owned natural areas	Detailed understanding of the ecological structure and function of all publicly owned natural areas.	Moderate	Publicly owned natural areas identified in a "natural areas survey" or similar document.
2.7	Native vegetation	Preservation and enhancement of local natural biodiversity.	Good	The use of native species is encouraged on a project- appropriate basis in both intensively and extensively managed areas; invasive species are recognized, and their use is discouraged.
2.8	Tree risk management	All publicly owned trees are safe.	Good	Complete tree inventory which includes detailed tree failure risk ratings; risk abatement program is in effect eliminating hazards within a maximum of one month from confirmation of hazard potential.
2.9	Maintenance of publicly owned intensively managed trees	All publicly owned trees are maintained to maximize current and future benefits. Tree health and condition ensure maximum longevity.	Moderate	Publicly owned trees are maintained on a request/ reactive basis. No systematic (block) pruning.

Audit Results

AUDIT RESULTS: PLANNING				
#	Criteria	Criteria Objective	Level Achieved	Indicator Achieved
3.1	Tree inventory	Complete inventory of the tree resource to direct its management, including age distribution, species mix, tree condition, and risk assessment.	Moderate	Complete or sample-based inventory of publicly-owned trees.
3.2	Canopy cover inventory	High resolution assessments of the existing and potential canopy cover for the entire community.	Optimal	Sampling of tree cover using aerial photographs or satellite imagery included in citywide GIS.
3.3	Citywide management plan	Develop and implement a comprehensive urban forest management plan for private and public property.	Moderate	Existing plan limited in scope and implementation.
3.4	Tree establishment planning and implementation	Urban forest renewal is ensured through a comprehensive tree establishment program driven by canopy cover, species diversity, and species distribution objectives.	Moderate	Tree establishment occurs on an annual basis.
3.5	Publicly owned natural areas management planning and implementation	The ecological structure and function of all publicly owned natural areas are protected and, where appropriate, enhanced.	Moderate	Reactionary stewardship in effect to facilitate public use (e.g., hazard abatement, trail maintenance).
3.6	Municipality-wide funding	Develop and maintain adequate funding to implement a citywide urban forest management plan.	Moderate	Funding to optimize existing urban forest.
3.7	Tree habitat suitability	All publicly owned trees are planted in habitats that will maximize current and future benefits provided to the site.	Moderate	Tree species are considered in planting site selection.
3.8	Tree protection policy development and enforcement	The benefits derived from large-stature trees are ensured by the enforcement of municipal wide policies.	Moderate	Policies in place to protect public trees.

Urban Tree Canopy

This urban tree canopy assessment utilized publicly available urban tree canopy data created by EarthDefine, based on 2018 National Agriculture Imagery Program (NAIP) aerial imagery and LiDAR data collected by the U.S. Geological Survey. The NAIP imagery was acquired during the growing season and included four spectral bands (red, green, blue, and near infrared) at 60-cm spatial resolution. Results of this study indicate 8% canopy cover citwide, and that most of this tree canopy coverage is in wealthier neighborhoods in the northeast quadrant of the City. Additional analyses using this UTC data are included in the following pages.

Urban Tree Canopy

Ecosystem Benefits

The urban forest holds millions of dollars of savings in avoided infrastructure costs, pollution reduction, and stored carbon. Using the best available science from USDA Forest Service's i-Tree Landscape tool, paired with the findings from the UTC assessment, ecosystem benefit values were calculated for the air quality, stormwater, and carbon functions provided by the urban tree canopy in San Leandro. The i-Tree tool reported monetary, pollution removal, and benefit value coefficients per tree canopy acre, tailored to the San Leandro area. The per acre coefficients were then applied to the 2018 UTC data (686 acres).

Air quality in San Leandro is estimated to be improved by removing over 31 tons of pollutants out of the air annually, which otherwise may cause expensive or life-threatening respiratory issues. Every year, trees in San Leandro divert over 21 million gallons of stormwater away from sewers and roadways. Citywide, San Leandro's trees have stored approximately 5,400 tons of carbon, valued at over $928,000, and each year the tree canopy absorbs and sequesters approximately 250 tons of carbon dioxide, valued at over $42,000. These annual benefits represent over $844,000 and a value of $9.73 per capita.

Annual Citywide Benefits Provided by Trees in San Leandro

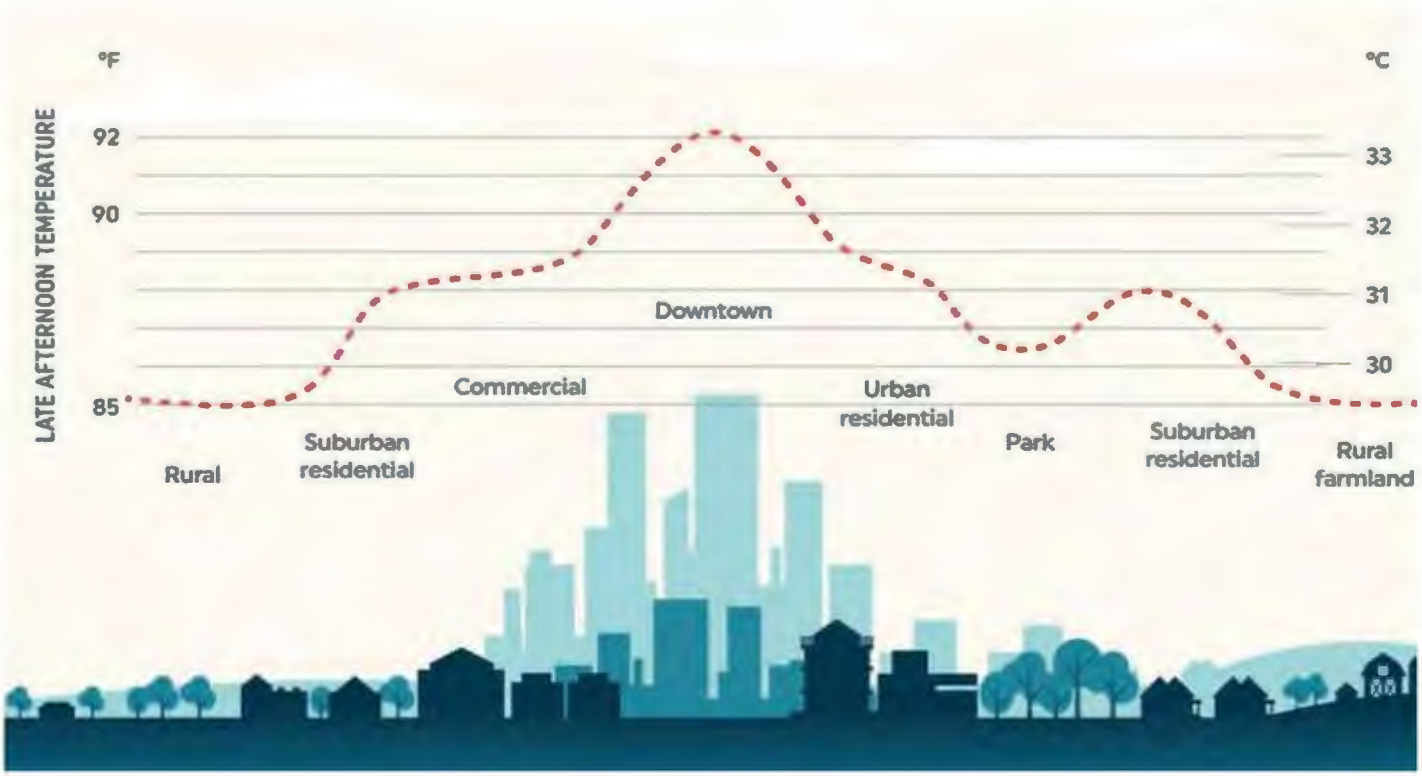
Air Quality	Stormwater Runoff Avoided	Carbon Sequestration	Total Annual Value	Carbon Storage (lifetime)
$612,170.93	$189,467.61	$42,556.24	$844,194.78	$928,525.05
31.47 tons	21.27 million gallons	249.51 tons		5,444.21 tons

Additional i-Tree methodology and documentation can be found here:
https://www.itreetools.org/support/resources-overview/i-tree-methods-and-files

Urban Heat Assessment

In San Leandro, some areas of the city experience hotter temperatures than others due to the urban heat island (UHI) effect. UHI happens when urban areas with large amounts of pavement and buildings tend to have less trees and vegetation, a combination that results in warmer temperatures. Asphalt and concrete gradually release stored heat at night, which can produce higher temperatures in the evening, further exacerbating daytime heat issues.

Research on the UHI effect indicates that people who live in the hottest parts of a city are more likely to be low-income and experience increased health risks. Respiratory issues, heat exhaustion, heat stroke, and other heat-related health conditions disproportionately impact our most vulnerable populations such as children, the elderly, and those with preexisting conditions. Heat mitigation strategies such as planting trees and increasing shade can be life-saving public investments that also increase quality of life.



Urban Heat Assessment

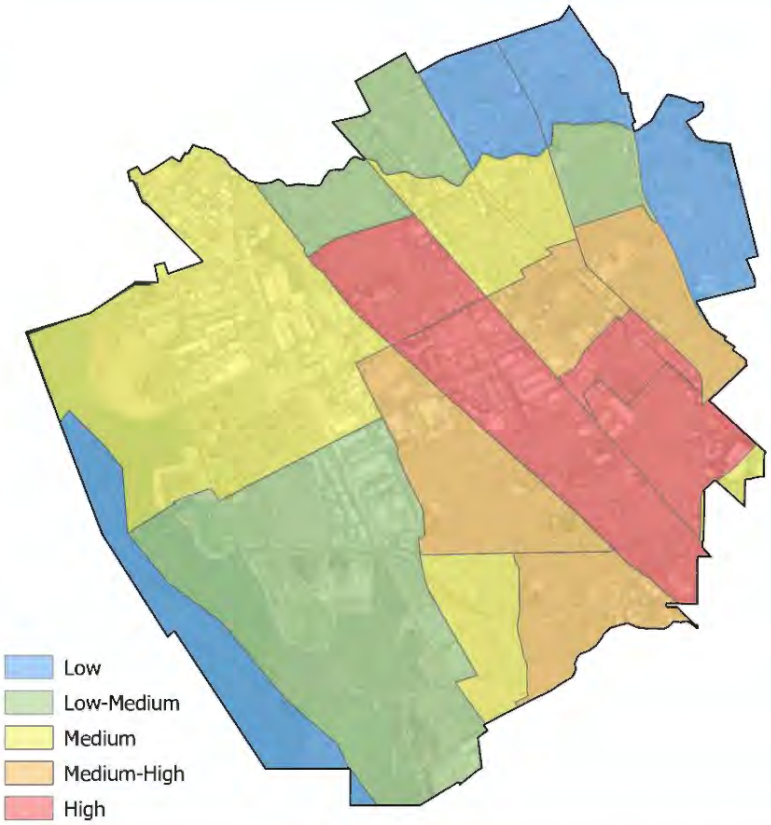
The "Urban Heat Island Index" map is an index created by consultants at PlanIT Geo based on high heat severity, high impervious surface, and low tree canopy. Areas near water and greenspaces are less susceptible to urban heat, while areas with lots of buildings and pavement experience the most heat severity.

Urban Heat Severity: shown on a scale of mild to severe, with mild heat in light pink (slightly above the city's average), and severe heat in dark pink (significantly above the city's average).

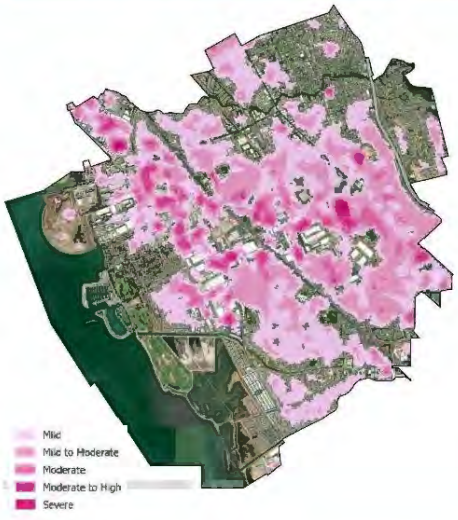
Urban Tree Canopy (UTC): shown for each Census Tract, from yellow or low (0-5%) to green or high (15-20%).

Impervious Surfaces: shown for each Census Tract, from teal or low (0-15%) to grey or high (>75%).

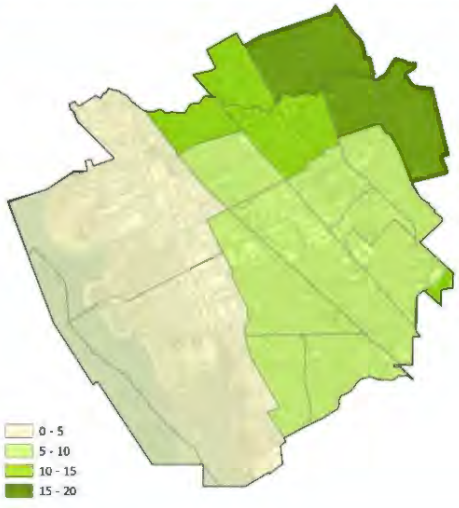
URBAN HEAT ISLAND INDEX



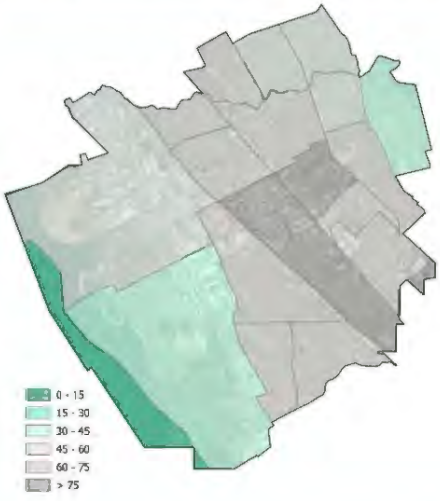
URBAN HEAT SEVERITY



URBAN TREE CANOPY



IMPERVIOUS SURFACES



Urban Heat Assessment

Vulnerable Populations

The "Vulnerable Populations" map includes data from the California Climate Investments program, which funds projects in or near areas with disadvantaged and low-income communities.

Disadvantaged Communities: as defined by the California Environmental Protection Agency (CalEPA) in 2022.

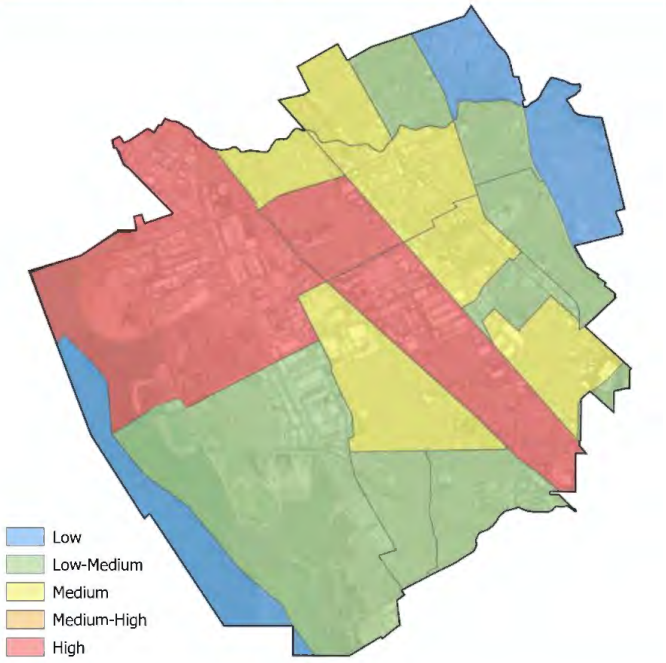
Low-Income Communities: income either at or below 80 percent of the statewide median or below a threshold designated as low-income by the Department of Housing and Community Development.

Planting Prioritization

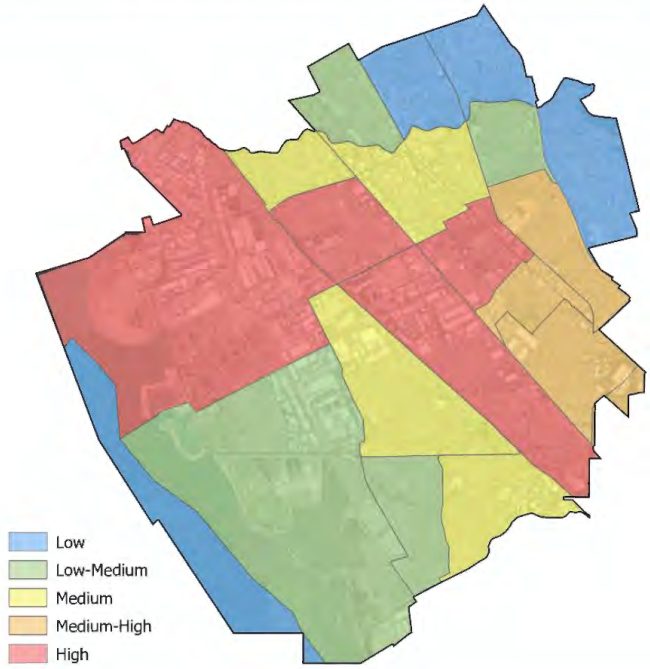
The Priority Planting map shows San Leandro's census tracts that have been prioritized and identified for increased tree investments, reflecting a scale of red (highest priority) to blue (lowest priority). The following datasets were used as indicators for this prioritization:

Heat Severity
Priority Populations
Impervious Surface
Imperviousness in Streets
Pollutant Levels
Displacement Potential
See discussion on pages 32-33
Urban Tree Canopy
Storm Drain Density
Park Access
Tree Equity Score
See discussion on page 30

