

CITY OF MOUNTAIN VIEW

BIODIVERSITY AND URBAN FOREST PLAN







City of Mountain View

SFEI San Francisco Estuary Institute

REPORT INFORMATION

City of Mountain View Biodiversity and Urban Forest Plan. (Adopted by Mountain View City Council June 2026.)

COVER PHOTO CREDITS

TOP: 2025 Earth and Arbor Day celebration, photo courtesy of the City of Mountain View.
BOTTOM ROW (left to right): Bumble bee visiting *Ceanothus*, photo by Shira Bezalel, SFEI. Visitors at Shoreline Park, photo courtesy of the City of Mountain View. Acorn Woodpecker, photo by David J. Mauk. Tree planting at Mountain View 2025 Earth and Arbor Day celebration, photo courtesy of the City of Mountain View. Coast Live Oak, photo by Don DeBold, courtesy of CC BY 2.0.

*Prepared for the **City of Mountain View** by*

San Francisco Estuary Institute

Lauren Stoneburner, Environmental Scientist

Selena Pang, Environmental Scientist

Sacha Heath, PhD, Senior Ecological Scientist

Ben Satzman, Environmental Analyst

Jennifer Symonds, Environmental Analyst

Vanessa Lee, Associate Environmental Scientist

Helen Casendino, Environmental Analyst

Kara Mirmelstein, Project Manager

Karen Verpeet, Resilient Landscapes Program Managing Director

with project leadership from

City of Mountain View Community Services Department

Brenda Sylvia, Assistant Community Services Director

Lindsay Wong, Senior Management Analyst

and support from

Davey Resource Group, Inc.

Michael Cappon, Senior Associate Consultant - Urban Forest Planning

DESIGN AND PRODUCTION:

RUTH ASKEVOLD AND LAUREN STONEBURNER (SFEI), WITH KORT MAEDA

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MOUNTAIN VIEW CITY COUNCIL

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Jose Gutierrez

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Tina Pham

Joyce Yin

MOUNTAIN VIEW PROJECT TEAM & PLAN DEVELOPMENT

City Manager's Office

Danielle Lee, Chief Sustainability Officer

Community Development Department

Jeffrey Tsumura, Senior Planner

Community Services Department

Tim Youngberg, Parks and Open Space Manager

Russell Hansen, Urban Forest Manager

Maureen Grzan-Pieracci, Recreation Supervisor

Allison Flynn, Executive Assistant

Public Works Department

Faryal Saiidnia, Senior Project Manager

Raymond Wong, Senior Engineer

Ria Lo, former Transportation Planner

ADDITIONAL SFEI PROJECT SUPPORT

Laura Feinstein, PhD, Resilient Landscapes Program Director

Melissa Foley, PhD, Resilient Landscapes Program Science Director & Senior Scientist

TECHNICAL ADVISORS

Darya Barar, Managing Consulting Urban Forester & Arborist, HortScience|Bartlett Consulting

John Gibbs, Principal Landscape Architect, WRT

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A Word from the City

Mountain View is taking a bold step forward with the adoption of its Biodiversity & Urban Forest Plan ("the Plan"). This forward-looking blueprint brings together community voices, City staff expertise, and a science-based approach to chart a new path for protecting and enhancing the city's natural systems in an increasingly urban and climate-impacted environment.

The Plan coordinates the City's strategy towards advancing both biodiversity and the urban forest. Mountain View is committed to planting and protecting native trees and vegetation to enhance native biodiversity, strengthen climate resilience, and support community health and connections. In partnership with the community, the City will also protect and expand its urban forest to maximize environmental, health, and social benefits for both people and native wildlife. By integrating biodiversity and urban forestry into a single, coordinated framework, Mountain View is modeling environmental leadership grounded in innovation, collaboration, and care for the natural environment.

The Biodiversity & Urban Forest Plan is intentionally designed to align with and support other City plans and initiatives, including the Parks and Recreation Strategic Plan, Active Transportation Plan, sustainability and climate efforts, the Shoreline Wildlife Management Plan, and the General Plan. Together, these efforts advance shared City priorities such as equitable access to green space, urban cooling, habitat connectivity, and healthy, walkable neighborhoods, while ensuring that investments in nature are coordinated across parks, streets, development, and public spaces.

At the heart of the Plan is a unifying Vision, developed through extensive community engagement, interdisciplinary staff collaboration, and alignment with City priorities:



Native landscaping in Mountain View. Photo by Shira Bezalel, SFEI.



2023 Mountain View Earth and Arbor Day Celebration at Rengstorff Park. Photo courtesy of Canopy.

This Vision reflects a shared understanding that parks, trails, streets, shorelines, schoolyards, and neighborhoods all contribute to the city's urban ecosystem. In particular, the Plan complements the Parks and Recreation Strategic Plan by reinforcing the role of parks, trails, and open spaces not only as places for recreation and gathering, but also as essential green infrastructure that supports habitat, stormwater management, active transportation, and climate resilience.

To advance the Vision, **Chapter 5 The Plan: Charting the Path** outlines the components of the Plan, including its Goals, Objectives, Actions, and Metrics, along with an implementation framework that functions as both a compass and a roadmap. The Plan's four Goals are:

1. **Connect People and Nature**
2. **Foster Places of Refuge**
3. **Build Resilience**
4. **Activate and Collaborate**

Together, these Goals will guide Mountain View towards its community vision, through both City-led initiatives and collaboration with residents, businesses, and industry professionals who shape the city landscape.

The Plan translates these Goals into actionable strategies through specific Objectives and Actions, supported by Metrics and Targets to track progress over time. Four companion technical Guides provide best practices and practical guidance to support City projects, programs, and decision-making.

While the Plan is not a regulatory document, it has the support of Mountain View City Council and should be considered as one of the foundational plans of the City. This Plan and its science-based framework will guide planning, policies, and initiatives in a growing city, where biodiversity and urban forest goals must be balanced alongside housing, infrastructure, fiscal constraints, and staffing capacity. By emphasizing coordination across departments and alignment with other City plans, the Plan seeks to maximize benefits, efficiency, and long-term impact.

Through this Plan, the City of Mountain View commits to a unified and collaborative approach to caring for its urban nature, one that strengthens ecological health, enhances daily life, and supports a more resilient community for current and future generations.

DEFINITIONS, ACRONYMS, AND ABBREVIATIONS

Important terms used in the Plan are listed and defined below. In some cases, a term can have many meanings across various contexts (e.g., "nature"), so these definitions also specify their meaning within the context of this Plan.

ATP: City of Mountain View Active Transportation Plan

Biodiversity: The variety and abundance of biological life (e.g., mammals, pollinators, plants, birds) within a given area; this Plan focuses largely on native species diversity, though genetic, functional, and ecosystem diversity are also important measures in urban areas; biodiversity is used interchangeably with "nature" in the Plan

"City": Referring to the government entity of the City of Mountain View

"city": Referring to a place defined by its municipal boundaries, such as the city of Mountain View

Climate-resilient and regionally- appropriate species: Organisms that are expected to tolerate the region's current and projected future climate, soils, and other environmental characteristics; may not be native to California; and are not invasive

CSD: City of Mountain View's Community Services Department

CTMP: City of Mountain View's 2015 Community Tree Master Plan, replaced by this document

Ecology: A field of science that specializes in organisms and how they interact with their environment and each other

Functional species: Species that can be selected for planting to provide specific desired functions, such as climate resilience, pest resistance, urban compatibility, or native biodiversity support

Green infrastructure (GI): Greening interventions that mimic natural processes and provide a range of ecological and social benefits within the urban environments, ranging from highly engineered (e.g., bioretention features, green roofs) to more natural, less designed landscape features (e.g., landscaping, park trees)

- **Green stormwater infrastructure (GSI)**: A subset of green infrastructure, such as bioswales and rain gardens, that use the natural process of infiltration and evapotranspiration to capture and manage stormwater

Green space: An area of any size with grass, trees, or other vegetation

Habitat: The resources and conditions needed to support the survival and reproduction of a species; can include physical qualities such as temperature and water availability, as well as biotic features such as food and nesting materials; the use of the term "habitat" in this Plan does not refer to regulatory definitions of habitat for special status species nor areas that warrant specific level of protections

- **Habitat restoration**: The process of assisting the recovery of habitat that has been degraded, damaged, or destroyed in order to restore its associated functions
- **Habitat enhancement**: Interventions to create specific habitat elements within a highly degraded area to improve specific habitat functions

Heritage Tree: A tree defined by and protected per the City's Heritage Tree Ordinance (Municipal Code 32 Article II Sec 32.22-32.39)

Land cover: One or more groups or categories used to describe the Earth's surface; can be used to describe physical conditions, such as land features or habitat type, or types of human use, such as agricultural vs urban; see below for common types of land cover referenced in this Plan:

- **Tree canopy cover**: The area that is covered by tree branches and leaves, as viewed from above
- **Vegetation cover**: The area covered by vegetation of all varieties, including grass, shrubs, and trees, unless otherwise specified
- **Impervious cover**: Area covered by impervious surfaces (surface materials that water cannot penetrate), such as asphalt or roofing

Native species: A given species' status as being native to (or having a long evolutionary history within) a specific locale. Native species can contribute to biodiversity anchors (defined in the Mountain View Parks and Recreation Strategic Plan), supporting ecological relationships and functions important in native ecosystems

- **Regionally-native species:** Species that are native to the San Francisco Bay Area subregion and Central Coast subregion of the California Floristic Province, as determined by Jepson eFlora's bioregion classification;[2] the list of regionally-native species was further refined and corroborated by considering species native to the United States Environmental Protection Agency Level III Ecoregion of Central California Foothills and Coastal Mountains regions according to the United States Department of Agriculture Plant Database; SelecTree database from California Polytechnic State University, San Luis Obispo; and Calscape, the California Native Plant Society native plants database[1,3-5]
- **California-native species**: All organisms (including plants and animals) that have evolved in and are adapted to California's physical and biological conditions; tree species were classified as California-native in this Plan using CalScape[1]

DEFINITIONS, ACRONYMS, AND ABBREVIATIONS (CONTINUED)

Nature: The full suite of elements and processes that make up an ecosystem, including the biological life such as plants, animals, and microorganisms; physical elements such as soils and water; and physical processes such as decomposition and nutrient cycling; used interchangeably with "biodiversity" and also encompasses the urban forest

Non-native species: A species that has been introduced, either deliberately or accidentally by human activities, to an area outside of its natural or historic range; also known as an "introduced" or "exotic" species; some non-native species are considered "invasive" only when the species causes harm, such as to the ecosystem or economy, in its new environment

Open space: Land that is intended to be kept in an undeveloped state and/or does not have many buildings (including unvegetated, unbuilt space)

"the Plan": City of Mountain View Biodiversity and Urban Forest Plan

Pollinator: Species that support plant reproduction by carrying pollen between flowers; while bees are the most well-known example, birds, bats, moths, butterflies, wasps, and other insects can serve as pollinators

Public trees: Trees owned or managed by the City of Mountain View, such as trees in parks, on City-owned property, and along streets in public rights-of-way

PWD: City of Mountain View's Public Works Department

Resilience: The ability of a system to continue to provide desired functions over time even when faced with disturbances and stressors; resilient landscaping focuses on a planted area's ability to both withstand challenges itself, as well as provide important benefits and services that support the community's resilience to a changing climate, such as shade and stormwater absorption

Riparian: The quality of being connected to or situated on the banks of a waterway such as a river, creek, or stream

SFEI: San Francisco Estuary Institute

Sustainability: Meeting the needs of the present without compromising the ability of future generations to meet their own needs

Tree Ordinance: City of Mountain View Code of Ordinances, Chapter 32 - Trees, Shrubs and Plants, i.e., "Tree Regulations of the City of Mountain View"

- **Heritage Tree Ordinance**: Chapter 32, Article II - Protection of the Urban Forest (formerly "Preservation of Heritage Trees")

Urban ecosystem: A dynamic system made up of the biological, physical, and social components of a city including humans, plants, animals, buildings, transportation systems, and water and energy flows

Urban forest: The entire population of trees (including street trees, backyard trees, and trees in green spaces) across a city, from its densely-developed core to its open spaces

Urban greening: Refers generally to the practice of increasing vegetation cover in a city, which could take a variety of forms including planting street trees, installing green infrastructure or green roofs, or creating parks

Urban tolerance: The degree of association between a species and the urban environment. The Plan uses the terms **urban sensitive** and **urban tolerant** to indicate species that land at either end of this tolerance gradient

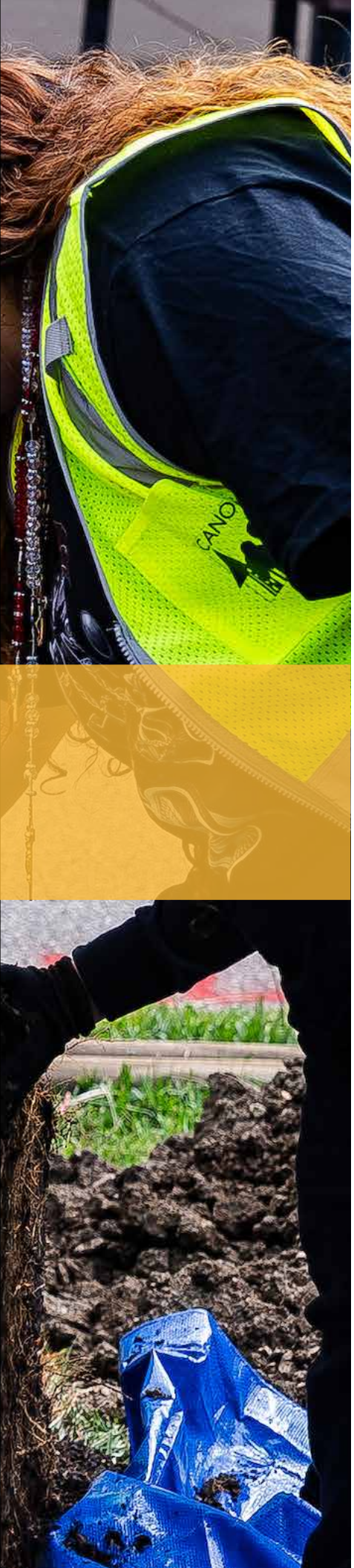
- **Urban sensitive:** Species with life history traits associated with their decreased presence in cities relative to other species (e.g., tendencies toward larger body size, lesser dispersal ability, stronger territoriality, more specialized habitat and dietary requirements, smaller clutch sizes, and shorter lifespans)
- **Urban tolerant:** Species with life history traits associated with their increased presence in cities relative to other species (e.g., tendencies toward small body size, greater dispersal ability, weaker territoriality, broader habitat and dietary requirements, larger clutch sizes, and longer lifespans)

Wildlife: The species in an environment, including plants, animals, fungi and microorganisms; sometimes used interchangeably with "biodiversity"



1 INTRODUCTION

Mountain View 2025 Arbor Day tree planting. Photo courtesy of the City of Mountain View.



1.1 Why a Biodiversity & Urban Forest Plan?

The health of cities and their ecology are tightly linked. Designing a city with and around nature fosters greater biodiversity and offers benefits to people. A healthy urban ecosystem—including its urban forest—fosters a diversity of life, from plants and animals to fungi and microorganisms. Its condition depends on the abundance, quality, and connectedness of nature across the city. These features in turn enable healthy ecosystem functions, such as filtering pollutants, facilitating wildlife movement, and promoting human physical and mental health, as well as adapting to and protecting the city from a changing climate.

Mountain View's urban forest is integral to the urban ecosystem, especially in supporting wildlife, providing shade, filtering air and stormwater, and sequestering carbon. Due to their large size, long lifespans, and many benefits, trees deserve a detailed examination to plan for their health now and into the future. There are important trade-offs to reconcile between managing the landscape for biodiversity and for a healthy, resilient urban forest. Nevertheless, this plan is guided by the underlying goal of supporting a healthy, functioning urban ecosystem that serves both people and biodiversity for generations to come.



Sweat Bee on Seaside Daisy in Mountain View.
Photo by Lauren Stoneburner, SFEI.

HOW DOES THE URBAN ECOSYSTEM BENEFIT MOUNTAIN VIEW?

Biodiversity and trees have been linked with improved physical and mental health, student performance, city walkability, quality of life, and civic pride and sense of place, among many other benefits.[8,9] The reciprocal relationship between nature and the city means that supporting biodiversity and the urban forest in Mountain View will also fortify the community's health, enjoyment, and resilience.

ARE THERE POTENTIAL TRADE-OFFS TO INCREASING URBAN BIODIVERSITY AND TREES?

While fostering greater biodiversity and tree canopy provides many community benefits and reflects Mountain View's collective values, the City will also need to continuously track and manage its potential challenges. Possible tradeoffs to the benefits of increasing urban biodiversity and tree canopy include, for example, negative health impacts (e.g., allergic pollen, insect bites, and disease vectors), human-wildlife conflicts, infrastructure damage and utility and safety conflicts (e.g., limb drops or fallen trees), shifting aesthetic preferences, and green gentrification.[9] Thoughtful plant species selection and maintenance can mitigate some of these impacts. Nevertheless, because urban ecosystems are inherently complex and ever-changing, ongoing monitoring, openness to community feedback, and adaptive management will best position the City to anticipate and address emerging challenges.

HOW CAN MOUNTAIN VIEW SUPPORT A HEALTHY URBAN ECOSYSTEM?

The San Francisco Bay Area is within a global biodiversity hotspot. Mountain View in particular sits in a historically-rich ecological landscape, linking the San Francisco Baylands and the Santa Cruz Mountains. While much of its historical ecosystem has been drastically transformed, giving way to its dense present-day development, the city still pulses with local biodiversity.

Mountain View's Biodiversity & Urban Forest Plan ("the Plan") offers an opportunity to further enrich the city's urban ecosystem for the benefit of people and nature. This roadmap blends community insights with science-based strategies to support native species, restore critical ecosystem functions, and advance the health and resilience of both the local ecosystem and community.

The City is not alone in these commitments and initiatives. The Plan will allow Mountain View to better support broader state and regional initiatives and commitments, such as California's 30x30 Initiative, California's Climate Adaptation Strategy, the California Biodiversity Initiative, the Santa Clara Valley Habitat Plan, the recent Senate Bill 1425 Advancing Climate Resilience through Open Space Updates, and Assembly Bill 1889 Enhancing Wildlife Movement and Connectivity Planning.



Managing trade-offs between native biodiversity and urban forest resilience

There are important considerations and trade-offs to reconcile when planning for both native biodiversity and a resilient urban forest. Many native wildlife rely on native plants, sometimes exclusively. While non-native trees and shrubs do support urban biodiversity,[6] the integration of native plants will help the city better support more urban sensitive species.

At the same time, urban forests must include species that are native to other regions to thrive. Commonly-cited reasons to plant tree species from other regions of the state, continent, or world include:

- **Many planting areas in cities are challenging places for trees to grow.** Urban planting areas, such as along streets and sidewalks tend to be space-limited and exposed to environmental stressors that many regionally-native species do not tolerate well, such as hotter temperatures, trampling, altered soils, and modified water sources, such as urban runoff or recycled water.
- **Greater tree diversity will foster greater resilience.** A lack of tree diversity can leave large portions of the urban forest vulnerable to threats, particularly pests.
- **The native ecosystem in Mountain View and the surrounding region has a relatively low diversity of native trees.** As few as seven tree species are native to Mountain View proper, and fewer than 30 are native to the broader Santa Clara Valley.[7] A much more diverse range of species is needed to reach the City's canopy cover goals and provide sufficient benefits for people and wildlife.
- **Plants native to the Santa Clara Valley** (see **Guide B: Plant Lists**) **suit Mountain View's current climate, but some may struggle to adapt to future climate and environmental changes.** Meanwhile, some functional species (see **Definitions, Acronyms, and Abbreviations**) can fill similar ecological niches and thrive into the future. Mountain View can prepare its urban forest for a changing climate by planting species that are suited to the expected future climate, as well as continually monitoring its urban forest and adapting its approach in the years to come.

This Plan seeks to balance these trade-offs. The assessments conducted and actions proposed ultimately seek to foster a rich, biodiverse urban forest that flourishes now and into the future.

Western Redbud in Mountain View. Photo by Lauren Stoneburner, SFEI.

THE ROLE OF THE BIODIVERSITY & URBAN FOREST PLAN

The Plan solidifies the City's commitment to fostering a healthier urban ecosystem and forest for its community. Grounded in the community's shared vision for how nature in Mountain View can thrive in the future, the Plan outlines a science-based roadmap with clear actions and measurable metrics to drive meaningful progress.

While urban forest plans have become a common planning instrument in cities across the United States, this Plan stands apart, integrating its urban forest plan within a strategy to support biodiversity and the urban ecosystem as a whole. Only a handful of other cities across the world have developed plans that focus on biodiversity support (e.g., *Toronto Biodiversity Strategy*, *City of London Biodiversity Action Plan*, *Vancouver Biodiversity Strategy*, and *Sydney Urban Ecology Strategic Action Plan*). An even smaller number of cities, such as San Francisco, have moved past the planning stage and enacted biodiversity policy. Similar to the approach applied here, these plans rely on science-based analyses to offer a range of recommendations—from governance to implementation—for creating more biodiverse urban ecosystems. In commissioning this Plan, Mountain View recognizes the management of urban biodiversity and the urban forest as inextricably linked.

The clear objectives and metrics in this Plan make biodiversity and urban forest health lasting City priorities. While not a regulatory document, the Plan will be implemented through binding mechanisms, including City ordinances, standards, permitting, and capital project review and requirements. Following through on these commitments will drive the City to deliver tangible improvements in nature access and ecological health.



Balancing biodiversity and urban forest goals with other City priorities

The Plan aims to enhance Mountain View's urban ecosystem while balancing competing priorities, such as housing, infrastructure, safety, and public services.

The Mountain View community values a healthy and biodiverse urban ecosystem. Meanwhile, increasing housing supply and strategic development are also critical for improving the city's affordability and livability. Promoting greater infill and urban density are also important strategies for mitigating urban sprawl and protecting biodiversity in the greater region.

The City will need to identify creative strategies to balance its multiple priorities. This Plan offers strategies to strengthen urban ecological health in tandem with other City objectives.

Landscaping with Santa Barbara daisy in Mountain View. Photo by Lauren Stoneburner, SFEI.

1.2 Planning Process

The Plan is grounded in a multi-year process to navigate Mountain View's urban forest and biodiversity priorities. This shared understanding was developed by integrating perspectives from the community, City staff, and the best-available science to help identify opportunities for improvement that would be actionable and feasible, as well as creative and ambitious.

The Plan incorporates the Mountain View community's hopes, concerns, and ideas for fostering vibrant nature in the city, collected through a robust public outreach and input process. The expertise of City staff and other experts also shaped the Plan to ensure that recommendations are feasible to implement and effectively realize the community's vision. The results of science-based technical analyses—grounded in historical ecology data, detailed landscape assessments, and future climate projections—helped prioritize actions that will effectively enhance the health and resilience of the city's landscape and urban forest.

The Plan distills these diverse perspectives and analyses into a clear roadmap from Vision to Action. The Plan centers the community's unified Vision for how nature in Mountain View should look, sound, and feel in the future, supported by a specific series of Goals, Objectives, Actions, and Metrics that bring this Vision closer to realization.



2024 Biodiversity & Urban Forest Plan Farmers' Market Pop-Up. Photo by Lauren Stoneburner, SFEI.

1.3 Biodiversity Ambassadors

The concept of "biodiversity" can seem abstract, but actions taken as a result of this Plan will have real benefits for many species in the city. To bring this idea to life, nine "Biodiversity Ambassadors" were chosen for the Plan, representing a diverse group of animal and plant species currently found in Mountain View. Each Ambassador has unique habitat needs, and will respond differently to various landscape improvements. These Biodiversity Ambassadors will pop up throughout the Plan to demonstrate both how a specific proposed action or guideline could meaningfully support the Ambassador species, as well as how the ecological requirements of an Ambassador species could inspire decisions during implementation.

Biodiversity Ambassadors represent a range of habitat types, types of organisms, and life history traits. Each species is associated with at least one of Mountain View's historical habitat types (see "The Historical Landscape" in **2.1 History**). Rather than selecting rare, threatened, or endangered species, all Biodiversity Ambassadors are relatively common in Mountain View today, so that the community can find, observe, and appreciate them. These Ambassador species complement five other special-status species featured in the Shoreline Wildlife Management Plan[10] developed for the City of Mountain View, which is discussed in **3.3 Policies, Guidance, and Protections.**



2025 Arbor Day Celebration. Photo courtesy of the City of Mountain View.



2025 Earth and Arbor Day Celebration. Photo courtesy of the City of Mountain View.

MEET THE BIODIVERSITY AMBASSADORS!

Mountain View's Biodiversity Ambassadors. *Nine Biodiversity Ambassadors showcase a diverse range of animal and plant species currently found in Mountain View, each associated with at least one of Mountain View's 10 historical habitat types. Included are some of their ecological requirements (Needs) and their benefits to ecosystems, ecological functions, other species, or humans (Benefits).*

ACORN WOODPECKER

Melanerpes formicivorus



Acorn Woodpecker. Photo by Laura M, courtesy of CC BY-SA 4.0.

Historical habitat types: Oak Woodland, Willow Grove

Needs: Large trees (> 32" diameter at breast height) for acorn granaries; nest cavities built in large trees and 0.5 - 3-foot diameter branches, prefer Valley Oak (*Quercus lobata*) and Western Sycamore (*Platanus racemosa*), repeated use over many years; at least 20 oak trees across 15-20 acres (that can span a variety of urban land uses) increase chances for new colonies; can tolerate urban landscapes if oaks are present; foods include acorns, insects, catkins, sap, and nectar

Benefits: Granary holes with acorns for other species' food storage, consumption, and shelter; oak seed dispersal

Sources: 11-13

CALIFORNIA VOLE

Microtus californicus



California Vole. Photo by Jerry Kirkhart, courtesy of CC BY 2.0.

Historical habitat types: Wet/Alkali Meadow, Oak Savanna/Grassland

Needs: Herbaceous layers in wet meadows, salt marshes, and arid uplands in > 10 acre patches; individuals may occupy small suitable patches > 0.5 acres with connectivity between multiple moist and dry patches; connected perennial grasslands may offer population refuges during low population cycles; food items include seeds and roots of grasses, sedges, and forbs

Benefits: Food source for raptors and mammals; burrow for other animals; soil formation, aeration, and nutrient mixing

Sources: 17, 18

BIODIVERSITY AMBASSADORS (CONTINUED)

HORN-FACED LEAFCUTTER BEE

Megachile fidelis



Horn-Faced Leafcutter Bee. Photo by rojasburke, courtesy of iNaturalist, CC BY 4.0.

Historical habitat types: Oak Woodland, Oak Savanna/Grassland, Chaparral

Needs: Pollen from host plant genera *Chrysothamnus, Cirsium, Coreopsis, Encelia, Ericameria, Erigeron, Grindelia, Gutierrezia, Haplopappus, Helenium, Helianthus, Hemizonia, Heterotheca, Holocarpha, Machaeranthera, Madia, Plectocephalus, Rudbeckia, Senecio, Solidago, Symphyotrichum, Verbesina,* and *Viguiera*; nest substrates include abandoned beetle burrows, hollow stems, and tree holes with leaf pieces and mud used to partition broods

Benefits: Pollination

Sources: 15, 16

PACIFIC CHORUS FROG

Pseudacris sierra



Pacific Chorus Frog. Photo by Will Brown, courtesy of CC BY 2.0.

Historical habitat types: Wet/Alkali Meadow, Oak Savannah/Grasslands, Valley Freshwater Marsh, Perennial Freshwater Pond

Needs: Ponds, marshes, slow streams, or roadside ditches for breeding and laying eggs; inhabits low-growing plants near or along water, and also drier grasslands, chaparral, and urban structures; pervious vegetated corridors (including manicured landscaping), for connectivity through impervious surfaces; food items include ground and flying insects (adults) and algae, bacteria, protozoa, and organic and inorganic debris (tadpoles)

Benefits: Mosquito control; food source for native animals

Sources: 21-24

SOUTHERN ALLIGATOR LIZARD

Elgaria multicarinata



Southern Alligator Lizard. Photo by Jerry Kirkhart, courtesy of CC BY 2.0.

Historical habitat types: Oak Woodland, Willow Grove, Chaparral

Needs: Can persist in highly urbanized areas far from standing water; refuges provided by logs, rocks, vegetation, human debris; dark moist areas; pervious corridors with these refuges to connect patches through impervious surfaces which are associated with more tail breakages due to human traffic; food types are primarily insects and other arthropods, sometimes other lizards; frequently depredated by outdoor domestic cats

Benefits: Consumption of garden pests; food source for native snakes and birds

Sources: 25-28

THREESPINE STICKLEBACK

Gasterosteus aculeatus



Threespine Stickleback. Photo by justas, courtesy of Adobe Stock.

Historical habitat types: Creek

Needs: Shallow vegetated areas over mud or sand in freshwater, brackish, and saltwater aquatic environments; food items include worms, crustaceans, aquatic insect larvae, drowned aerial insects, and small fish; though anadromous, non-anadromous populations will survive in streams with blocked spawning headwaters or marine access; tolerates moderate to highly urbanized San Francisco Estuary streams, high water temperatures, low dissolved oxygen, and low to moderate water pollution

Benefits: Food source for fish-eaters

Sources: 19, 20

BIODIVERSITY AMBASSADORS (CONTINUED)

VALLEY OAK

Quercus lobata



Valley Oak. Photo by Bob Dodge, courtesy of CC BY.