VULNERABLE POPULATIONS INDEX



PLANTING PRIORITIZATION

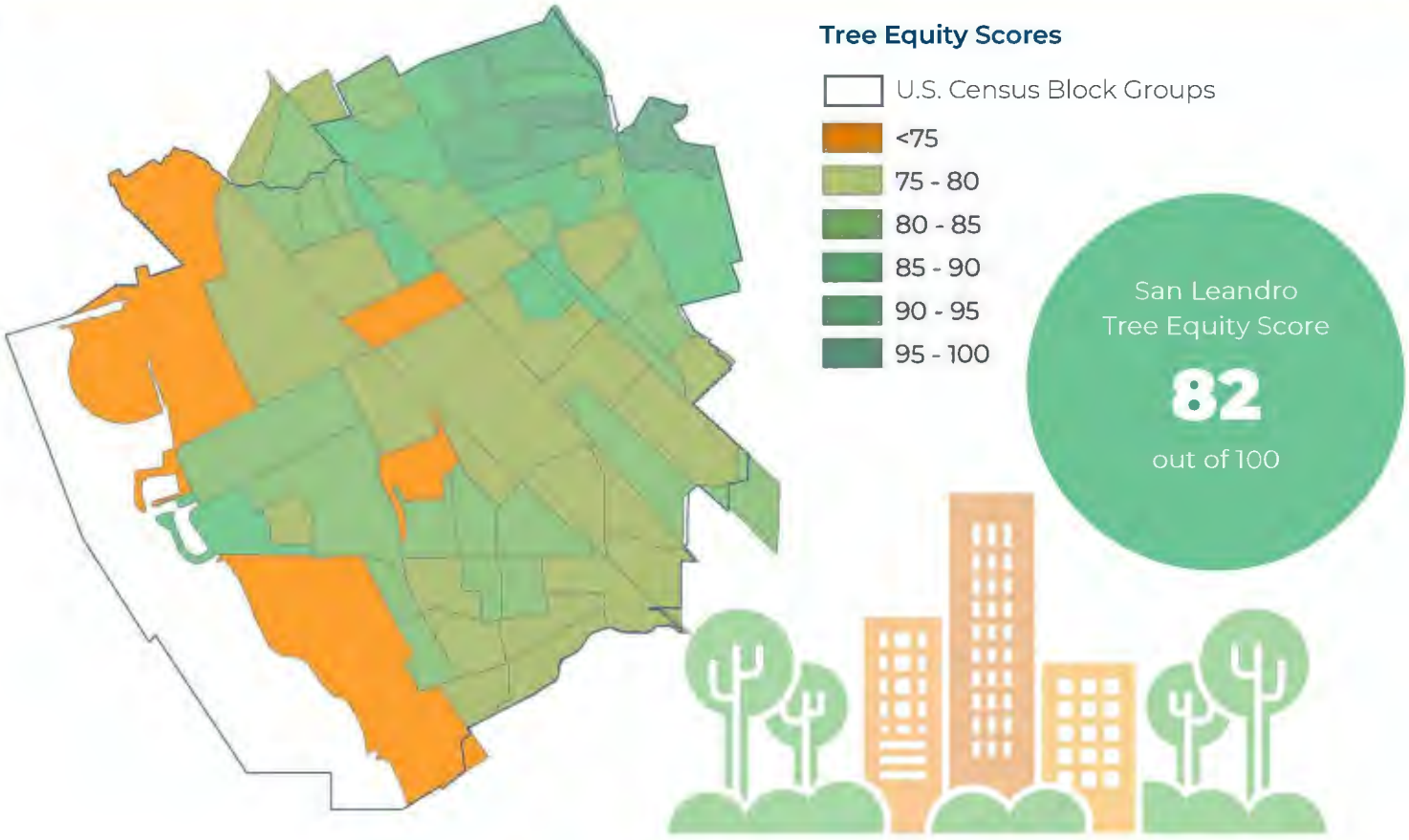


Tree Equity Score

Tree canopy coverage is rarely distributed equitably throughout a city. The American Forests organization created the Tree Equity Score (TES, www.treeequityscore.org) tool to help address environmental inequities by identifying and prioritizing areas with the greatest need. The tool measures tree equity across every urban Census block group in the United States. TES scores indicate the level of access to the health, economic, and climate benefits provided by trees. A score of 100 represents tree equity.

The map below displays the Tree Equity Scores for each U.S. Census Block Group (CBG) within the City of San Leandro. Based on a 2023 analysis, San Leandro's TES is 82, compared with the average score of 85 for all 197,505 U.S. Census-defined urban areas included in the study. The disparities are clearly seen between the highest scores in the northeast and the rest of the city. Three CBGs are attaining tree equity with a score of at least 95, while 29 CBGs have a score below the city's average of 82. This illustrates an opportunity for the City to adopt and implement a canopy goal that addresses tree equity in priorities areas.

San Leandro's Tree Equity Score

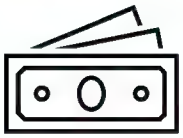


Tree Equity Score

Tree Equity Score Inputs

Existing Canopy

Population Density

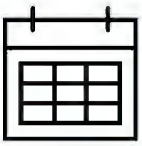


Income

Employment

Surface Temperature

Race

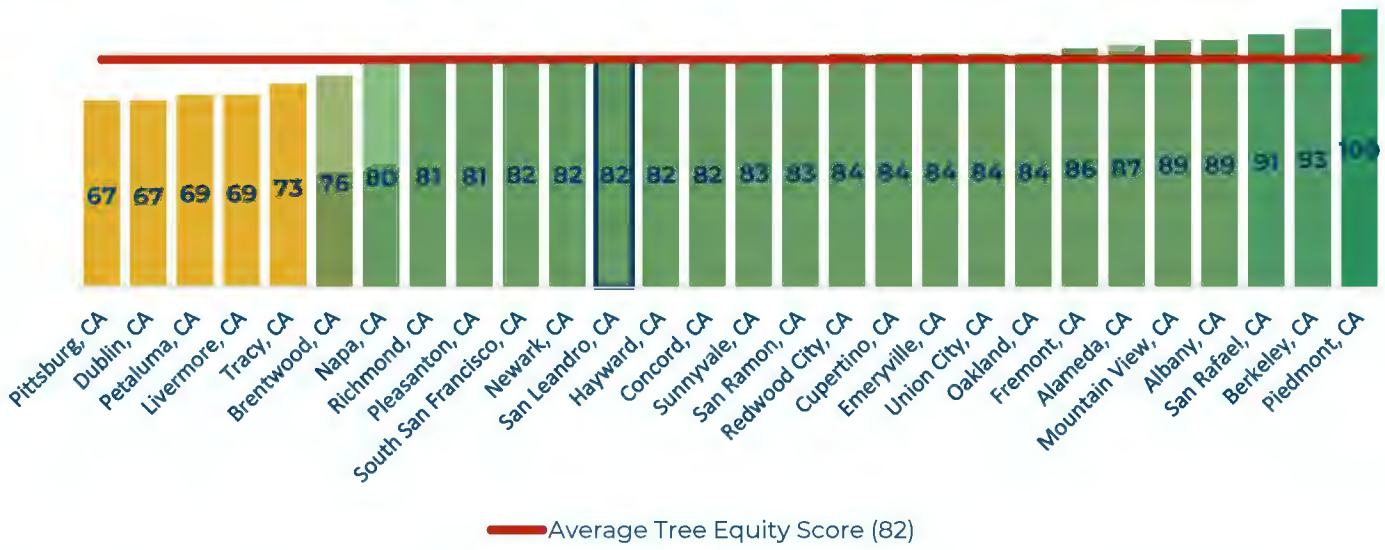


Age

Health

Tree Equity Scores are calculated using the metrics listed in the figure above for each Census Block Group, and an average score is then provided for each community. Compared with 27 other cities in the region, San Leandro's Tree Equity Score of 82 is on par with the average. Achieving tree equity is a high priority for San Leandro, so the goals and strategies outlined in this Tree Master Plan guide the City towards an equitable distribution of tree canopy cover.

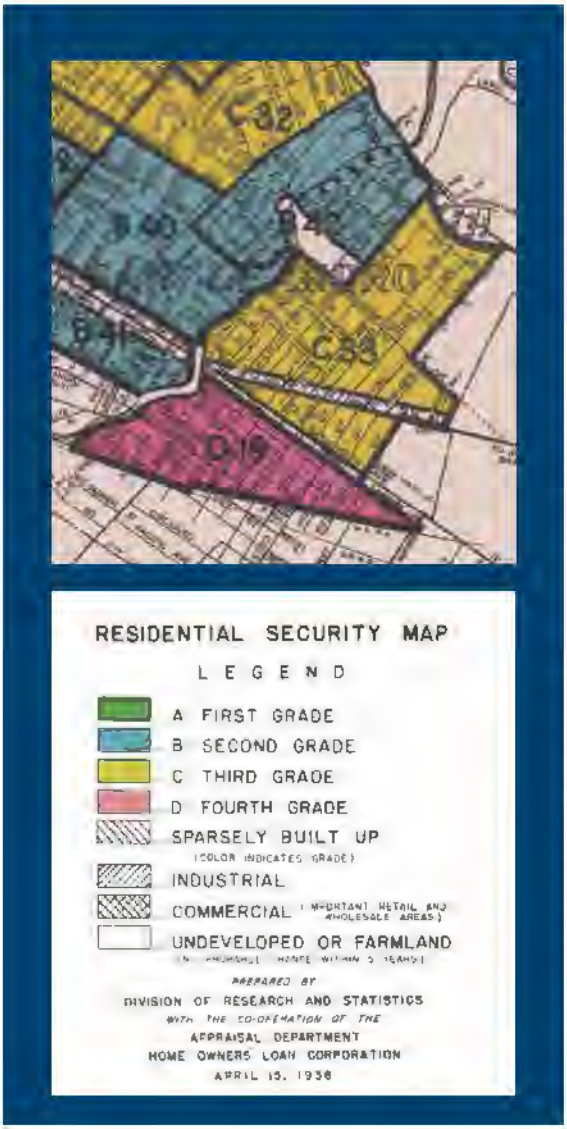
Regional Comparison of Tree Equity Scores



Green Gentrification

Green gentrification (also known as environmental or ecological gentrification) happens when the installation of new, improved, or restored green spaces and infrastructure, such as trees, gets the attention of developers and results in increased investment, which drives up cost of living and forces existing residents to relocate (Anguelovski et al., 2019; Curran and Hamilton, 2012; McClintock, 2018). To understand the risk of green gentrification in San Leandro as the City aims to direct urban forest investments towards areas with low tree canopy, it is important to acknowledge the history that led to today's inequities.

Urban Canopy and Racist Housing Policies



A recent assessment of 37 U.S. cities found that inequitable urban tree canopy distribution today is correlated with racist housing practices called "redlining" that began in 1933 with the creation of the federal government's Home Owners' Loan Corporation (HOLC) (Locke et al., 2021). HOLC issued loans based on a system of perceived risk, and those appraisals were based primarily on an area's demographics and the age and physical condition of its housing stock. Areas with predominantly U.S.-born, white populations, and newer housing were widely appraised as the "safest" places for lending, while areas with significant numbers of racial and ethnic minorities, foreign-born residents, and older housing stock were appraised as having the highest risk for lenders.

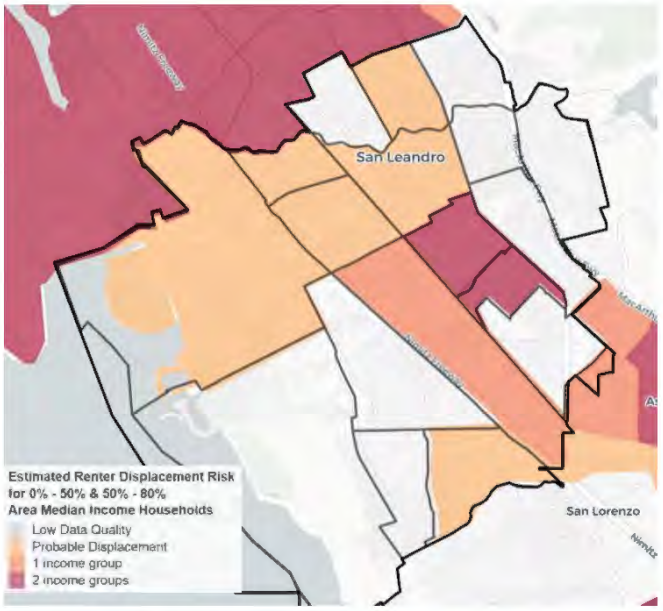
These lending practices, along with segregation and exclusionary zoning, resulted in immense economic disparities among urban populations that was perpetuated by continued disinvestment of public resources and infrastructure. While housing discrimination and redlining practices were outlawed with the 1968 Fair Housing Act, San Leandro and adjacent cities remained mostly racially White and working-class for decades (City of San Leandro, 2024). The Urban Displacement Project (UDP) published a report in 2018 which found that from 2000-2015, there was a migration of low-income people of color from San Francisco to the outer areas of Alameda County such as Oakland, San Leandro, and Daly City (Schafran, 2018; Menendian and Gambhir, 2018).

Green Gentrification

Untended Consequences

Even well-intended public investments such as tree planting projects can contribute to gentrification, displacement, or exclusion of vulnerable populations and disenfranchised communities. Many cities in California are investing in projects like bike lanes, green spaces, and public transportation to mitigate and adapt to the impacts of climate change (Chapple, et al., 2022). Policies, plans, and programs can help to stabilize San Leandro's neighborhoods identified for urban forestry investments and strengthen against potential green gentrification.

The map on the left shows the Urban Displacement Project's Estimated Displacement Risk Model for San Leandro. Census tracts in red indicate the areas with greatest displacement risk, estimating an elevated displacement for low-income (50% - 80% AMI) and high displacement risk for very low-income households (0% - 50% AMI). Areas in orange indicate elevated displacement for low-income households (50% - 80% AMI), and areas in yellow have a probable displacement risk. (Thomas et al., 2022)



Opt-Out Programs

Some property owners are not prepared to take on the responsibility of caring for a tree. A 2019 study out of Detroit found that roughly 24% of impacted property owners decided to opt out of the City-led street tree planting effort. Community members expressed a lack of confidence that the local government would share the burden of caring for the tree and cleaning up debris (Carmichael, 2019).

The goal is to replace a tree at every location, but it is not always feasible. In certain circumstances, the City of San Leandro offers the option for property owners to "opt-out" of receiving a replacement street tree when one is removed from the right-of-way adjacent to the property. Instead, a one-time fee is collected to locate an alternate space on public property to plant a tree.

COMMUNITY ENGAGEMENT

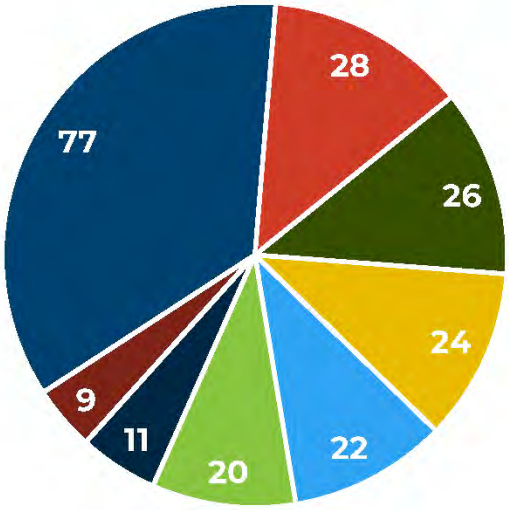
San Leandro community members contributed their input, opinions, priorities, and ideas for the Tree Master Plan at community events, stakeholder focus groups, and public meetings. Engaging community members in the TMP was vital to the long-term success of the project, and a comprehensive Outreach and Engagement Plan (OEP) was developed to establish a clear understanding of purpose, target audiences, strategies, messaging, and deliverables.

Public Events

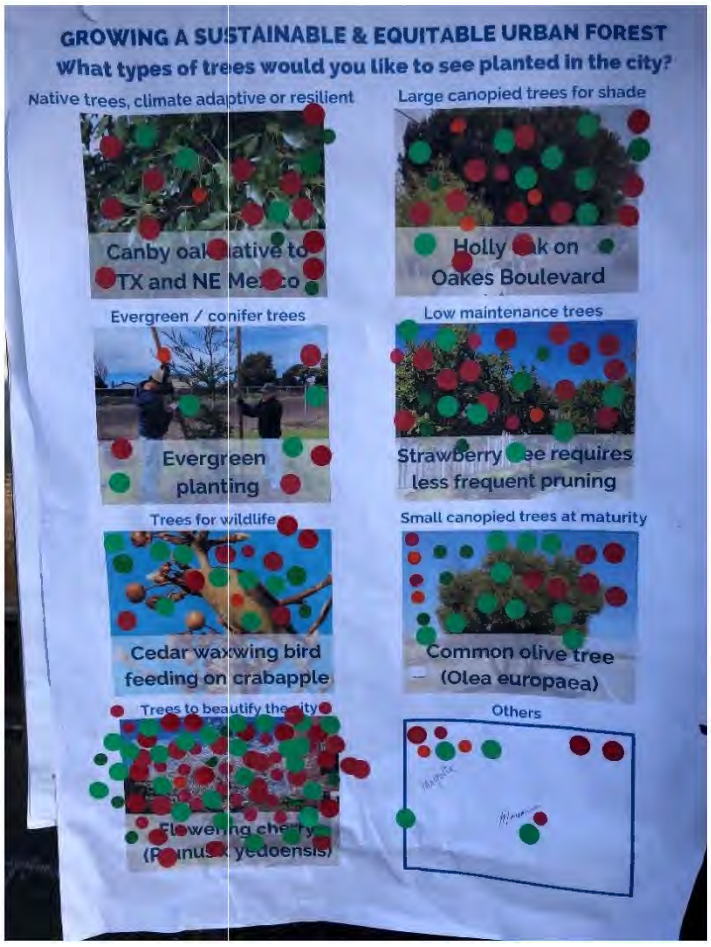
Earth Day

The City hosted an Earth Day event in April with a variety of activities and information offered to the community. In support of urban forestry, the City had a booth with educational posters about trees and a dot board exercise to gather community input for the Trees Master Plan.

The results of the dot exercise are shown below. The vast majority of participants voted for "Trees to beautify the city" where a picture of a flowering cherry was displayed. "Low maintenance trees" and "large-canopied trees for shade" received the next highest number of votes.



- Trees to beautify the city
- Low maintenance trees
- Large-canopied trees for shade
- Small-canopied trees
- Native trees, climate adaptive, or resilient
- Trees for wildlife
- Other
- Evergreen / conifer trees



Public Events

Tree Planting Projects

The City of San Leandro partnered with Common Vision to plant 1,000 trees and engage the community on tree planting, maintenance, and care. Planting projects were funded through a CalFire grant received in May 2022. The planting events were held throughout the course of the Tree Master Plan, which provided ample opportunity for crossover on public education and outreach regarding the TMP.

Common Vision is an organization that improves community health and food security through outdoor classrooms and school gardens throughout California. Executive Director Wanda Stewart's vision aligns with the City of San Leandro's tree planting efforts to reach underrepresented communities, maximize public education, and empower youth.

Focus Groups

Community partners were essential to the Trees Master Plan's success. Special attention was given to targeting frontline communities where tree canopy is low, urban heat island impacts are high, and allocation of resources has historically been lacking. To achieve the TMP priorities of environmental justice and resilience, a strong network of stakeholders was formed to share information and news about the TMP, recruit volunteers and attendees for community events, advise the City and consultants of issues and deficiencies in the outreach process, and provide input. Several of these organizations partner with the City of San Leandro on existing and/or recent efforts such as the General Plan Update, Climate Action Plan, Resilience Hubs, and the CalFire Tree Planting Grant.

Common Vision

CALIFORNIA DEPARTMENT OF FORESTRY & FIRE PROTECTION
CAL FIRE
SINCE 1885

The Trees Master Plan's outreach and engagement included a series of focus group sessions. In these sessions, various interest groups shared perspectives and ideas about San Leandro's urban forest. These groups provided local expertise and innovative ideas to inform the TMP's recommendations.