Historical habitat types: Oak Woodland, Oak Savannah

Needs: Sufficient space for root growth; nearby oaks for pollination (< 500 feet); > 30 feet from California Bay Laurel (*Umbellularia californica*) to reduce sudden oak death transmission

Benefits: Food and shelter for hundreds of species of animals (including people!), fungi, and plants; nutrient cycling, decomposition, erosion control, and carbon sequestration; shade from extreme heat; nodes of 20 oak trees or more confer the most benefits

Sources: 11

WESTERN PYGMY-BLUE BUTTERFLY

Brephidium exilis



Western Pygmy Blue. Photo by Renee Grayson, courtesy of CC BY 2.0.

Historical habitat types: Oak Savanna/Grassland, Tidal Marsh, Willow Grove, Valley Freshwater Marsh

Needs: Lowland areas including salt marsh, roadsides, vacant lots, and alkali flats; host plants for egg laying and/or larvae food include many species of *Atriplex*, and species of the genera *Chenopodium, Batis, Sesuvium, and Suaeda,* and *Salicornia*

Benefits: Pollination

Sources: 1, 14

WILSON'S WARBLER

Cardellina pusilla



Male Wilson's Warbler. Photo by Becky Matsubara, courtesy of CC BY 4.0.

Historical habitat types: Willow Grove

Needs: Insect food and tree cover during migratory stop-over periods (average of 4 days in Santa Clara Valley); forages from urban Valley Oaks disproportionate to its percent canopy cover and to other urban tree species during spring and fall migration; also shows a preference for willow during spring migration; forages at 16 to 23 feet high in tree canopy; food items mostly adult and larval insects and spiders; common window collision victim during migration but not disproportionate compared to abundance

Benefits: Insect pest control

Sources: 29-32



2 MOUNTAIN VIEW LANDSCAPE: PAST, PRESENT, AND FUTURE

Trail along Charleston Retention Basin. Photo by Shira Bezalel, SFEI.

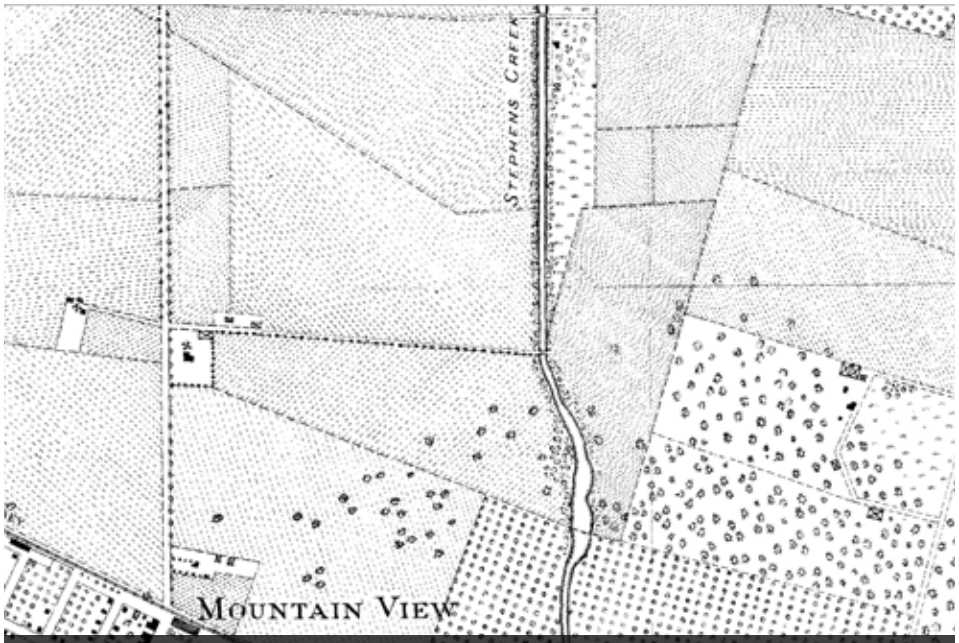




2.1 History

THE HISTORICAL LANDSCAPE

This Plan is grounded in an understanding of the historical landscape.[33] While the city today is heavily developed, understanding its past, including its native plant communities and the people and wildlife they supported, will help inspire ideas around what is possible for the future.



U.S. Coast and Geodetic Survey Topographic Map from 1897. Courtesy of the National Ocean Service.



U.S. Geological Survey Aerial Photo from 1948. Courtesy of the United States Geological Survey.

Prior to Euro-American colonization in the late 18th and early 19th centuries, the land now known as the City of Mountain View was an important place of ecological transition between the Bay and the Santa Clara Valley. This gradient fostered a rich diversity of plant and wildlife communities.

This landscape's indigenous inhabitants, the Olpen Tribe living north of Stevens Creek at the junction between the homelands of the Ramaytush Ohlone and Tamien Nation,[34] maintained a tightly interwoven, reciprocal relationship with the land. Through active management and stewardship, traditional cultural practices and lifeways shaped the natural landscape over thousands of years.[35-37]



Tidal Marsh and slough. Photo by SFEI.



California Rose, common in Wet Meadow and Riparian habitats. Photo by Stephanie Falzone, courtesy of vCC BY 2.0.



Oak Woodland. Photo by SFEI.

Baylands. Along the shoreline, Tidal Marshes, Tidal Flats, and Shallow Channels provided vital resources for fish, shorebirds, and other wildlife uniquely adapted to inhabiting the intertidal environment.

Bayland-Upland Transition. Transitional zones like Wet Meadows, Willow Groves, and Valley Freshwater Marshes hosted specialized plant communities adapted to seasonal or year-round flooding and, in the case of Alkali Meadows, saline soils.

Upland. Dense Oak Woodlands, where oaks and other native trees intermixed with native grasses, wildflowers, and shrubs, transitioned into sparser Oak Savanna, where oaks dotted the open grassland. These oaklands were interspersed with thickets of shrubby Chaparral on drier sites. The boundaries between these habitat types shifted over time, in part due to both natural disturbances and active management by indigenous tribes.

HISTORICAL HABITAT TYPES AND CHANNELS

Historical habitats were compiled from SFEI's Western Santa Clara Valley Historical Ecology Study[33] and represent average conditions prior to significant Euro-American modification (1770s-1850s).

BAYLANDS

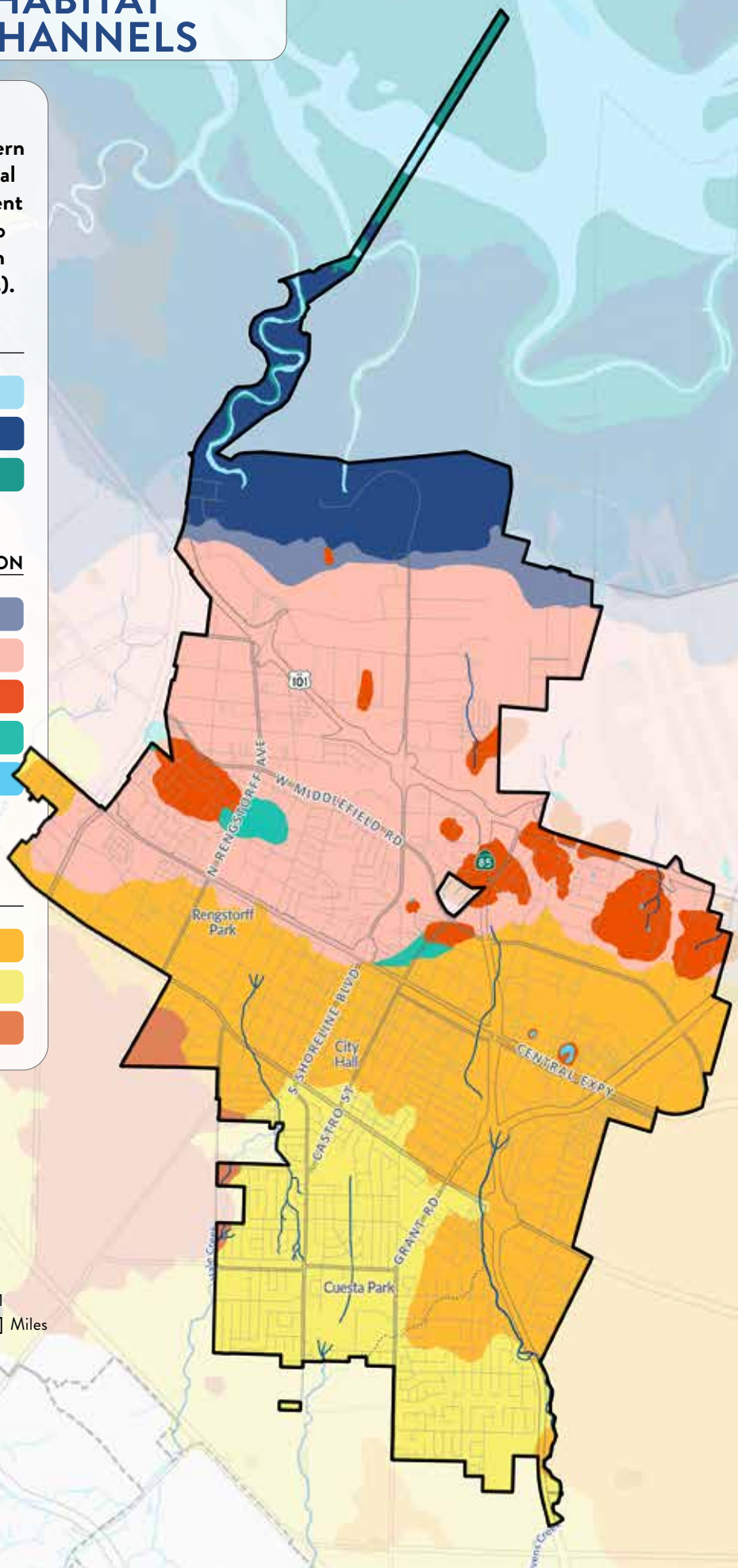
- Tidal Channel / Open Water
- Tidal Marsh
- Tidal Flat

BAYLAND-UPLAND TRANSITION

- Alkali Meadow
- Wet Meadow
- Willow Grove
- Valley Freshwater Marsh
- Perennial Freshwater Pond
- Channels

UPLAND

- Oak Woodland
- Oak Savanna
- Shrubland



N

0 0.5 1 Miles

LANDSCAPE CHANGE

Mountain View's landscape changed dramatically after European arrival in the 18th century, beginning with the establishment of Mission Santa Clara and the displacement of indigenous inhabitants, introduction of invasive species, and extractive land use practices. By the mid-19th century, agriculture and salt production had reshaped the land, followed by rapid urbanization after World War II, ultimately transforming the Santa Clara Valley into the metropolitan landscape it is today.

Comparing historical and modern vegetation mapping reveals how Mountain View's landscape has changed since Euro-American colonization, showing both what has been lost and what still remains. This analysis helps identify opportunities to restore elements of the historical landscape, where feasible, within today's urban setting.



Barney Job Ranch ca. 1900. Courtesy of California Revealed.



Crittenden Ranch ca. 1880. Photo by W.N. Collom, courtesy of California Revealed.



Castro and Front Streets ca. 1900. Courtesy of California Revealed.

Extensive habitat loss. Nearly 90% of Mountain View's native habitat has been converted to development and associated vegetation. Oak Savanna and Woodland, which once sprawled across nearly half of Mountain View's footprint, has now been reduced to five acres of Oak Woodland along Stevens Creek, and other historical habitat types are nearly or completely lost.

Creek and shoreline modification. Historical creeks have been simplified and disconnected from their floodplains, reducing their functions and biodiversity support. Tidal habitats are also fragmented and occupy only a fraction of their original extent, with much of their area converted to salt ponds.

Potential for restoration. Despite Mountain View's urbanization, some areas retain natural features or have been restored, particularly near the shoreline and along Stevens Creek. Other more heavily-modified sites, such as Permanente Creek, still have important potential for restoration and biodiversity support. Furthermore, there are strategies laid out in this Plan to apply knowledge of the historical ecology both to enhance the habitat quality of open spaces and to enhance the quality of urban greening and landscaping. These projects can not only support greater native biodiversity, but also act as a tool to engage the community and connect them to Mountain View's historical landscape.

MODERN VEGETATION[38] AND CHANNELS[39]

Vegetation mapping only includes larger (generally greater than 0.25 to 0.5 acres) tracts of vegetation, so not all vegetation is mapped.

BAYLANDS

- Tidal Channel / Open Water
- Tidal Marsh
- Tidal Flat

BAYLAND-UPLAND TRANSITION

- Willow Grove
- Valley Freshwater Marsh
- Perennial Freshwater Pond
- Channels

UPLAND

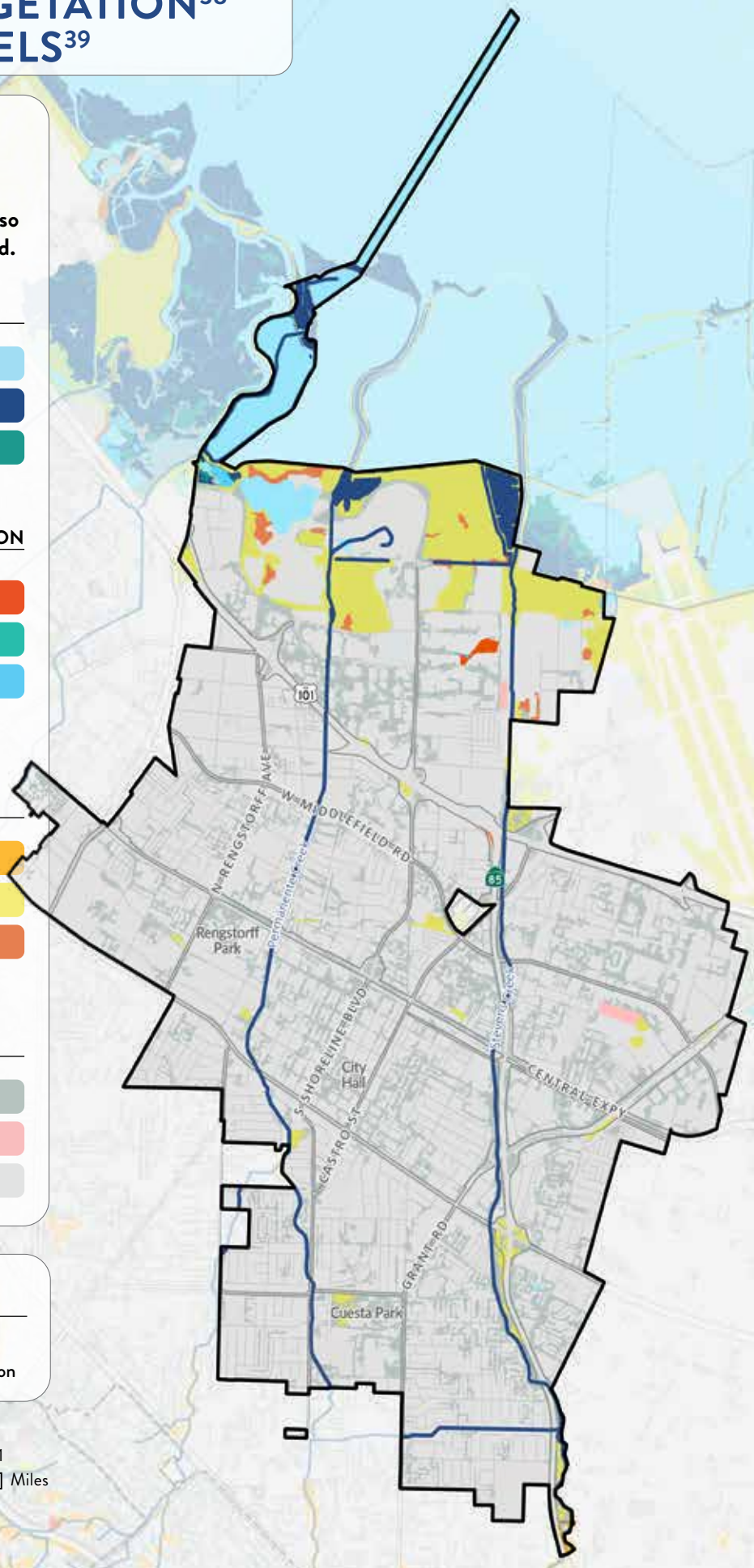
- Oak Woodland
- Oak Savanna
- Shrubland

INTRODUCED

- Urban Vegetation
- Agriculture
- Developed

NO LONGER PRESENT IN MODERN MAPPING

- Oak Savanna
- Chaparral
- Wet Meadow
- Alkali Vegetation



N

0 0.5 1 Miles

2.2 The City Today

Since its incorporation in 1902, the City of Mountain View has grown as a vibrant city of over 82,000 residents.[40] Demographically diverse, nearly half of residents speak a language other than English at home, two-fifths are foreign-born, and nearly three-fourths hold a Bachelor's degree or higher, with a median household income of $179,917.[40] Despite overall prosperity, over one in five residents live in poverty, and several census tracts face high housing and transportation vulnerability.[41]

As a global corporate hub, tens of thousands more commute to Mountain View for work.[42] Situated at the heart of Silicon Valley, many leading high-technology corporations or institutes have also chosen Mountain View to house their corporate headquarters or major offices.

Mountain View is positioned at a vital point of regional connection and transition between the baylands and the Santa Cruz Mountains. Characteristic of the ecoregion, Mountain View experiences a Mediterranean climate of hot dry summers and cool moist winters.

Despite its urban character, Mountain View is home to several key natural resources. Creeks, including Stevens and Permanente, link the landscape from the Santa Cruz Mountains through Mountain View to the Bay, where several shoreline wetland restoration projects are underway. Shoreline Regional Park's 750 acres offer important wildlife habitat and recreation opportunities, as do other city parks, including Rengstorff Park, Cuesta Park and Annex, Sylvan, and smaller neighborhood parks.



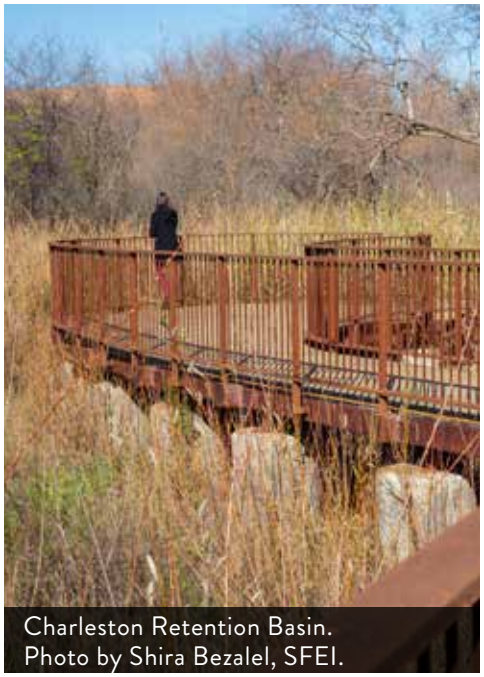
Castro Street Pedestrian mall. Photo courtesy of the City of Mountain View.



Playground at Mora Park. Photo courtesy of the City of Mountain View.



Biker on Stevens Creek Trail.
Photo by Shira Bezalel, SFEI.



Charleston Retention Basin.
Photo by Shira Bezalel, SFEI.

2.3 Future Climate Challenges

Mountain View is facing growing climate challenges, including more intense drought, heat, wildfire, sea-level rise, and flooding, which threaten ecological resources, public health, and urban infrastructure.[43–55]

These potential climate-driven changes present serious risks to Mountain View's biodiversity and urban forest. Hotter, drier conditions are expected to stress trees and shift species ranges.[56] Trees planted today must withstand changes over the coming decades, and proper urban forest planning can prevent growing risks and management costs. Meanwhile, flooding and erosion could degrade creeks, wetlands, and shoreline habitats.[51] Socially-vulnerable communities, who often have less access to green space and tree canopy, will bear the brunt of these impacts, highlighting the need for equitable adaptation strategies.[57]

Investing in Mountain View's biodiversity and urban forest will in turn support the city's climate adaptation. Advancing nature-based solutions, such as planting trees, restoring coastal ecosystems, and installing green stormwater infrastructure, will pay dividends as the climate shifts. By integrating biodiversity and urban greening into climate adaptation efforts, Mountain View can not only safeguard its ecosystems but also strengthen community health and resilience to future climate extremes.



Walking path near Charleston Retention Basin. Photo by Shira Bezalel, SFEI.

Planting Trees in Historically-Treeless Landscapes

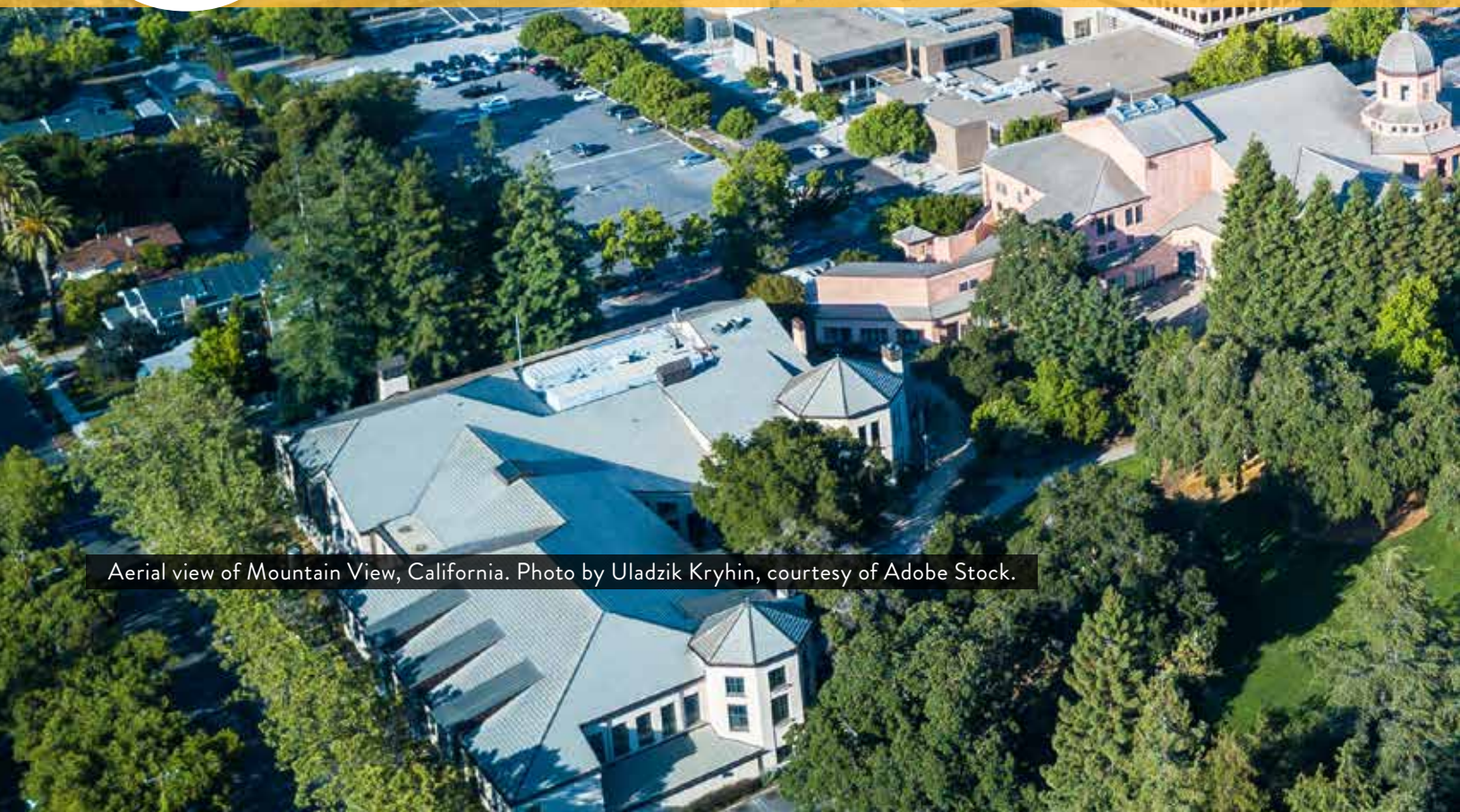
While much of Mountain View's landscape historically supported open habitats such as Wet Meadows and Oak Savannas with few or no trees (see **2.1 The Historical Landscape**), the modern urban context brings different ecological and social needs. Urban forests provide a variety of benefits that are important for urban biodiversity and public health, factors that were not present in the pre-urban landscape. The Plan emphasizes the use of native and ecologically-appropriate species where possible, but strict adherence to historical vegetation patterns would suggest minimal tree cover in large parts of the city. Striking a balance between recognizing historical landscapes, planting native vegetation, and accommodating the needs of present and future urban conditions is a crucial component of creating an effective and actionable plan.



Castro Street. Photo courtesy of the City of Mountain View.

Charleston Park. Photo by Shira Bezalel, SFEI.

3 LANDSCAPE ASSESSMENT AND POLICY OVERVIEW



Aerial view of Mountain View, California. Photo by Uladzik Kryhin, courtesy of Adobe Stock.





3.1 Biodiversity Assessment

SEVEN LANDSCAPE ELEMENTS OF URBAN BIODIVERSITY SUPPORT

The Urban Biodiversity Framework, developed by SFEI in *Making Nature's City*, distills global biodiversity research into seven essential landscape elements that foster urban biodiversity.[58] Each element plays a distinct and complementary role; together, they offer a holistic approach to fostering biodiversity in the city under a changing climate.

The Plan evaluates each element individually, assessing important existing landscape features and identifying opportunities and constraints for enhancing biodiversity support. This section highlights the key findings that will inform the City's strategy, including the recommendations proposed in the Plan (see **5.2 Vision to Action**) and the urban landscaping Zones (see **Guide A: Urban Landscaping**).

What role does the urban forest play in the biodiversity assessment?

The urban forest is a vital component of the urban ecosystem, and the methods to assess biodiversity and the urban forest overlap. The biodiversity assessment considers the role of tree canopy in connecting the landscape and providing food and habitat for native biodiversity. **3.2 Urban Forest Assessment** dives deeper into examining tree canopy cover, public trees managed by the City, and the multiple benefits of an urban forest.



2025 Mountain View Earth and Arbor Day Celebration. Photo courtesy of Canopy.

The following table outlines the seven landscape elements of the Urban Biodiversity Framework. Measures for assessing the current conditions in Mountain View are listed under each element.

These resulting maps and assessments are informational. Because priority areas for improvement span across both public and private land, collaboration with other agencies and private landowners may be necessary to implement the suggested improvements. **5.2 Vision to Action** applies these results to prioritize Actions that the City can take to meaningfully improve its biodiversity support.

***Seven elements of urban biodiversity**, which work together to support healthy and biodiverse urban ecosystems.*[5]





Aerial image of Mountain View centered on Stevens Creek. Photo courtesy of Google Earth.

1 PATCHES • consolidated areas of vegetated green space	
Patch size	Patches grouped by size reflecting the expected degree of biodiversity support
Patch core area	Amount of interior area that is more sheltered from urban influences and disturbances at the patch "edge"
2 CONNECTIONS • features that facilitate the movement of plants and animals between patches	
Priority for improving connections	Areas where addressing barriers to movement could have the greatest impact on improving landscape connections
3 MATRIX QUALITY • levels of biodiversity support between existing patches and corridors	
Tree canopy and other vegetation cover	Amount of tree canopy and other vegetation cover (i.e., shrub and herbaceous vegetation, excluding trees) in the urban matrix
Priority areas near patches and creeks	A score indicating priority areas for matrix quality improvements, based on sites that 1) are located near patches and creek corridors and 2) have low total vegetation cover (including trees, shrubs, and grass)
4 NATIVE VEGETATION • plant species that have a long evolutionary history in the local region	
Proportion of native riparian vegetation	Amount of native vegetation in the riparian corridor (creekside vegetation), relative to non-native vegetation or unvegetated area
Other mapped native vegetation	Mapped areas with consolidated tracts of native vegetation
Regionally-native trees (public trees only)	Number, species composition, and location of public trees native to the Bay Area (see "regionally-native species" in **Definitions, Acronyms, and Abbreviations**)
5 HABITAT DIVERSITY • the type, number, and spatial arrangement of habitats	
Diversity of habitat types	Number of different habitat types and amount of area covered by each, relative to historical conditions
6 SPECIAL RESOURCES • features that can provide uniquely important benefits to wildlife	
Distribution of water resources	Mapped wetlands, open water, and creeks
Large, regionally-native oak trees (public trees only)	Number and locations of regionally-native oak trees in the public tree dataset with over 20 inches diameter at breast height (DBH)
7 MANAGEMENT • practices that affect the quality of the landscape for biodiversity	
Artificial light at night and bird safety	Lighting strategies to minimize impacts on wildlife and building and other structure design to minimize bird collisions
Seasonal management activities	Seasonal maintenance strategies to minimize negative impacts on wildlife

PATCHES | CONSOLIDATED AREAS OF VEGETATED GREEN SPACE

- **Patches in Mountain View are particularly clustered around the Shoreline and Stevens Creek.**
- **Most patches have limited core area.** Larger core areas offer more protected habitat for urban-sensitive species.
- **These patches span both public and private ownership**, making patch management complex, particularly along the nearly-continuous Stevens Creek corridor. There are key opportunities to enhance and protect habitat through public land acquisition and improved management agreements.



Cuesta Park pollinator habitat. Photo courtesy of the City of Mountain View.

PATCHES

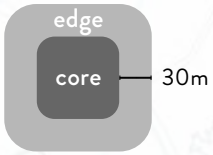
PATCH SIZE

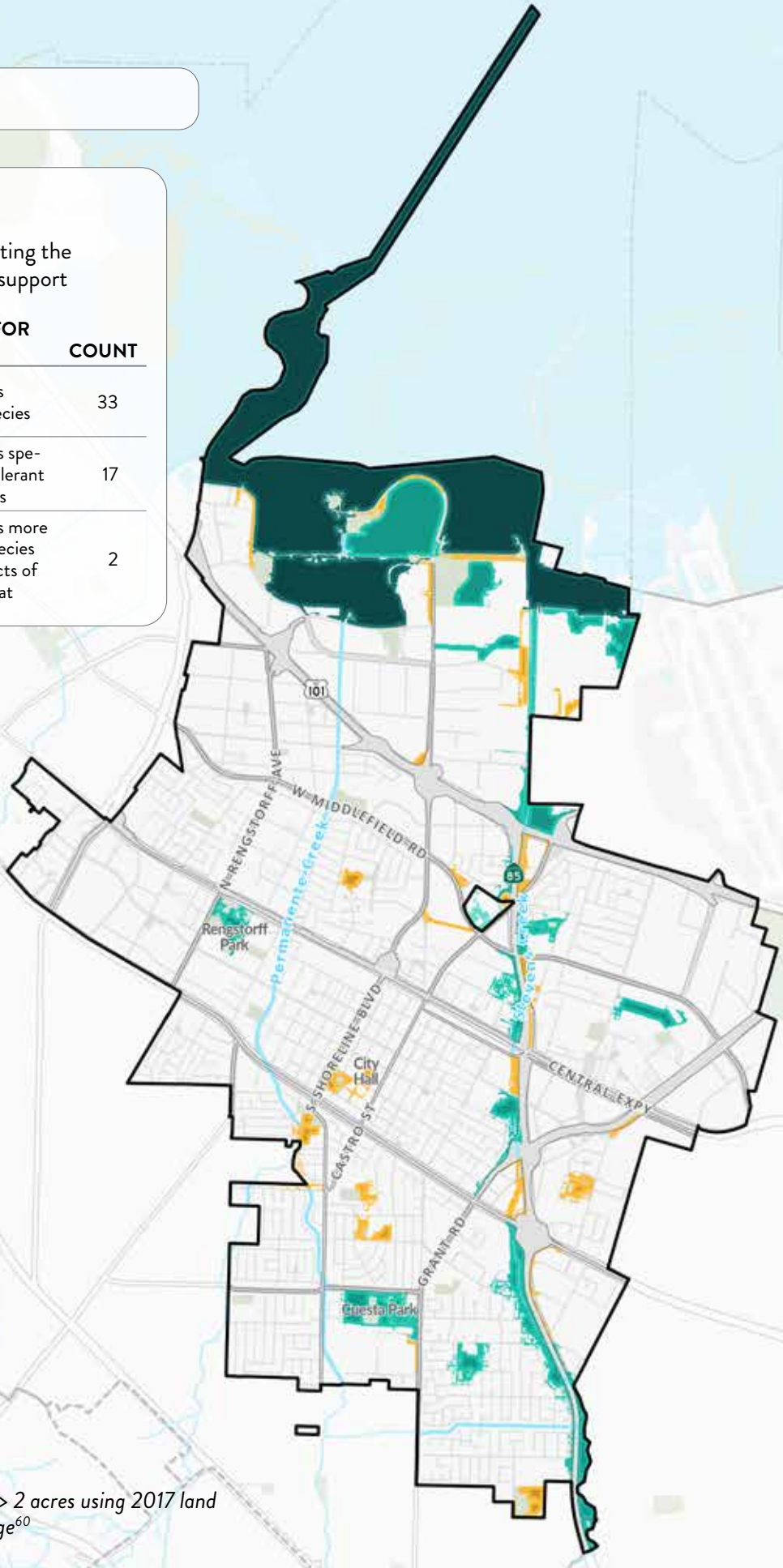
Patches grouped by size reflecting the expected level of biodiversity support

PATCH SIZE	IMPORTANCE FOR BIODIVERSITY	COUNT
Small patch **> 2 acres**	Generally supports urban-adapted species	33
Local biodiversity hub **> 10 acres**	Generally supports species moderately tolerant of urban conditions	17
Regional biodiversity hub **> 130 acres**	Generally supports more urban-sensitive species requiring large tracts of consolidated habitat	2

PATCH CORE AREA

Amount of interior area that is more sheltered from urban influences and disturbances at the patch "edge"





N

0 0.5 1 Miles

Identified consolidated tracts of vegetation > 2 acres using 2017 land cover data[59] and landscapemetrics R package[60]

CONNECTIONS | FEATURES THAT FACILITATE THE MOVEMENT OF PLANTS AND ANIMALS BETWEEN PATCHES

- **Streets and highways are generally the greatest barriers to wildlife movement**, both fragmenting the landscape and increasing the risk of wildlife vehicle collisions.
- **Virtually all of the most important sites for improving connections overlap with bikeways and trails**, highlighting opportunities to pair biodiversity-support strategies with other City projects, such as roadway and recreation amenity improvements.
- **Stevens Creek is both a major landscape connector for people and wildlife and flanked by a major barrier**, California State Route 85. This key corridor deserves more detailed assessments to better understand the threats and opportunities for better connections.
- **Permanente Creek did not emerge as a priority for improving connections in this analysis**, likely due to its current condition, being narrower and less vegetated and having fewer surrounding patches than Stevens Creek. However, other regional analyses have demonstrated its importance for urban wildlife support.[61]

The City has housing and development projects scheduled in some of these high-priority areas. These results are not intended to impede those projects, and in fact, the projects offer an opportunity to apply strategic landscape improvements in tandem with their design and implementation.



Stevens Creek Trail. Photo courtesy of the City of Mountain View.

CONNECTIONS

PRIORITY AREAS FOR IMPROVING CONNECTIONS

Areas where addressing barriers to movement could have the greatest impact on improving landscape connections

HIGH PRIORITY



- Existing bikeways
- Funded or planned bikeways
- Trails
- Creeks
- Patches

N

0 0.5 1 Miles

Used Barrier Mapper[62] to analyze 2017 land cover,[59] impervious surfaces,[63] roads,[64] bikeways,[65] wetlands, and open water[39]

MATRIX QUALITY | LEVELS OF BIODIVERSITY SUPPORT BETWEEN EXISTING PATCHES AND CORRIDORS

- **Many of the U.S. Census blocks with the most tree canopy and other vegetation cover are in the inner core of residential areas**, further from major highways and commercial zones, demonstrating how residential landscaping and street trees can improve the urban matrix for biodiversity.
- **The urban matrix surrounding some patches have particularly low tree canopy and vegetation cover**, resulting in these patches being more isolated and of potentially lower quality for biodiversity.
- **Many gaps in tree and vegetation cover are zoned for mixed-use, commercial, and office/industrial land use, particularly in the western and northern portions of the city**, highlighting opportunities for tree planting and landscape improvement projects.

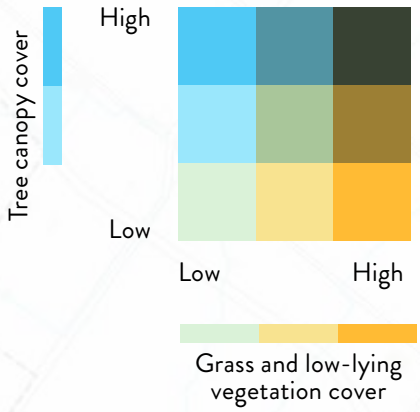


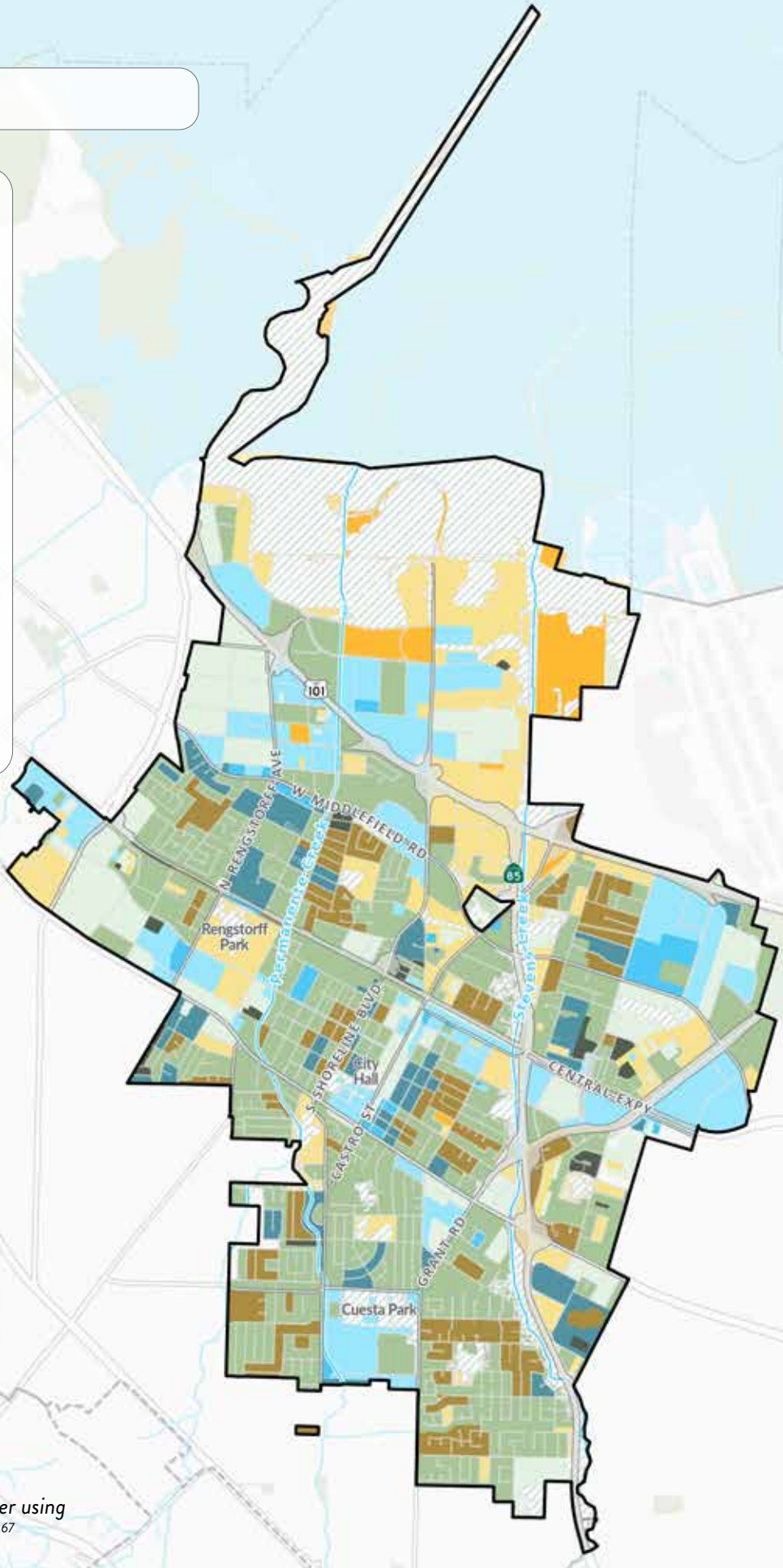
Google Headquarters in Mountain View providing urban matrix habitat.
Photo by Henry Zbyszynski, courtesy CC BY 2.0.

MATRIX QUALITY

TREE CANOPY AND OTHER VEGETATION COVER

Amount of tree canopy and other vegetation (i.e. shrub and herbaceous vegetation, excluding trees) in the urban matrix





Creeks and channels

Patches

N

0 0.5 1 Miles

Calculated total canopy and vegetation cover using 2022 land cover[66] within U.S. census blocks[67]

MATRIX QUALITY (CONTINUED)

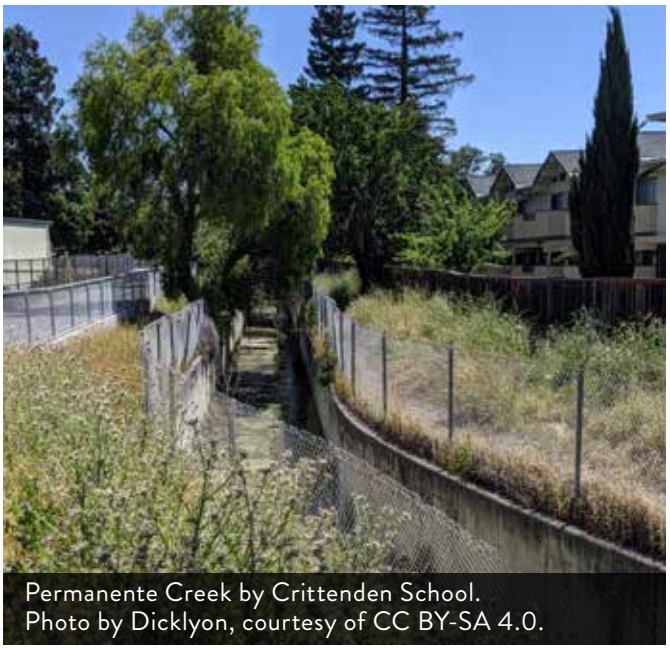
- **Enhancing vegetation in the urban matrix around patches and water features boosts the ecological value** of these resources by buffering against urban disturbances and providing key support for urban-sensitive species.
- **The largest high-priority zones for matrix quality improvements surround the Shoreline Regional Park**, though all patches and creeks are surrounded by areas in need of improved matrix quality. Matrix quality improvements should be compatible with the adjacent habitat resource being supported and abide by the established ecological guidelines in other governing plans and documents.



Native flowering plants planted around a parking lot in Mountain View. Photo by Shira Bezalel, SFEI.



Castro Street in Mountain View.
Photo by Eric Fredericks, courtesy of CC BY-SA 2.0.



Permanente Creek by Crittenden School.
Photo by Dicklyon, courtesy of CC BY-SA 4.0.

MATRIX QUALITY

PRIORITY AREAS NEAR PATCHES AND CREEKS

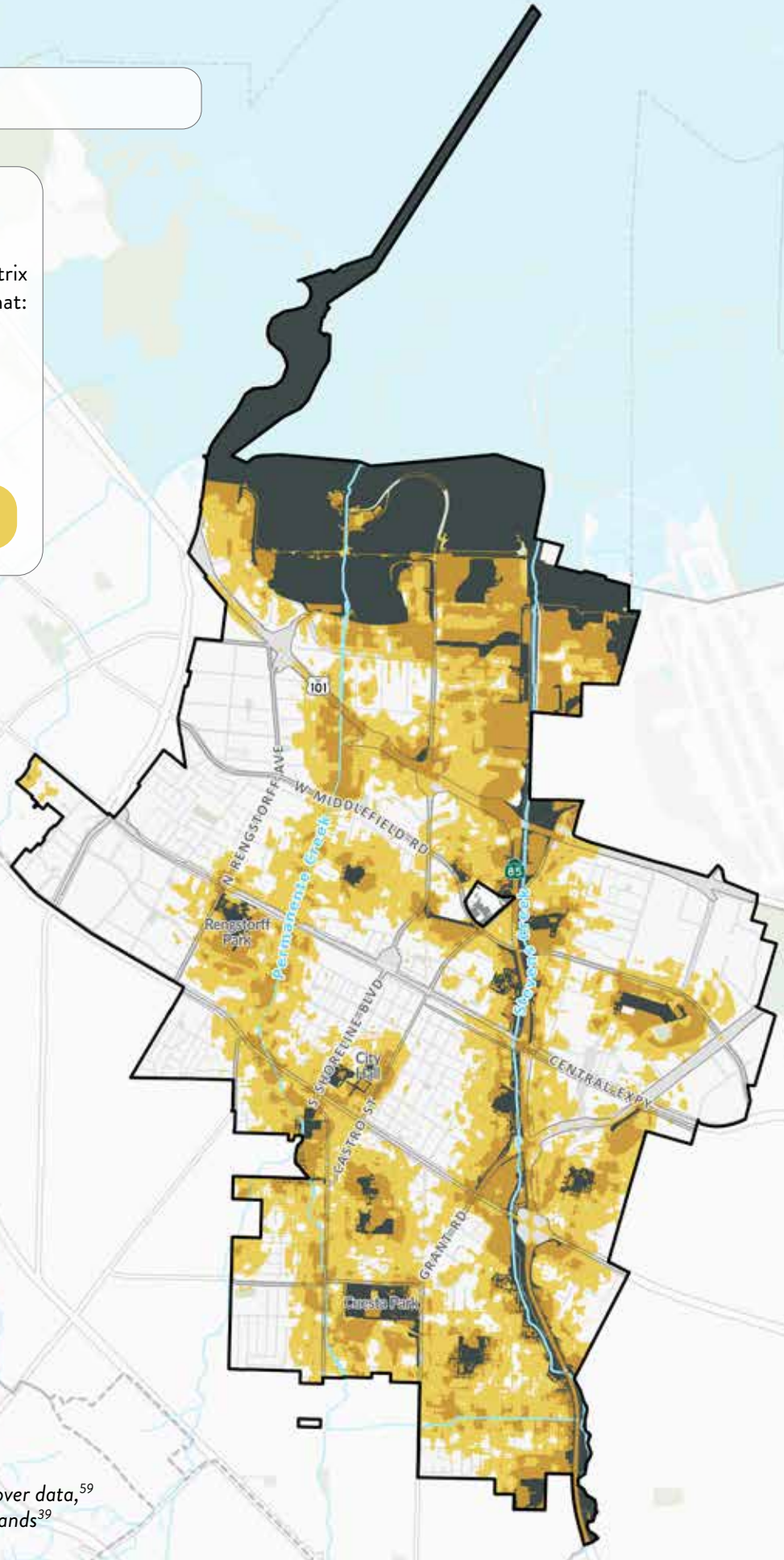
A score indicating priority areas for matrix quality improvements, based on sites that:

1) are located near patches and creek corridors and

2) have low total vegetation cover (including trees, shrubs, and grass)

VERY HIGH PRIORITY

HIGH PRIORITY



Analyzed matrix quality, using 2017 land cover data,[59] around vegetated patches, creeks, and wetlands[39]

NATIVE VEGETATION | PLANT SPECIES THAT HAVE A LONG EVOLUTIONARY HISTORY IN THE LOCAL REGION

- **Stevens Creek has the greatest native vegetation cover among waterways in the city.** Permanente Creek and other smaller channels are largely dominated by non-native vegetation or unvegetated cover, limiting their value for supporting biodiversity, according to the best-available data from 2010.
- **Larger, consolidated tracts of native vegetation are mostly found near the shoreline**, due largely to habitat restoration projects, like at Charleston Retention Basin and Shoreline Park. While not mapped, smaller plots of native landscaping also provide biodiversity support across the city.
- **Most publicly-owned or -managed trees that are regionally-native are in parks and open spaces**, where larger planting areas promote greater tree size, health, and longevity when paired with adequate maintenance. Coast Redwood (*Sequoia sempervirens*) stand out as an exception with extensive planting along major roads, such as the Central Expressway. **3.2 Urban Forest Assessment** further examines regionally-native public trees.

What "native" means and why it matters

Native vegetation includes plant species that evolved in a particular place and are adapted to its climate, geography, and ecosystems. What is considered "native" always depends on the geographic place and scale being considered, such native to a specific site, city, country, or continent.

Plants native to the local region, such as the Santa Clara Valley, are especially important for supporting local wildlife because of their long co-evolutionary relationships. In cities dominated by ornamental landscaping, native plants are foundational to sustaining biodiversity and ecosystem functions, including by providing quality habitat, food, and healthy soils.[58,70–73]

At the same time, as climate conditions change, plant palettes should also account for future climate suitability and vulnerability. Incorporating functional species, or plants native to a broader geography such as northern and coastal California, all of California, or western North America, can improve resilience while also promoting local biodiversity, especially when those plants play similar ecological roles to regionally-native plants.

In practice, plant selection should reflect project goals. Projects that prioritize biodiversity support should consider including a larger proportion of species native to the local Santa Clara Valley (see **Guide B: Plant Lists**), particularly plants that uniquely support wildlife with specialized habitat requirements. Other projects with other priorities or more challenging growing conditions may benefit from a more diverse mix of plants native to other nearby regions, such as California or western North America.

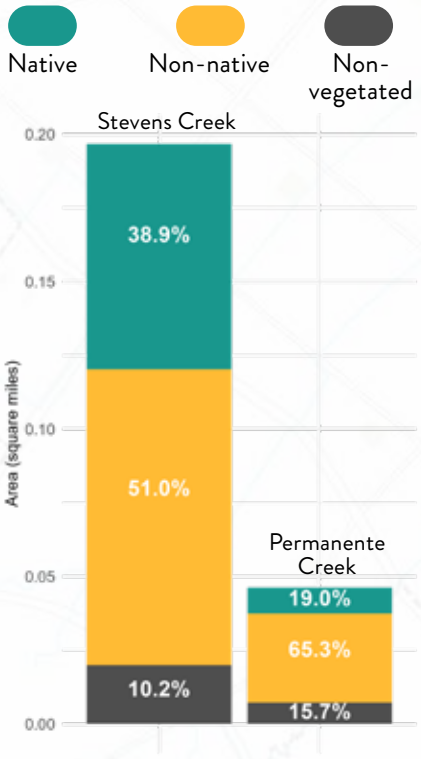


Green Sweat Bee on Bush Sunflower.
Photo by Lauren Stoneburner, SFEI.

NATIVE VEGETATION

PROPORTION OF NATIVE RIPARIAN VEGETATION

Amount of native vegetation in the riparian corridor (creekside vegetation), relative to non-native vegetation or unvegetated area



OTHER MAPPED NATIVE VEGETATION

Mapped areas with consolidated tracts of native vegetation (generally >0.25 acres)

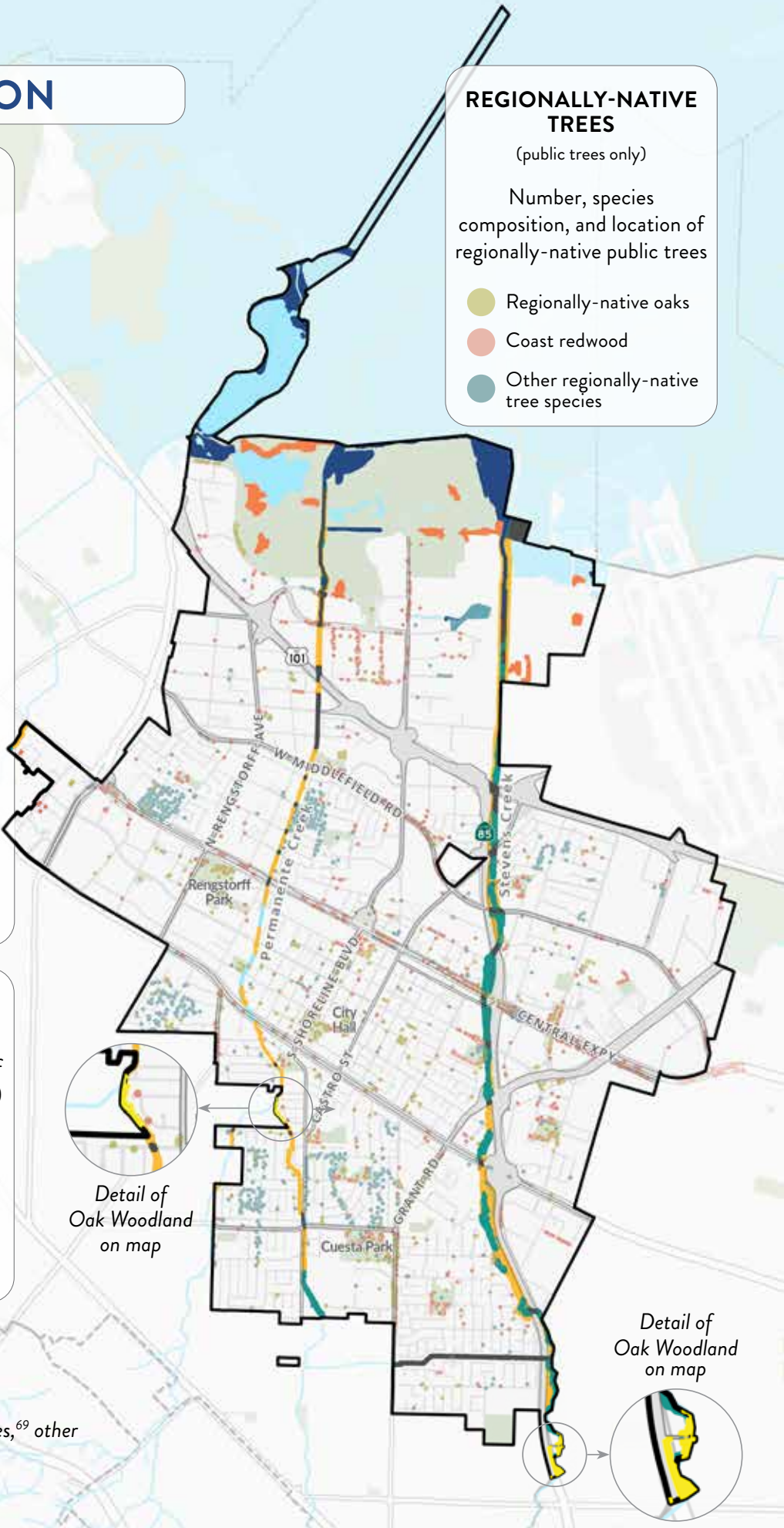
- Emergent Tidal Marsh
- Willow Grove
- Shrubland
- Oak Woodland

REGIONALLY-NATIVE TREES

(public trees only)

Number, species composition, and location of regionally-native public trees

- Regionally-native oaks
- Coast redwood
- Other regionally-native tree species



N

0 0.5 1 Miles

Mapping of riparian vegetation,[68] public trees,[69] other tracts of native vegetation[38]

HABITAT DIVERSITY | THE TYPE, NUMBER, AND SPATIAL ARRANGEMENT OF HABITATS

- **Urbanization has led to ecological homogenization**. Comparing historical[33] and modern[38] vegetation maps shows a large decline in native habitat diversity and shows a large decline in the amount and diversity of native habitat in Mountain View..
- **Most remaining vegetated tracts are composed of grasslands, which includes natural turf and non-native grasslands**, with very little representation of other native habitat types.
- **Reintroducing key elements of historical habitats within parks and open spaces can boost urban biodiversity**. For example, natural turf and non-native grasslands can more closely resemble historical Oak Savanna by boosting tree canopy cover above 10%, particularly with oaks and native trees, and stormwater bioretention units could mimic the ecological functions of Wet Meadow or Willow Grove, as at the restored Charleston Retention Basin.





California Vole (top) and Western Pygmy-Blue Butterfly (bottom). Photos by Jerry Kirkhart and Renee Grayson, respectively, courtesy of CC BY 2.0.

Habitat diversity fosters greater biodiversity, creating spaces for more species with specialized needs.

The California Vole and Western Pygmy-Blue Butterfly are two species that require special conditions to thrive in Mountain View.

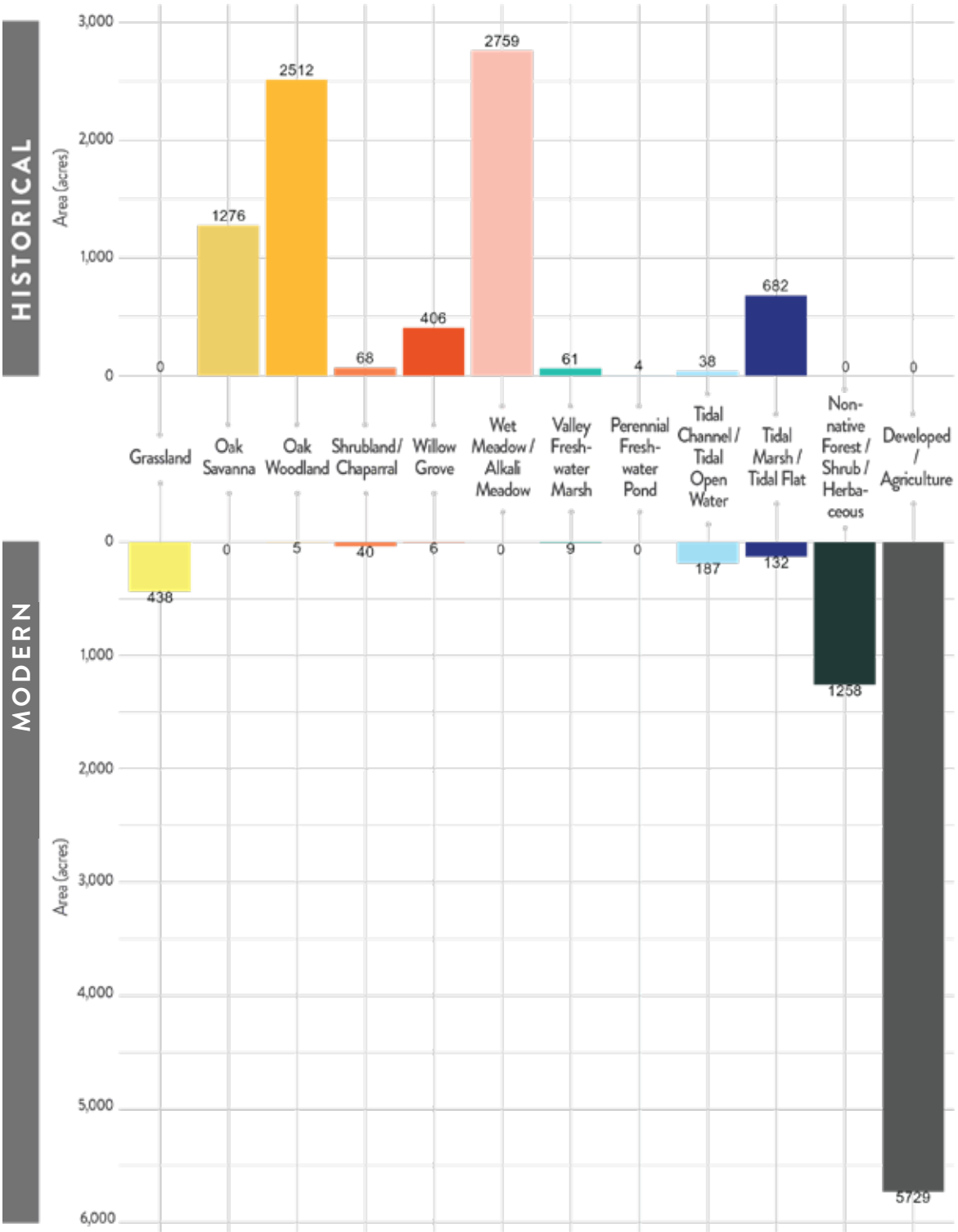
California Voles spend time in wet meadows and salt marshes. While populations typically require habitat patches > 10 acres, they may also subsist in smaller well-connected patches well-stocked with the grasses, sedges, and forbs they need for food.