Stakeholders

Community-Based Organizations

Common Vision joined two other community groups in the TMP's first focus group. One member joined from the Friends of San Leandro Creek, a 501(c)3 non-profit organization and community group made up of community members, students, and businesses interested in the protection and enhancement of San Leandro Creek, and in learning more about the creek's ecology. They had a key role in volunteer organization for the CalFire grant tree planting effort. The group is supportive of native plants to replace eucalyptus and restore the San Leandro Creek.

A member of Hyphae Design Laboratory joined and shared experience with vegetative buffers, ecosystem restoration, and wildlife corridors. Hyphae's vision is to break down disciplinary silos and conventions to redefine the relationship between nature, humans and the built environment.

5 Key Takeaways

1) *Continued engagement*: Effective community engagement and education are vital to the success of the urban forest.
2) *Tree maintenance*: San Leandro needs greater resources, support, and buy-in for maintaining newly planted trees, established trees, and mature trees.
3) *Soils*: Soil and understory vegetation play an important role in the health of the urban forest. There is often not enough soil for trees. When possible, remove concrete and make more permeable spaces for trees.
4) *Recommended trees*: San Leandro's recommended tree species list should be updated with climate adaptation in mind. There is a desire to include more conifers and evergreen trees while reducing eucalyptus.
5) *Green infrastructure*: The TMP should highlight the importance the urban forest as an asset, and the application of green infrastructure concepts such as wildlife corridors, living shorelines (San Leandro creek), and vegetative buffers in urban environments.

Stakeholders

Indigenous Communities

SOGOREA TE' LAND TRUST
LED BY URBAN INDIGENOUS WOMEN

A focus groups was held with the Sogorea Te' Land Trust, an urban Indigenous women-led land trust based in the San Francisco Bay Area that facilitates the return of Indigenous land to Indigenous people.

During the focus group session, Corrina Gould, co-founder of the Sogorea Te' Land Trust, emphasized the importance of passing on Indigenous ecological knowledge to future generations. Gathering native oak acorns, harvesting manzanita berries, and weaving baskets with willow are traditional skills that are threatened by colonization and rampant development.

Deja Gould, Language Program Coordinator at the Sogorea Te' Land Trust, suggested that the Tree Master Plan include recommendations of companion plants for trees. Honeysuckle, California rose, and dutchman's pipe support a balanced ecosystem in San Leandro Creek.

5 Key Takeaways

1. *Tree Pruning Program*: San Leandro would benefit from a community tree care training program. As we increase the amount of tree canopy throughout the city, youth should learn to care for the trees as part of a generational program (e.g. on school grounds).
2. *Sharing Tribal Knowledge*: Traditional ecological knowledge from old Tribal diaries ad texts would greatly benefit the TMP's land management approach. Need to follow up with a request for a quote or excerpt to include in the TMP (potentially Chris Longoria).
3. *Recommended Tree Species*: Include fruit trees in the recommended species list. Companion planting should be given more consideration with tree planting plans.
4. *Planting Strategies*: The City's TMP should include strategies for the removal of invasive species, moving towards native species, and incorporating trees that can handle saltwater intrusion.
5. *Ongoing Relationship*: the Tribe would like continued communication and invitations to be part of urban forestry efforts as time goes on. Tribes in the area would like to be involved in participating in the training events for tree planting, pruning, harvesting, and using wood and other products from the trees.

Stakeholders

Young People

The San Leandro High School's Eco Club is an active group that helps to organize volunteers and educational events focusing on a wide variety of environmental topics. Two ninth-grade Eco Club members joined to express their passion for the environment and ideas to make the world a better place.

Mr. Marc Gordon (pictured below), the students' environmental sciences teacher and advisor of the Eco Club, joined to share more about the sustainable activities, tree plantings, and nature-based activities he helps to organize for the students. Amy Olson, who works in the high school's counseling office and is active with environmental issues, shared her knowledge of and desire for more California-native trees and plants.

5 Key Takeaways

1. *Recommended Tree Species:* Include drought tolerant species, native species (such as redbud and valley oak), and species well adapted to natural disasters.
2. *Planting Strategies*: need more trees along streets and on campuses. When street trees die, it is important to replace them and fill the gaps (e.g. along I-580).
3. *Canopy for Schools*: San Leandro High School needs more trees and canopy cover.
4. *Growing Trees*: The students are interested in starting a nursery (on the roof) at the club and bringing professionals in to support distribution.
5. *Ongoing Youth Involvement*: youth groups are interested in getting outside, into nature, and looking for social volunteer opportunities. The San Leandro High School Eco Club, AEY Club, Interact Club, the AP Environment class, and the Student Conservation Commission are all possible future partners.

Public Survey

Community Responses

The community participated in two public surveys to share ideas, knowledge, and feedback for the Tree Master Plan. The first survey aimed to gauge community members' understanding of the urban forest and their thoughts on how to manage public trees, while the second focused on defining goals, vision, and measures of success. Between the two surveys, 368 responses were received (352 in English, 3 in Spanish, and 13 in Chinese). Complete survey results were provided to the City.

Survey Highlights

MOST IMPORTANT QUALITY OF TREES:

SHADE AND REDUCING TEMPERATURES

CITY RESOURCES SHOULD GO TO:

SETTING AND ACHIEVING TREE CANOPY GOALS

AREA TO PRIORITIZE PLANTINGS:

STREETS AND MEDIANS

GREATEST CONCERN:

WATER CONSUMPTION, ESPECIALLY DURING DROUGHT

GREATEST EDUCATIONAL INTEREST:

CREATING WILDLIFE HABITAT

GREATEST OPPORTUNITY:

JOB CREATION & WORKFORCE DEVELOPMENT

URBAN FOREST MANAGEMENT

The trees act not as individuals, but somehow as a collective. Exactly how they do this, we don't yet know. But what we too is the power of unity. What happens to one happens to us all. We can starve together or feast together."

—*Robin Wall Kimmerer, Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*

Tree Inventory

HIGHLIGHTS

Successful urban forest management includes an organized, proactive program that utilizes the most recent and accurate tree inventory data to set goals and measure progress.

In late 2022, P anIT Geo's Inventory Arborists (certified by the International Society of Arboriculture) assessed and nventoried San Leandro's trees within the public rights-of-way (ROW) and select parks and public properties. As of December 2022, a total of 16,145 street trees, 1,719 park trees, 4,032 planting sites, and 369 tree stumps were inventoried.

Based on this recent inventory, the TMP considers the tree species diversity, distribution, and general condition to provide a prioritized system for managing San Leandro's trees.

17,864
Trees Inventoried

45%
Good Condition

373
Unique species

13%
Crapemyrtle species

Tree distribution considers various characteristics of where trees are located throughout San Leandro, such as land use, site width, and growing space. Understanding tree distribution helps plan for potential risks such as pests, diseases, or the impacts of climate change. Equitable distribution of trees throughout the city ensures that all residents have access to the canopy's benefits.

Tree care management strategies, tree care priorities, budgets based on projected needs, and are identified in an effort to minimize the need for costly, reactive solutions to crises or urgent risk mitigation. The strategies included in the TMP will help the City maximize benefits the urban forest will provide in the years to come.

Tree Inventory

GENUS DIVERSITY

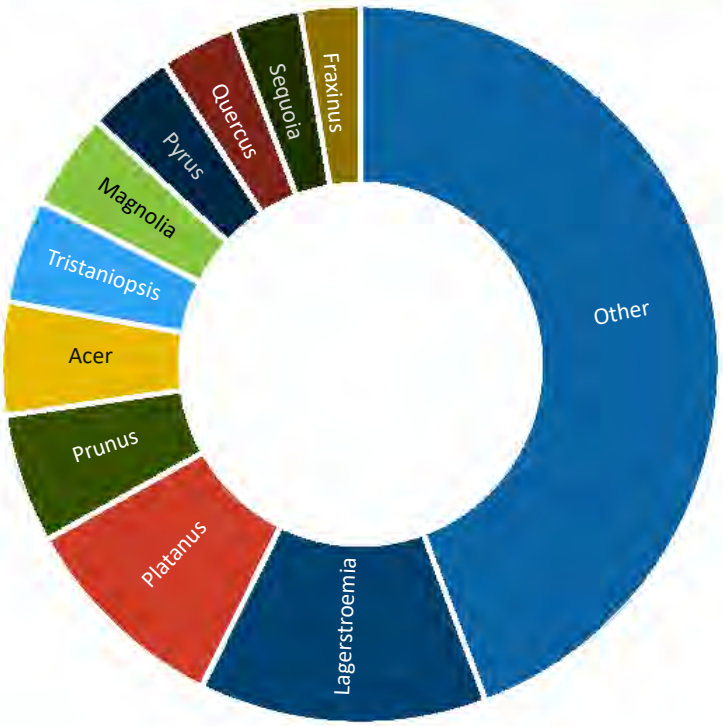
The public trees in San Leandro are comprised of 52 unique genera. The top ten most common tree genera comprise 56% of the public tree population. The City should monitor the diversity of public trees by periodically updating its inventory.

10-20-30 Rule

A guideline for increasing urban tree biodiversity by limiting urban forests to 10% of any species, 20% of any genus, and 30% of any family. This rule aims to reduce the risks associated with pests and diseases and increase urban forest resilience. When trees of the same genus are planted together, they are more susceptible to being attacked by a single pest or disease, which can spread rapidly and cause widespread damage. Diversifying plantings can significantly reduce the risk of large-scale damage from species-specific threats.

Based on the 10 20 30 Rule for urban tree diversity, the genus *Lagerstroemia*, which comprises four crapemyrtle species in San Leandro (common crapemyrtle, Muskogee crapemyrtle, Tuscarora crapemyrtle, and Natchez crapemyrtle), is not exceeding the threshold with 13% compared to the recommended 20% for genus. When looking specifically at the street tree population however, this increases to 14%.

It may be recommended to limit the planting of crapemyrtle species as street trees and prioritize trees from a different genus that present similar aesthetic and maintenance characteristics while increasing urban forest resilience through diversification.



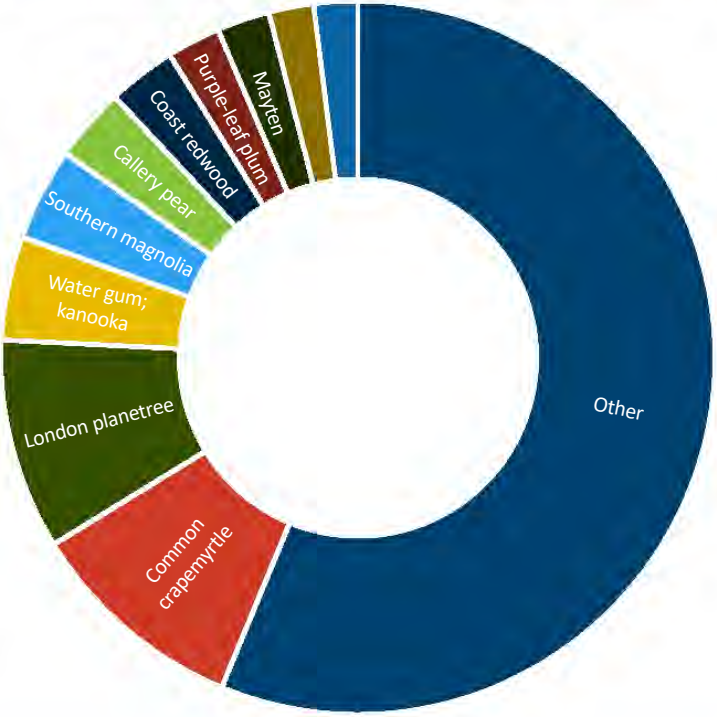
Tree Inventory

SPECIES DIVERSITY

While crapemyrtle species dominate the urban tree population in San Leandro with 1,787 trees in the inventory, the London planetree is a contender for most common species with 1,708 trees; both represent 10% of the citywide inventory. Still, San Leandro has healthy species diversity when assessing based on the 10-20-30 Rule, since no species makes up more than 20% of the total inventory. San Leandro's public tree inventory has 373 unique species, a relatively impressive species richness for urban areas.

The genus *Lagerstroemia* makes up 13% of San Leandro's tree inventory. Roughly 50 species of *Lagerstroemia* trees and shrubs commonly known as crapemyrtle. Ubiquitous to warm climates and the southern United States, crapemyrtle are popular for their drought tolerance and showy flowers. They are native to India, China, Japan, Korea, northern Australia, and the Oceana. Examples of native alternatives for San Leandro include Western redbud (*Cercis occidentalis*), California buckeye (*Aesculus californica*), and Catalina ironwood (*Lyonhamnus floribundus ssp asplenifolius*).

Of the ten most common species, mayten is considered invasive according to the Invasive Species Council of California (ISCC), while coast redwood is the only native species according to the California Native Plant Society. With "Right Tree, Right Place" principles in mind, native species should be considered by the City for public spaces and encouraged to private landowners as replacements for non-native and invasive species to support local wildlife, lower maintenance needs, and improve overall drought resistance by reducing watering needs.



Tree Inventory

PARK TREES

Parks trees make up 10% or 1,719 of the City's inventory, located in 22 City parks. This table on the right identifies the distribution of inventoried trees within parks. Trees on or adjacent to vacant land and other unmaintained areas are included in the street tree count.

Most park trees (89.2% or 1,534 trees) grow in open areas associated with the maintained areas of parks, while the remaining trees grow in spaces that are either unmaintained (2.9%), planting strips (3.9%), or other more restricted areas such as planting wells (1.8%), parking islands (1.5%), medians (0.5%), or raised planters (0.2%).

While park trees are usually provided more space than street trees, understanding the type of space park trees are growing in allows for informed analysis of tree condition over time and enables assessments of tree species survivability in different growing space types.

Park Name	# of Trees	% of Park Trees in Inventory
Marina Park	321	18.7%
Chabot Park	306	17.8%
Washington Manor Park	261	15.2%
Halcyon Park	179	10.4%
Bonaire Park	119	6.9%
Stenzel Park	111	6.5%
Siempre Verde Park	83	4.8%
Toyon Park	51	3.0%
Floresta Park	41	2.4%
Thrasher Park	39	2.3%
Cherry Grove Park	38	2.2%
Warden Park	23	1.3%
Washington Manor Middle School Field	23	1.3%
San Leandro Ball Park	21	1.2%
Memorial Park	21	1.2%
Mulford Point	16	0.9%
Tony B. Santos Park	16	0.9%
Root Park	15	0.9%
Pescador Point	15	0.9%
McCartney Park	11	0.6%
Victoria Park	7	0.4%
Heath Park Tennis Courts	2	0.1%
Total	1719	100%

Tree Inventory

MONARCH BAY GOLF COURSE TREES

A total of 508 trees were inventoried in San Leandro's Monarch Bay Golf Course, not including the northwest area which was omitted from the inventory due to logistical factors. For this Tree Master Plan, the 508 trees are included in the street tree analysis because they have similar management needs. Roughly 91% of the trees were identified for routine pruning at the time of the inventory, while only 9% (46 trees) require more urgent pruning or removal.

It is important to note that seven tree species within the *Eucalyptus* genus were found on the Monarch Bay Golf Course. These 175 trees make up 27.5% of the inventoried golf course trees. The trees represent a mix of "non-native" and "invasive" species, many of which are also considered to be a fire hazard and should be considered for removal.

The City is proactively planting native species in Monarch Bay Golf Course. As part of a CalFire-funded tree planting project, 125 trees were installed within the golf course boundaries in 2023. The following tree species were planted:

- Brisbane box (20 trees)
- Cypress (14 trees)
- Interior live oak (13 trees)
- Pacific wax myrtle (40 trees)
- Saratoga laurel (5 trees)
- Southern live oak (12 trees)
- White alder (21 trees)

Tree Inventory

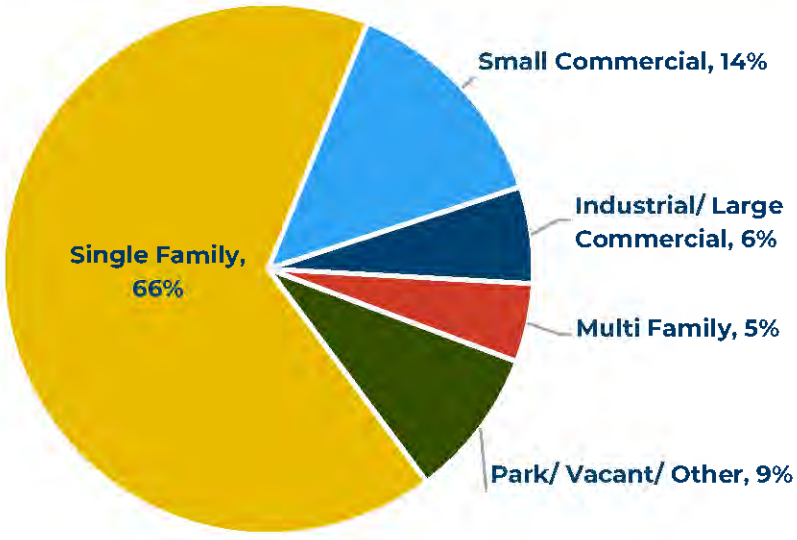
STREET TREES

According to the 2022 inventory, most street trees in San Leandro are adjacent to the single-family land use (66%), followed by small commercial (14%). "Park/Vacant/Other" is a category of land uses that may be adjacent to a park or a vacant lot, which is applicable to 9% of San Leandro's street trees.

Trees in commercial areas might endure higher pollution levels, soil compaction from increased foot and vehicular traffic and are competing for space with utilities, business operations, and other urban activities. Conversely, trees near residential areas may face fewer stressors but still require specific attention to mitigate potential issues like root intrusion into underground utilities or branch interference with overhead power lines.

The inventory assessed site conditions for interference with overhead and underground utilities. 52% of street trees did not have overhead utilities present, while 26% of the sites had wires present without any conflicts. However, conflicts were apparent at 3,558 sites of 22% of the street tree inventory. Underground utilities were observed at 248 sites (7%). More than half of San Leandro's street trees (55%) are in good, very good, or excellent condition. Only 1.4% were recorded as dead at the time of the inventory.