Western Pygmy-Blues are the denizens of tidal marshes, but with the right salt-tolerant plant species present they can also live along urban roadsides and in vacant lots. Planting patches of salt bush *(Atriplex)* and salt-tolerant forbs like *Chenopodium* for egg-laying and larval food might just elicit a visit. stocked with the grasses, sedges, and forbs they need for food.

HABITAT DIVERSITY

DIVERSITY OF HABITAT TYPES

Number of different habitat types and amount of area covered by each, relative to historical conditions



SPECIAL RESOURCES | FEATURES THAT CAN PROVIDE UNIQUELY IMPORTANT BENEFITS TO WILDLIFE

- **Permanente Creek and Stevens Creek remain important for biodiversity,** both despite and because of surrounding dense urban development. Restoration efforts like daylighting stream sections, softening channels, planting trees, and building green infrastructure can improve biodiversity and water quality along riparian corridors.
- **Mountain View's coastal water bodies (wetlands, lagoons, Shoreline Lake) provide unique habitats and support rich biodiversity.**
- **Large native oaks, especially when clustered, play a vital role in urban biodiversity** by enhancing pollination, facilitating wildlife movement, and mimicking oak woodland habitat that supports many native species.



Stevens Creek. Photo by Shira Bezalel, SFEI.



Permanente Creek by Crittenden School. Photo by Dicklyon, courtesy of CC BY-SA 4.0.

SPECIAL RESOURCES

DISTRIBUTION OF WATER RESOURCES

Mapped wetlands, open water, and creeks

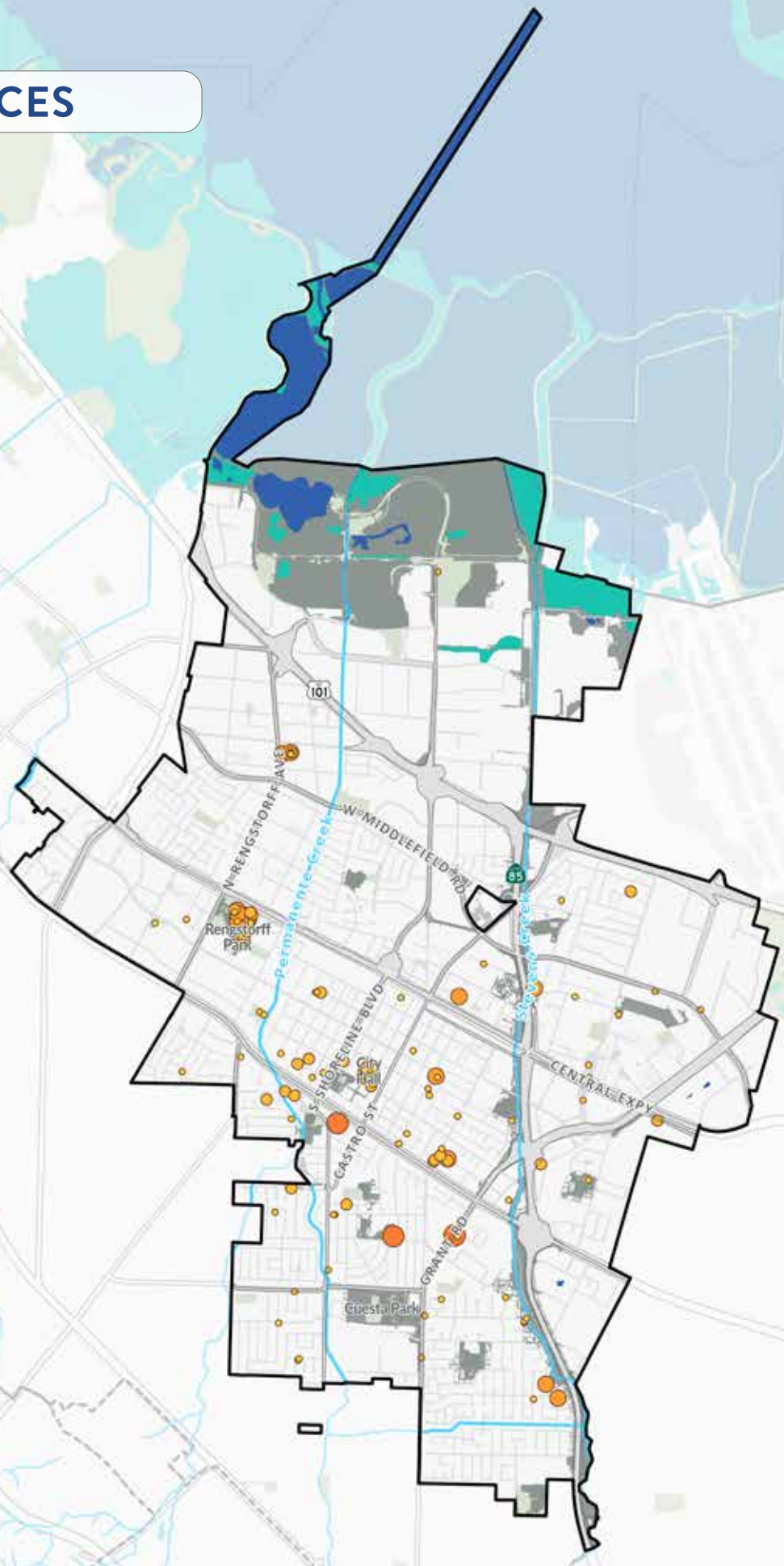
- Wetland
- Open water
- Creek

LARGE, REGIONALLY-NATIVE OAK TREES

(public trees only)

Number and locations of regionally-native oak trees in the public tree dataset with over 20 inches diameter at breast height

- < 20”
- < 30”
- < 40”
- > 50”



- Creeks and channels
- Patches

N

0 0.5 1 Miles

Mapping of water resources[39] and public trees[69]

MANAGEMENT | PRACTICES THAT AFFECT THE QUALITY OF THE LANDSCAPE FOR BIODIVERSITY

- **Timing the planting and maintenance activities of trees, landscaping, and open space around plant growing seasons and the migration and nesting seasons of native and resident wildlife** is important for avoiding unintended negative impacts to biodiversity. The "Seasonal Consideration" section below highlights high-level best practices.
- **Mountain View faces increasing heat and drought risks that threaten biodiversity and water availability**, making it essential to prioritize drought- and salt-tolerant landscaping and tree species, plant native and functional species where appropriate, expand water conservation efforts, and adapt to changing climate conditions.
- **Elements of the built environment, such as artificial light at night (ALAN), highly reflective windows, and road infrastructure, can also pose major threats to wildlife**. Strategic design and management of these features can hugely reduce their impact on biodiversity.



City tree maintenance crew. Photo courtesy of the City of Mountain View.

Artificial light at night and window collisions

A growing number of resources and measures are being developed that can help Mountain View reduce artificial light at night and bird collision risk. Key interventions include:

Lighting

1. Reducing the total amount and intensity of lighting
2. Replacing blue lights with yellow or amber lights
3. Directing light only where it is needed (e.g., with shielded fixtures) to prevent light pollution in sensitive habitat areas
4. Blocking light emittance from windows by shading or turning off interior lights, especially during peak bird migration (see the following table)

Building & Structure Design

1. Installing low- or non-reflective materials (e.g., building facades or windows) and avoiding transparent barriers (e.g., clear and solid balcony railings), or retrofitting these surfaces with available treatments to improve visibility
2. Monitoring bird strikes to identify high-collision locations and prioritize action

Sources: 74–82

Several Bay Area cities have incorporated bird safety guidance[83,84] or regulations and permitting.[85–89] In Mountain View, bird safety requirements are included in both the North Bayshore Precise Plan and the East Whisman Precise Plan.

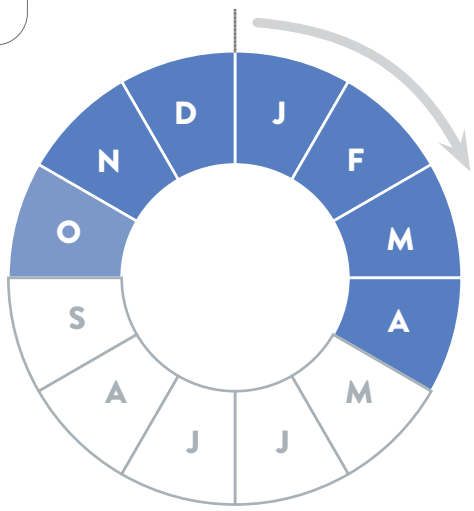


Artificial light at night in the San Francisco Bay Area, shown from the International Space Station in December 2012. Photo courtesy of ESA/NASA.

MANAGEMENT (CONTINUED)

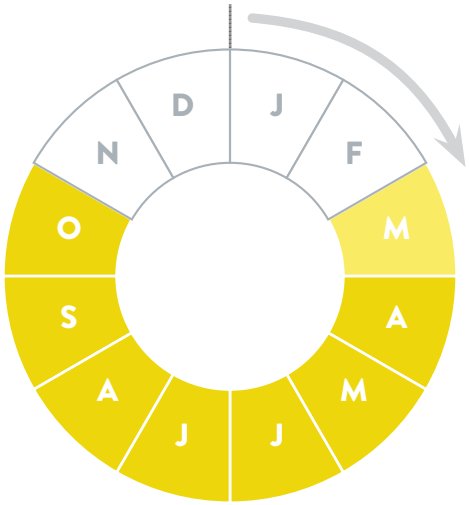
SEASONAL MANAGEMENT ACTIONS FOR BIODIVERSITY

The shaded graphics indicate when to incorporate specific management actions to minimize wildlife disturbance and increase resources for biodiversity. Months shaded in lighter colors indicate the season typically begins mid-month.



WET SEASON | Rainy season triggers the start of seed germination and new growth

- Plant new plantings at the start of the wet season to take advantage of natural irrigation and plant germination cycle
- Remove invasive plants before seed set
- Incorporate the use of pre-emergent treatments (targetting weeds before they emerge) to help reduce pesticide use to avoid polluting runoff

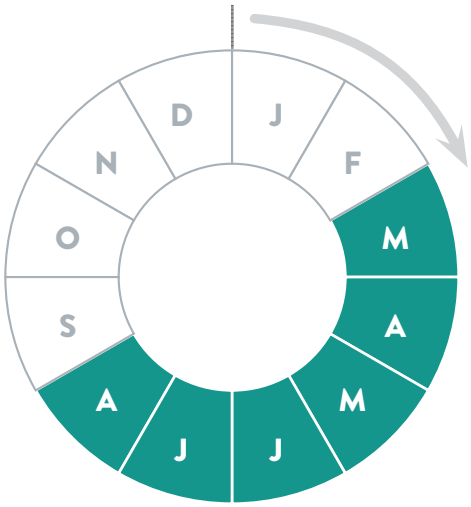


DRY SEASON | Some plants begin to die, go dormant, and drop seeds, while other summer-blooming species continue to grow

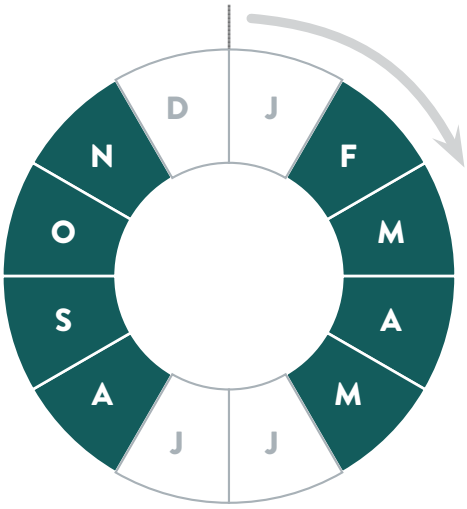
- Water trees and landscaping as they establish
- Established drought-tolerant and native plants should no longer need irrigation
- Use organic pest control in safe and recommended doses
- Just before the wet season, prepare sites for planting, including soil health amendments, decompacting soil, site clearing, and lawn removal

BIRD BREEDING SEASON

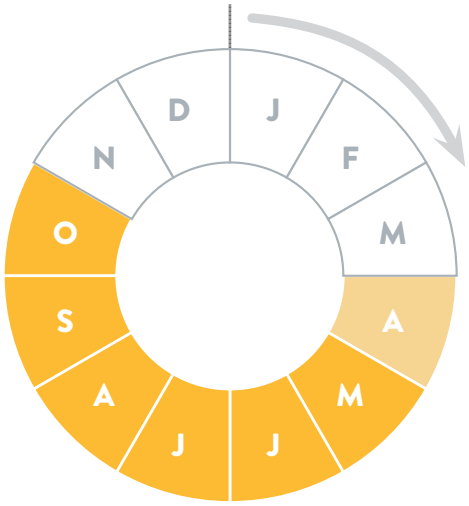
- Schedule tree and shrub maintenance between September and February (outside of breeding season) when feasible to reduce impacts to nesting birds[90]
- Provide and maintain bird baths where feasible
- Retain logs/dying trees for cavity-nesting birds



BIRD MIGRATION SEASON



- Minimize the area, proportion, and intensity of lit windows and outdoor lighting during migration, especially during peak spring migration in Mountain View (around the third week of April)[91]
- Provide native plants with seeds and fruits
- If using bird boxes, place them in the fall or winter, before spring breeding begins, perform annual cleaning and maintenance, and consider placing predator guards

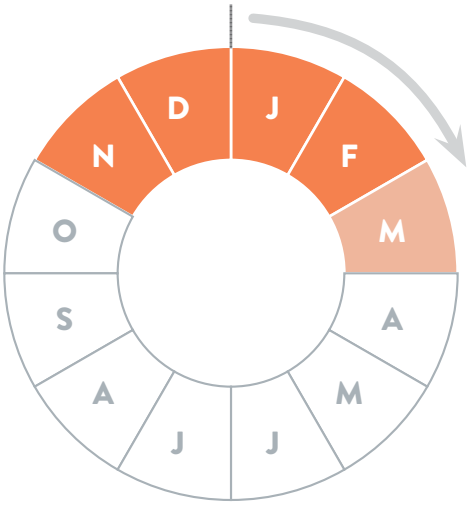


MONARCH BUTTERFLY BREEDING AND MIGRATION SEASON

- Offer native milkweed (where milkweed is suitable) and a diversity of flowering nectar resources
- Avoid maintenance of Monarch habitat, especially mowing and cutting back milkweed
- Avoid applying pesticides, herbicides, and chemical treatments to Monarch-supporting landscaping

MONARCH BUTTERFLY OVERWINTERING SEASON

- Provide food resources for overwintering birds and insects: plant native plants that flower or fruit in the winter, such as coffeeberry, manzanita, and toyon; if using bird feeders, clean and maintain them to avoid transmitting disease
- Minimize clearing leaf litter, which supports soil health and insects, an important food source for overwintering birds
- Near Monarch Butterfly and bird overwintering sites, consult with an ecologist to advise wildlife-friendly maintenance



3.2 Urban Forest Assessment

The urban forest is a vital part of creating livable cities for both people and nature. Among their many benefits, trees provide cooling shade, infiltrate stormwater, capture pollutants, promote human health, support insects and birds, and enhance beautiful spaces. Effective urban forest management, through species selection, placement, site preparation, and maintenance, fortifies the health, size, and lifespan of city trees, which in turn maximizes their benefits.

To assess the current state of the City of Mountain View's urban forest, this section examines the following elements of urban forest health, value, and resilience:

TREE CANOPY COVER • **the area covered by tree leaves, branches, and stems**

Mapping tree canopy cover, expressed as the percent of land area covered by trees, across public and private spaces helps identify areas in need of greater tree canopy to allocate resources effectively.

These analyses used a land cover dataset representing conditions in 2022[66] and a 2021 dataset estimating potential available planting space, which coarsely excludes impervious cover, bare soil, and areas with active uses like fields and utility corridors.[92] Because the available planting space assessment does not account for site-specific conditions or land ownership, further local assessments are required to further assess feasibility. The Baylands and Shoreline Park were largely excluded from tree canopy analyses (see "Special Considerations for the Baylands and Shoreline Park" below for more information).



Birds-eye view illustration of the tree canopy cover. *Tree canopy cover shown here includes both private and public trees, in a neighborhood of Mountain View.*

PUBLIC TREE COMPOSITION • **the number, type, and size of trees owned or managed by the City, largely on parks, streets, or City property**

The City tracks its public trees, recording each tree's species, size, and location. The public tree dataset excludes private trees, such as those within schoolyards, residential backyards and commercial landscaping. This assessment analyzes the composition, distribution, and planting patterns of public trees across the city.

THREATS TO THE URBAN FOREST • **critical urban forestry threats and opportunities**

This section identifies some of the most prominent urban forest stressors that are important to manage and mitigate.

BENEFITS OF TREES • **summary of expected benefits from Mountain View's trees**

While all trees in the urban forest provide benefits, the quantitative component of this assessment focuses only on public trees due to data availability. Other benefits not quantified are also described. The results provide guidance for how to best manage the urban forest and ensure its long-term viability in the city.



Important differences between public and private trees

Private trees—those on privately-owned and -managed land—contribute uniquely to the urban forest's diversity and benefits. Within a single city, public and private trees have been found to differ greatly in species richness, size, and abundance.[93] Nevertheless, the vast majority of municipal tree inventories, including Mountain View's, only survey public trees. Collecting detailed data on private trees is more challenging and costly.

The City manages less than half (roughly two-fifths) of Mountain View's tree canopy cover, including public trees that are privately-owned and publicly-managed, while the rest is privately managed. This relatively even split between public and private stewardship of the city's tree canopy underscores the vital role of bolstering both the City's urban forestry efforts and enhanced community partnership and communication. While the Tree Canopy Assessment examines tree canopy cover found on both private and public land, the Public Tree Assessment and Benefits of Public Trees are only able to evaluate the composition of public trees and the benefits they provide with the available public tree data.

It is valuable for the City to understand the health and composition of its public trees, which the City has the autonomy to manage and plan for future plantings. The City is also committed to supporting the private sphere of its urban forest, such as through tree distribution programs, education, and outreach, as discussed further in **5.2 Vision to Action**. Although this Plan is not able to examine private trees with the same level of detail, the health and management of private trees are of great value and interest to the city, as people and biodiversity both benefit greatly from trees on private land.

TREE CANOPY ASSESSMENT

Mountain View and its Neighborhoods

- **The city's canopy cover has increased by nearly two percentage points since the 2013 estimates** published in the 2015 Community Tree Master Plan.[94] The recent 2022 tree canopy cover estimate is based on the most up-to-date land cover data available.[66]

2013	2017	2022
17.7%	18.9%	19.5%

Sources: [59,66,94]

- **As an urbanized city with goals and mandates to further increase density and housing, canopy cover aspirations must remain balanced with other priorities.** Aligning tree planting, care, and protection with broader goals will help the city maximize tree health, longevity, and benefits for both nature and the community, while poor coordination risks undermining past and future investments.

Special tree-planting considerations for the Baylands and Shoreline Park



Shoreline Park. Photo by Don DeBold, courtesy of CC BY 2.0.

The Baylands and Shoreline Park have a unique set of circumstances influencing tree-planting opportunities and goals:

- The natural shoreline historically had very few trees (see **2.1 History**), so habitat management goals will often exclude tree-planting.
- Trees often provide critical habitat for sensitive species, but the Park's proximity to the shoreline poses limitations, where trees' potential to create perches for predators increases the risks of predation on other vulnerable tidal marsh species.
- The park's location atop a closed landfill and its use as a golf course also greatly reduce the potential for tree planting.

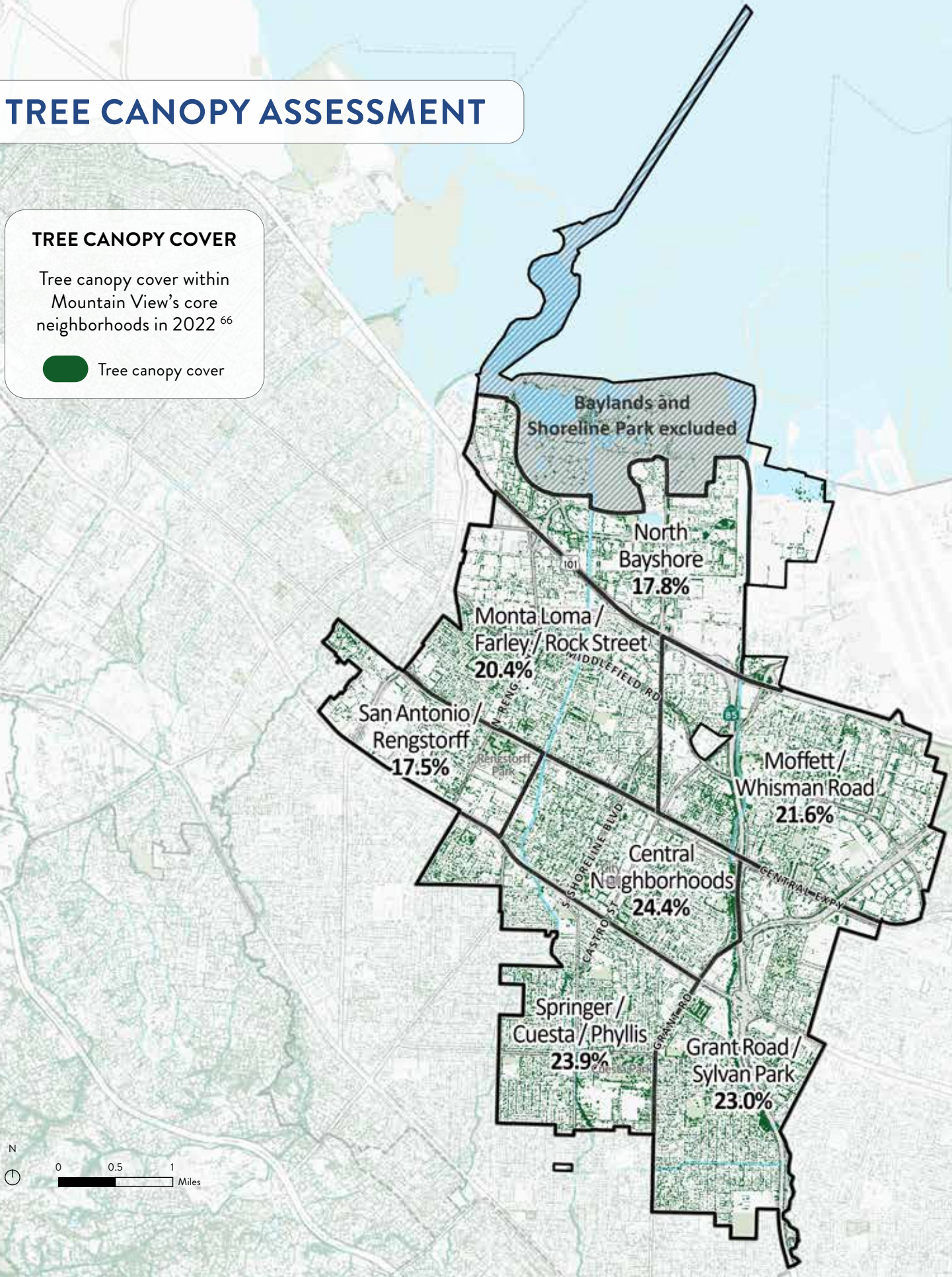
For these reasons, the Baylands and Shoreline Park have been largely excluded from tree canopy analyses. The City's Shoreline Wildlife Management Plan provides guidance on how to manage these tradeoffs specific to the shoreline's natural resources.[10]

TREE CANOPY ASSESSMENT

TREE CANOPY COVER

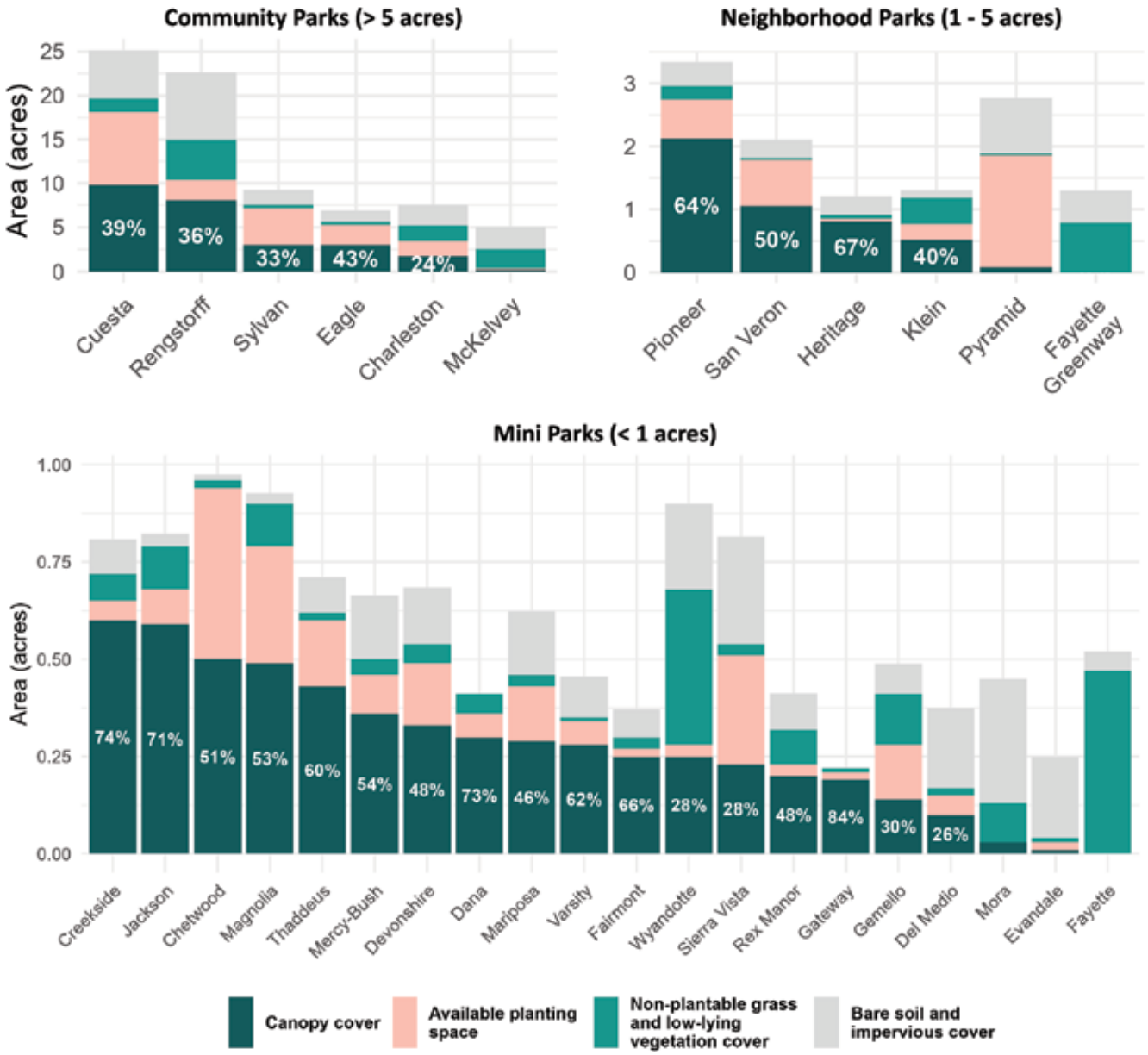
Tree canopy cover within Mountain View's core neighborhoods in 2022 [66]

Tree canopy cover



Parks

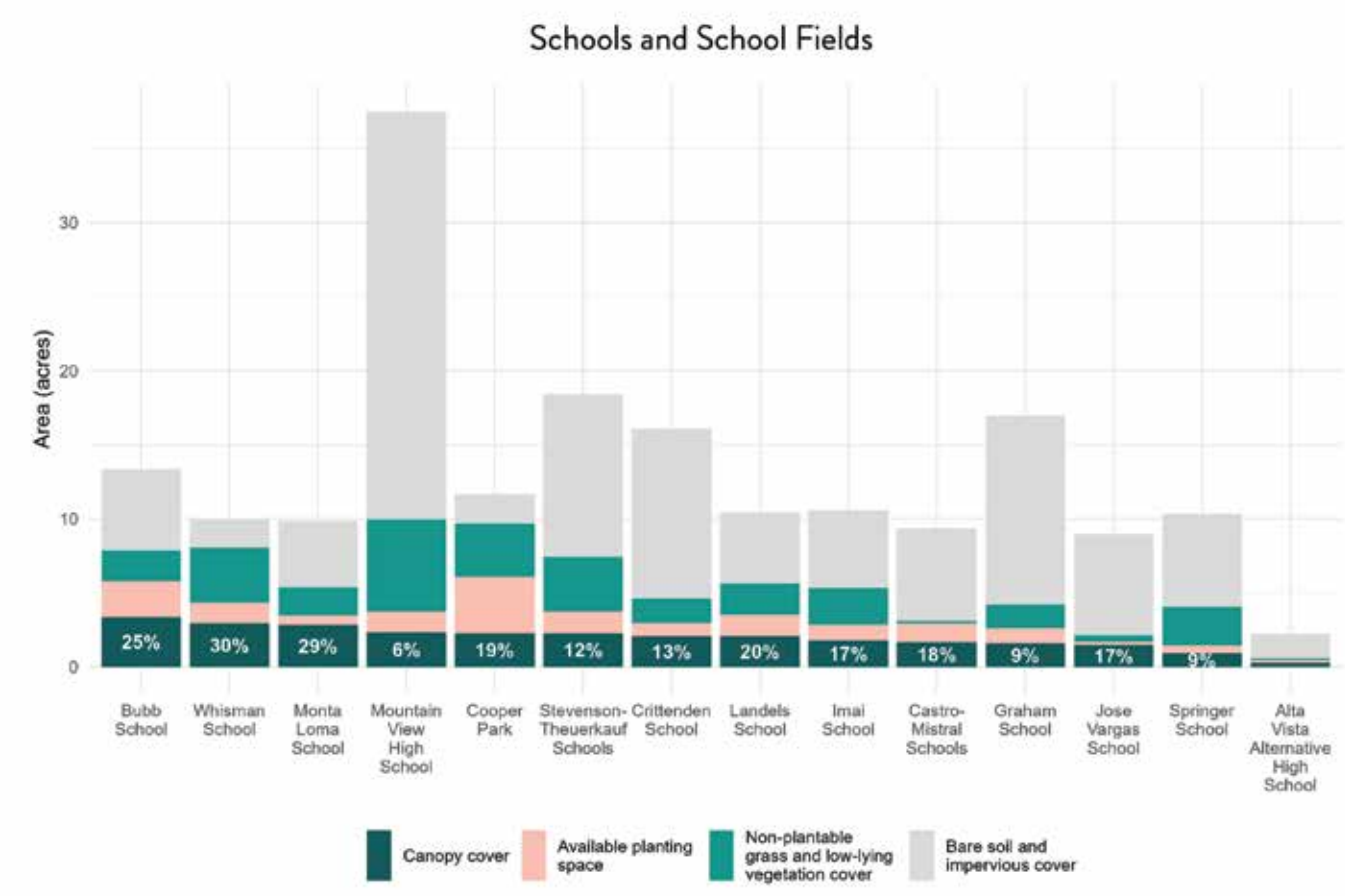
- **The city's 36 parks (excluding school fields) offer strong opportunities to plant trees** for shade, recreation, and biodiversity support.
- **Parks across the city average 39.1% tree canopy cover**, without accounting for their size, ranging greatly from no detectable canopy cover in the recently-opened Fayette Park (opened 2023) to 74.3% canopy cover in Creekside Park.
- **Park size, function, and location influence available plantable space**. For example, parks with extensive high-use recreational turf (natural or artificial) or play areas, such as Del Medio Park, may accommodate less tree-planting than more naturalized parks with walking trails, like Cuesta Park and Annex.