STREET TREE ADJACENT LAND USE

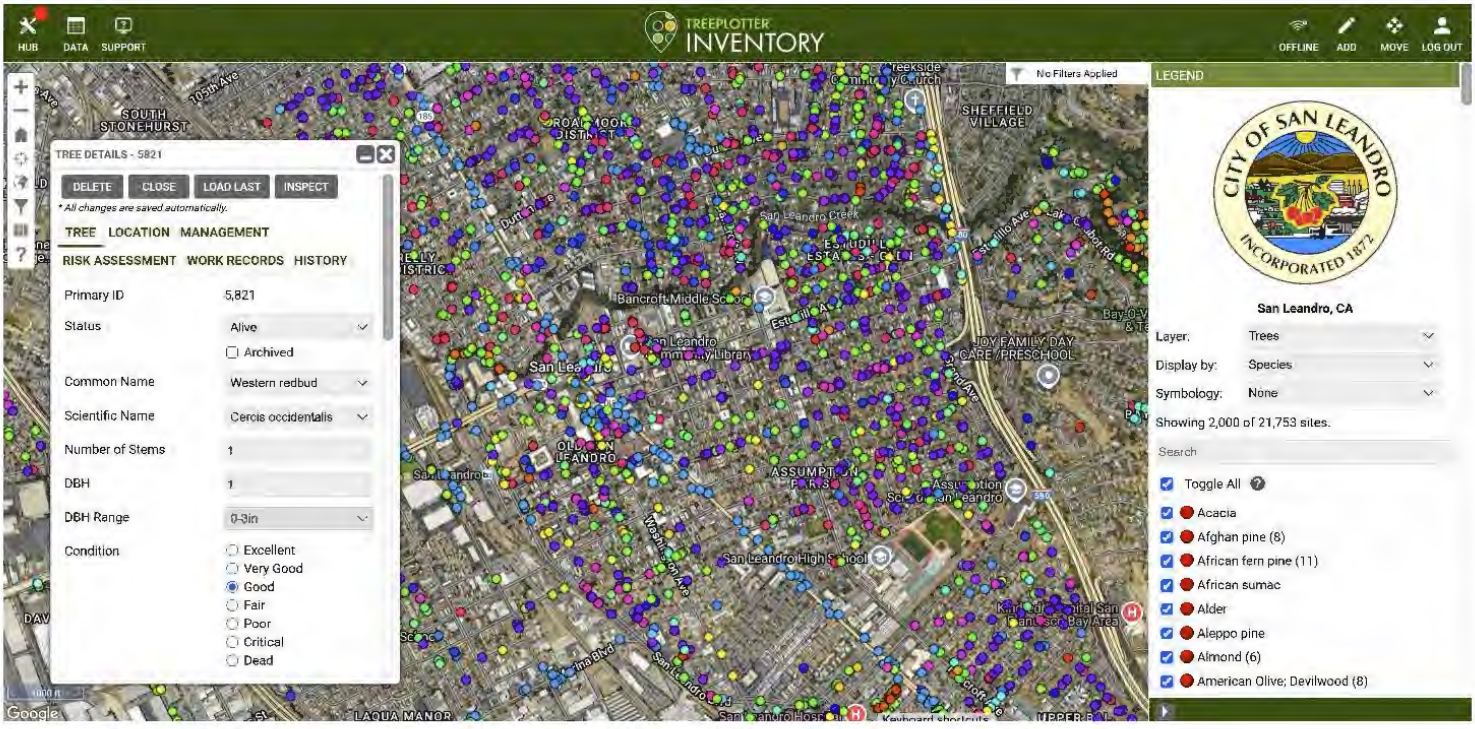


Tree Maintenance

TREE MANAGEMENT PROGRAM

The City of San Leandro intends to use the 2022 tree inventory to proactively preserve, care for, and enhance the urban forest while maintaining the capacity to respond to the community's needs. A five-year Tree Management Program (Program) was developed to balance these priorities, recognizing that implementation of this Program will be a continuous effort, and high-risk tree work must always be prioritized to maintain public safety. As such, the Program recommends adequate staff, resources, and equipment to support a safe and healthy work environment in addition to utilizing contractors for proactive care. Implementation of regular training, certifications, and continuing education credits ensures that the San Leandro staff are informed of industry standards and use best management practices daily.

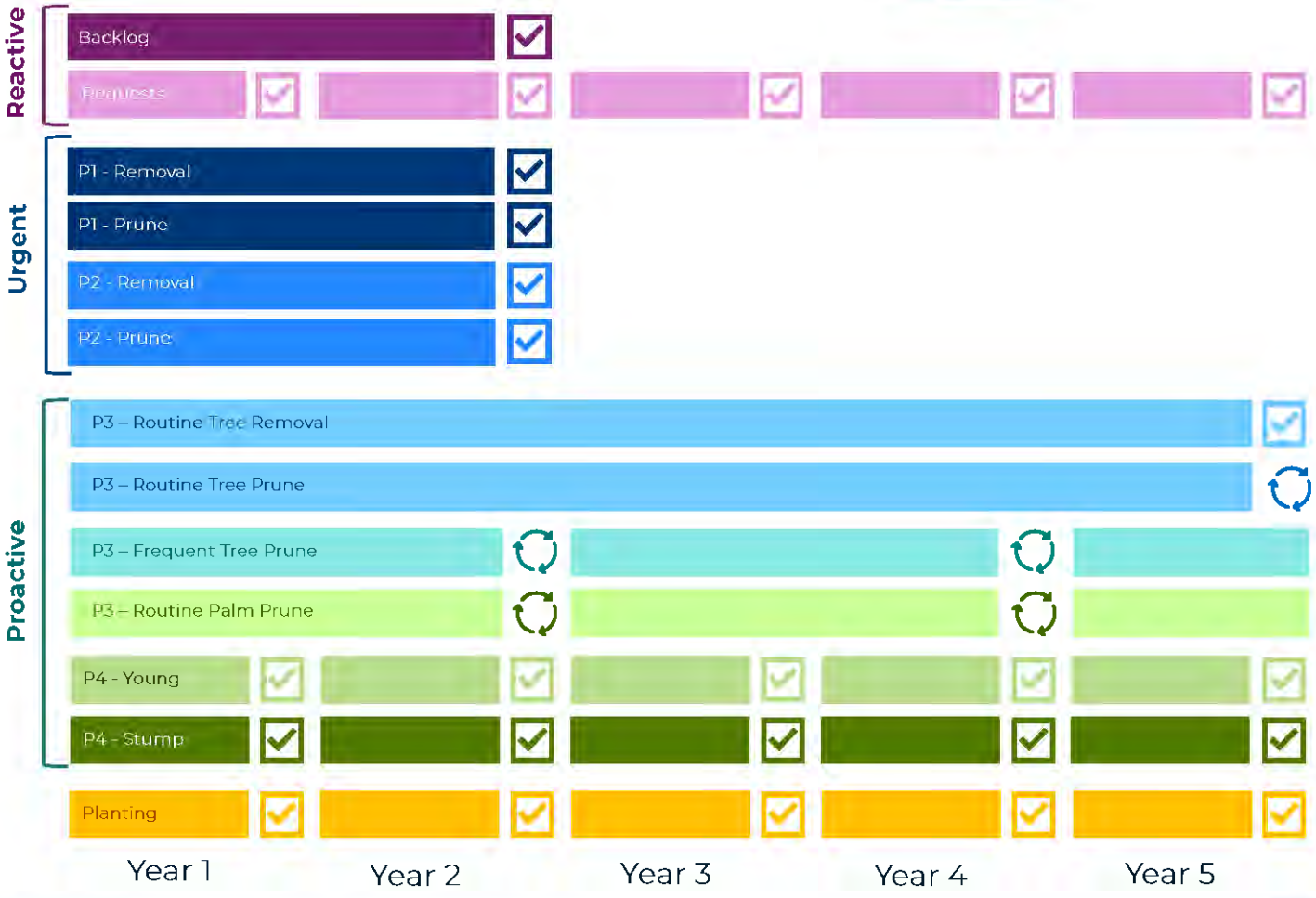
San Leandro's public tree inventory can be easily accessed in PlanIT Geo's TreePlotter map using any device that supports internet or cellular data at www.pg-cloud.com/SanLeandroCA/. The City can use TreePlotter's mapping tool to focus on specific neighborhoods and areas for maintenance by utilizing advanced filters to showcase the most critical tree removal and pruning needs. The inventory can be printed, although navigation using the interactive map or spreadsheets is recommended due to the size and complexity of the inventory data. A Tree Management Program Workbook provides full inventory delivery, tree work prioritization details, and the breakdown of the inventory by priority level.



Tree Maintenance

Prioritization of the Tree Work

During the 2022 tree inventory, each tree was assigned a recommended maintenance priority level by an ISA Certified Arborist. Overall tree condition and severity of potential defects present were used to guide the maintenance recommendations. The most urgent situations are scheduled to be addressed in the first two years of the Program, followed by two-year and five-year cycles for proactive pruning, maintenance, and planting. The following pages provide a summary of these priorities, along with maintenance and pruning recommendations for San Leandro's trees.



Tree Maintenance

TREE MANAGEMENT PROGRAM SUMMARY			
PRIORITY LEVEL		**DETAIL**	**DESCRIPTION**
REACTIVE	REACTIVE	BACKLOG OF REQUESTS	San Leandro community members regularly submit requests for City staff to inspect trees, assess risk, advise on maintenance, and administer treatment or removal of trees. Due to a shortage of staff and resources, the City is roughly six months behind on these requests.
	REACTIVE	NEW REQUESTS	On average, the City's arborists and urban foresters receive roughly 2-3 requests per day, or 40-60 requests per month.
URGENT	PRIORITY 1	IMMINENT REMOVAL	These trees are designated as imminent removals due to their defects that pose potential public safety hazards and cannot be cost-effectively or practically treated.
	PRIORITY 1	IMMINENT PRUNE	These trees require pruning to remove dead, dying, or weakened branches that pose potential safety hazards.
	PRIORITY 2	HIGH PRIORITY REMOVAL	These trees should be removed but do not pose a liability as great as Priority 1 trees.
	PRIORITY 2	HIGH PRIORITY PRUNE	These trees have dead, dying, diseased, or weakened branches between two and four inches in diameter and do not have the potential safety hazards of those trees requiring Priority 1 pruning.
PROACTIVE	PRIORITY 3	ROUTINE TREE REMOVAL	For some trees and palms, the maintenance need was assessed as routine removal. These trees should be removed, but they pose minimal risk to people or property.
	PRIORITY 3	ROUTINE TREE PRUNE	Most of San Leandro's trees were determined to need routine maintenance. Trees in this category are established, mature, and maturing trees greater than 6" DSH.
	PRIORITY 3	FREQUENT TREE PRUNE	Certain tree species were selected for a 2-year maintenance cycle because they commonly present issues that warrant more frequent pruning.
	PRIORITY 3	ROUTINE PALM PRUNE	Palm pruning consists of removing dead and dying fronds, flowers, and fruit on a biennial cycle.
	PRIORITY 4	YOUNG & SMALL TREE PRUNE	Small trees require routine pruning to prevent clearance issues, and young trees need training pruning to shape and guide the growth to achieve a desired form and structure.
	PRIORITY 4	STUMP REMOVAL	Stumps (and their root system above soil level) require removal.
PLANT	TREE PLANTING	NO-NET-LOSS PLANTING	A no-net-loss planting program proactively replaces trees as they are removed. This estimate of 300 trees per year accounts for trees removed as part of the maintenance program, as well as predicted annual mortality of 1% of the tree population.

Tree Maintenance

Reactive Tree Care

On average, the Urban Forestry Division receives 40 to 60 tree service requests every month for a range of tasks, including inspections, pruning, hanging limbs, and removals. There are a wide variety of unpredictable factors at play in the urban forest, and some reactive tree work will always be needed to satisfy the community. Decreased urban forestry budget and inconsistent staffing in recent years have resulted in uncertainties and inefficiencies in program operations. Today, the Urban Forestry Division is faced with a six-month backlog of public tree service requests, creating inefficient work planning and frustration for community members. As the City begins working through pre-planned maintenance cycles, the ratio of reactive to proactive tree work will shift so that on-demand requests from the public will lessen.

Urgent Hazards and Risks

Managing hazardous trees requires a comprehensive approach that prioritizes public safety and timely intervention. While regular pruning cycles and tree planting initiatives are crucial, immediate action must be taken for high-priority and high-risk trees to mitigate potential hazards promptly. Continuous monitoring of the tree population is essential to identify and address high-priority situations, and plan for removal of trees when hazard management is proven insufficient. Priority 1 and Priority 2 maintenance may involve the removal of dead, diseased, or damaged trees, or the elimination of risks such as broken limbs.

Tree Maintenance

Proactive Tree Care

Managing established trees is a critical aspect of maintaining a healthy and sustainable urban forest. Priority 3 and 4 in the Program encompass a variety of proactive and routine tree work to address structural issues or growth patterns that could pose safety risks or interfere with infrastructure. Understanding the maintenance type prescribed for trees helps establish maintenance routes, schedules, and budgets. Priority 3 maintenance aims to manage risk, develop structure, provide clearance, and sustain a tree's health and benefits until natural senescence. Proactive pruning focuses on creating and maintaining a sound tree structure to minimize risks such as branch failure. When executed properly, pruning offers numerous benefits including reduced risk of breakage, improved health and appearance, and enhanced clearance for vehicles and pedestrians

Routine Tree Pruning

A five-year routine tree pruning cycle is recommended for most trees in the inventory. It is crucial for the City to routinely monitor these trees, along with public tree needs and service demands, to ensure adequate staffing and resources are allocated to maintain the recommended pruning cycle. For San Leandro's Public Tree Management Program, proactive pruning should remain a central component to ensure the health and longevity of the city-maintained public trees. Proactive pruning plans should align with the Tree Master Plan and complement tree planting and emergency response efforts. The level of care provided to established trees directly impacts their long-term health and vigor, ultimately affecting the benefits derived from the urban forest.

Routine Pruning of Palms

A total of 422 palms were recorded in the public tree inventory. Palms provide less ecosystem benefits than trees overall, and they require very different maintenance strategies that can make a proactive maintenance program challenging. While palms are much less impactful to sidewalks and underground utilities, they often interfere with overhead utilities. The City should monitor the palms that were recorded as conflicting with wires and pedestrian clearance.

Tree Maintenance

Frequent Tree Pruning

Certain tree species were selected for a 2-year maintenance cycle because they commonly present issues that warrant more frequent pruning. Examples of these trees include:

- Fremont cottonwood (*Populus fremontii*) is most likely to have girdling roots with poor root systems, and frequently experience crown dieback.

- Chinese elms (*ulmus parvifolia*) were found to be problematic trees in San Leandro's streetscapes, causing hardscape damage that is often due to a poor planting site choice. Additionally, Chinese elms were frequently impacted by poor maintenance practices such as improper pruning and mechanical damage.

- Carob trees *(ceratonia siliqua)* were often observed to have poor structure with crown dieback, and sometimes experiencing canker and abiotic issues, such as mechanical damage and improper pruning.

- Sweetgum (*liquidambar styraciflua*), sycamore (platanus occidentalis), and London planetrees (platanus spp.) are litter-prone and drop litter and branches throughout the year. While they are rigorous trees that provide great shade, their problematic root systems can cause extensive hardscape damage.

Young Tree Care

Within San Leandro's public tree inventory, approximately 25% of the trees are less than six inches in diameter, alive, and not recommended for removal. These trees are either young trees that require training pruning, or small trees that require routine pruning.

Training is the structural pruning of young trees to eliminate diseased or damaged branches, establish a central leader, and improve branching structure to foster strong growth and future tree health. Given the potential structural challenges young trees may face as they mature, addressing these issues early is imperative. Problems such as codominant leaders or crossing limbs can escalate over time, increasing the risk of tree failure and liability. Incorporating young tree training into the Program not only promotes tree health and longevity but also mitigates future safety concerns associated with structural defects.

Tree Planting

Mitigation Planting for No-Net-Loss

When a tree is removed, whether due to disease, damage, or safety concerns, the benefits they provide to the community are lost. Replanting trees helps to restore these invaluable ecosystem services and ensures that future generations can continue to enjoy the many advantages of a robust urban forest. A planting strategy is crucial to sustainability of the urban forest and should be based on data, available resources, partnerships, and community input.

The Tree Management Program recommends a commitment to a "no net loss" planting policy that accounts for planned removals, as well as 1% annual mortality (natural causes or accidents). To meet the "no net loss" commitment the City should plan to plant an estimated 300 trees each year of the five-year Tree Management Program to account for these removals.

Planting for Canopy Growth

Based on the analysis of the tree diameter classes City-wide, the City should be adding young trees for an improved distribution of tree sizes that reduce tree maintenance surges and increase the flow of ecosystem services equally across the City. Additionally, the City envisions expanding tree canopy to ensure equitable distribution of canopy throughout San Leandro, so additional resources will be required as the City grows its urban forestry program to accommodate canopy goals. San Leandro's future tree plantings will thrive with continuous implementation of proper tree care practices. City policies, regulations, and community involvement are just some of the factors that contribute to long-term stewardship of trees.

Tree Planting

Citywide Canopy Goal Considerations

A canopy goal-setting exercise was accomplished for San Leandro using the 2018 urban tree canopy data as a baseline while referencing the Tree Equity Score assessment and industry standards. As of the 2018 UTC assessment, San Leandro has 8% canopy cover. While the City is committed to no-net-loss, the following canopy goal scenarios were explored to envision canopy growth throughout the San Leandro:

- 12% by 2050 (25-year trajectory)
- 20% by 2075 (50-year trajectory)

These scenarios were guided by tree canopy cover data, socio-demographic data derived from the Tree Equity Score (American Forests, 2021), benchmarking research, analysis of existing and potential resources, City input, and community feedback.

Using the ratio of private land to public land as a guide, it is recommended that the City lead 12.6% of the tree planting and support the community in planting the other 87.4% on private property. City staff, community leaders, tree advocates, business owners, and residents all have a role in stewarding trees to expand tree canopy to areas that need it most.

To reach a citywide canopy goal of 12% the City would need to increase canopy by 4%. In this scenario, the City and community would need to plant a total of 56,384 trees over 25 years, or an average of 2,225 trees planted per year. This is an average of 284 trees planted by the City on public land annually, and roughly 1,971 trees annually on private land.

Tree Planting

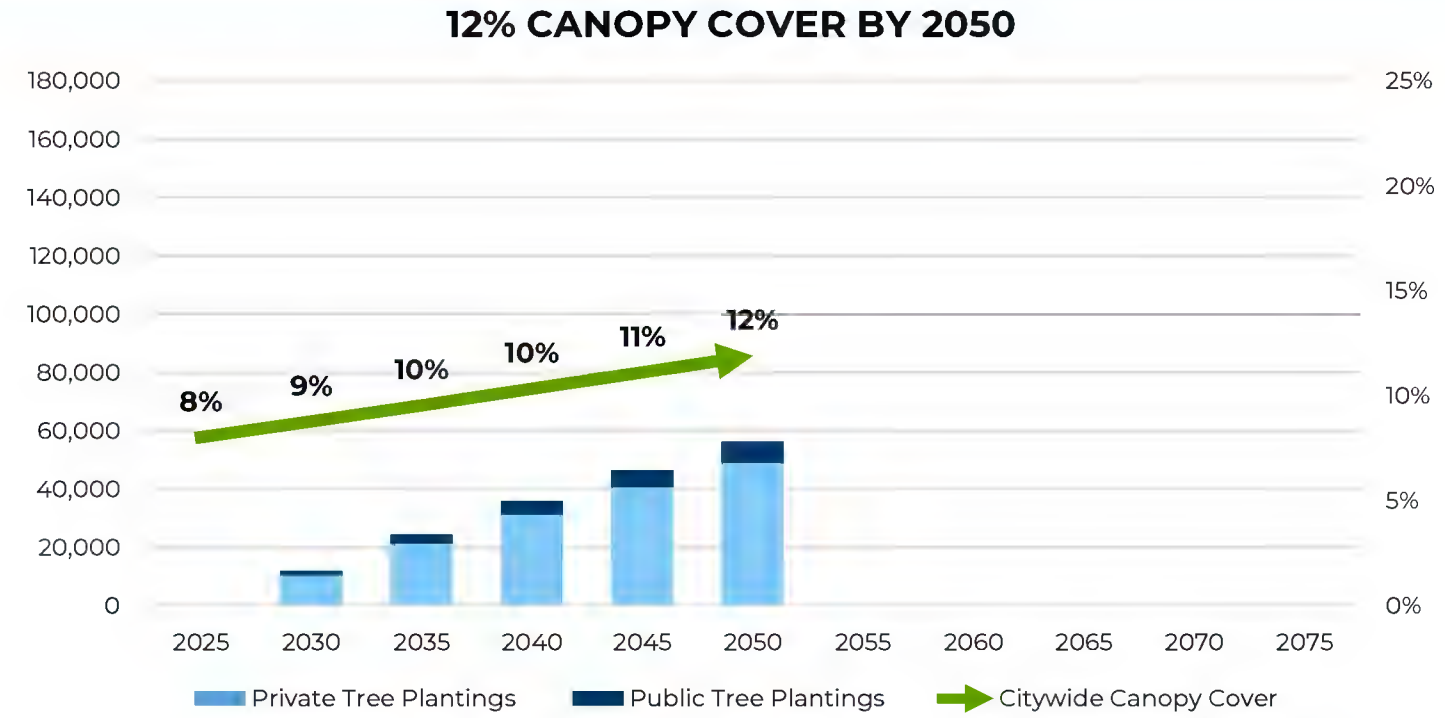


Figure 5: 12% Canopy goal planting needs

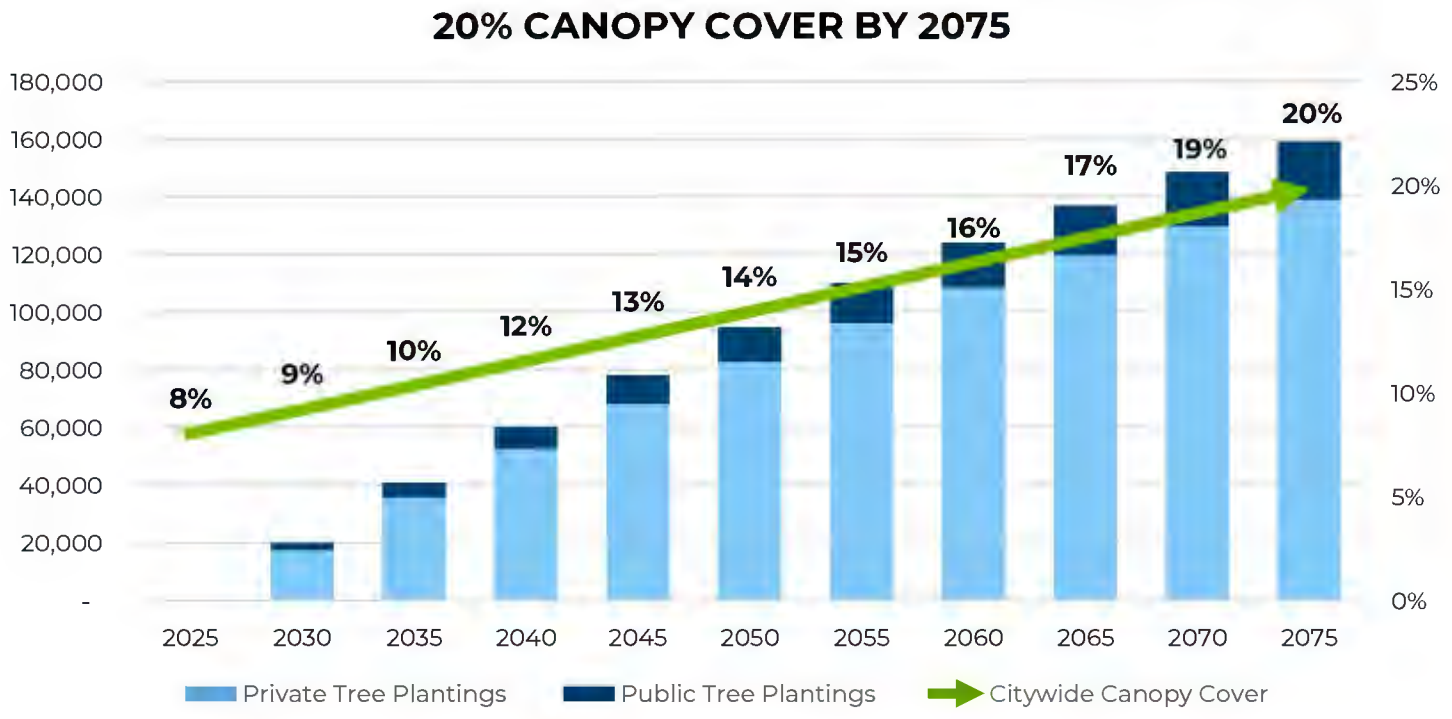


Figure 6: 20% Canopy goal planting needs

Tree Planting

Tree Preservation for Canopy Growth

While planting new trees is an essential component of achieving 12% or 20% citywide tree canopy cover, it is also crucial to preserve existing trees and protect the baseline 8% canopy cover. Since the majority of San Leandro's urban forest is on private land, it will take support from private property owners to make a meaningful preservation effort. Through community partnerships and robust public education and outreach initiatives the City can encourage homeowners to value and preserve their trees.

Many cities enact private tree preservation ordinances to require permit approval before property owners can remove trees of a certain size or species. The City of San Leandro does not have a private tree preservation ordinance, but many nearby cities used in this Plan's benchmarking analysis do. For example, the City of Livermore protects native tree species with a trunk circumference of 24 inches or more and non-native trees with a trunk circumference of 60 inches or more. Redwood City requires a permit for pruning or removal for trees larger than 12 inches in diameter. It is recommended the City explore private tree preservation ordinances as a strategy for protecting and growing tree canopy.

Right Tree Right Place

Choosing the right tree species for an urban environment involves considering various factors such as site conditions, climate resilience, and desired functions like shade or seasonal flowering. Trees must be able to withstand challenging urban conditions like high temperatures, pollution, and limited growing space. It's crucial to consider the tree's size at maturity, root structure, and maintenance needs, as well as potential impacts on surrounding structures and utilities. By carefully selecting both the tree species and planting location, the City of San Leandro can ensure that the investment in trees will be long-lasting and rewarding.

The City needs to carefully select tree species for each site to avoid potential damage and maximize benefits. Planting large trees in small spaces can lead to infrastructure damage and shorter lifespans, while small trees in large spaces limit shade benefits. Proactive planning is essential to match trees with available space, utility presence, and clearance needs, ensuring an effective and attractive urban forest. Species diversity is crucial for resilience in the face of pests, diseases, and environmental stressors like drought and storms.

Tree Planting

Recommended Tree Species List

In selecting street tree species appropriate for planting in San Leandro's public right-of-way, priorities were identified through City staff consultations, stakeholder interviews, community engagement, data analysis, and industry concerns:

Drought Tolerance: Reduce watering needs for a more sustainable urban forest.

Height: A majority of the City's residential neighborhoods still have overhead power lines)

Root Growth: Minimizing impacts to adjacent public sidewalks and private sewer laterals.

Species Diversity: Growing an urban forest that is resilient to pests and disease.

California Natives: plant species that are well adapted to San Leandro's climate today.

Climate Change: plant species that have a better chance adapting to San Leandro's future climate.

Tree Planting

Native Species

San Leandro's community members expressed a strong preference for planting native tree species. Of the 60 species recommended for San Leandro, 26 California native species, and eight are appropriate for planting as full-sized street trees: California buckeye, netleaf hackberry, chitalpa, tecate cypress, Catalina ironwood, coast live oak, valley oak, island oak. Only two of those (California buckeye and tecate cypress) are appropriate for planting under power lines, and even those require regular pruning to maintain a manageable height and shape. Several strategies were used to accommodate the priority for California natives:

1) *Aligned with San Leandro's Neighbors*: Other cities in the Bay Area, notably Oakland, San Francisco, and Fremont, have recently updated their recommended species list. These lists were used as reference in developing the recommendations for San Leandro.
    a. Oakland's Street Tree List (2023): Oakland's street tree list includes eight native species. Six of those are included in San Leandro's list.
    b. San Francisco's Street Tree List (2021): Ten native species are included in San Francisco's list of recommended street trees, and six of those are recommended in San Leandro.
    c. Fremont's Tree List (2023): Of the 14 native species in Fremont's list, eight of them are included in San Leandro's list.

2) *Beyond Shade Trees*: The recommended species list expands beyond shade trees to include understory and large shrubs. Under the right conditions, large shrubs perform extremely well in streetscapes and provide value for biodiversity, habitat, and ecological balance.
    a. Street-appropriate native shrub species added: mountain mahogany, desert willow, coast silk tassel, toyon, laurel sumac, blue elderberry.
    b. Park-appropriate native shrub species added: hollyleaf cherry and catalina cherry.

3) *Ohlone Traditions and Significance*: As a result of the focus group session with Sogorea Te' Land Trust, several native species were included to honor Indigenous traditions and acknowledge the significance to the Muwekma Ohlone.
    a. Oak Acorns: Acorn collecting is a tradition of the Ohlone tribe that is threatened by pressures of development. Native oak species include coast live oak, mesa oak, valley oak, island oak, and interior live oak.
    b. Manzanita Berries: While 192 species of manzanita are native to California, three are recommended for San Leandro's tree list: big berry manzanita, Austin Griffiths manzanita, and Dr. Hurd manzanita. The berries, seeds, and leaves are all traditionally used for culinary or medicinal purposes.
    c. Culinary and Medicinal Uses: Fruit, seeds, and/or leaves are traditionally valued from blue elderberry, toyon, California buckeye, hollyleaf cherry, Pacific madrone, and California sycamore 'Roberts'.

RECOMMENDED TREE SPECIES LIST FOR SAN LEANDRO											
#	BOTANICAL NAME	COMMON NAME	PLANT TYPE	HEIGHT	SPREAD	PLANTING WIDTH (MIN)	NATIVE SPECIES	UNDER POWER LINES	STREET	MEDIAN	PARK
1	*Acer buergerianum*	Trident Maple	tree	20-25'	15-25'	4'		Y	Y	Y	
2	*Aesculus californica*	California Buckeye	tree	20-30'	20-50'	8'	Y	Y	Y	Y	Y
3	*Angophora costata*	Sydney red gum	tree	50-70'	40-60'	6'					Y
4	*Arbutus 'Marina'*	Strawberry tree	tree	15-40'	20-30'	2'					Y
5	*Arbutus Menziesii*	Pacific madrone	tree	50-100'	20-50'	7'	Y				Y
6	*Archontophoenix cunninghamiana*	king palm	palm	35-60'	10-20'	3'			Y	Y	
7	*Arctostaphylos glauca 'Big Berry'*	Big Berry Manzanita	shrub	3.3-20'	6-20'	3'	Y	Y		Y	Y
8	*Arctostaphylos x 'Austin Griffiths'*	Austin Griffiths Manzanita	shrub	8-15'	6-10'	3'	Y	Y		Y	Y
9	*Arctostaphylos x 'Dr Hurd'*	Dr Hurd Manzanita	shrub	10-15'	8-10'	3'	Y	Y		Y	Y
10	*Brahea edulis*	Guadalupe Palm	palm	20-35'	10-15'	4'			Y	Y	Y
11	*Cassia leptophylla*	Gold Medallion Tree	tree	15-25'	20-35'	3'		Y	Y	Y	
12	*Ceanothus 'Ray Hartman'*	Ray Hartman Ceanothus	shrub	15-30'	5-10'	3'	Y	Y			Y
13	*Ceanothus thyrsiflorus 'Snow Flurry'*	Snow Flurry Ceanothus	shrub	10-20'	20'30'	3'	Y	Y			Y
14	*Celtis reticulata*	Netleaf hackberry	tree	25-40'	25-30'	4'	Y		Y	Y	
15	*Cercis canadensis var. texensis 'Oklahoma'*	Oklahoma Redbud	tree	10-20'	10-20'	2'		Y	Y	Y	Y
16	*Cercocarpus betuloides*	Mountain Mahogany	shrub	8-20'	10-12'	3'	Y	Y	Y	Y	Y
17	*Chilopsis linearis*	Desert Willow	tree - shrub	15-40	10-20'	4'	Y	Y	Y	Y	Y
18	*Chitalpa tashkentensis*	Chitalpa	tree	25-35	20-30'	4'	Y		Y	Y	Y
19	*Corymbia citriodora*	lemon-scented gum	tree	60-80'	20-30'	6'				Y	Y
20	*Corymbia ficifolia*	red flowering gum	tree	25-40'	30-50'	6'				Y	Y
21	*Corymbia papuana*	Ghost gum	tree	40-50'	20-35'	4'				Y	Y
22	*Cupressus forbesii*	Tecate Cypress	tree	20-30'	15-25'	4'	Y	Y	Y	Y	Y
23	*Eriobotrya deflexa*	Bronze Loquot	tree	15-25'	15-25'	3'		Y	Y	Y	Y
24	*Eucalyptus polyanthemos*	silver dollar gum	tree	60-80'	40-50'	6'					
25	*Feijoa sellowiana*	Pineapple Guava	tree - shrub	15-25'	18-25'	4'		Y			Y
26	*Garrya eliptica 'James Roof'*	Coast Silk Tassel	tree - shrub	8-12'	6-10'	2'	Y	Y	Y		Y
27	*Ginkgo biloba 'Autumn Gold'*	Ginkgo	tree	40-50'	25-35'	7'			Y	Y	Y
28	*Ginko biloba 'Grindstone'*	Ginko Grindstone	tree	15-25'	6-10'	3'		Y	Y	Y	Y
29	*Heteromeles arbutifolia*	Toyon	shrub	6-30'	10-15'	4'	Y	Y	Y	Y	Y

RECOMMENDED TREE SPECIES LIST FOR SAN LEANDRO											
#	BOTANICAL NAME	COMMON NAME	PLANT TYPE	HEIGHT	SPREAD	PLANTING WIDTH (MIN)	NATIVE SPECIES	UNDER POWER LINES	STREET	MEDIAN	PARK
30	*Hymenosporum flavum*	Native frangipani / Sweetshade	tree	35-50'	15-20'	4'		Y	Y	Y	
31	*Jacaranda mimosifolia*	Jacaranda	tree	25-40'	25-40'	4'					Y
32	*Koelreuteria bipinnata*	Chinese Flame Tree	tree	20-35'	15-30'	4'			Y	Y	
33	*Laurus 'Saratoga'*	Bay Laurel	tree	25-40'	15-30'	4'			Y	Y	
34	*Lophostemon confertus*	Brisbane box	tree	40-60'	25-40'	5'			Y	Y	
35	*Lyonothamnus floribundus*	Catalina Ironwood	tree	25 - 50'	15 - 24'	4'	Y		Y	Y	Y
36	*Magnolia grandiflora 'Little Gem'*	Magnolia 'Little Gem'	tree	15-25'	6-10'	2'		Y	Y	Y	Y
37	*Malosma laurina*	Laurel Sumac	shrub	10-20'	10-20'	4'	Y	Y	Y		Y
38	*Metrosideros excelsa*	New Zealand Christmas tree	tree	30-40'	25-40'	6'				Y	Y
39	*Pinus Torreyana*	Torrey Pine	tree	60-120'	40-90'	6'	Y			Y	Y
40	*Pistacia chinensis*	Chinese pistache	tree	30-40'	25-40'	5'				Y	Y
41	*Pistacia chinensis 'Keith Davey'*	Keith Davey Pistache	tree	30-40'	25-40'	5'				Y	Y
42	*Platanus racemosa 'Roberts'*	California Sycamore 'Roberts'	tree	80-100'	30-50'	7'	Y				Y
43	*Prunus ilicifolia*	Hollyleaf Cherry	tree - shrub	30-50'	15-25'	4'	Y				Y
44	*Prunus ilicifolia ssp. lyonii*	Catalina cherry	tree - shrub	25-30'	20-30'	4'	Y				Y
45	*Punica granatum*	Pomegranate	tree	10-25'	10-20'	2'		Y			Y
46	*Quercus agrifolia*	Coast Live Oak	tree	60-80'	40-60'	4'	Y		Y	Y	Y
47	*Quercus engelmanii*	Mesa Oak	tree	50-70'	80-120'	7'	Y			Y	Y
48	*Quercus fusiformis*	Escarpment live oak	tree	40-60'	25-40'	5'			Y	Y	Y
49	*Quercus hypoleucoides*	silverleaf oak	tree	30-60'	20-40'	5'			Y	Y	Y
50	*Quercus lobata*	Valley Oak	tree	60 - 100'	30-60'	7'	Y		Y	Y	Y
51	*Quercus oblongifiolia*	Mexican blue oak	tree	50-70'	20-30'	7'					Y
52	*Quercus rugosa*	Netleaf Oak	tree	40-70'	25-45'	5'			Y	Y	Y
53	*Quercus suber*	Cork oak	tree	40-80'	30-60'	6'			Y	Y	Y
54	*Quercus tomentella*	Island Oak	tree	40-70'	30-50'	5'	Y		Y	Y	Y
55	*Quercus virginiana*	Southern live oak	tree	30-50'	40-80'	6'				Y	Y
56	*Quercus wislizeni*	Interior Live Oak	tree	15 - 50'	10 - 50'	7'	Y				Y
57	*Quillaja saponaria*	soapbark tree	tree	40-60'	25-35'	4'				Y	Y
58	*Rhus lancea*	African Sumac	tree	25-35'	20-35'	4'			Y	Y	
59	*Sambucus nigra ssp. cerulea*	Blue Elderberry	tree - shrub	15-25'	10-20'	2'	Y	Y	Y	Y	Y
60	*Tristaniopsis laurina*	Water gum	tree	10-30'	10-25'	3'		Y	Y	Y	

Table 11: San Leandro recommended tree list

Staff and Resources

A well-resourced urban forestry program is vital for efficiently managing tree maintenance tasks and ensuring public safety. Adequate staffing, equipment maintenance, and proactive planning improve work quality, increase efficiency, and reduce long-term liabilities. With growing demands of a maturing urban forest and climate change concerns, additional resources are needed to sustainably manage tree maintenance, meet community needs, and achieve climate action goals. Addressing these needs now is essential to maintain a healthy urban forest and provide valuable benefits to the community.

Urban Forestry Team

Currently at the City of San Leandro, tree maintenance is managed by staff in the Urban Forestry Division of the newly structured Department of Recreation and Parks. In addition to tree maintenance and removal, the Urban Forestry Division has a variety of tasks it may be called to assist with, such as sidewalk/tree conflict inspections, median beautification, irrigation issues, and banner installation. In recent years, the City has hired an independent tree contractor to complete work on large trees due to the equipment, skill, and staffing needed to work on large trees safely and efficiently. While overall program funding has not declined in recent years, staffing was reduced from a crew of five tree trimmers to two tree trimmers, which has put stress on operations.