Comparison of tree canopy cover among the city's parks, excluding Shoreline Park, listed in descending order of total tree canopy cover by area. *Mora, Evandale, Fayette Greenway, and Fayette parks all opened after November 2020. Evelyn and Villa-Chiquita mini parks are not included, as they opened after the Plan was drafted.*

Schools

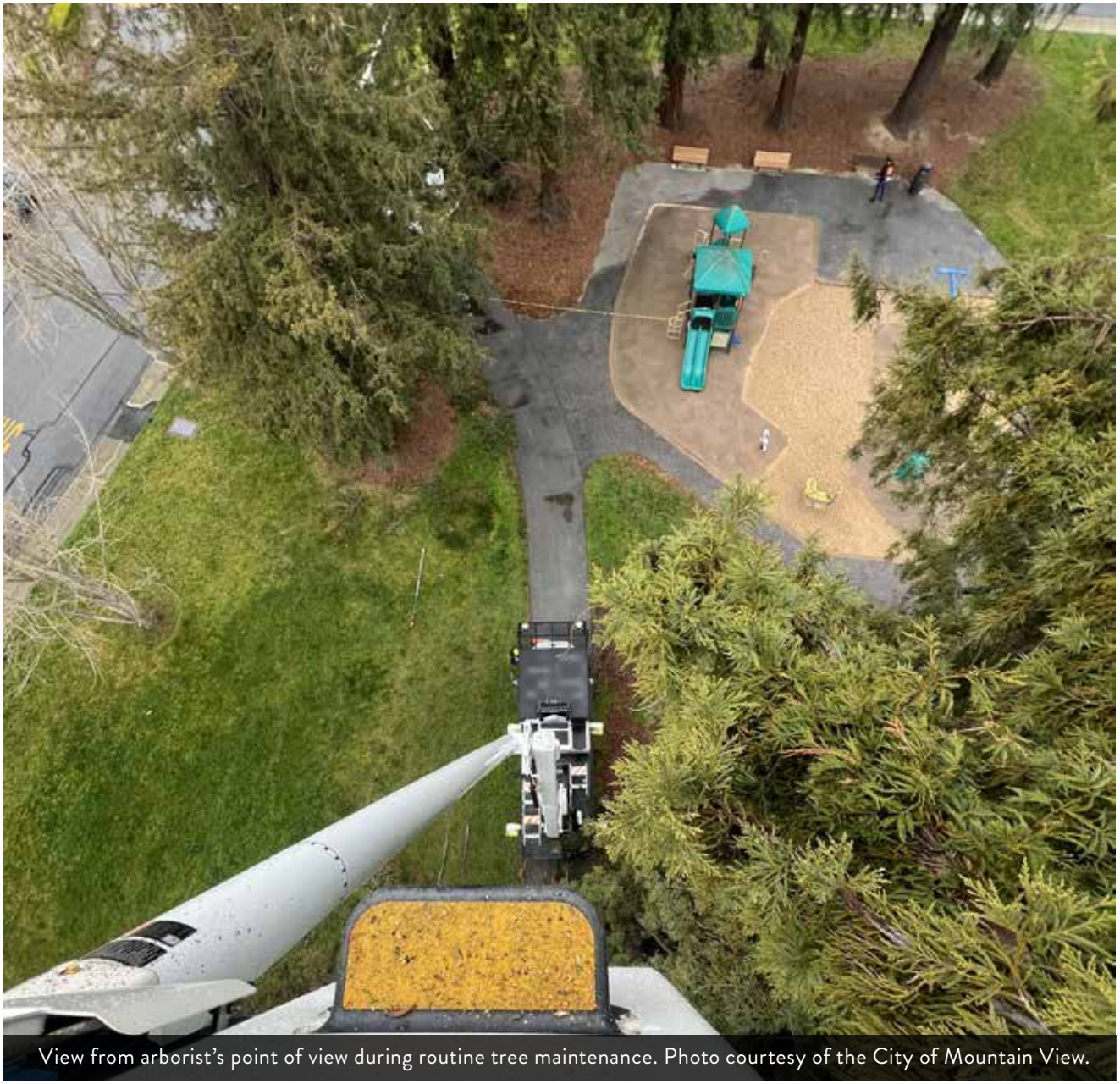
- **Trees provide shaded places for children to play and are associated with numerous health benefits and improved student performance**, making examining canopy cover on public school grounds essential. As the owner of school campuses, the school district is responsible for the planting and maintenance of trees on school properties and ultimately determines all maintenance and programming on school fields and recreational areas. Nevertheless, the City plays a significant role by maintaining and programming these shared-use spaces. The school district's Outdoor Learning Project, which aims to expand green spaces and enhance outdoor learning environments across campuses, is expected to move into construction in summer 2026, further underscoring the importance of planning for future canopy needs.
- **On average, public schools in Mountain View have 14.4% tree canopy cover**, which is 5.1% less than the city average.



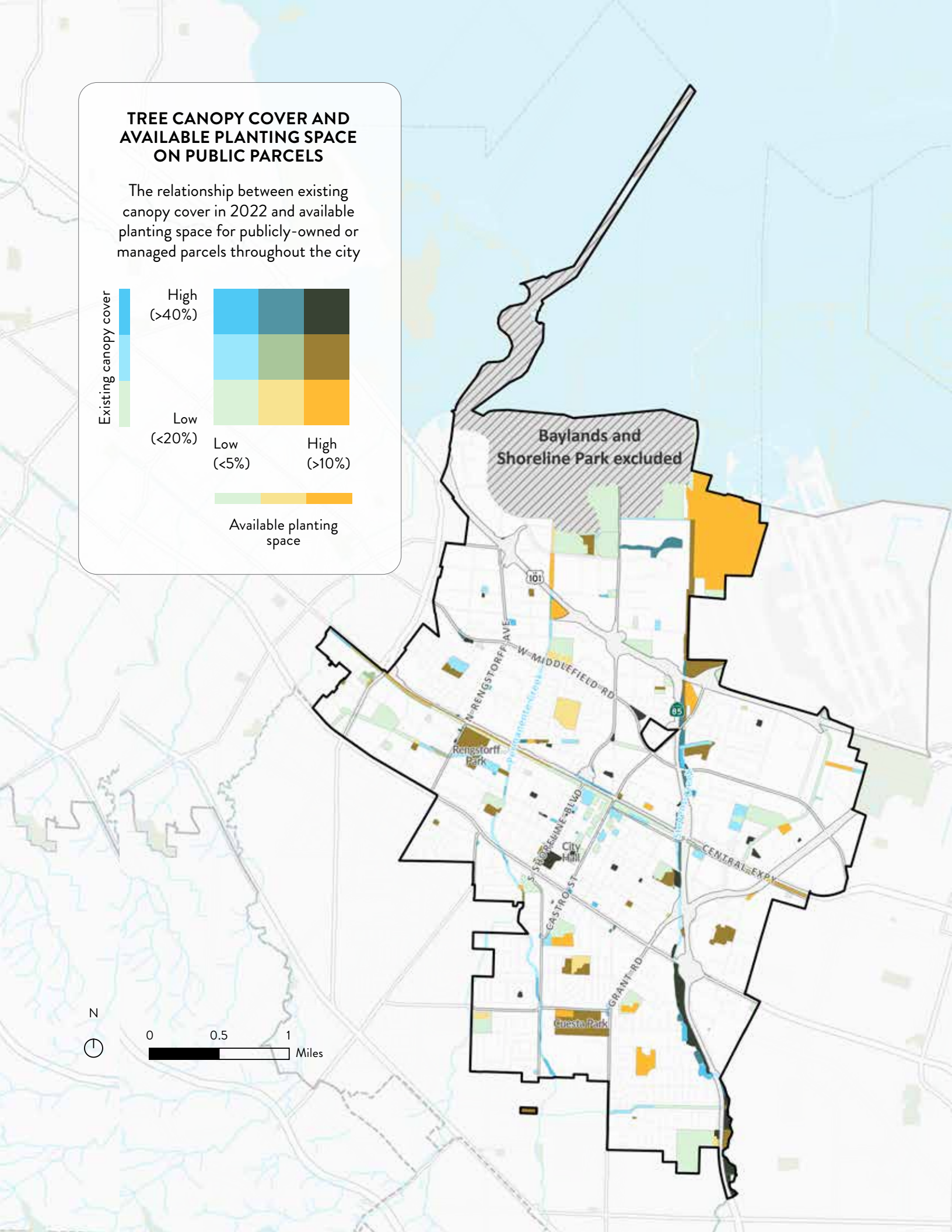
Comparison of tree canopy cover among the City's public school and school field locations. *Schools and school fields are listed in descending order of tree canopy cover in acres.*

Public Property

- **City-owned or managed parcels across Mountain View (e.g., civic facilities, trails, and public rights-of-way) offer important opportunities to expand tree canopy**, since the City can implement tree planting on these parcels without private property constraints.
- **Across the city, average tree canopy cover on public property is 19.5%**, about 1.7% less than that for private property (21.2%).
- **Strategically increasing tree canopy on public parcels with low existing canopy and high available space** can enhance ecological connectivity and distribute benefits across all neighborhoods.



View from arborist's point of view during routine tree maintenance. Photo courtesy of the City of Mountain View.


TREE CANOPY COVER AND AVAILABLE PLANTING SPACE ON PUBLIC PARCELS
The relationship between existing canopy cover in 2022 and available planting space for publicly-owned or managed parcels throughout the city
Existing canopy cover
High (>40%)
Low (<20%)
Low (<5%)
High (>10%)
Available planting space
Baylands and Shoreline Park excluded
101
85
W MIDDLEFIELD RD
N RENGSTORFF AVE
Rengstorff Park
STEVENS CREEK
CASTRO ST
CENTRAL EXPY
GRANT RD
Cuesta Park
N
0
0.5
1
Miles

Land Use Designations

- **The City of Mountain View's 2030 General Plan** maps 24 unique land use designations in five major categories: Residential, Commercial, Office/Industrial, Mixed-Use, and Public/Institutional.
- **Residential areas have the highest average tree canopy cover in Mountain View, while Commercial, Mixed-Use, and Office/Industrial fall below the city average**.



Volunteers planting a street tree in Mountain View. Photo courtesy of Canopy.



Tree canopy on Google Campus.
Photo by Marcin Wichary, courtesy of CC BY 2.0.

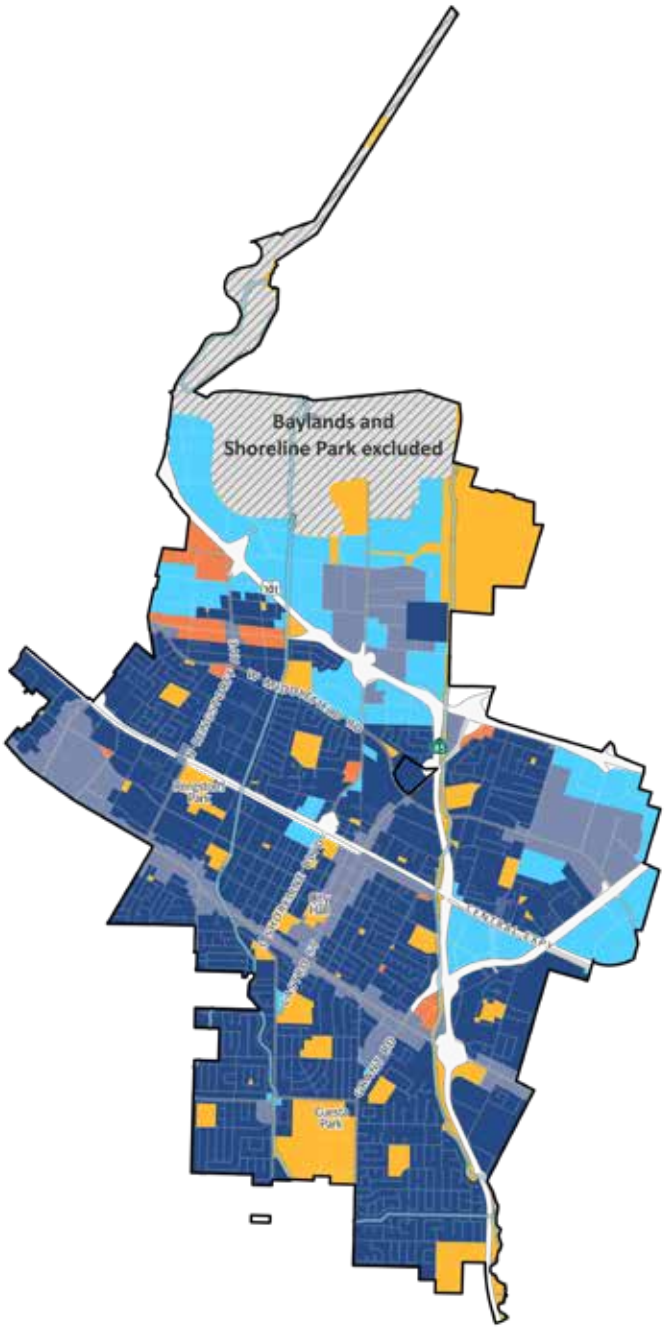


Tree canopy over Mountain View Community Center.
Photo courtesy of the City of Mountain View.

GROUPING	CANOPY COVER %	LAND AREA %*
RESIDENTIAL (R) Low-Density R Medium-Low Density R Medium-Density R Medium-High Density R High-Low Density R High-Density R Mobile Home R	23.7%	55.0%
PUBLIC / INSTITUTIONAL Regional Park Institutional Parks, Schools, & City Facilities	20.7%	13.4%
OFFICE / INDUSTRIAL Office High-Intensity Office General Industrial	18.3%	15.2%
MIXED-USE (MU) Neighborhood MU General MU East-Whisman MU North Bayshore MU MU Center MU Center North Bayshore Downtown MU MU Corridor	17.0%	14.2%
COMMERCIAL (C) General C Industrial / Regional C Neighborhood C	9.3%	2.2%

**Excludes Baylands and Shoreline Park*

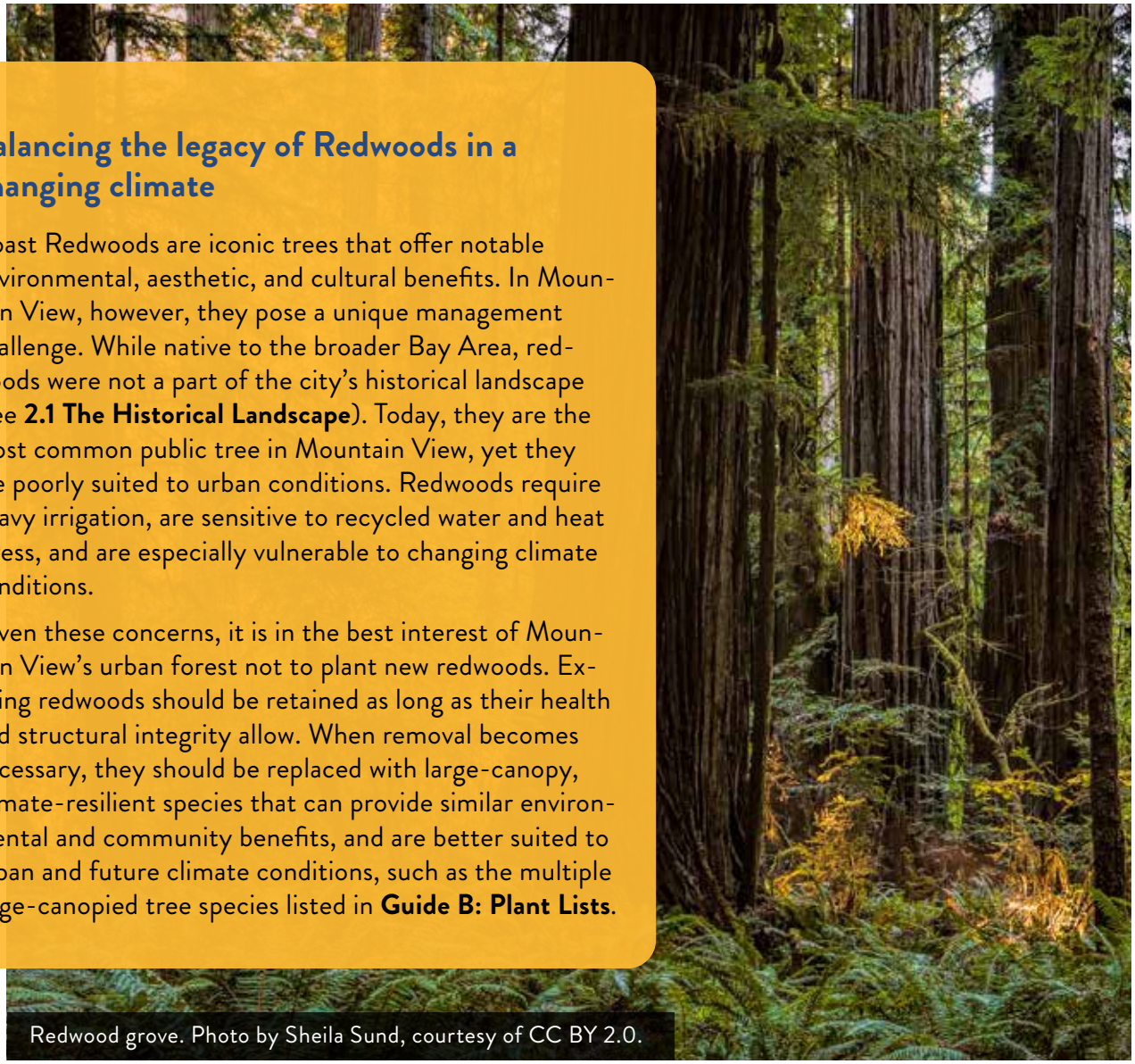
Mountain View 2030 General Plan Land Use Designations and associated tree canopy cover and proportion of the city's total area by land use group.



PUBLIC TREE COMPOSITION

The City keeps a dataset of its publicly-owned and -managed trees to help track, maintain, and strategically enhance its Public Trees. The most recent comprehensive inventory of the city's public trees was conducted in 2015[69] and was used to assess the condition of the urban forest in the City's prior 2015 Community Tree Master Plan.[94] Since then, the City has opportunistically updated the dataset as trees are planted, maintained, or removed, but a full inventory has not been repeated, resulting in gaps and inconsistencies that should be considered when interpreting these results.

The Public Tree Asset Dataset ("public tree dataset") is essential for assessing the composition and health of the public urban forest, providing insights on both current conditions and potential future changes. Records with species-level information were categorized as regionally-native to the Bay Area ecoregion and/or native to California using myriad sources,[1,3-5] described further in **Definitions, Acronyms, and Abbreviations.**



Balancing the legacy of Redwoods in a changing climate

Coast Redwoods are iconic trees that offer notable environmental, aesthetic, and cultural benefits. In Mountain View, however, they pose a unique management challenge. While native to the broader Bay Area, redwoods were not a part of the city's historical landscape (see **2.1 The Historical Landscape**). Today, they are the most common public tree in Mountain View, yet they are poorly suited to urban conditions. Redwoods require heavy irrigation, are sensitive to recycled water and heat stress, and are especially vulnerable to changing climate conditions.

Given these concerns, it is in the best interest of Mountain View's urban forest not to plant new redwoods. Existing redwoods should be retained as long as their health and structural integrity allow. When removal becomes necessary, they should be replaced with large-canopy, climate-resilient species that can provide similar environmental and community benefits, and are better suited to urban and future climate conditions, such as the multiple large-canopied tree species listed in **Guide B: Plant Lists**.

Redwood grove. Photo by Sheila Sund, courtesy of CC BY 2.0.

Species Composition

MOST COMMON SPECIES OVERALL

- **Mountain View's public tree inventory grew by 5.4 percentage points since 2015**, increasing from 26,166 to 27,591 trees, and now includes 246 species and cultivars.
- **The top ten most common species—led by Coast Redwood (Sequoia sempervirens) at 9.6%—make up 55.0% of all public trees**, with recent shifts in species composition including the addition of Callery Pear (*Pyrus calleryana*) and Red Maple (*Acer rubrum*).
- **While the urban forest remains within the minimum recommended diversity limits** (no more than 10% per species, 20% per genus, 30% per family),[95] Coast Redwood and London Plane Tree (*Platanus x acerifolia*) are approaching the species threshold.

Table of the top 10 most common public trees in the city.

Common name	Scientific name	# of individuals	% of public trees
Coast Redwood	*Sequoia sempervirens*	2,655	9.6%
London Plane Tree	*Platanus x acerifolia*	2,509	9.1%
Chinese Pistache	*Pistacia chinensis*	2,195	8.0%
American Sweetgum	*Liquidambar styraciflua*	1,474	5.3%
Southern Magnolia	*Magnolia grandiflora*	1,465	5.3%
Crape Myrtle	*Lagerstroemia indica*	1,378	5.0%
Ginkgo	*Ginkgo biloba*	1,025	3.7%
Callery Pear	*Pyrus calleryana*	907	3.3%
Canary Island Pine	*Pinus canariensis*	782	2.8%
Red Maple	*Acer rubrum*	781	2.8%
Total		**15,171**	
Percent of all public trees		**55.0%**	

NATIVE SPECIES

- **Regionally-native and California-native tree species make up 14.7% of all public trees.**
- **Coast Redwood is the only native species among the top ten most common public tree species and represents 74.5% of the regionally-native species in the city**. Coast Live Oak (*Quercus agrifolia*; 13.5%) and Valley Oak (*Q. lobata*; 2.9%) are the second- and third-most common regionally-native public trees, respectively. Sixteen species make up the remaining nine percent of regionally-native public trees, which are found mostly in parks.
- **Nine regionally-native species promoted in the Updated City Tree List are not recorded** in the public tree dataset (see **Guide B: Plant Lists**).

Percentage of public trees in the city, by native species status. *Regionally-native are those native to the San Francisco Bay Area subregion and Central Coast region of the California Floristic Province, as determined by Jepson eFlora's bioregion classification.2 The list of regionally-native species was further refined and corroborated by considering species native to the United States Environmental Protection Agency Level III Ecoregion of Central California Foothills and Coastal Mountains regions according to the United States Department of Agriculture Plant Database; SelecTree database from California Polytechnic State University, San Luis Obispo; and Calscape, the California Native Plant Society native plants database.*[1,3-5]

Native status	# of trees	% of public trees	# of species
Non-native	23,253	84.3%	207
Regionally-native	3,565	12.9%	19
Other California-native	497	1.8%	10
Unknown species identification	276	1.0%	N/A



Oak in Cuesta Annex. Photo courtesy of the City of Mountain View.

Regionally-native tree species in the public tree dataset. *Nineteen species in the public tree dataset are regionally-native. Nine species that are both regionally-native and recommended in the Updated City Tree List were not recorded in the public tree dataset* ***(Guide B: Plant Lists).***

Common name	Scientific name	# of public trees	% of regionally-native public trees	% of public trees
Coast Redwood	*Sequoia sempervirens*	2,655	74.5%	9.6%
Coast Live Oak*	*Quercus agrifolia*	482	13.5%	1.7%
Valley Oak*	*Quercus lobata*	104	2.9%	0.4%
California Buckeye*	*Aesculus californica*	73	2.0%	0.3%
Northern California Black Walnut	*Juglans hindsii*	62	1.7%	0.2%
Western Redbud*	*Cercis occidentalis*	58	1.6%	0.2%
Western Sycamore*	*Platanus racemosa*	36	1.0%	0.1%
Bay Laurel*	*Umbellularia californica*	25	0.7%	0.1%
Box Elder*	*Acer negundo*	17	0.5%	0.1%
White Alder	*Alnus rhombifolia*	11	0.3%	<0.1%
Bigleaf Maple	*Acer macrophyllum*	10	0.3%	<0.1%
Interior Live Oak*	*Quercus wislizeni*	9	0.3%	<0.1%
Pacific Madrone	*Arbutus menziesii*	6	0.2%	<0.1%
Douglas Fir	*Pseudotsuga menziesii*	5	0.1%	<0.1%
Toyon	*Heteromeles arbutifolia*	3	0.1%	<0.1%
Ponderosa Pine	*Pinus ponderosa*	3	0.1%	<0.1%
Hollyleaf Cherry	*Prunus ilicifolia*	3	0.1%	<0.1%
Blue Elderberry	*Sambucus nigra ssp. cerulea*	2	0.1%	<0.1%
Tanoak	*Notholithocarpus densiflorus*	1	0.1%	<0.1%
Other regionally-native species in Updated City Tree List: **Blue Oak*** (*Quercus douglasii*), **Canyon Live Oak*** (*Q. chrysolepis*), **Oregon Oak*** (*Q. garryana*), **Oregon Ash*** (*Fraxinus latifolia*), **Fremont Cottonwood*** (*Populus fremontii*), **Red Willow*** (*Salix laevigata*), **Shining Willow*** (*Salix lasiandra*), **Arroyo Willow*** (*S. lasiolepis*), and **Sitka Willow*** (*S. sitchensis*)		0	0%	0%
Total		**3,565**		
Percent of all Public Trees		**12.9%**		

** Species listed in Updated City Tree List in* ***Guide B: Plant Lists***

INVASIVE SPECIES

- **Invasive species make up 9.1% of Mountain View's public trees**, with 21 species totaling 2,512 individuals identified by the California Invasive Plant Council.
- **Five species are rated as a "Moderate" risk of invasiveness** due to their ecological impacts and spread potential, accounting for 12.4% of all invasive individuals.

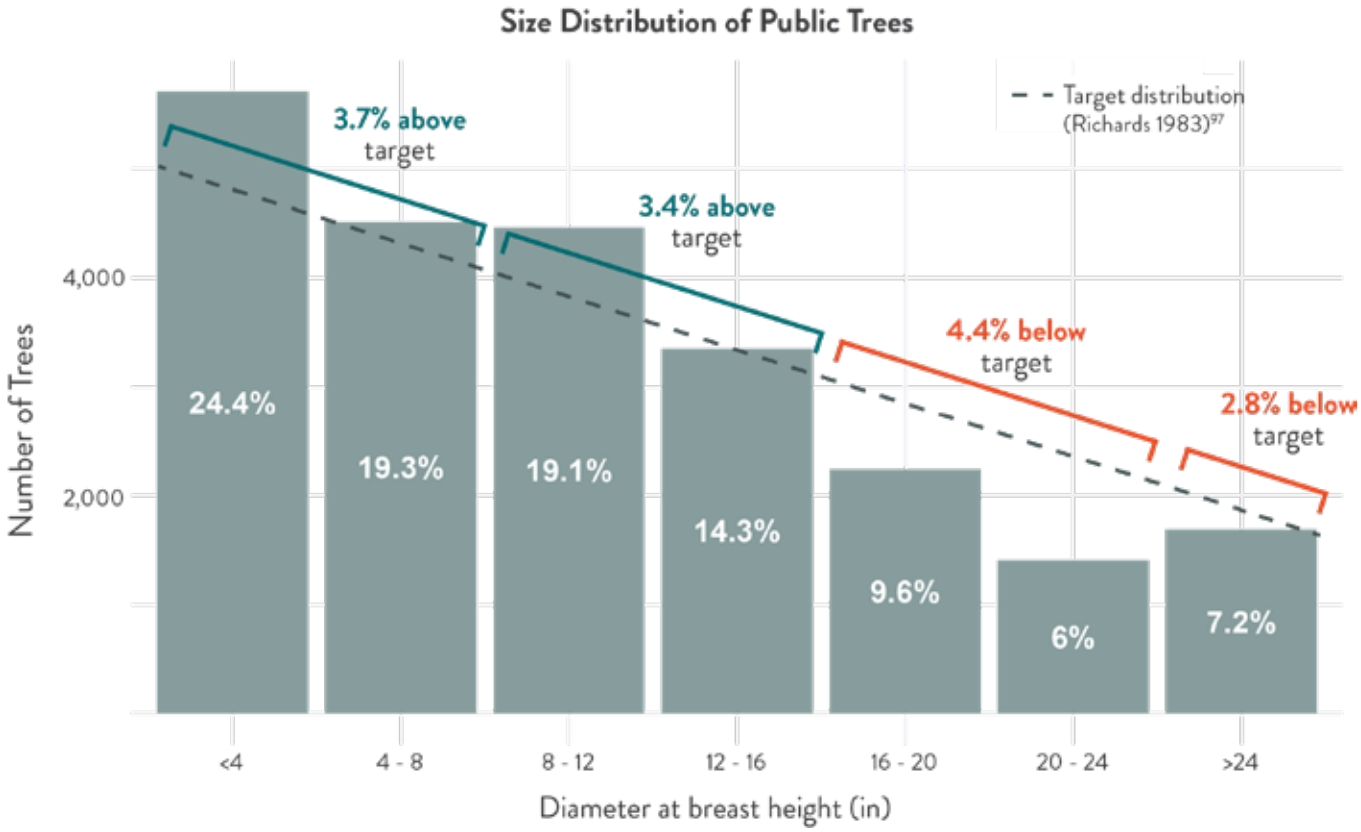
Complete table of invasive tree species in the public tree dataset. *Includes invasive ratings—ranging from lowest (Limited) to highest (High)—and plants at high risk for becoming invasive (Watch) as determined by the California Invasive Plant Council.*[96]

Common name	Scientific name	Invasive rating	# of trees	% of invasive individuals
Callery Pear	*Pyrus calleryana*	Watch	907	36.1%
Cherry Plum	*Prunus cerasifera*	Limited	414	16.5%
Peruvian Peppertree	*Schinus molle*	Limited	208	8.3%
Mexican Fan Palm	*Washingtonia robusta*	Moderate	161	6.4%
Glossy Privet	*Ligustrum lucidum*	Limited	118	4.7%
Mayten	*Maytenus boaria*	Watch	115	4.6%
Chinese Tallow	*Triadica sebifera*	Moderate	95	3.8%
Common Olive	*Olea europaea*	Limited	84	3.3%
Silk Oak	*Grevillea robusta*	Watch	74	3.0%
Canary Island Date Palm	*Phoenix canariensis*	Limited	65	2.6%
Blue Gum	*Eucalyptus globulus*	Limited	64	2.5%
Australian Black-wood	*Acacia melanoxylon*	Limited	41	1.6%
Black Locust	*Robinia pseudoacacia*	Limited	33	1.3%
Cootamundra Wattle	*Acacia baileyana*	Watch	31	1.2%
Victorian Box	*Pittosporum undulatum*	Watch	23	0.9%
Tree of Heaven	*Ailanthus altissima*	Moderate	23	0.9%
Brazilian Pepper Tree	*Schinus terebinthifolius*	Moderate	19	0.8%
River Red Gum	*Eucalyptus camaldulensis*	Limited	17	0.7%
Common Fig	*Ficus carica*	Limited	13	0.5%
		Total	**2,512**	
		Percentage of public tree dataset	**9.1%**	

Size Class Distribution

ALL PUBLIC TREES

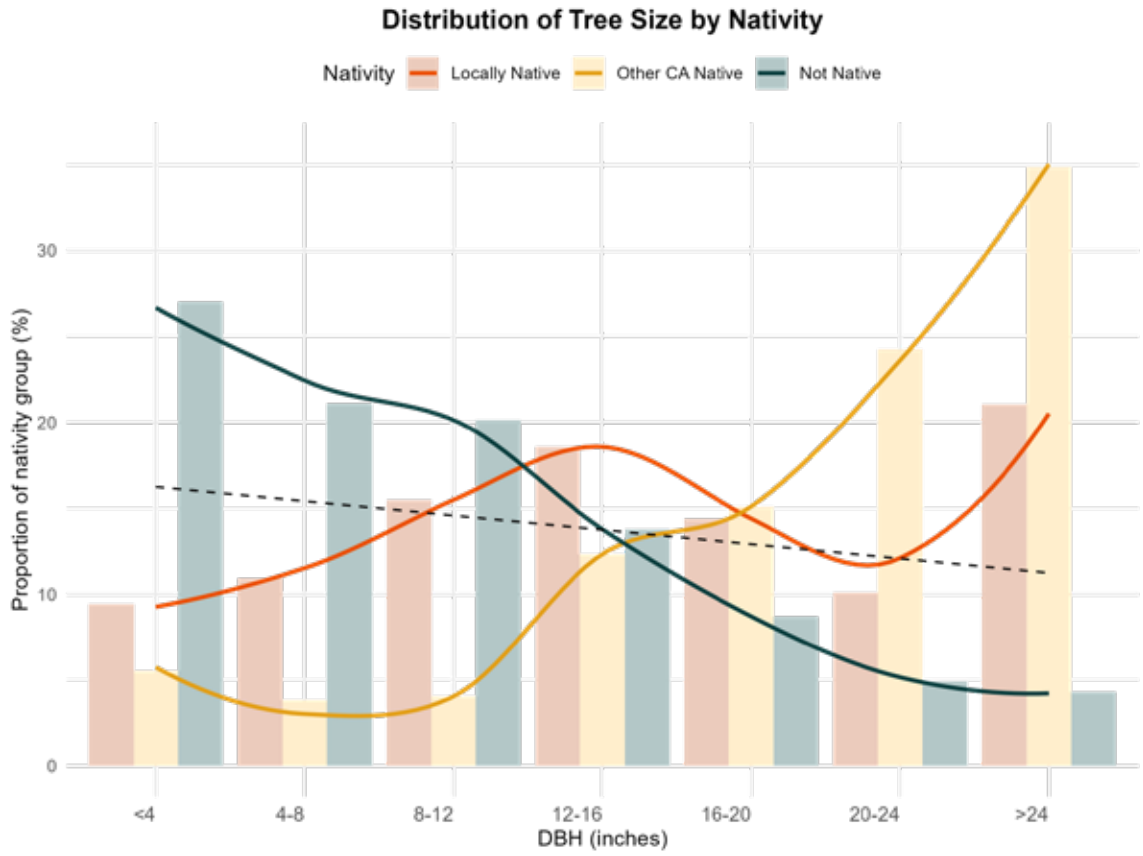
- **Maintaining trees of all ages is vital to sustaining a healthy, resilient urban forest**. Older trees provide immediate benefits, while younger trees will grow to provide canopy cover in the future. Without enough younger trees to replace aging ones, dramatic canopy losses can occur suddenly when many older trees decline and are removed within a short period.
- **Tree size, measured as diameter at breast height (DBH), was used as a proxy for age**. Trees missing DBH records (4,215 trees) were excluded.
- **Relative to recommended standards, the overall size distribution of Mountain View's public trees is relatively on target**.[97] Though largely on track, public trees skew slightly smaller, and therefore younger, than the ideal, with over half of trees under 8 inches in DBH. With care and protection, these younger trees prepare the city for a larger urban forest in the future.
- **Meanwhile, the proportion of larger trees (over 24 inches in DBH), whose larger canopies provide greater cooling, health, and biodiversity benefits, is slightly below the ideal target**. The City should continue prioritizing the protection of its larger public trees, which offer greater environmental benefits and are not easily replaced.



***Distribution of public tree sizes, grouped into 4-inch intervals**, compared to a commonly-referenced target size distribution (overlaid as a generalized reference line), which recommends that 40% of trees should have DBH values less than 8 inches, 30% between 8-16 inches, 20% between 16-24 inches, and 10% larger than 24 inches.*[97]

SIZE BY NATIVE STATUS

- **Native and non-native trees differ in size distribution**. Only ~3% of all small public trees (≤8" DBH) are native, while native species are more common among trees over 24" DBH, indicating an aging native tree population.
- **Planting more native trees where appropriate and monitoring the native-to-non-native ratio** can help the city sustain its native tree presence and local biodiversity and avoid unintentional long-term replacement by non-native species.



Distribution of public tree sizes, grouped into 4-inch intervals, according to their native status: regionally-native, other California-native, and non-native. *This distribution is compared to a commonly-referenced target size distribution, overlaid as the dashed generalized reference line.*[97]

THREATS TO THE URBAN FOREST

Many urban and environmental stressors can cause widespread decline in the urban forest's health, value, and resilience. This section examines some of the most prominent threats. These stressors are likely to intensify and interact over time, magnifying their impact into the future. This assessment highlights the urgent need for proactive, well-funded urban forest management to protect tree health and preserve their benefits for current and future generations.

Various **pathogens and pests** pose some of the biggest threats to the health and sustainability of the urban forest, with the risk of outbreaks growing as the climate continues to change.

Sudden Oak Death (SOD), caused by *Phytophthora ramorum*, has caused widespread oak mortality in the Bay Area. Among the many oak and plant species that are susceptible, Coast Live Oak (*Quercus agrifolia*) and Black Oak (*Q. kelloggii*) are particularly vulnerable.

Bark beetles, including *Dendroctonus* species, continue to pose a significant threat to trees in the region, particularly during periods of drought, affecting conifer species such as Ponderosa Pine (*Pinus ponderosa*) and Coulter Pine (*Coulter pine*).

Invasive Shot Hole Borer (ISHB; *Euwallacea spp.*), recently found near San Jose, is an emerging threat to the city's urban forest and the surrounding Bay Area. California-native trees, such as Box Elder (*Acer negundo*) and Western Sycamore (*Platanus racemosa*), and other common ornamental species are susceptible.

Climate change introduces both acute (e.g., storms, heatwaves) and chronic (e.g., drought) stressors that can weaken trees and make them more vulnerable to pests and disease.

Recent **major storms** have strained the City's tree maintenance budget, diverting resources from proactive tree care. Upfront investment is needed to recover from the City's maintenance backlog and establish a proactive maintenance cycle to ensure the city's public trees are healthier, longer-living, and better able to withstand future storm events.

Development is a City priority, but planning development without sufficient planting space or tree protections can also contribute to declining tree health, greater tree removal, and reduced opportunities to expand the urban forest. Development standards, such as minimum tree cover requirements, minimum soil volumes, and structural soil provisions, can help the City meet its goals in both building more housing and advancing the health and growth of the urban forest.

Reactive tree care and infrequent monitoring increase risk of disease and tree mortality, leading to higher maintenance costs, more removals, and greater safety liabilities over time.

BENEFITS OF TREES

Proper management of Mountain View's urban forest is vital because of the immense and diverse value its public trees bring the community. This assessment describes some of the many benefits and services that Mountain View's urban forest provides, in addition to biodiversity support. The list of benefits highlighted here is not exhaustive, but underscores the far-reaching importance of trees in the city.

While all urban trees provide benefits, this assessment was able to quantify a subset of benefits provided by public trees (City-owned or -managed), using the i-Tree Eco tool[98] to analyze the City's public tree dataset. These value estimates are based on public tree species and size records and may be under-valued—with over 15% of tree records missing tree species or size data. Conservative assumptions were used to avoid over-estimating the benefits provided. Improved data quality and more frequent updates will increase accuracy in the future.

A range of other benefits is also listed to demonstrate that trees provide much more value than can be easily quantified using readily-available tools. Details about these benefits are supported by well-vetted research.

Quantified Benefits of Mountain View's Public Trees

estimated using the i-Tree Eco tool

REPLACEMENT VALUE • the likely cumulative cost of replacing (replanting) each tree with one of the same size and health	**$83.7M ($3K per tree)**
HOW TO IMPROVE REPLACEMENT VALUE: Frequent and prudent maintenance can increase tree value and benefits, improve tree health and longevity, and reduce maintenance, removal, and replacement costs.	
CARBON STORAGE • carbon stored in the tree's woody matter (e.g., trunk, branches, and roots)	**9,323 tons ($4.03M)**
CARBON SEQUESTRATION • carbon dioxide captured from the atmosphere and converted to biomass	**342 tons ($148K) per year**
HOW TO IMPROVE CARBON SEQUESTRATION AND STORAGE: Older and large trees tend to sequester and store more carbon. Planting more trees and promoting tree health, size and growing space, protection, and longevity will keep more carbon stored in the city's urban forest.	
AVOIDED RUNOFF • stormwater runoff that trees slow, absorb, and filter	**1.96M gal ($17.5K) per year**
HOW TO IMPROVE STORMWATER MANAGEMENT: Planting more trees, especially evergreen trees and those with large, dense canopies, around paved and flood-prone areas can help intercept rainfall and infiltrate stormwater runoff, especially when paired with other forms of green stormwater infrastructure.	
OXYGEN PRODUCTION • amount of oxygen trees produce each year	**912 tons per year**



2025 Mountain View Earth and Arbor Day. Photo courtesy of Canopy.

Other Benefits of Mountain View's Public Trees

HUMAN HEALTH, WELLBEING, AND RECREATION

Trees improve air quality by filtering pollutants linked to cardiovascular and pulmonary diseases;[99,100] a 10% increase in canopy cover is associated with a 10% reduction in asthma.[101]

Tree-lined neighborhoods support walkability and physical activity, leading to lower obesity and improved health;[101,102] a 10% increase in canopy cover is linked to a 55% rise in recreational walking.[103]

Exposure to urban trees enhances mental wellbeing, reducing stress, depression, and anxiety, and is linked to fewer antidepressant prescriptions.[104-107]

HEAT MITIGATION & BUILDING ENERGY USE

Urban trees cool cities—especially when canopy cover exceeds 30–40%—by providing shade and improving outdoor thermal comfort, as well as reducing building energy use.[108-111] Urban forest cooling helps prevent heat-related injury,[100] especially during intensifying climate change-driven heatwaves.[112]

CHILDREN'S ACADEMIC PERFORMANCE

Tree canopy on school grounds may boost academic performance, especially for students in underserved communities.[113-114]

TRAFFIC CALMING AND SAFETY

Street trees can slow traffic and improve safety by visually narrowing roadways, enhancing drivers' perception of spatial boundaries, and reducing crashes and injury severity.[102,115-117]

ECONOMY, SAFETY, AND MORE

Trees increase property values, business appeal, and public safety, while also reducing crime and extending pavement life—benefits that highlight the broad value of the city's urban forest.[118-123]

3.3 Policies, Guidance, and Protections

A number of existing policies and resources protect and enhance the natural components of Mountain View's urban ecosystem. Both regional and local guidelines have played an important role in shaping how the city grows while preserving vital green space, habitat, and tree canopy. This section highlights key policies, guidance, and protections that support Mountain View's biodiversity and urban forest. Due to the large number of documents discussed, this section refers to the Biodiversity & Urban Forest Plan, rather than "the Plan."



2025 Mountain View Earth and Arbor Day. Photo courtesy of Canopy.

REGIONAL GUIDANCE

The following policies and documents guide, shape, and facilitate conservation of natural resources and urban environments in the region.

Conservation and Natural Resources

- **Conservation Lands Network 2.0**[124] (CLN) is a science-based regional conservation plan developed by the Bay Area Open Space Council (now Together Bay Area). Its primary purpose is to guide conservation investments and land use planning by public agencies, land trusts, and local governments. Its analyses and target-setting previously focused outside of dense urban environments, but the upcoming CLN 3.0 will offer new strategies for the Bay Area's urban realm. The CLN Explorer Reporting Tool identifies the Mountain View shoreline's important role in supporting broad, regional habitat connectivity and conservation success. Permanente Creek and Stevens Creek are identified as Priority 2 conservation stream targets, and Stevens Creek is predicted to have particularly high species richness according to the recent CLN Connecting Urban Biodiversity analysis.[61]

- **Santa Clara Valley Habitat Plan**,[125] with an update anticipated for 2025, is a 50-year regional plan to protect 18 species and their associated habitats. The plan identifies County priorities for management and monitoring of these species. Although the City of Mountain View is not within the plan's primary area, its shoreline lies partly within the plan's conservation zone for the Western Burrowing Owl, where the plan notes "Moderate-High" potential to increase the nesting population in the shoreline area, and identifies Shoreline Park as a site of high regional importance for the species. The Western Burrowing Owl is temporarily protected as a candidate species for protection under the California Endangered Species Act; protections will become permanent if it is selected.

- The **Santa Clara County Climate Collaborative (SC4) Strategic Plan**[126] sets out a plan whereby its group of diverse stakeholders will build a county-wide network, attract regional funding, and build political will and capacity to combat climate change and protect people and the environment. Four major impact areas are identified: empower communities to build resilience to climate change, achieve net zero emissions, prepare communities for extreme heat and impaired air quality, and eliminate risk from flooding and rising seas. The SC4 includes dozens of regional organizations and public agencies, including the City of Mountain View.

- **Historical Vegetation And Drainage Patterns Of Western Santa Clara Valley**[33] is a technical memorandum describing the historical ecological landscape of the western Santa Clara Valley, including Mountain View situated within the Lower Peninsula Watershed Management Area. The Biodiversity & Urban Forest Plan uses this report to assess landscape change in Mountain View (see **2.1 History**).

- With regard to stormwater, the City of Mountain View is a participating municipality in the Water Resources Protection Collaborative, which adopted Valley Water's **Guidelines and Standards for Land Use Near Streams: A Manual of Tools, Standards, and Procedures to Protect Streams and Streamside Resource in Santa Clara County** in 2007.[127] This resource guides land use in and around stream resources, through various

recommendations and requirements, which are incorporated into various City ordinances and processes. The document is referenced in **Guide A: Urban Landscaping**. The City of Mountain View is also a participating member in the Santa Clara Valley Urban Runoff Pollution Prevention Program (SCVURPPP), and green stormwater infrastructure (GSI) efforts in the city are guided by SCVURPPP's 2019 Santa Clara Basin Stormwater Resource Plan.[128]

- **San Francisco Bay Shoreline Adaptation Atlas**[129] is a report proposing a science-based framework of 30 Operational Landscape Units (OLU) for cross-jurisdictional management and climate resilience and adaptation planning along Bay Area shorelines. Mountain View's shoreline falls within the Stevens OLU, which also includes Moffett Federal Airfield and Mountain View's neighboring cities of Palo Alto and Sunnyvale. The shared historical conditions and modern challenges within the Stevens OLU present opportunities for cooperation and collaboration between Mountain View and its neighbors. The San Francisco Baylands Resilience Metrics Mapbook[130] offers further insight into Stevens OLU, and the forthcoming Bay Conservation and Development Commission's Regional Shoreline Adaptation Plan will provide further guidance on required shoreline planning in Mountain View.

Urban Environments

- **Urban Ecological Planning Guide for Santa Clara Valley**[12] is a planning and design guide to support urban biodiversity planning across the Santa Clara Valley. The guide is relevant to Mountain View's site-scale and city-scale strategies for habitat creation, connectivity, and resilient, multifunctional green spaces. The Biodiversity & Urban Forest Plan's Native Plant List provided in **Guide B: Plant Lists** was derived from this earlier document.

- **Re-Oaking Silicon Valley**[11] highlights strategies and potential benefits of reintroducing native oak habitats to Silicon Valley. The report combines historical and urban ecological research and landscape design guidance, identifying strategies for creating, expanding, and supporting sustainable, healthy urban oak populations. Several strategies related to site selection, appropriate species choice, and long-term stewardship have been incorporated into **Guide A: Urban Landscaping of the Biodiversity & Urban Forest Plan**. Oaks in the region are further protected by State laws and County guidance. The County of Santa Clara has recently proposed an amendment on an oak removal ordinance. While this would be enforced only in unincorporated areas of the County, it would strengthen protections for oaks in the region and could serve as a model for the City.

- Santa Clara County is producing a **Santa Clara County Urban Forest Master Plan** to navigate development and stewardship of trees and green space across the county. The County plan will identify urban forest priorities, challenges, and strategies to address county-level priorities. Its analysis will include Mountain View, and the development of this county-wide resource will offer Mountain View important regional context and funding partnership opportunities, as the City implements the Biodiversity & Urban Forest Plan. The City is involved in the development of the Santa Clara County Urban Forest Master Plan, including through participation in the Santa Clara County Urban Forestry Alliance (a work group of the Santa Clara County Climate Collaborative).

CITY PLANS AND POLICIES

The City has a longstanding commitment to its urban forest, dating back to its first tree care ordinances in the 1960s. Below is an overview of existing plans and policies that influence its biodiversity and urban forest in the city, and their relationship to the Biodiversity & Urban Forest Plan.

General Plan

Mountain View's 2030 General Plan[131] provides Goals and Policies to guide overall changes in the city to achieve its long-term vision, propagating to regulations such as zoning. The General Plan recognizes the importance of native species and protection of the city's sensitive habitat areas, particularly along the shoreline and local creeks, and in the North Bayshore Change Area. It calls for preserving habitat and species as part of an integrated watershed management approach, integration of green infrastructure including green roofs, native landscaping, green street design (such as bioswales and bioretention). The General Plan highlights major policies relating to trees, gardens, and landscaping in Mountain View, including the Heritage Tree Ordinance (see below).

MANDATED UPDATES: Two recent California Senate bills will require open space and wildlife planning updates in the near future:

- **SB 1425 Advancing Climate Resilience through Open Space Updates** requires that general plan elements provide for equitable open space access from a social, economic, and racial equity perspective; climate resilience and other open space benefits; and rewilding opportunities to preserve and enhance natural ecosystems and coordinate mitigation of development impacts. Changes related to SB 1425 are required by January 1, 2026.
- **AB 1889 Enhancing Wildlife Movement and Connectivity Planning** calls for a wildlife connectivity element, and requires that the conservation element consider the impact of development on habitat connections, including identifying connections, permeability, and natural landscapes. AB 1889 importantly recognizes the link between human-dominated environments, climate change, ecosystem resilience, and the public interest, and requires the incorporation of wildlife-friendly measures into standards, policies, and zoning. Changes related to AB 1889 will be required as of Mountain View's next General Plan update.

RELATIONSHIP TO THE BIODIVERSITY & URBAN FOREST PLAN: Many elements of the Biodiversity & Urban Forest Plan directly support the General Plan's Goals and Policies on Water, Wastewater and Stormwater; Climate Change; Green Building; Species and Habitat; Watershed and Floodplain Management; Integrated Pest Management; Streetscapes and Public Spaces; Sustainable Building Design and Development, and Park and Open Space. Goals and policies for the North Bayshore Change Area—particularly those around sustainability and wildlife friendly development—are also in line with the Biodiversity & Urban Forest Plan. The Vision, Goals, and Objectives of the Biodiversity & Urban Forest Plan align with the anticipated General Plan Updates; the Biodiversity & Urban Forest Plan will particularly support the updates through the analyses in **3.1 Biodiversity Assessment** and many of its Actions and Metrics in **Chapter 5 The Plan: Charting the Path.**

Urban Forest Guidance

The **City of Mountain View Community Tree Master Plan 2015** (CTMP) is superseded by the Biodiversity & Urban Forest Plan. The CTMP was adopted in 2015.[94] The CTMP provides a comprehensive 10-year strategy through 2025 to guide preservation, management, and expansion of Mountain View's "community trees", i.e., publicly-managed trees on streets, in parks, and at City facilities. The CTMP provides context and builds on Mountain View's prior urban forestry milestones, including its Tree Ordinance, the City's first Urban Forestry Management Plan (2007), and the City's induction into National Arbor Day Foundation's Tree City USA program (2001). The document also outlines specific objectives for sustainability, species diversity, and increased canopy, **with a canopy cover goal of 22.7% by 2030** and other benchmarks for progress.

RELATIONSHIP TO THE BIODIVERSITY & URBAN FOREST PLAN: The Biodiversity & Urban Forest Plan replaces the CTMP, providing an updated vision and plan for nature in Mountain View that addresses the urban forest in the context of overall biodiversity and urban ecology as a way to meet community needs and priorities. **5.3 Metrics and Targets** revisits certain quantitative urban forest benchmarks set by the 2015 CTMP, and provides status updates on these goals.

Ordinances (see *Mountain View City Code*)

Tree regulations: Tree protections are conferred by the City of Mountain View Code of Ordinances, Chapter 32 - Trees, Shrubs and Plants ("Tree Ordinance"). Article I of the Tree Ordinance provides authority to Parks and Recreation (Sec. 32.3) to plan for, plant, and protect street trees and shrubs. Article I also prevents the City from trimming or removing plants on private property (with specific exceptions), and describes the process for issuing notice to private property owners if such work is planned (Sec. 32.13). Sec. 3.2.14-16 addresses liability, watering responsibilities, and the process for plants that become a public nuisance. Article II - Protection of the Urban Forest ("Heritage Tree Ordinance") aims to protect valuable trees in Mountain View. The Heritage Tree Ordinance defines Heritage Trees by size (trunk circumference), with special protections for *Quercus* (oak), *Sequoia* (redwood), or *Cedrus* (cedar) trees as well as trees declared to be of special value by resolution of City Council.

Other biodiversity-relevant regulations: Mountain View's Park Land Dedication Ordinance (Chapter 41 Park Land Dedication or Fees in Lieu Thereof) provides for a land requirement (Sec. 41.5) of three acres of parks and recreational facilities for each one thousand residents. Table 41.11 defines maintained natural habitat space in the context of privately-owned publicly-accessible (POPA) open space credits. In the Zoning Ordinance (Chapter 36 Zoning), Article X Parking and Loading includes landscaping requirements for parking and loading areas (Sec. 36.32.80.f). Article XI Landscaping sets forth objectives of City landscaping regulations, including aesthetics and land use compatibility, as well as water conservation and public wellbeing. Removal of healthy trees is discouraged (Sec. 36.34.25), and the chapter defers to Chapter 32 regarding Heritage Trees.

RELATIONSHIP TO THE BIODIVERSITY & URBAN FOREST PLAN: The Biodiversity & Urban Forest Plan aligns with the Mountain View City Code, and ordinance amendments can further facilitate its implementation.

Local Wildlife

Shoreline Wildlife Management Plan[10] (SWMP)provides a comprehensive framework for managing and enhancing biodiversity within the 750-acre shoreline area of Mountain View and ecologically important sites outside of Shoreline but within the North Bayshore area. The plan outlines adaptive management strategies to support special status species and nesting birds, while supporting compatible public use and infrastructure for the closed landfill and other utilities.

RELATIONSHIP TO THE BIODIVERSITY & URBAN FOREST PLAN: This document defers to the SWMP within its planning area, and aligns with the City's Shoreline Burrowing Owl Preservation Plan. Its detailed, habitat-specific recommendations complement the Actions in **5.2 Vision to Action** and **Guide A: Urban Landscaping** offered in the Biodiversity & Urban Forest Plan.

2012 Shoreline Burrowing Owl Preservation Plan[132] outlines a long-term strategy by the City of Mountain View to protect and sustain the Burrowing Owl (*Athene cunicularia*) population at Shoreline. The Western Burrowing Owl (*A. c. hypugaea*), which resides at Shoreline at Mountain View and other portions of Santa Clara County, is a special-status species. This plan replaced the City's 1998 Burrowing Owl Management Plan and establishes a structured, holistic approach to owl conservation within a multi-use park setting. The plan provides targeted, species-specific guidance that complements the City's broader biodiversity goals, particularly in protecting at-risk terrestrial species and managing grassland ecosystems.

RELATIONSHIP TO THE BIODIVERSITY & URBAN FOREST PLAN: This document defers to the Shoreline Burrowing Owl Preservation Plan. The City has made important progress since its inception, and the Biodiversity & Urban Forest Plan encourages continued, similar efforts.



Burrowing Owl. Photo by Alan Schmierer, courtesy of CC0.

Schoolyard Greening

In 2023, Mountain View Whisman School District passed the **Climate Change and Green Schoolyard Board Resolution 05-012623,** a green schoolyards and climate change adaptation initiative. A series of preliminary schoolyard designs have been presented to the board, and are undergoing review.

RELATIONSHIP TO THE BIODIVERSITY & URBAN FOREST PLAN: This document commends Mountain View Whisman School District for prioritizing climate resilience and greening, and has identified schoolyards as part of its Native Planting Strategy Zone (see **Guide A: Urban Landscaping**).