As the City implements the proactive Tree Management Program outlined in this TMAP, the City should closely monitor changes in demand for in-house services versus contracted services. Effective tracking of work relating to the Tree Management Program helps set the City up for success when requesting an increase in budget and/or staffing. The pricing and recommendations included in this section are outlined for in-house capacity.

City Staff Capacity Assessment

Currently, the City has 4.2 FTEs involved with urban forestry, with 3.0 FTEs dedicated to doing tree work in the field. The exact number of staff needed depends on various factors such as the size of the urban forest, the complexity of maintenance tasks, and the level of service expected by the community. Ideally, the team should include a combination of arborists, tree inspectors, crew supervisors, administrative staff, and support personnel. By having an adequately sized team, the workload can be effectively distributed, allowing efficient completion of routine maintenance tasks, emergency responses, and proactive management strategies.

Staff and Resources

Using the following assumptions, an exercise was completed to study the current staffing level compared with current capacity as well as predicted future capacity to support the Tree Management Program.

- Average working days per year: 235
- Average hours per trimming job: 2.5
- Predicted public service requests split evenly between job complexity/types
- Estimated daily job capacity for one crew: 4.2 jobs (or 82 jobs/month or 979 jobs/year)

The resulting difference between the staff's in-house capacity and the estimated workload illustrates the need for additional resources, likely to be addressed using a combination of City employees, contractors, and volunteers.

SAN LEANDRO CURRENT CAPACITY		
TREE-RELATED POSITIONS	FTE	Performs Tree Work?
Director	0.1	0
Parks & Landscape Manager	0.25	0
Street Supervisor	0.65	0
Tree Trimmer I	2.0	2.0
Street Maintenance Worker II	0.5	0.5
Street Maintenance Worker I	0.5	0.5
Admin Assistant III	0.2	0
Total FTEs	4.2	3.0

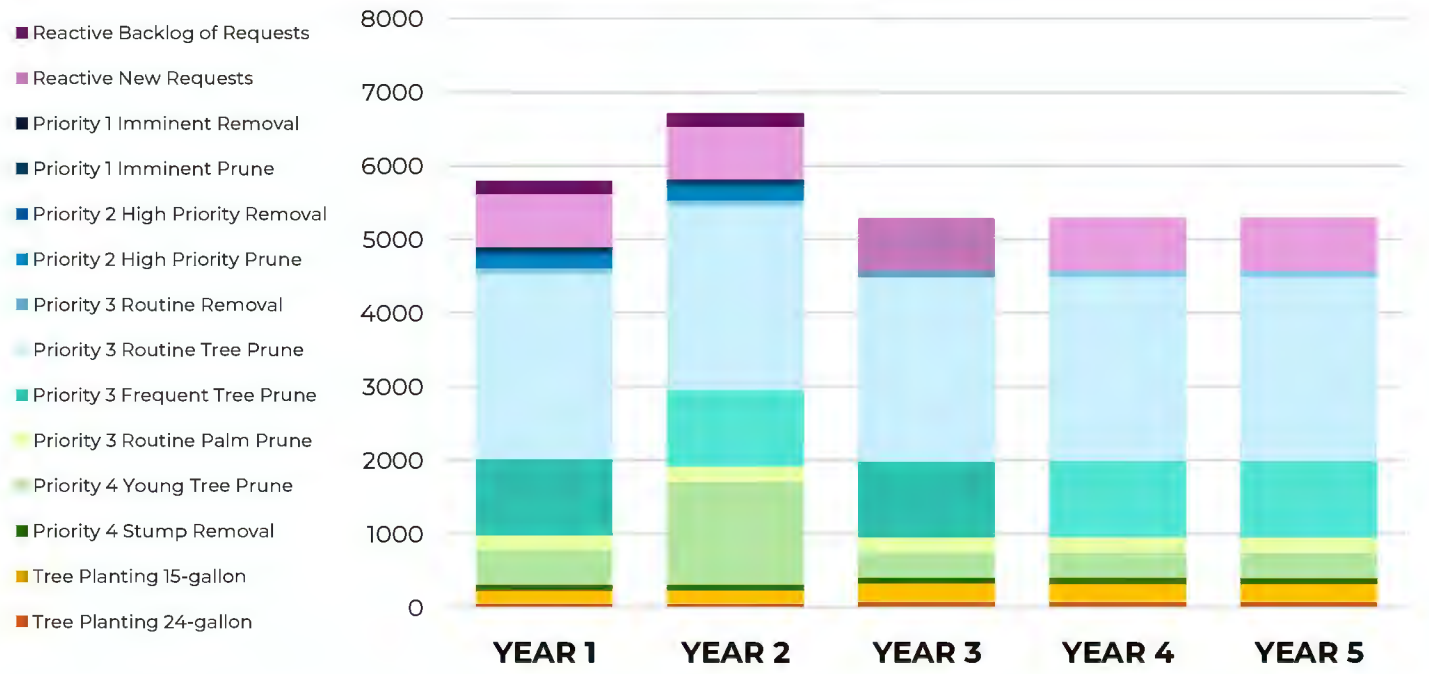
DAILY WORKLOAD BASED ON THE TREE MANAGEMENT PROGRAM								
PRIORITY TYPE	DETAIL	YEAR 1	YEAR 2	YEAR 3	YEAR 4	YEAR 5	YEAR 6	YEAR 7
Reactive	Backlog	0.76	0.76					
Reactive	New Requests	3.06	3.06	3.06	3.06	3.06	3.06	3.06
Urgent + Proactive	Trees to Remove	0.3	0.3	0.7	0.7	0.7	0.7	0.7
Urgent + Proactive	Trees to Prune	2.8	7.0	16.0	16.0	15.9	16.0	15.9
Planting	Trees to Plant	1.0	1.0	1.4	1.4	1.4	1.4	1.4
Estimated Daily Jobs		8.7	11.4	21.1	21.1	21.1	21.1	21.1
Estimated In-house Capacity for Jobs		4.2	4.2	4.2	4.2	4.2	4.2	4.2
Difference		-4.5	-7.2	-16.9	-16.9	-16.9	-16.9	-16.9

Staff and Resources

Scenarios for In-House vs. Contracted Work

Over the five-year tree maintenance program, it is estimated that 28,428 tree work jobs would address reactive tree maintenance, proactive tree maintenance, as well as tree planting. The chart below illustrates the number of tree work jobs separated by priority and type per year.

TREE WORK JOBS PER YEAR



The City is exploring scenarios for what it would take to grow the urban forestry program in support of the proactive tree maintenance program and planting trees to grow San Leandro's canopy coverage from 8% (no-net-loss) to 12% by 2050 and 20% by 2075. If the City of San Leandro maintains their current capacity of 3 FTEs dedicated to tree work, the majority of tree work will be handled by contractors. A scenario of 50/50 outlines the staffing and budget required to support more in-house staff to tackle some of all types of work: reactive, urgent, proactive, and planting. A third scenario is outlined, in which all of the work is handled in house by City staff. The number of staff needed ranges from 17.3 FTEs for the 8% canopy goal to 18.5 FTEs for the all-in-house scenario. The type of work is directly related to the costs of the work, meaning that the routine and proactive tree work is less expensive on average than reactive and emergency situations. All costs in this exercise are based on current estimates for average salaries and costs outlined in existing contracts.

Staff and Resources

CANOPY GOAL CAPACITY SCENARIOS: IN-HOUSE VS CONTRACTED JOBS																			
				Reactive		Urgent				Proactive						Planting			
				Reactive		Priority 1		Priority 2		Priority 3				Priority 4		No-Net-Loss		Growth	
Canopy Goal*	In-House vs Contracted	In-House	Contracted	Backlog	New Requests	Imminent Removal	Imminent Prune	High Priority	High Priority	Routine Removal	Routine Tree Prune	Routine Palm	Frequent Tree Prune	Young Tree Prune	Stump Removal	15-gallon	24-gallon	15-gallon	24-gallon
8%	Current Capacity	18.8%	81.2%	C	SL	C	SL	C	SL	C	C	C	C	C	C	SL	SL		
	50/50	50.8%	49.2%	SL	SL	SL	SL	SL	SL	C	C	C	SL	SL	SL	SL	SL		
	All In-House	100.0%	0.0%	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL		
12% by 2050	Current Capacity	17.9%	82.1%	SL	SL	SL	SL	SL	SL	SL	C	C	C	C	SL	C	C	C	C
	50/50	51.9%	48.1%	SL	SL	SL	SL	SL	SL	C	C	C	SL	SL	C	SL	SL	SL	SL
	All In-House	100.0%	0.0%	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL
20% by 2075	Current Capacity	17.5%	82.5%	SL	SL	SL	SL	SL	SL	SL	C	C	C	C	SL	C	C	C	C
	50/50	52.8%	47.2%	SL	SL	SL	SL	SL	SL	C	C	C	SL	SL	C	SL	SL	SL	SL
	All In-House	100.0%	0.0%	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL	SL

**The City of San Leandro currently has 8% canopy coverage.*

CANOPY GOAL CAPACITY SCENARIOS: IN-HOUSE VS CONTRACTED JOBS									
Canopy Goal	In-House vs Contracted	In-House Avg Daily Jobs	In-House Avg Annual Jobs	Contracted Avg Daily Jobs	Contracted Avg Annual Jobs	City Staff FTEs Needed	Cost for FTEs (avg annual)	Cost for Contract Work (avg annual)	Estimated Total Annual Cost*
8%	Current Capacity	4.5	1067.0	20.9	4902.6	3.2	$288,428.02	$940,819.99	$1,229,248.01
	50/50	12.3	2887.8	11.9	2797.8	8.8	$780,620.85	$450,322.00	$1,230,942.85
	All In-House	24.2	5685.6	0.0	0.0	17.3	$1,536,913.19	$-	$1,536,913.19
12% by 2050	Current Capacity	4.5	1067.0	20.9	4902.6	3.2	$288,428.02	$1,303,260.03	$1,591,688.05
	50/50	13.2	3096.8	12.2	2872.8	9.4	$837,117.06	$487,562.00	$1,324,679.06
	All In-House	25.4	5969.6	0.0	0.0	18.1	$1,613,683.16	$-	$1,613,683.16
20% by 2075	Current Capacity	4.5	1067.0	21.4	5019.6	3.2	$288,428.02	$1,452,575.12	$1,741,003.14
	50/50	13.7	3213.8	12.2	2872.8	9.8	$868,744.13	$683,751.38	$1,552,495.51
	All In-House	25.9	6086.6	0.0	0.0	18.5	$1,645,310.23	$-	$1,645,310.23

**Estimate costs are for staff or contractor time only and do not include the cost of equipment, supplies, inspections, overhead, and other resources. Input costs are based on 2024 estimates for pricing and wages.*

Staff and Resources

Tree Infrastructure Team

With limited staff and capacity in the City's Urban Forestry Division, the Tree Management Program should be supported by an entire network of community members. By creating a Tree Infrastructure Team, the City of San Leandro can continue the momentum that was built in 2022-2024 during the development of this Tree Master Plan and the CalFire-funded tree planting events. The goals of the Tree Infrastructure Team should reflect the priorities identified in this Plan by expanding canopy cover by planting and caring for trees to increase community resilience and stewardship of the urban forest.

Five Functions of the Tree Infrastructure Team

Clear structure and organization of the team is key to its success, so five functions of the Tree Infrastructure Team have been identified in the pie chart below. Each function should be managed by the Tree Infrastructure Team to add capacity and support for City staff.

Focus on securing financial resources from various sources such as grants and donations to support tree-related initiatives and community projects.

Organize community engagement activities, tree planting events, and manage social media to raise awareness about the importance of trees and garner support for tree-related programs.

Provide education and skill-building opportunities for community members interested in tree care, enhancing the capacity and expertise of the local workforce.

Recruit and organize volunteers to identify interest and direct volunteers to the appropriate events and activities.

Leverage community members' arboricultural insights and indigenous practices to inform tree management decisions, share native traditions, and align the program with cultural values and heritage.

Staff and Resources

POTENTIAL TREE INFRASTRUCTURE TEAM PARTNERS					
Potential Partners	**Local Knowledge and Tribal Traditions**	**Funding, Grants, and Donations**	**Outreach and Event Planning**	**Training and Workforce Development**	**Volunteer Recruitment and Coordination**
City of San Leandro Urban Forestry Division	Y	Y	Y	Y	Y
Downtown San Leandro		Y	Y		
Friends of San Leandro Creek	Y			Y	
Hyphae Design Laboratory	Y			Y	
Kiwanis of San Leandro			Y		Y
Merritt College Horticulture Class	Y				Y
Muwekma Ohlone Tribe	Y			Y	
Rotary Club of San Leandro				Y	Y
San Leandro 2050		Y	Y		
San Leandro Chamber of Commerce		Y			Y
San Leandro High School Eco Club			Y	Y	Y
Sierra Club	Y	Y		Y	Y
Sogorea Te Land Trust	Y			Y	
Teen Advocacy Going Strong (TAGS)			Y	Y	Y
UC Berkeley Master Gardeners Program	Y			Y	

Table 13: Potential infrastructure team partners

Tree Ordinances

San Leandro's municipal codes contain regulations for management of trees on public and private property in multiple chapters and sections. A systematic approach was used to review San Leandro's codes and organize key considerations for updating tree-related ordinances. Currently, the tree protection standards are found in the City of San Leandro's Municipal Code, Administrative Code, and Zoning Code.

Municipal Code

Title 5: Streets and Parks

Chapter 5-2: Street Trees was adopted by ordinance No. 2019-015 in October for 2019. This chapter addresses regulations for street trees in San Leandro. Some language found in this section is duplicative of the language found in the Administrative Code's Title 12 Chapter 8: Street Tree Policy and Procedure. The Municipal Code sections provide an overview of street tree regulations, requirements, and activities, whereas the Administrative Code sections identify the administrative authority of the City in implementing the code.

Administrative Code

Title 12: Public Works

Chapter 8: Street Tree Policy and Procedure identifies procedures for street tree planting, removal, pruning, and other maintenance such as debris cleanup. There are "reserved" sections which provide opportunities for further development of this chapter.

Title 8: Engineering and Transportation

Chapter 1: Sidewalk Repair Program outlines the details for maintenance of trees and sidewalks when the two are conflicting.

Zoning Code

Title 4: Regulations Applying in All or Several Districts

Chapter 4.16: Landscape Requirements lay out the requirements for tree preservation, planting, and maintenance on private property relating to development projects.

Tree Ordinance Checklist

A 2014 study of 667 municipal urban forestry programs in the United States included a comparison of tree ordinances using a list of twenty-five ordinance topics categorized as credential, management, planting, and preservation (Hauer, 2016). This study provided the framework for the ordinance checklist exercise. Additional categories and topics were included based on engagement sessions with City staff to produce a comprehensive and customized assessment for San Leandro.

Tree Ordinances

ORDINANCE CHECKLIST FRAMEWORK	
Category	**Description**
Authority + Credential	Designation of authority over trees by a specific City department, staff person, board, committee, or professional. Ordinances may include requirements for specific professional licenses or certifications.
Canopy	Requirements to meet canopy goals, whether citywide or by specific districts or land uses. May include per-tree canopy projections to use as a tool for tree selection, or a process to calculate canopy projections.
Tree Preservation	Criteria for determining which trees are protected using factors such as size, species, or other characteristics of the tree or the location of the tree. Often include definitions and thresholds for signature tree, heritage tree, legacy tree, and similar.
Tree Protection During Construction	Standards for protecting trees during construction and development activity such as a critical root zone, fencing and signage, or restrictions on activity near trees.
Tree Planting Standards	Specifications for the planting of trees, including minimum standards for tree size, species selection, soil volume, spacing from other trees and infrastructure, site selection processes, and criteria for tree planting locations.
Tree Maintenance and Management	Specifications for the maintenance of trees, including strategies for managing specific obstacles such as pests and disease or invasive species removal. Ordinances may include specific references to industry standards or best management practices.
Mitigation	Requirements to replant on site or off site, including options to contribute to a mitigation fund or other mechanism that assists in the compensation of trees and canopy cover.
Enforcement	Inspections and permit processes to confirm compliance, or fees, fines, and other penalties for noncompliance.

Tree Ordinances

ORDINANCE REVIEW CHECKLIST			
Ordinance Topic	**Included (Y/N)**	**Code Mentions**	**Key Considerations**
Authority + Credential			
ISA Certified Arborist requirement	N	4.16.112.A.2	• Allow the Recreation & Parks Director to designate another authority for making decisions and managing street trees. • Designate a role for an urban forester and/or an urban forestry division. • Define ISA Certified Arborist. • Clarify roles and responsibilities for maintaining street trees after planting. Confusing and potentially conflicting info in 12.8.100-125.
Authority over trees	Y	12.8.100 12.8.126	
Tree Preservation			
Protected Tree	N	4.16.112	• Define protected tree and establish a minimum size for a protected tree. Currently, a tree survey is required for existing trees measuring at least 6" DBH (DSH) on development sites, but preservation requirements are loose and left up to the "Site Plan Review decision-maker". • Update/create recommended and protected tree lists. • Compare species and size requirements for tree preservation in comparable cities.
Heritage Tree	N		
Canopy-based preservation	N		
Exemptions	Y	12.8.115	
Incentives	N		
Tree removal permit process established	Y	5-2-215(a) 12.8.110(b)(1)	
Tree Protection During Construction			
Dripline or root area definition	N	4.16.112.B	• Define and differentiate between "critical root zone" (CRZ), "drip line", and "tree protection zone" (TPZ). • Include a requirement for signage explaining tree protection measures during construction. • Require inspection of tree protection fencing and signage prior to approval of the grading design plan.
Signage and fencing	N	4.16.112.B	

Tree Ordinances

ORDINANCE REVIEW CHECKLIST			
Ordinance Topic	**Included (Y/N)**	**Code Mentions**	**Key Considerations**
Tree Planting Standards			
Tree species list	Y	4.16.116.B 5-2-220(b)	• Update the recommended species list and strengthen code language to require planting from this list, with flexibility for other California native species, and/or other regional or state-wide lists. • Add minimum surface area or soil volume requirements. Consider ANSI A300 Part 6 language: "the planting-hole width should be a minimum of 1.5 times the diameter of the rootball, or soil surrounding the upper 1/3 of the planting hole should be loosened to a width of 1.5 times the rootball diameter." • Consider distance requirements from above ground utilities.
Tree size	Y	4.16.116.B 4.16.120 .B	
Minimum tree well or soil area	N		
Minimum spacing	Y	4.16.116.B	
New private development	Y	4.16.116.C.a-b	
Distance from utilities	N		
Tree Maintenance/Management			
Private trees	Y	4.16.124.D	• Include references to ANSI standards and ISA Best Management Practices to support proper maintenance of trees. • Expand on the reference to "Bay-Friendly Landscape Model Maintenance Specifications" to include references to water-wise, fire-wise, and defensible space standards to increase resilience. • Strengthen clarity around maintenance responsibilities for street trees.
Public trees	Y	8.1.120(a)(1-3) 12.8.100-125	
References to BMPs and industry standards	Y	4.16.124.D.1.c	
Pest/disease strategy	Y	4.16.124.D.1.c	
Mitigation			
Public trees	Y	12.8.105	• Strengthen language and criteria for both public and private tree mitigation. Consider the following: for removal of trees up 20" DSH, 1:1 inch shall be replanted; for removal of trees greater than 20" DSH, 1:1.5 inch shall be replanted • Determine which government entities are exempted from permitting, fees, and fines (if any) and why.
Private trees	N	4.16.112.B.1	
On site	N		
Off site	N		
In lieu of fees	Y	12.8.110(b)(4)	

Tree Ordinances

ORDINANCE REVIEW CHECKLIST			
Ordinance Topic	**Included (Y/N)**	**Code Mentions**	**Key Considerations**
Enforcement			
Inspections	Y	5-2-210	• Establish a process for inspections of tree plantings. • Establish a fund for in lieu of fees, permit fees, fines, and other sources of tree-dedicated dollars. Define acceptable uses of those dollars.
Fines and fees	Y	5-2-200 4.16.124.D.2-3	
Other penalties for noncompliance	Y	5-2-230 8.1.120	

"If we want to use forests as a weapon in the fight against climate change, then we must allow them to grow old..."

— Peter Wohlleben, The Hidden Life of Trees: What They Feel, How They Communicate: Discoveries from a Secret World

IMPLEMENTATION—

You and the tree in your backyard come from a common ancestor. A billion and a half years ago, the two of you parted ways. But even now, after an immense journey in separate directions, that tree and you still share a quarter of your genes…."

— Richard Powers, The Overstory

Implementation

How Will San Leandro Use the TMP?

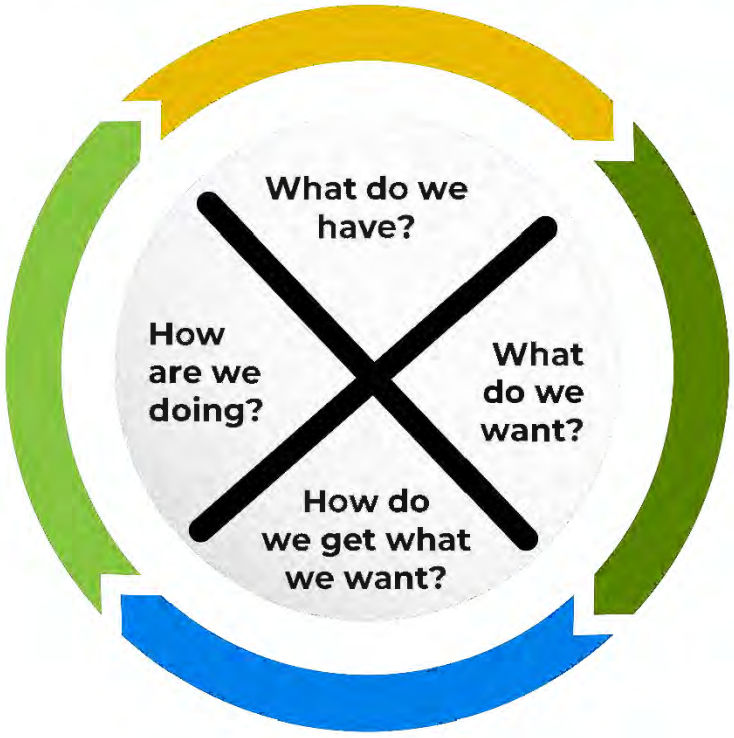
San Leandro has a vision for preserving, caring for, and enhancing the urban forest. Managing trees in urban areas is a complex, demanding, and ever-evolving process. Urban foresters are often tasked with balancing the recommendations of experts, the needs of residents, the pressures of local economics and politics, concerns for public safety and liability, physical components of trees, forces of nature and severe weather events, and various other unforeseen obstacles.

Adaptive Management Approach

With these challenges in mind, San Leandro's Tree Master Plan was developed to address these key questions:

- What Do We Have?
- What Do We Want?
- How Do We Get There?
- How Are We Doing?

This structure, termed "adaptive management," is commonly used for resource planning and management and provides a useful conceptual framework for managing San Leandro's urban forest resource (Miller, 1988). An adaptive management approach allows the City to adjust management actions over time as changes occur in the physical and biological environment, as well as the culture and needs of the City's residents.



Implementation

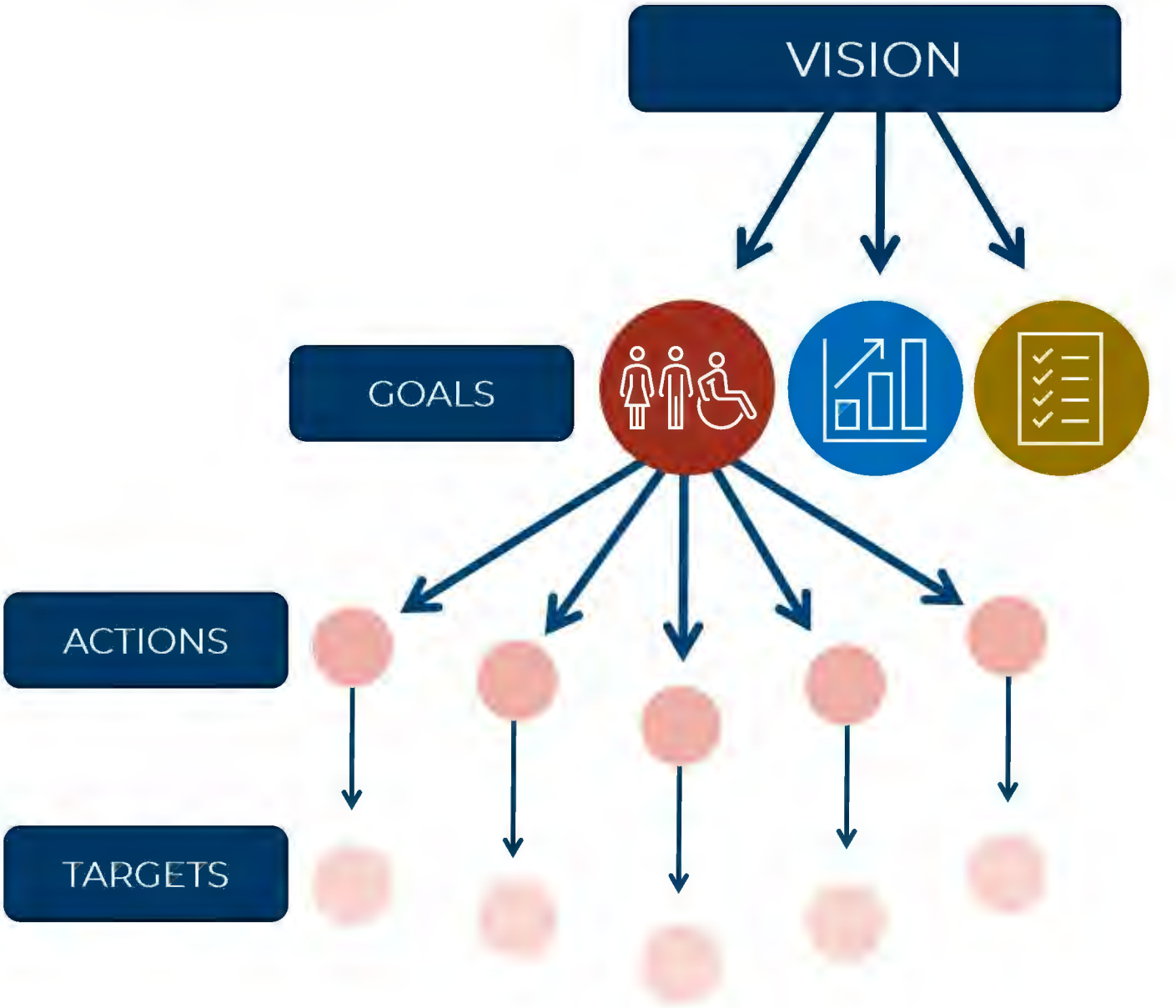
Tracking Progress

The City's strengths and opportunities were systematically evaluated to inform the Plan's goals, objectives, actions, and targets. The goals in the Plan align with Urban Forestry Ethos themes and the actions are intended to guide the City towards improvements in ranking for each criterion identified during the Urban Forest Audit. As actions are implemented, the City may update the audit to gauge success, evaluate progress, and adjust accordingly. Implementation of this Tree Master Plan will be a community effort that includes a wide variety of partners and stakeholders to grow a healthy and diverse urban forest. A framework is outlined to ensure smooth implementation as outlined below. Action strategies are recommended to assist in achieving the goals set out at the beginning of this planning process with the Urban Forest Audit. The actions and strategies included on the following pages establish effective and measurable outcomes for San Leandro's urban forest.

GOAL THEME	COMMUNITY FOREST ETHOS	TREE MASTER PLAN GOAL
PEOPLE	Support human capacity and care (investments in people and organizations)	Foster a culture of inclusive tree stewardship through robust education, partnerships, and capacity-building opportunities that empower all community members to build tree equity.
PERFORMANCE	Re-envision the functions of the urban forest (productive systems and biocultural approaches)	Measure and track the performance of San Leandro's urban forest in an effort increase the quality and quantity of trees, the benefits provided by trees, and the resources dedicated to tree management.
PLANNING	Community organizing beyond the green silo (intersectional and cross-sectoral approaches)	Develop and implement plans, policies, and procedures that reflect the community's priorities, are driven by data, and proactively tackle issues facing trees in San Leandro.

Implementation

FRAMEWORK



Implementation

PEOPLE

#1 Align tree-related resources and planning efforts across City departments and partners to meet common goals and improve efficiency.

Purpose	Action Item 1.1	Action Item 1.2	Action Item 1.3
Partnerships and coordination enable efficient achievement of shared goals.	All entities, resources, and planning efforts identified (Year 2)	Regular meetings between departments and partners improves outcomes and efficiencies (Year 5)	Goals of participating partners are achieved (Year 20)

Priority:		**Department:**	RP, CD, ET	**Criteria Addressed:**	1.1
Effort:		**Target Year:**	2025, Annually	**Co-Benefits:**	C, E, H, N

#2 Utilize a continuous improvement framework (Commitment, Strategy, Process, Performance) to improve operational workflows and coordination among departments impacting or influencing the urban forest.

Purpose	Action Item 2.1	Action Item 2.2	Action Item 2.3
As cities grow and change, workflows will adapt.	TMP actions to improve efficiencies begin to be implemented (Year 1)	Regular meetings between departments and partners identify changes in workflows and resource needs (Year 2)	The framework shows improvements in workflows, efficiency, efficacy, and communications (Year 5)

Priority:		**Department:**	RP	**Criteria Addressed:**	1.1
Effort:		**Target Year:**	Annually	**Co-Benefits:**	C, N

#3 Staff participating in tree maintenance and management should actively engage in City planning efforts.

Purpose	Action Item 3.1	Action Item 3.2	Action Item 3.3
Partnerships and coordination enable efficient achievement of shared goals.	Tree management staff represented at relevant planning meetings (Year 2)	Tree management staff represented at relevant planning meetings (Year 5)	Urban forestry is integrated into all relevant City and partner planning efforts (Year 10)

Priority:		**Department:**	RP, CD, ET	**Criteria Addressed:**	1.1
Effort:		**Target Year:**	2025, Annually	**Co-Benefits:**	C, E, H, N

Implementation

PEOPLE

#4	Stay current with industry research, science, and technology through various platforms. An example includes management of current and potential exotic tree pest and disease threats.		
Purpose	**Action Item 4.1**	**Action Item 4.2**	**Action Item 4.3**
Long-term planning and management of a sustainable urban forest requires continual research and practice.	A framework for acquiring necessary information is established (Year 2)	Tree management staff attend relevant conferences, webinars, and trainings (Year 3-20)	Tree management staff attend relevant conferences, webinars, and trainings (Year 3-20)
Priority:	**Department:** RP	**Criteria Addressed:**	1.3
Effort:	**Target Year:** Annually	**Co-Benefits:**	C, N

#5	Establish a tree inspection protocol that includes the methodology and format for tree inspections and tree risk assessments by staff with industry credentials such as International Society of Arboriculture (ISA) Certified Arborist and Tree Risk Assessment Qualification (TRAQ) either directly through the department or supporting department.		
Purpose	**Action Item 5.1**	**Action Item 5.2**	**Action Item 5.3**
Staff training reduces costs and improves production, safety, levels of service, and the urban forest.	Required certifications and qualifications for tree management staff and contractors identified (Year 2)	Staff and contractors maintain certifications, qualifications, and licenses (Year 3-20)	Staff and contractors maintain certifications, qualifications, and licenses (Year 3-20)
Priority:	**Department:** RP, CD, ET	**Criteria Addressed:**	1.3
Effort:	**Target Year:** Annually	**Co-Benefits:**	N

#6	Oversee City trees using Industry Standards for tree planting, tree pruning, overall tree care, tree permitting processes, tree and sidewalk conflicts, plan reviews, tree inspections, project design, and construction.		
Purpose	**Action Item 3.1**	**Action Item 3.2**	**Action Item 3.3**
Training will improve transparency, consistency, and effectiveness.	Training needs are identified (Year 3)	Staff and contractors maintain certifications, qualifications, and licenses (Year 3-20)	Annual training meets the needs of City staff (Year 3-20)
Priority:	**Department:** RP, ET	**Criteria Addressed:**	1.3
Effort:	**Target Year:** Annually	**Co-Benefits:**	C, N

Implementation

PEOPLE

#7 Track and annually report urban forestry activities to achieve and maintain Arbor Day Tree City USA designation. Strive to achieve Arbor Day Foundation Growth Awards.

Purpose	Action Item 7.1	Action Item 7.2	Action Item 7.3
A city must demonstrate that it cares about its urban forest.	Receive Tree City USA recognition (Year 1)	Receive Tree City USA annually, receive an ADF Growth Award (Year 10)	Receive Tree City USA recognition and Sterling status (Year 20)

Priority:	■■■	**Department:**	RP	**Criteria Addressed:**	1.3
Effort:	■	**Target Year:**	2025, Annually	**Co-Benefits:**	C, N

#8 Create a tree pruning program to educate the community and work with PG&E on proper tree pruning practices.

Purpose	Action Item 8.1	Action Item 8.2	Action Item 8.3
Utility forestry broadens the public understanding of tree care.	A positive working relationship is established with PG&E's vegetation management staff and review San Leandro's TMP actions (Year 2)	Public-facing educational campaign for proper pruning practices is rolled out (Year 3)	Educational events are co-hosted by the City and PG&E at least annually to train the community on proper pruning practices (Year 5)

Priority:	■■■	**Department:**	RP, ET	**Criteria Addressed:**	1.5
Effort:	■■	**Target Year:**	2030, Annually	**Co-Benefits:**	C, H, N

#9 Collaborate with the school district on increading canopy coverage in schoolyards. Partner with students in the community for pilot projects such as growing a tree nursery with distribution from school properties.

Purpose	Action Item 9.1	Action Item 9.2	Action Item 9.3
School districts typically put an emphasis on public safety and low maintenance yards, but canopy helps public health.	Coordination with the school district opens the conversation to optimizing schoolyards for increasing urban canopy cover (Year 1)	A UTC assessment and possible planting area for San Leandro schools is accomplished and potential pilot projects are identified with students (Year 2)	One pilot project is in the ground at a San Leandro school that contributes to increased tree canopy cover (Year 7)

Priority:	■■■	**Department:**	RP	**Criteria Addressed:**	1.5
Effort:	■	**Target Year:**	2035	**Co-Benefits:**	C, E, N

Implementation

PEOPLE

#10 Work with local non-profit organizations (or similar) to develop a program that recognizes exemplary urban forest stewards and volunteers representing youth, residents, organizations, and business owners.

Purpose	Action Item 10.1	Action Item 10.2	Action Item 10.3
A city must demonstrate that it cares about its urban forest and the individuals caring for it.	Criteria and sectors of exemplary urban forest stewardship is established (Year 2)	Announcement of recognition program is shared with City partners and the public with a request for nominations (Year 3)	Exemplary urban forest stewardship recognition awarded to multiple sectors (Year 4)

Priority:	■■	**Department:**	RP	**Criteria Addressed:**	1.5
Effort:	■■	**Target Year:**	2025	**Co-Benefits:**	C

#11 Create a Tree Manual to consolidate tree-related policies, guidelines, best practices, and standards for planners, developers, homeowners, contractors, and private tree care companies.

Purpose	Action Item 11.1	Action Item 11.2	Action Item 11.3
A well-managed urban forest is sustainable, resilient, lower risk, and beneficial.	Code, manuals, standards, and policies are updated (Year 5)	The Tree Manual is updated (Year 8)	Manuals are prepared and distributed specific to all sectors (Year 10)

Priority:	■■	**Department:**	RP, CD, ET	**Criteria Addressed:**	1.6
Effort:	■■■	**Target Year:**	2028	**Co-Benefits:**	C, E, H, N

#12 Create an interesting, concise, and educational handout for urban forestry staff to distribute when encountering community members in the field.

Purpose	Action Item 12.1	Action Item 12.2	Action Item 12.3
Consistent messaging resonates with the audience.	Information from the TMP is compiled and outreach strategies are drafted (Year 1)	TMP outreach strategies are coordinated with other City departments and efforts (Year 1)	A community outreach plan clearly defines the messaging and approaches (Year 1)

Priority:	■	**Department:**	RP, CD	**Criteria Addressed:**	1.6
Effort:	■	**Target Year:**	Annually	**Co-Benefits:**	C, N

Implementation

PEOPLE

#13	Establish consistent talking points and interdepartmental memos regarding tree ordinances, unauthorized tree plantings, invasives, identifying pests and diseases, planting and young tree care best practices, utility pruning roles and procedures, public tree permitting requirements, and tree maintenance responsibility.		
Purpose	**Action Item 13.1**	**Action Item 13.2**	**Action Item 13.3**
Readily available information raises awareness and increases support to achieve common goals.	Information is gathered and aligned with the community outreach strategy (Year 2)	Information and resources are shared annually (Year 2)	Data shows a decline in invasive species, tree maintenance malpractice, pests and diseases, and other concerns (Year 20)
Priority:	**Department:** RP, CD, ET	**Criteria Addressed:**	1.6
Effort:	**Target Year:** 2026, Annually	**Co-Benefits:**	C

#14	Create an urban forestry outreach and education campaign that includes TMP progress, tree care education, tree planting news, community storm preparedness, and more.		
Purpose	**Action Item 14.1**	**Action Item 14.2**	**Action Item 14.3**
Alignment of resources improves effectiveness and reduces costs.	Meet with City departments and partners to develop the community outreach plan (Year 1)	Urban forest outreach and education aligns with other City and partner initiatives, messaging, and events (Year 1)	Urban forest outreach and education integrated into all applicable initiatives, messaging, and events (Year 10)
Priority:	**Department:** RP, CD	**Criteria Addressed:**	1.6
Effort:	**Target Year:** 2025	**Co-Benefits:**	C, E, N

#15	Partner with the local Indigenous communities to host events that focus on tree planting, pruning, harvesting, using wood and other products from the trees, and tribal knowledge sharing. Reinforce an ongoing relationship with the City.		
Purpose	**Action Item 15.1**	**Action Item 15.2**	**Action Item 15.3**
Staff training reduces costs and improves production, safety, levels of service, and working environment.	Curriculum is developed between with City and local Indigenous communities for annual program on trees (Year 1)	First program is hosted (Year 2)	Tribal knowledge is shared with the community and the city shares industry standards for tree maintenance (Year 3)
Priority:	**Department:** RP	**Criteria Addressed:**	1.7
Effort:	**Target Year:** 0	**Co-Benefits:**	0

Implementation

PEOPLE

#16

Allocate time and budget for ISA Arborist certification, including ongoing training for department staff to attend CEU accrediting seminars, workshops, and conferences each year. Consider the Tree Care Industry Association's Certified Treecare Safety Professional accreditation.