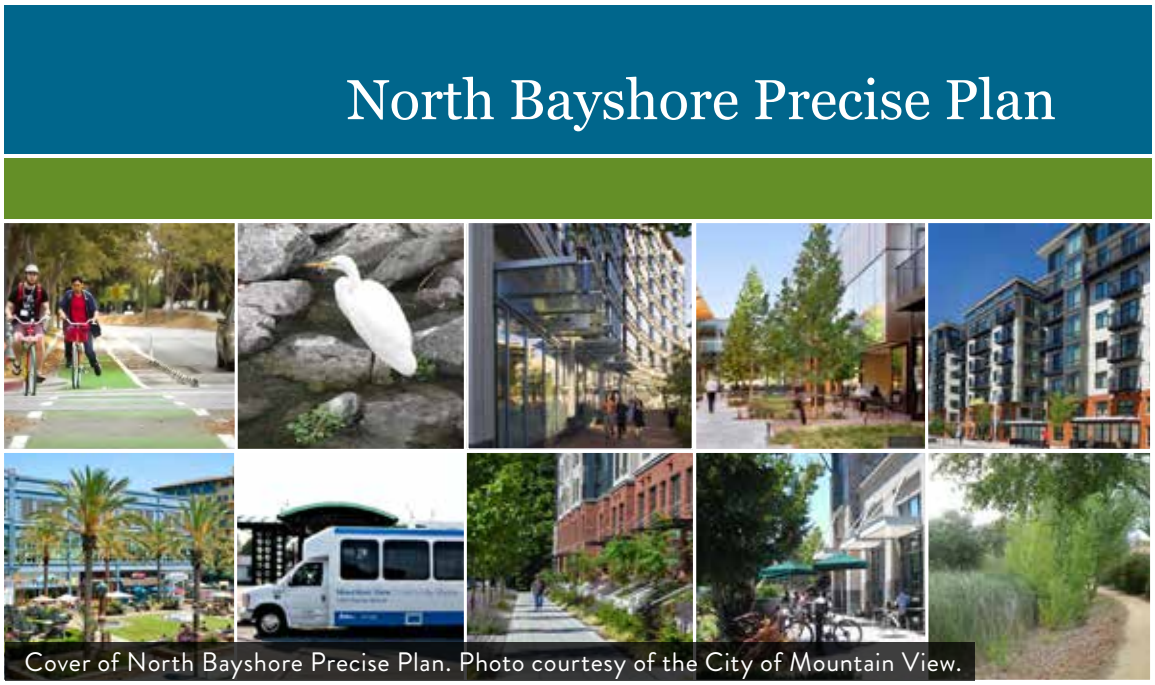
2025 Benjamin Bubb Elementary School planting. Photo courtesy of Canopy.

Precise Plans

Mountain View has 25 areas defined by **Precise Plans**. The purpose of Precise Plan designation is to ensure coordinated public and private improvements in certain areas of the city. Precise Plans are provided for in the Zoning Ordinance, Chapter 36, Article XVI, Division 11. Many Precise Plans include an overview of local ecological resources within the designated area, and landscaping guidelines that include biodiversity and urban forest elements. Development review in Precise Plan areas is guided by the details of the applicable Precise Plan, making these documents highly influential in particular areas of the city.

The **North Bayshore Precise Plan** (NBPP), most recently updated in 2021, guides the sustainable development of the North Bayshore area, with an emphasis on creating a vibrant mixed-use district that is also ecologically sensitive.[133] The NBPP outlines strategies for integrating high-density residential and commercial development with habitat preservation and public space enhancement. It includes a place-specific plant palette and street tree list, making it a valuable resource for site-appropriate landscape design. The accompanying Environmental Impact Report, including Appendix A: Biological Resources, informs sensitive habitat considerations and species protection strategies. Other recent Precise Plans of note include the Downtown Precise Plan (DPP) and El Camino Real Precise Plan (ECRPP), both updated in 2024.[134,135] From the perspective of the Biodiversity & Urban Forest Plan, the DPP is notable for its emphasis on greenery in urban public space, and green setbacks and buffers. The ECRPP is notable for its emphasis on green infrastructure and urban tree canopy.

RELATIONSHIP TO THE BIODIVERSITY & URBAN FOREST PLAN: Guide A: Urban Landscaping references the NBPP and is based on many of the same principles. The level of guidance produced for NBPP was popular in the Mountain View community, and may be used as a model in developing further resources. **Guide C: Urban Forest Policies and Practices** refers to both the DPP and the ECRPP as models for standardizing policies and practices across the city and in future Precise Plans.



Cover of North Bayshore Precise Plan. Photo courtesy of the City of Mountain View.

Synergistic Local Plans and Guidance

While the following City documents do not primarily focus on biodiversity and the urban forest, they align or intersect with the Biodiversity & Urban Forest Plan in some areas. These synergistic plans and guidance provide useful context for other initiatives in Mountain View that may overlap, be carried out by the same staff, or offer funding partnership opportunities as the City implements the Biodiversity & Urban Forest Plan.

Sustainability planning and strategy: The Mountain View Environmental Sustainability Task Force Final Report 2017-2018 [136] (ESTF-2) recommends community-wide actions to reduce greenhouse gas emissions as required by California law, and includes recommendations to City Council to support enhanced urban infrastructure sustainability. Recommendations address transportation, buildings and land use, circular economy and waste, outreach, regional collaboration, and legislative advocacy, and measurement and metrics. Between 2008 and 2022, the City's Office of Sustainability produced four three-year Sustainability Action Plans (SAPs) identifying various focus areas (policies, programs, and projects) for City action towards sustainability.[137-140] In 2019 the City produced the City of Mountain View Sustainability Program, which built on the process to identify priority strategies: reducing the volume of traffic, adopting cleaner vehicles and fuels, and adopting building decarbonization strategies that focus on electrification. The document also identifies actions that may be taken by the City, in partnership with the community, with regional partnerships, and looking to future growth.

Parks and open space planning: Parks and open spaces are critical to supporting Mountain View's biodiversity and urban forest. The Community Services Department is leading the development of Mountain View's new Parks and Recreation Strategic Plan (PRSP) which is slated to be adopted in spring 2026. The plan is the next phase in park planning for the City, following its 2014 Parks and Open Space Plan [141] which envisions an abundant, accessible, and connected network of parks and open space for Mountain View, strengthened by regional open space resources and welcoming of community involvement. The Biodiversity & Urban Forest Plan seeks to support parks and open space through **Actions 4, 10, 15** and **21** (see **5.2 Vision to Action**).

Active Transportation Plan: The Public Works Department is leading the development of Mountain View's Active Transportation Plan (ATP), which combines the City's Pedestrian Master Plan[142] and Bicycle Transportation Plan.[143] The forthcoming ATP will hold many synergies with the Biodiversity & Urban Forest Plan, which considers active transportation corridors a priority within the Heat Mitigation Strategy Zone (see **Guide A: Urban Landscaping**), incorporates corridors in its connectivity analyses (see **3.1 Urban Biodiversity Assessment**), and identifies **Actions 1, 10,** and **16** related to transportation corridors (see **5.2 Vision to Action**).

City-issued or City-endorsed guidance/regulations documents: In addition to those listed above, the City of Mountain View has created or adopted the following resources which will inform, support, and influence implementation of the Biodiversity & Urban Forest Plan:

- Tree Technical Manual (see **Guide C: Urban Forest Policies and Practices** for a detailed review)

- 2003 Integrated Pest Management Plan and IPM Policy[144]
- Shoreline Sea Level Rise Study Update (2021)[48]
- Water Conservation in Landscaping Regulations (Mountain View City Code Chapter 36, Article XI, Division 3)

CONCLUSION

Together, these plans and policies reflect Mountain View's ongoing efforts to foster a resilient and thriving urban ecosystem. Changes to these plans and policies may better allow Mountain View to achieve the visions set forth in the General Plan, the community's vision for biodiversity and the urban forest, and improvements to City processes–particularly regarding the Tree Ordinance and/or Zoning Ordinance. (See **Actions 4** and **13** in **5.2 Vision to Action**.) The prior 2015 Community Tree Master Plan's benchmarks remain a valuable resource developing monitoring and metrics for the city's urban forest (see **5.3 Metrics and Targets**). Local plans, precise plans, and synergistic plans such as the Active Transportation Plan should also consider Biodiversity & Urban Forest Plan recommendations.

Prioritizing biodiversity and the health of the urban forest through the Biodiversity & Urban Forest Plan is the next step in Mountain View's history of robust environmental initiatives, and adjusting some of its policies will allow the City to build on the strong foundation provided by these existing documents. Engagement with the public and continued thoughtful approaches to planning will be key to maximizing benefits for both people and nature, as the city moves forward.



Green infrastructure feature at Pyramid Park. Photo courtesy of the City of Mountain View.

4 COMMUNITY AND CITY PERSPECTIVES



2024 Biodiversity & Urban Forest Plan Youth and Families Workshop. Photo courtesy of the City of Mountain View.



4.1 Community Engagement

The project team sought community input through a robust seven-month outreach process that included a series of public events, a dedicated project webpage, and a community survey. Opportunities to give feedback were advertised on the City's website, through flyers and mailing lists, and at community events and programs.





Photos from Biodiversity & Urban Forest Plan public workshops. Photos courtesy of the City of Mountain View.

SUMMARY OF PUBLIC ENGAGEMENT EFFORTS

This section details the number and types of public engagement efforts conducted to collect input for the development of the Plan. It includes the key topics covered by each engagement activity and number of participants or interactions.

* interpreter services available
**translated materials provided

6 WORKSHOPS WITH 242 ATTENDANCES

JULY - NOVEMBER 2024



5 COMMUNITY WORKSHOPS

General public (virtual and in-person sessions)*

Youth and families**

Teens

Mandarin and Spanish language workshops*/**

General public (virtual and in-person sessions)*/**

KEY TOPICS

- Project overview/updates and key terminology
- Invitation to share visions for nature and its amenities in Mountain View; invitation to identify/discuss particular areas of the city that embody the vision, or need improvement. Identification of priorities in the face of potential tradeoffs
- Live polls, group discussions, questionnaires, poster board voting activities
- Later workshops shared preliminary data from previous workshops



1 STAKEHOLDER WORKSHOP

Practitioners and City partners sent invitations; also open to general public with an emphasis on community experts

KEY TOPICS

- Overview of project and biodiversity principles underlying the Plan
- Focused discussions organized by topic (Designing and Planting Around the Built Environment; Incorporating Habitat for Biodiversity into Transportation and Transit; Protecting Spaces for Nature), synthesis, and recommendations from each discussion group

Photos of Biodiversity & Urban Forest Plan workshops. Photos courtesy of the City of Mountain View.

3 POP-UP EVENTS WITH 475 INTERACTIONS



APRIL 2023 - OCTOBER 2024

3 POP-UPS

Mountain View Earth Day Celebration

Mountain View Farmers Market**

Mountain View Senior Center*/**

KEY TOPICS

- Project overview
- Invitation to share thoughts/visions of nature in Mountain View, select priority issues, select priority benefits of nature and trees
- Staff generally available to answer questions

COMMUNITY SURVEY** WITH 547 RESPONSES

OCTOBER 14, 2024 - DECEMBER 17, 2024

KEY TOPICS

- Refer to **Appendix A: Community Engagement Summary** for a list of survey questions and the responses

PROJECT WEBPAGE WITH 124 ENTRIES

MAY 2024 - APRIL 2025

KEY TOPICS

- The virtual comment box was open to any ideas and questions from the public. Responses to commonly asked questions were posted on the webpage

TOTAL: 1,388 EVENT ATTENDANCES OR INTERACTIONS

4.2 Community Perspectives

This section highlights responses to a selection of questions asked during the community engagement process. These responses helped guide the project team in understanding community priorities and concerns regarding Mountain View's biodiversity and the urban forest. Refer to **Appendix A: Community Engagement Summary** for summarized responses to all public survey questions and recommendations developed by stakeholder teams at the project's Stakeholder Workshop.

ENVISIONING NATURE IN MOUNTAIN VIEW

Throughout the engagement process, community members were asked for input on how they envision nature in Mountain View. To illustrate this, the following word cloud shows the most common words and phrases written in response to the public survey. Respondents indicated a vision for nature in Mountain View that is primarily green, diverse, native, peaceful, and clean. Trees play an important role, and respondents also envision an abundant, natural, beautiful, lush, and healthy environment.

USE THREE WORDS TO DESCRIBE WHAT YOU HOPE NATURE WILL LOOK LIKE IN THE CITY OF MOUNTAIN VIEW IN THE FUTURE. HOW SHOULD IT LOOK OR SOUND? WHAT SHOULD IT FEEL LIKE?

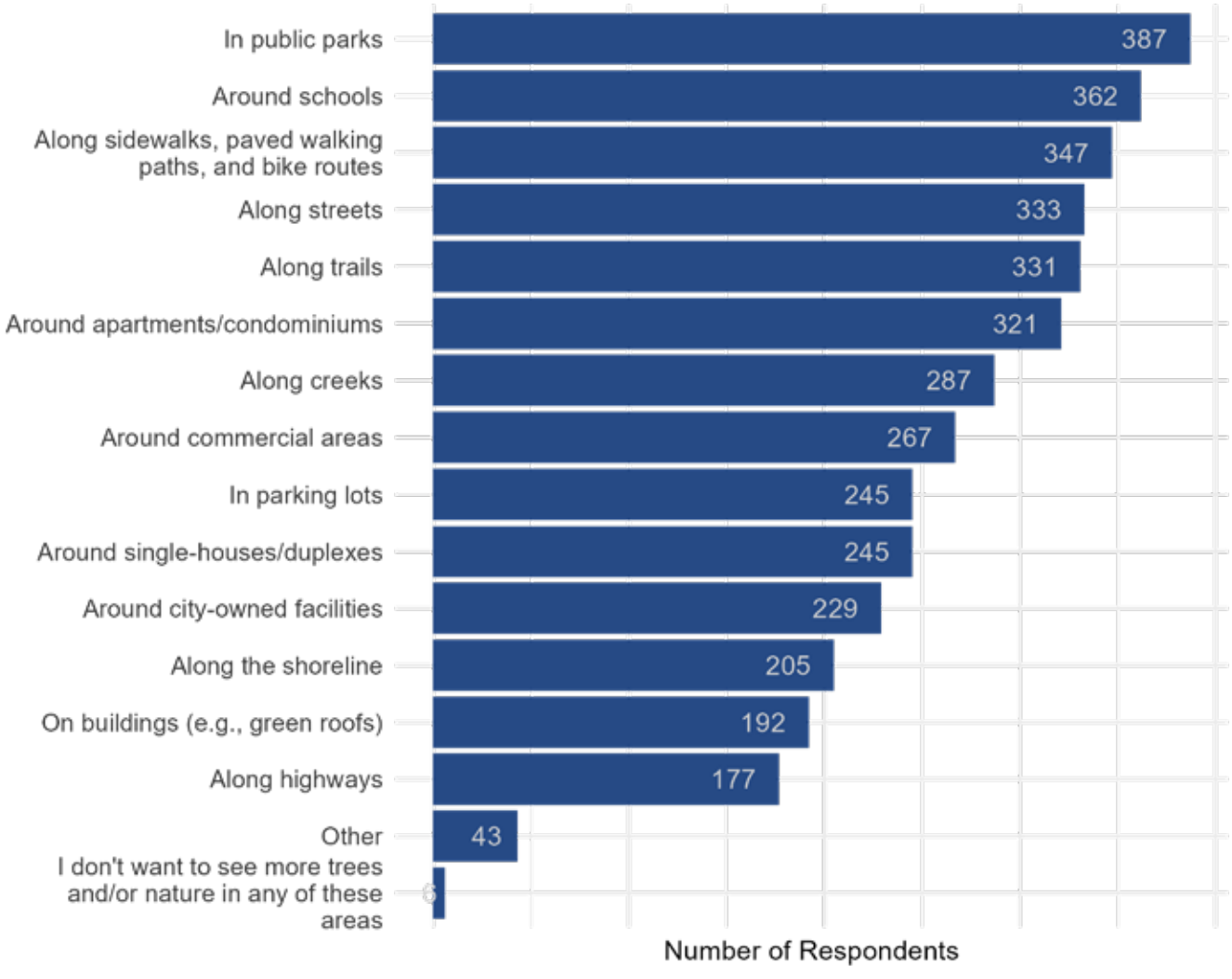


Word cloud highlighting the most common words used to describe how the community envisions nature in Mountain View. *The larger the word appears, the more frequently it occured in responses.*

URBAN SPACES IN NEED OF TREES AND NATURE

The community was also asked to identify types of urban spaces that could use more trees and nature. Community gathering spaces, including parks and schools, were selected as most in need of more trees and nature. Pedestrian and vehicle transportation corridors (e.g., local roadways, trails, sidewalks) were also selected as priorities for improvement. Respondents identified lower relative need for greening around buildings or other large infrastructure (e.g., parking lots and highways).

IN WHICH TYPES OF AREAS IN MOUNTAIN VIEW DO YOU THINK TREES AND NATURE ARE MOST NEEDED?



Where public survey respondents think trees and nature are most needed in Mountain View.

WEIGHING THE BENEFITS AND CHALLENGES OF URBAN NATURE

Two important survey questions sought to understand the value Mountain View's community places on the primary benefits and challenges of integrating nature in urban spaces. Overall, respondents' interest in the benefits of nature outweigh their concerns about the challenges it may present, indicating that the Mountain View community recognizes the value of biodiversity and the urban forest, despite potential tradeoffs.

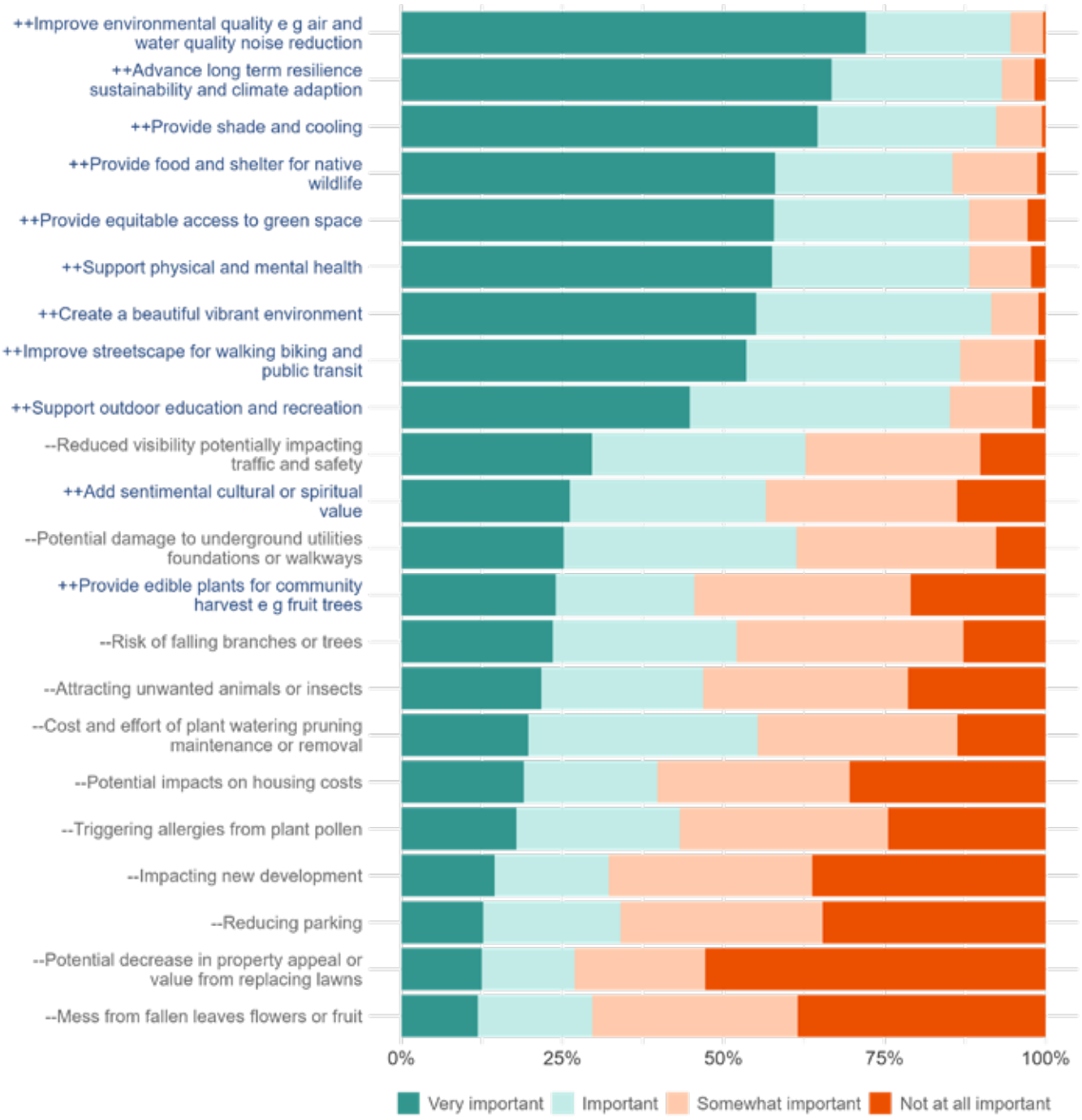
Benefits of greatest importance to respondents (i.e., "very important") included improvements to environmental quality (e.g., air and water quality, human health) and climate benefits (e.g., shade, resilience and climate adaptation). Many respondents also place value on habitat (food and shelter) for native wildlife, along with community-centered benefits, such as streetscape improvements for pedestrian mobility and public transit. Respondents also expressed interest in green spaces that are beautiful, promote outdoor recreation, and are implemented with equitable access in mind.

Key challenges identified included traffic hazards related to visibility and damage to utility infrastructure.



2024 Biodiversity & Urban Forest Plan Mandarin-translated workshop. Photo by Lauren Stoneburner, SFEI.

HOW IMPORTANT ARE EACH OF THE FOLLOWING BENEFITS OR CHALLENGES TO YOU?

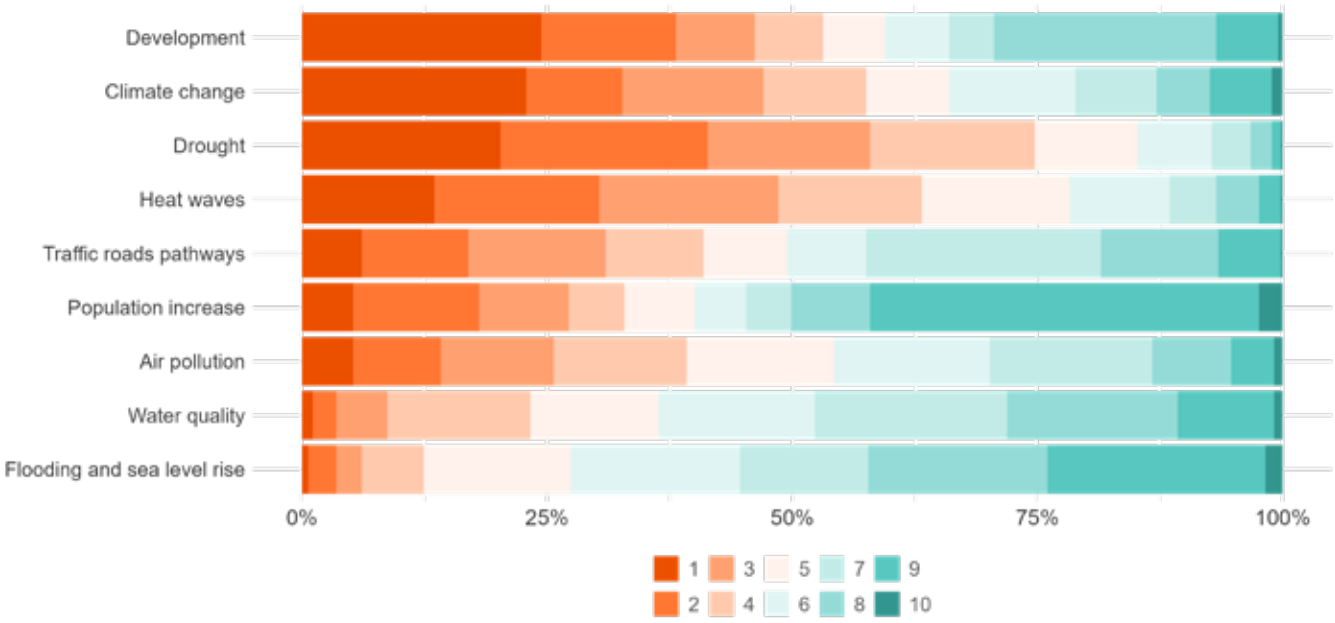


Topics of most and least concern to respondents of the public survey. *The survey asked two parallel questions, one asking respondents to rank the priority of each benefit from nature, and the other asking about challenges. Respondents were asked to consider trees and nature in all areas including parks, commercial areas, along streets, and on residential properties. Overall, participants ranked the benefits (shown in blue text) of nature as more important than the challenges (shown in gray text).*

COMMUNITY-REPORTED THREATS TO NATURE

Community perspectives on threats to nature were a priority consideration in the creation of this Plan. Lived experience brings a wealth of knowledge, and Mountain View's community members observe various natural spaces on a daily basis, with a closeness that allows them to identify important patterns and threats. Development emerged as the most frequent top-ranked threat to nature, with climate-related threats (climate change, drought, heat waves) also falling high on the list of threats. Traffic, air quality, and population increase are considered to be lesser threats to nature in Mountain View. Threats of least concern to respondents were water quality and inland/coastal flooding.

WHAT ARE THE BIGGEST THREATS TO NATURE IN MOUNTAIN VIEW?



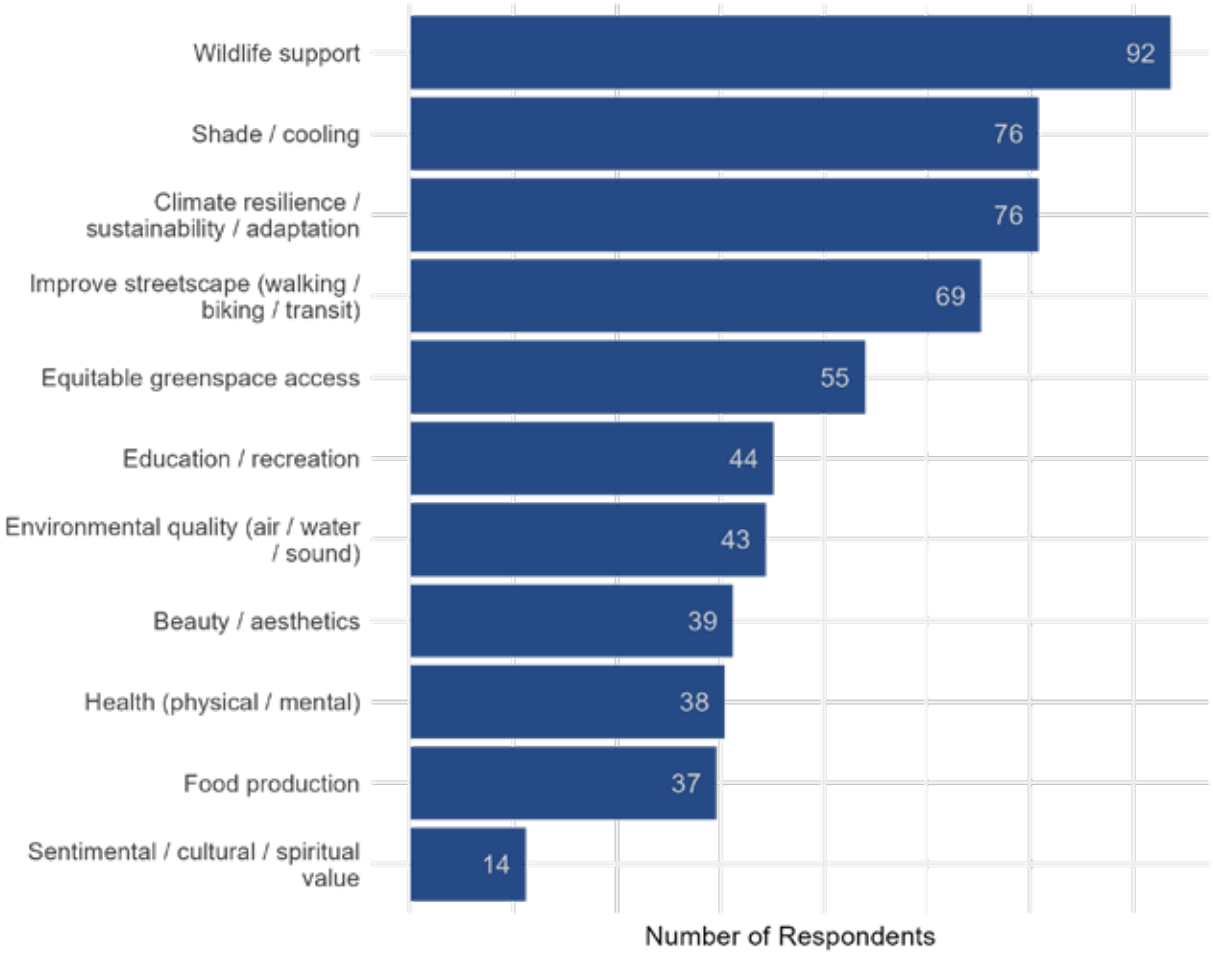
Responses to the public survey about which threats to Mountain View are of most concern to respondents. *Respondents ranked each of the nine options. Threats listed at the top are ranked as bigger threats. Bars in the darkest red represent the percent of respondents who ranked that threat first.*

MOST DISCUSSED BENEFITS, VALUES, AND AMENITIES ACROSS PUBLIC EVENTS

Community members who attended public events were encouraged to share their hopes for the future of Mountain View's biodiversity and urban forest via discussion groups, live polls, comment boxes, poster pinning, and other activities. The following figure summarizes the most-frequently discussed benefits, values, and amenities across written responses.

Community participants highlighted the importance of wildlife support, climate resilience and adaptation, and the related issue of urban shade and cooling. Respondents also expressed a desire for streetscape improvements, and equitable green space access was frequently mentioned.