Purpose	Action Item 16.1	Action Item 16.2	Action Item 16.3
Staff training reduces costs and improves production, safety, levels of service, and working environment.	An assessment of training needs supports budget planning (Year 1)	All tree management staff retain certifications, licenses, and qualifications (Year 2)	All staff associated with urban forest management are certified and/or appropriately trained (Year 10)

Priority:		**Department:**	RP	**Criteria Addressed:**	1.8
Effort:		**Target Year:**	0	**Co-Benefits:**	0

#17

Annually revisit contract specifications and in-house policies and directives to ensure that tree care operations adhere to current industry standards, including ANSI A300 Standards for Tree Care Operations, ANSI Z133.1-2012 for Arboricultural Operations Safety Requirements, and ISA Series Best Management Practices (BMPs).

Purpose	Action Item 17.1	Action Item 17.2	Action Item 17.3
A well-managed urban forest is sustainable, resilient, lower risk, and beneficial.	Contractor specifications meet ANSI, ISA, and OSHA standards (Year 1)	Contractor specifications meet ANSI, ISA, and OSHA standards (Year 5)	Observations show a decrease in tree malpractices on public and private property (Year 10)

Priority:		**Department:**	RP, ET, CD	**Criteria Addressed:**	1.8
Effort:		**Target Year:**	Annually	**Co-Benefits:**	N, H

Implementation

PERFORMANCE

#1	Strengthen protocols and threshold criteria for routine and impromptu public tree risk assessments. Consider ANSI A300 Tree Risk Standards, SOPs, communication protocols, and decision checklist for transparency and consistency.		
Purpose	**Action Item 1.1**	**Action Item 1.2**	**Action Item 1.3**
Consistent assessments using industry best practices reduces risk and improves public perception.	Existing protocols and industry recommendations are compiled (Year 1)	Protocols and risk assessment criteria updated, documented, and distributed (Year 2)	Inventories show a reduction in tree risk, less service requests, and improved public perception (Year 20)
Priority: ■■■	**Department:** RP	**Criteria Addressed:**	2.5
Effort: ■□□	**Target Year:** 2025, Annually	**Co-Benefits:**	C, E, H, N

#2	Update the suitable tree list based on the tree inventory, climate change projections, site suitability (Right Tree Right Place), drought tolerance, ecosystem services, tree canopy goals, among other factors.		
Purpose	**Action Item 2.1**	**Action Item 2.2**	**Action Item 2.3**
Adhering to tree species recommendations across public and private property results in a more resilient urban forest.	An analysis of the tree inventory and TMP informs changes to the tree species planting palette (Year 6)	Updated draft of the tree species list is completed (Year 8)	The updated tree species list is integrated into City projects, partner projects, policies, and manuals (Year 10)
Priority: ■■□	**Department:** RP	**Criteria Addressed:**	2.7
Effort: ■□□	**Target Year:** 2030	**Co-Benefits:**	H, N

#3	Review, update, and document the Recommended Tree Species List to reflect native and non-native species that are appropriate for planting in the public right-of-way, parks, and private property. Encourage and consider a requirement for species diversity. Prioritize soil health and volume in tree plantings areas. Include understory plants and soils in the planning process for trees.		
Purpose	**Action Item 3.1**	**Action Item 3.2**	**Action Item 3.3**
A diverse urban forest is resilient to tree pests and diseases and climate change, but must be planted according to tree and site requirements, timing, and desired function.	Existing tree species lists are reviewed (Year 3)	Inventory data informs tree species list (Year 5)	An updated recommended tree species list is created (Year 6)
Priority: ■■□	**Department:** RP	**Criteria Addressed:**	2.7
Effort: ■■□	**Target Year:** 2025	**Co-Benefits:**	C, H, N

Implementation

PERFORMANCE

#4	Use Citywide tree inventory data and best available science to create an integrated pest management (IPM) program for long-term planning and management of existing and future tree pests and diseases impacting the City's urban forest. Improve the community's ability to report tree risk and pest issues through an online portal, application, or other easy communication method.		
Purpose	**Action Item 4.1**	**Action Item 4.2**	**Action Item 4.3**
A well-managed urban forest is sustainable, resilient, lower risk, and beneficial.	Tree inventory data is analyzed and cross-examined with industry research (Year 1)	A tree pest and disease plan is implemented and a strategy for managing other susceptible tree species is established (Year 6)	The public tree population is resilient to existing and potential tree pests and diseases (Year 20)
Priority:	**Department:** RP	**Criteria Addressed:**	2.8
Effort:	**Target Year:** Annually	**Co-Benefits:**	H, N

#5	Add resources and funding for increased watering capacity for trees and landscape (trucks, staff, etc.). Incentivize xeriscape practices using policies, codes, and educational campaigns.		
Purpose	**Action Item 5.1**	**Action Item 5.2**	**Action Item 5.3**
Focus on climate resiliency, drought tolerant species, and fire resistent species to optimize implementation strategies.	Xeriscaping incentives are integrated into policies, codes, and educational campaigns (Year 3)	Budget ask to increase resources and funding for increased watering capactiy (Year 4)	New watering processes in place to supplement xeriscaping incentives (Year 5)
Priority:	**Department:** RP, CD, ET	**Criteria Addressed:**	2.8
Effort:	**Target Year:** 2030	**Co-Benefits:**	C, H, N

Implementation

PERFORMANCE

#6	Revise the street tree code to allow residents to plant street trees, clarify maintenance responsibilities for street trees, and empower residents to care for the trees with proper training. Create a more systematic approach to replacing street trees as they die and are removed.		
Purpose	**Action Item 6.1**	**Action Item 6.2**	**Action Item 6.3**
San Leandro's street tree ordinance is a guiding document for the community and city staff, which will be most impactful with clarity and enforceability.	Public engagement and education is completed regarding potential code changes (Year 1)	City ordinances are updated to clarify street tree planting and maintenance requirements (Year 2)	Educational materials and department memos are published to provide clarity and empower residents (Year 3)
Priority: ■	**Department:** CD, ET, RP	**Criteria Addressed:**	2.9
Effort: ■ ■ ■	**Target Year:** 2026, Annually	**Co-Benefits:**	C, N

#7	Identify sidewalk conflict procedures, alternatives to tree removal, and protocol for replacing damaged trees during infrastructure projects.		
Purpose	**Action Item 7.1**	**Action Item 7.2**	**Action Item 7.3**
Partnerships and coordination enable efficient achievement of shared goals.	Regular meetings to identify opportunities to collaborate (Year 2)	Trees effectively integrated into all City projects where feasible (Year 5)	A shared commitment achieves local and Citywide tree canopy goals (Year 20)
Priority: ■ ■	**Department:** ET	**Criteria Addressed:**	2.9
Effort: ■ ■	**Target Year:** Annually	**Co-Benefits:**	E, H, N

Implementation

PLANNING

#1 Track all City-led tree plantings and tree plantings conducted by partners. Utilize tree inventory software and/or city asset management program.

Purpose	Action Item 1.1	Action Item 1.2	Action Item 1.3
Accurate tracking enables assessment of efficacy of actions and progress towards canopy goals.	A system is established to methodically and routinely gather tree planting and removal data (Year 1)	Tree planting and removal data from all partners is integrated into the City's asset system (Year 2)	All tree planting and removal data from the City and partners is accurately maintained (Year 5)

Priority:	**Department:** RP, ET, CD	**Criteria Addressed:**	N, C, H, E
Effort:	**Target Year:** 2025, Annually	**Co-Benefits:**	3.1

#2 Update the Tree Canopy Assessment (TCA) every 5-10 years using industry recommended protocols.

Purpose	Action Item 2.1	Action Item 2.2	Action Item 2.3
An updated assessment of canopy gains and losses informs policy and management and offers a baseline to establish goals.	A budget is prepared and approved for the TCA (Year 2)	An RFP is prepared and consultant selected to complete a TCA (Year 4)	An updated TCA is completed (Year 5)

Priority:	**Department:** RP	**Criteria Addressed:**	3.2
Effort:	**Target Year:** 2030	**Co-Benefits:**	N, H

#3 Prioritize canopy cover growth for San Leandro's streets, parks, school campuses, and areas that currently have very little canopy coverage.

Purpose	Action Item 3.1	Action Item 3.2	Action Item 3.3
Areas with low tree canopy cover suffer from the urban heat island effect, which has a variety of negative impacts on the community that could be avoided with more equitable distribution of tree canopy throughout the city.	Tree plantings are directed to priority areas as identified in the TMP that used 2018 canopy data (Year 1)	A canopy assessment is completed to compare with the 2018 data, identify areas of growth and loss, and reprioritize plantings strategies if necessary (Year 3)	Planting strategies are assessed periodically as new data becomes available so canopy is equitable distributed (Year 4)

Priority:	**Department:** RP, ET	**Criteria Addressed:**	3.2
Effort:	**Target Year:** 2025, Annually	**Co-Benefits:**	H, N

Implementation

PLANNING

#4	Utilize the TMP's Tree Maintenance and Budget Sheet to secure funding for urban forest management activities.		
Purpose	**Action Item 4.1**	**Action Item 4.2**	**Action Item 4.3**
Adequate funding to maintain a healthy urban forest benefits the community.	Funding mechanisms provided in the TMP are explored for funding strategies (Year 2)	Priority activities and projects identified, funding mechanism strategy(s) implemented (Year 4)	Funding secured for priority activities and/or projects (Year 6)
Priority: ■■■	**Department:** RP	**Criteria Addressed:**	3.3
Effort: ■■■	**Target Year:** Annually	**Co-Benefits:**	N

#5	Complete an urban forest audit using similar criteria as the 2023 audit completed for the TMP to evaluate improvements in urban forest management and adapt strategies.		
Purpose	**Action Item 5.1**	**Action Item 5.2**	**Action Item 5.3**
Evaluations enable adaptive management.	A team to complete the updated audit is established (Year 1)	The first City-led urban forest audit is completed (Year 3)	An urban forest audit is routinely conducted (Year 4)
Priority: ■■■	**Department:** RP, CD, ET	**Criteria Addressed:**	3.3
Effort: ■■	**Target Year:** Bi-annually	**Co-Benefits:**	N, C, H, E

#6	Based on the outcomes of the bi-annual urban forest audit, available resources, industry technology and research, and data, modify existing actions and develop new actions to continue to achieve goals of the 2024 TMP.		
Purpose	**Action Item 6.1**	**Action Item 6.2**	**Action Item 6.3**
Updates to actions applies adaptive management and improves decision making based on observable outcomes.	An assessment of TMP actions and targets achieved is completed (Year 3)	Updated actions for the TMP are drafted (Year 4)	The TMP has updated actions and targets (Year 5)
Priority: ■■■	**Department:** RP, CD, ET	**Criteria Addressed:**	
Effort: ■■■	**Target Year:** 2026	**Co-Benefits:**	C, E, H, N

Implementation

PLANNING

#7	Create an annual activity calendar for urban forest management aligned with actions in this TMP.		
Purpose	**Action Item 7.1**	**Action Item 7.2**	**Action Item 7.3**
A structured program guides management, provides prioritization guidance, and enables efficiencies.	TMP action worksheet is utilized (Year 1)	List of activities drafted (Year 2)	Annual calendar created (Year 2)
Priority: ■■	**Department:** RP	**Criteria Addressed:**	3.3
Effort: ■	**Target Year:** Annuall y	**Co-Benefits:**	N, C

#8	Maintain the inventory of public street and park trees. Update as maintenance and new plantings occur. Encourage partners to manage a current inventory of utility trees.		
Purpose	**Action Item 8.1**	**Action Item 8.2**	**Action Item 8.3**
Inventories inform maintenance, resource needs, planting, and ecosystem benefits.	Database updated to reflect changes to the public tree population (Year 1)	All street trees are inventoried in at least one City planning area per year (Year 2)	All City planning areas are inventoried and data is up-to-date (Year 10)
Priority: ■■■	**Department:** RP, ET	**Criteria Addressed:**	3.4
Effort: ■■	**Target Year:** 0	**Co-Benefits:**	0

#9	Implement a holistic approach to urban forestry that focuses on the entire ecosystem. Create more natural areas, riparian improvements, green spaces, urban gardens, pollinator habitat, and wildlife habitat in support of a holistic urban forest.		
Purpose	**Action Item 9.1**	**Action Item 9.2**	**Action Item 9.3**
Holistic urban forest management takes into account more than just trees and leans toward a comprehensive ecosystem management approach.	Community stakeholders form a committee with City staff (Year 1)	Potential projects, partners, locations, and funding sources are identified for implementation in San Leandro (Year 2)	The first project is completed and annual progress is made to meet the goals of the initiative (Year 5)
Priority: ■■	**Department:** RP	**Criteria Addressed:**	3.5
Effort: ■	**Target Year:** 0	**Co-Benefits:**	0

Implementation

PLANNING

#10	Evaluate staffing and budget resources required to safely and effectively plant trees aligned with canopy goals and implement a proactive tree maintenance program. Prioritize public safety and economic development as important factors when using urban forestry funds.			
Purpose	**Action Item 10.1**		**Action Item 10.2**	**Action Item 10.3**
Canopy goals cannot be obtained nor can healthy young urban forests be established without the proper resources.	Canopy goals and planting targets are established (Year 6)		An analysis of the required staff necessary to plant and maintain new trees to meet canopy goals is prepared (Year 8)	A budget proposal is prepared detailing the necessary staff (Year 10)
Priority:	**Department:**	RP, CD, ET	**Criteria Addressed:**	3.6
Effort:	**Target Year:**	0	**Co-Benefits:**	0
#11	Monitor grants and technical assistance opportunities from organizations such as CalFire.			
Purpose	**Action Item 11.1**		**Action Item 11.2**	**Action Item 11.3**
Diverse funding achieves long-term TMP goals.	Resources of partners are utilized (Year 2)		Grant application submitted and approved for a project such as tree planting, planning, inventory (Year 3)	Grant application submitted and approved for a project such as tree planting, planning, inventory (Year 3-20)
Priority:	**Department:**	RP, CD, ET	**Criteria Addressed:**	3.6
Effort:	**Target Year:**	Annually	**Co-Benefits:**	N, C
#12	Establish a dedicated, sustained funding source beyond the current departmental budget (such as a Tree Fund from permit fees) for urban forestry operations to increase the level of service to meet the community's standards.			
Purpose	**Action Item 12.1**		**Action Item 12.2**	**Action Item 12.3**
Funding that is diversified, sustained, and dedicated will enable long-term success.	Tree inventory and canopy data along with supporting information is utilized to identify any budget shortfalls (Year 10)		Strategies in the sustained funding report are fully implemented (Year 15)	A dedicated, sustained funding source is established that represents the needs of the urban forest, service levels, and community (Year 20)
Priority:	**Department:**	RP, CD, ET	**Criteria Addressed:**	3.6
Effort:	**Target Year:**	0	**Co-Benefits:**	0

Implementation

PLANNING

#13	Strengthen written urban forestry protocols, specifications, and standards for capital projects, construction administration, maintenance, contracts, and performance monitoring.			
Purpose	**Action Item 13.1**		**Action Item 13.2**	**Action Item 13.3**
A well-managed urban forest is sustainable, resilient, lower risk, and beneficial.	Existing protocols and other guidance documents are gathered and reviewed (Year 3)		Areas for improvements to protocols and guidance documents is listed (Year 4)	All relevant protocols and guidance documents are updated and maintained (Year 5)
Priority:		**Department:**	RP, CD, ET	**Criteria Addressed:** 3.8
Effort:		**Target Year:**	0	**Co-Benefits:** 0

#14	Establish SOPs for enforcement of the tree ordinance during development plan review, including tree protection, preservation, and planting.			
Purpose	**Action Item 14.1**		**Action Item 14.2**	**Action Item 14.3**
Oversight of tree-related ordinances ensures proper tree preservation and planting that achieves common goals.	SOPs established for the Urban Forestry division to engage in plan reviews (Year 3)		The Urban Forestry division is involved in all pertinent plan reviews (Year 3-20)	The Urban Forestry Division is involved in all pertinent plan reviews (Year 3-20)
Priority:		**Department:**	CD	**Criteria Addressed:** 3.8
Effort:		**Target Year:**	0	**Co-Benefits:** 0

#15	Adopt a heritage tree ordinance with incentives for proper tree maintenance, more flexibility in individual situations, added capacity for enforcement, and potential for financial assistance to non-commercial properties.			
Purpose	**Action Item 15.1**		**Action Item 15.2**	**Action Item 15.3**
Standards for tree protection and planting on private property contribute to goals for canopy growth and tree health citywide.	Public engagement and education is completed regarding potential code changes (Year 1)		A heritage tree ordinances is adopted to establish new regulations for preservation, planting, and mitigation on private property (Year 2)	Educational materials and department memos are published to provide clarity and empower residents (Year 3)
Priority:		**Department:**	CD, ET, RP	**Criteria Addressed:** 3.8
Effort:		**Target Year:**	2026, Annually	**Co-Benefits:** C

Community-Centered

"We're taking care of [this land] so the next generation can take care of it,"

—Corrina Gould, co-founder of The Sogorea Te' Land Trust

Our nation and this state are at an economic crossroad. We can cut and run, or we can work our way through these challenges by letting cities make the smart investments and good choices that will make the biggest difference and have the most immediate impact. Planting trees and caring for them are two of the smartest investments we can make—providing shade, reducing energy costs, cleaning the air, reducing greenhouse gases that cause global warming, capturing polluted urban runoff, improving water quality, and adding beauty to our neighborhoods. The urban forest is a critical component of our infrastructure—one that increases in value over time. The Tree Master Plan provides a vehicle in which we can move toward achieving our goals around health, climate, and livability.

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