BENEFITS, VALUES, AND AMENITIES DISCUSSED IN COMMUNITY WRITTEN RESPONSES



Summary of themes included in open-form responses to prompts during the community engagement process about the community's hopes for the future of biodiversity and the urban forest in Mountain View. *This figure groups each respondents' written responses thematically, capturing how many written responses were associated with each theme.*



PLACES WHERE NATURE AND TREES NEED MORE SUPPORT

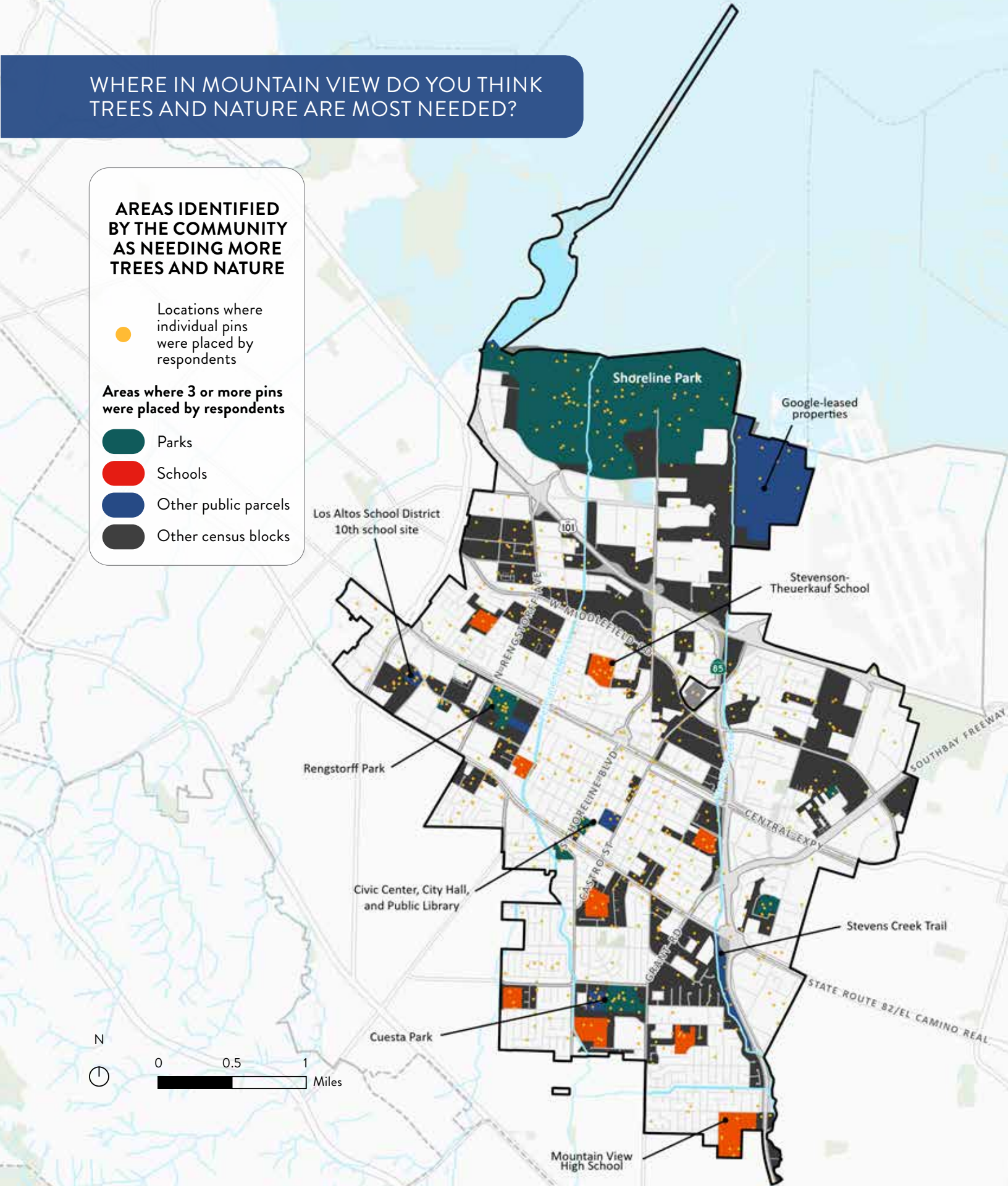
Throughout the public engagement process, community members were asked to identify where nature and trees need more support in the city. The following map presents the combined results, summarizing how many of these points fall within various types of city locations (parks, schools, public parcels, and U.S. Census blocks).

The parks that received the highest number of votes included Shoreline Park, Cuesta Park and Annex, and Rengstorff Park. The schools that received the highest number of votes included Stevenson-Theuerkauf School and Mountain View High School. Publicly-owned parcels (other than parks) with the most votes were properties in the Mountain View Civic Center Plaza area, a southern portion of the Stevens Creek Trail, Los Altos School District's tenth school site, and a complex of Google-leased properties near the shoreline.



2024 Biodiversity & Urban Forest Plan Stakeholder Workshop. Photo by Lauren Stoneburner, SFEI.

WHERE IN MOUNTAIN VIEW DO YOU THINK TREES AND NATURE ARE MOST NEEDED?



4.3 City Perspectives

The Plan's objectives, actions, and metrics incorporate community visions and scientific recommendations, reflected through a lens of what is feasible by the City. City engagement for the Plan was supported primarily by the City Project Team including staff and leadership from the Community Services Department, Public Works Department, Community Development Department, and the City's Sustainability and Resiliency team (City Manager's Office). These City staff collaborated in several major meetings and workshops to ensure that the Plan, in particular the actions and metrics, reflects department expertise, deep knowledge of City operations, and program-level experience. Actions and metrics for the Plan were designed to be carried out by City departments and staff, and therefore their contributions to these pieces of the Plan have been invaluable.

CITY FOREST OPERATIONS

The City's Urban Forest Manager was actively involved throughout the development of this Plan and assisted in identifying strengths, challenges, and opportunities to grow, maintain, and protect Mountain View's urban forest. **Guide C: Urban Forest Policies and Practices** includes a detailed review of City forestry operations. Current challenges to City forestry operations are driven by several related needs.

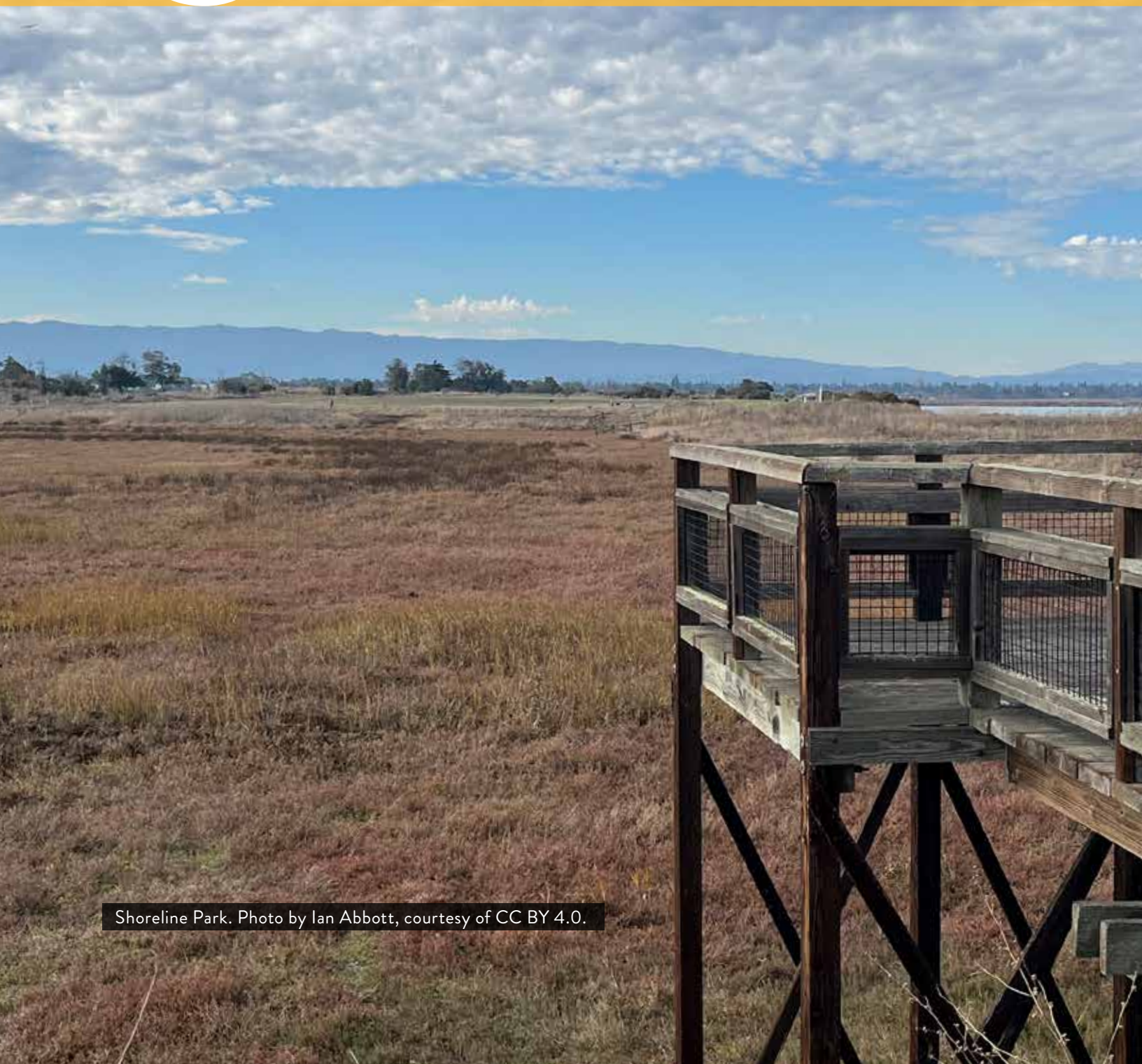
- There is a general need to prioritize hiring, training, and retaining staff to support City urban forestry operations, including outreach, education and enforcement.
- There is also a need for City-wide urban forestry planning tools, including a climate-resilient plant palette, planting plan, and regular updates to the City's existing public tree asset dataset.
- Regarding tree removals, City staff identified an overall need to simplify the Heritage Tree permit process, improve enforcement around post-removal permits and replanting, and standardize reporting from arborists to support the permit process. These changes would facilitate objective evaluation and decision-making around proposed removals.
- Regarding development, the City identified the need for development codes and standards to better support trees, as City staff navigate maintaining plantable space in the midst of increasing redevelopment and housing needs and requirements.
- To help address threats to the urban forest, the City identified a need for a proactive and climate-minded pest management and monitoring program, especially to address the current threat of an Invasive Shot Hole Borer (ISHB) outbreak.
- Improvements to operations such as software improvements, increased inspections of tree-planting and maintenance contractors, and improved protocols for debris disposal were also highlighted.



Routine tree pruning of City-managed trees. Photo courtesy of City of Mountain View.

- Staff identified a need for expanded engagement within the community to increase knowledge, stewardship, and understanding of City forestry processes. There is also a need for increased inter-departmental engagement, to improve coordination. and guidance.
- Staff identified the need for the City to increase funding to support a more proactive life-cycle maintenance program for the urban forest, including trees located in public rights-of-way.
- Staff noted that trees are the only infrastructure asset that increases in value over time and are not easily replaced; this is a rationale for prioritizing trees in Mountain View.
- Staff noted a need to identify a better tracking system for replacement trees, to ensure young replacement trees are protected and retained while they mature to Heritage Tree size.

5 THE PLAN: CHARTING THE PATH



Shoreline Park. Photo by Ian Abbott, courtesy of CC BY 4.0.



5.1 Components of the Plan

This Plan lays out a roadmap towards the Vision of a healthier, more resilient and biodiverse Mountain View. The Goals, Objectives, and Actions provide the tools to navigate the path, while Metrics and Targets ensure steady, measurable progress. Together, each component plays a vital role in charting the path from vision to action.

Vision and Goals: rooted in community. The Vision for biodiversity and the urban forest reflects the community's shared values and ideals, distilled from the project's community engagement. Goals are long-term strategies to realize the Vision. The Vision and Goals will align City departments around clear priorities and steer decisions towards Actions that best serve nature and the community.

Objectives: blending community input and science-based strategies. Objectives apply science-based guidance and community priorities to translate the high-level Vision and Goals into specific, measurable, and practical commitments that guide the City's implementation.



2024 Biodiversity & Urban Forest Plan Farmers' Market pop-up poster activity. Photo by Lauren Stoneburner, SFEI.

Actions: charting the City's path forward. The City will implement Actions to achieve the Plan's Objectives. Future City planning, policies, ordinances, standards, and capital improvement projects should demonstrate their alignment with these Actions.

While these Actions may engage with other external groups, the City will drive their implementation. Each Action designates a responsible City department(s), representing the City departments that make up this Plan's City Project Team. The level of priority assigned to each Action will support decision-making around how to allocate resources and sequence efforts.

1	**SHORT-TERM PRIORITY ACTIONS** • urgent; strong public support or high visibility; immediate impact and return on investment

In Progress: **short-term priority Actions** that are already in progress and will be expanded upon or refined as part of implementation	***Upon Plan Adoption:*** **short-term priority Actions** prioritized for implementation beginning immediately upon Plan adoption

2	**MEDIUM-TERM PRIORITY ACTIONS** • less time-sensitive; dependent on resources, coordination, preparations, and/or other preceding actions
3	**LONG-TERM PRIORITY ACTIONS** • valuable, future-oriented actions that require substantial coordination and lead time and are not time-sensitive; may be dependent on or complementary to other efforts

The project team collaborated closely with City staff to blend science, community aspirations, feasibility considerations, and prior City commitments from the prior 2015 Community Tree Master Plan (CTMP) to generate the highest-priority Actions that are within reach and will generate meaningful impact for biodiversity, the urban forest, and other community needs.

Metrics and Targets: tracking progress. If the Vision represents the North Star—the ultimate destination the community aspires to reach—and the Goals, Objectives, and Actions represent the compass and tools needed to get there, Metrics are the odometer measuring progress, and Targets set quantitative milestones along the way. Metrics and Targets are equally critical to the Plan's success, establishing a system for transparency and accountability, as well as recognizing accomplishments and fostering learning.



Urban Forest Planning and Management Icons

In **5.2 Vision to Action** and **5.3 Metrics and Targets**, tree icons are used to highlight Actions and Metrics that relate to urban forest planning and management for use by the City's Urban Forestry Division.

Implementation Framework: planning for coordinated progress. The Implementation Framework outlines clear roles and pathways for prioritizing and funding implementation and monitoring progress, ensuring that the City is prepared to implement the Plan and evolve alongside community needs and new information.

Guides: resources for implementation. The body of this Plan, which outlines the path from the Vision to implementation and evaluation, is supplemented by Guides, providing a wealth of additional information and technical findings to support the City's immediate next steps and decision-making.

Guide A: Urban Landscaping translates the Vision, Goals, Objectives, and Actions of the Plan into practical landscaping design guidance. These guidelines are organized around five urban landscaping Zones that prioritize where in the city each of the landscaping strategies will likely have the greatest impact on biodiversity and community well-being. Some of the Actions introduced in the Plan are linked to the Zones and landscaping guidelines.

Guide B: Plant Lists provides two plant lists:

- The Native Plant List includes plant species native to the Santa Clara Valley floor that the City or residents can incorporate into projects or gardens.
- The updated City Tree List includes 62 tree species suitable for planting as street trees (among other less-constrained site types) and an additional 22 species suitable for parks and open space.

Guide C: Urban Forest Policies and Practices contains a detailed review and recommendations for urban forestry operations, guidelines, and pest management strategy.

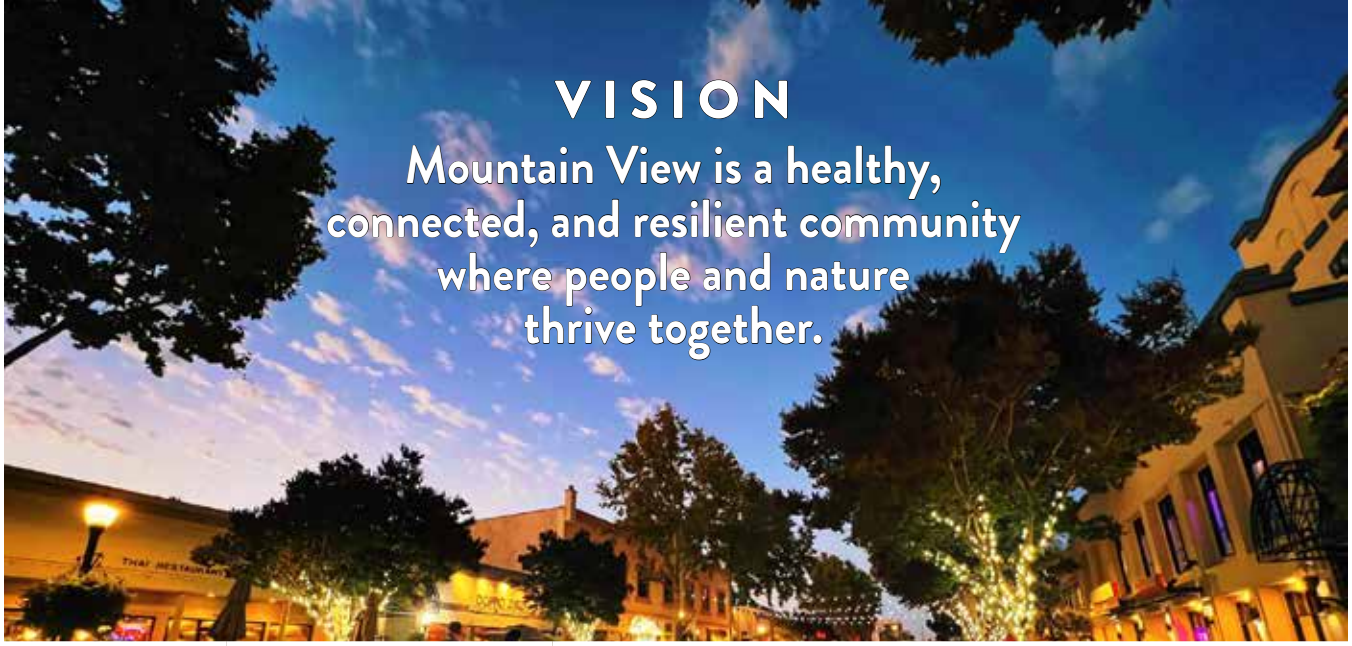
Guide D: Monitoring and Targets offers resources and approaches for developing a monitoring protocol to track Metrics and setting Targets.

5.2 Vision to Action

This section details the Plan's Vision, Goals, Objectives, and Actions, summarized as a table on the following page and subsequently detailed further. The City can work towards realizing the community's shared Vision by prioritizing four strategic long-term Goals, which are supported by measurable Objectives and concrete Actions.



California Flannelbush. Photo courtesy of the City of Mountain View.



VISION

Mountain View is a healthy, connected, and resilient community where people and nature thrive together.

GOAL	OBJECTVE	ACTION
1 Connect People and Nature	1A. Support a network of connected green space across the city	1. Strategically integrate green features in active transportation improvement project design to both increase ecological value and achieve other City priorities.
		2. Continue to review land management agreements and explore opportunities to enhance restoration and maintenance of high-value ecological areas along third-party creeks.
	1B. Foster a cultural shift that spotlights biodiversity and integrates it into Mountain View's sense of place	3. Promote biodiversity-themed installations and educational content.
2 Foster Places of Refuge	2A. Foster a healthier built environment for nature and people	4. When reviewing or updating existing City landscaping and planting guidelines, implement design standards for city parks, facilities, and streetscapes where feasible.
		5. Further develop native and climate-resilient planting guidance to support proper installation, maintenance, and sourcing of native plant materials.
		6. Implement planting projects according to urban landscaping Zones indicated in **Guide A: Urban Landscaping**.
		7. Develop and adopt a dark skies ordinance.
		8. Further advance strategies that support bird-friendly standards and reduce collision risk.
		9. Support coexistence between people and wildlife in Mountain View by using approaches that prevent conflicts before they happen, such as protecting natural habitats, reducing wildlife attractants in unsafe areas, and creating spaces where people can enjoy wildlife safely.
	2B: Balance opportunities for community enjoyment of nature with the needs of native species	10. Maximize biodiversity support within city parks and trail corridors while continuing to meet community needs.

Downtown Mountain View. Photo courtesy of the City of Mountain View.

GOAL	OBJECTVE	ACTION
3 Build Resilience	3A. Grow, protect, and care for a resilient urban forest, continuing progress towards the goal of 22.7% canopy cover by 2030	11. Expedite developing a public tree monitoring and maintenance plan.
		12. Plant an additional 1,575 public trees by 2030.
		13. Update the City tree list and Tree Ordinance to increase urban forest health, species diversity, and age diversity.
		14. Explore and expand opportunities to repurpose public tree materials and green waste.
	3B. Support quality habitat that sustains a diversity of life	15. Establish priority areas and goals for habitat restoration of large open spaces.
		16. Identify and pursue opportunities to enhance and expand existing vegetated patches providing habitat, particularly for native species that are less tolerant of urban disturbances.
	3C. Use greening opportunities to adapt to future climate conditions	17. Prioritize shade tree planting in the Cooling Zone, mapped in **Guide A: Urban Landscaping,** to protect against heat and improve walkability.
4 Activate and Collaborate	4A. Activate and collaborate with the community	18. Enhance residential and privately-managed tree support. Conduct City-led outreach and partner locally to activate the community in supporting biodiversity and the urban forest in neighborhoods across the city.
		19. Build partnerships and programs that enable the community to access and contribute to data about trees and nature in the city.
	4B. Activate and collaborate with design practitioners and large landowners	20. Conduct a biodiversity- and urban forest-focused review of City development processes to clarify various City department expectations and requirements.
	4C. Enhance collaboration across City departments to optimize implementation of the Plan through City programs, projects, operations, and maintenance	21. Develop and implement staff training for biodiversity-friendly landscape installation and maintenance.
		22. Establish an internal system across City departments for a) data collection and Target-setting, and b) regularly revisiting the Plan to maintain steady progress towards the Vision and Goals.
		23. Incorporate recommendations and guidelines from this Plan when developing new, or substantially updating existing, Precise Plans.
	4D. Coordinate with other agencies to identify opportunities for aligning visions and collaborating on initiatives that enhance shared natural resources	24. Explore collaborations with local and regional public/agency partners to identify potential opportunities to support biodiversity together.`
		25. Continue to explore and apply for intergovernmental programs and networks to elevate Mountain View's leadership and recognition on a national and international platform.

GOAL 1:
CONNECT PEOPLE AND NATURE

Landscape connections are vital for both human wellbeing and biodiversity. The Mountain View community wants abundant access to biodiversity to foster cultural and physical connections to nature; biodiversity also relies on a rich and connected network of habitat to move across and thrive within the city.



Visitors at Shoreline Park. Photo courtesy of the City of Mountain View.

Objective 1A: Support a network of connected green space across the city

Action 1. Strategically integrate green features in active transportation improvement project design to both increase ecological value and achieve other City priorities.

Align transportation improvement projects with the Plan's goals and guidelines to generate multiple benefits, including supporting biodiversity, pedestrian and bike safety, recreation, and public health.

Use **Guide A: Urban Landscaping** (Ecological Enhancement Zone and Cooling Zone) as a resource, verified with site-scale information, to enhance high-priority active transportation corridors (e.g., streetscapes, bikeways, walking paths) with habitat elements that support biodiversity. Undertake feasibility studies and integrate biodiversity and urban forest elements as standard components of capital improvement projects to reduce dependence on additional funding where possible.

Priority *Medium-term priority*

Responsible department(s) *Lead: Public Works Department*
Support: Community Services Department

Pacific Chorus Frogs need pervious connectivity

Frogs are associated with waterways, ponds, and wetlands. As they should; these habitats are required for frogs to lay their eggs. Connecting aquatic areas with pervious surfaces of many kinds—even manicured landscaping and grass—improves the urban environment for chorus frogs who need to move safely through the landscape.



Pacific Chorus Frog. Photo by Will Brown, courtesy of CC BY 2.0.

Action 2. Continue to review land management agreements and explore opportunities to enhance restoration and maintenance of high-value ecological areas along third-party creeks.

Promote consistent, proactive ecological management of Santa Clara Valley Water District's (Valley Water) creeks—namely Permanente, Stevens, Hale, and Adobe creeks—by aligning agency stewardship responsibilities with restoration and enhancement goals. This coordination will enable the City to leverage its financial resources where they can have the greatest impact for residents, biodiversity, and interagency collaboration.

- Identify parcels of high value to biodiversity along Valley Water creeks, using local expertise and the analyses included in this Plan.
- Conduct a review of land ownership and existing management agreements along Valley Water creeks, in collaboration with relevant agencies including Santa Clara Valley Water District (Valley Water), San Francisco Public Utilities Commission (SFPUC), and Pacific Gas and Electric Company (PG&E).
- Explore opportunities for updating agreements (if possible) to enhance stewardship to maximize creeks' benefit for people and nature.

Priority *Medium-term priority*

Responsible department(s) ***Lead:*** *Community Services Department*
Support: *Public Works Department*



Threespine Stickleback. Photo by justas, Courtesy of Adobe Stock.

Urban creeks support "city slicker" fish.

Threespine Sticklebacks appear to adjust to city life, tolerating even the more heavily urbanized streams around the San Francisco Estuary. Even so, these fish will benefit from coordinated restoration and enhancement along Mountain View's creeks, where they seek out insects, worms, and crustaceans among vegetated stream bottoms.

Objective 1B: Foster a cultural shift that spotlights biodiversity and integrates it into Mountain View's sense of place

Action 3. Promote biodiversity-themed installations and educational content.

Incorporate the topics of biodiversity and local ecology into Public Art installations and interpretive content where appropriate, with input from the Visual Arts Committee.

- Consider adding a biodiversity element to the City's Public Art program.
- Create educational signage highlighting the native historical habitat types discussed in this Plan. Materials should also build public awareness of other biodiversity-supporting features and projects, such as bird-safe windows, pollinator gardens, "messy" landscapes, and "dark skies."
- Co-develop projects with community groups and representatives, hire local talent, and activate students and volunteers to elevate local voices, values, and stories. Collaborate with the Multicultural Engagement Program and their leadership program to encourage diverse participation.

Priority	*Short-term priority*
Responsible department(s)	***Lead:*** *Economic Development Division* ***Support:*** *Public Works Department, Community Development Department, Community Services Department*

GOAL 2:
FOSTER PLACES OF REFUGE

The city can create healthy and safe spaces for people and nature both in open spaces and in the built environment. Urban-sensitive native species and the community rely on green space for refuge from urban life. Balancing these needs requires carefully managing tradeoffs (see *Ecology for Health: Design Guidance for Fostering Human Health and Biodiversity in Cities*).[8] Each green space will have a unique set of priority uses, but in every case, there are strategies to promote human recreation, wellbeing, and a sense of immersion in nature while maximizing biodiversity protection and support. Where the city is more densely developed, wildlife-friendly design and landscaping strategies can boost not only native biodiversity, but also community health for city residents and visitors.



Monarch Butterfly nectaring from its milkweed host plant. Photo by David J. Mauk.

Objective 2A: Foster a healthier built environment for nature and people

Action 4. When reviewing or updating existing City landscaping and planting guidelines, implement design standards for city parks, facilities, and streetscapes where feasible.

Develop guidelines and standards for both the engineered and natural elements of planting areas and their surroundings, such as the planting area size, soil treatments, and stormwater management. Refer to existing best management practices and industry standards, including **Guide A: Urban Landscaping**.

- Revise City permitting processes, ordinances, and long-term planning to align with commitments and guidelines presented in both this Plan and the Active Transportation Plan (see also **Action 20** and **Action 23**).
- Identify and reconcile conflicts in existing standards and ordinances.
- Pair opportunities to support human health with biodiversity goals in landscape design guidelines.

Priority *Short-term priority*

Responsible department(s) ***Lead:*** *Community Services Department (Urban Forest, Parks and Open Space)*

Support: *Community Development Department, Public Works Department (Design and Construction)*



Valley Oak. Photo by Bob Dodge, courtesy of CC BY 2.0.

Valley Oaks need more space, but provide many benefits for animals and humans.

Valley Oaks require more space and grow more slowly than the more common live oaks, but their shading and wildlife benefits are plenty. Planting sites with sufficient space for root growth—like schoolyards and parks—should give them a better chance of success, and planting them within 500 feet of other Valley Oaks can assist pollination and the production of acorns that wildlife depend on.

Action 5. Further develop native and climate-resilient planting guidance to support proper installation, maintenance, and sourcing of native plant materials.

Develop a more extensive plant palette of regionally-native, California-native, functional species, and climate-resilient plants, paired with a plant selector tool to facilitate implementation. Prioritize native plants where appropriate based on site conditions, biodiversity goals, and urban forest resilience. See "Managing trade-offs between native biodiversity and urban forest resilience," "Planting Trees in Historically-Treeless Landscapes," and "What 'native' means and why it matters" in **1.1**, **2.3**, and **3.1**, respectively, for more information on balancing native plant selection with climate resilience and other planting goals.

- Develop guidelines for sustainable native plant sourcing practices, such as guidance to avoid introducing pests and support native plant genetic diversity.
- Develop guidance and species selection criteria to incorporate more native and/or climate-resilient plants into synergistic projects, such as stormwater management or street and safety improvement projects.
- Develop and implement an interactive web-based plant selector tool that incorporates planting lists and guidelines. The interactive, functional tool would help project managers select plants and develop plant palettes that are appropriate for their specific site and desired project outcomes (including guidance for applying these principles in green stormwater infrastructure projects). (**Action 13** describes uses of the tool for tree selection specifically.)
- A subset of materials should be developed for distribution to residents and local developers to educate and align landscaping goals and standards, as discussed further in **Action 18**.
- Develop biodiversity-supportive guidelines and design standards, and native planting/replacement incentive programs. California Invasive Plant Council (Cal-IPC) and other existing lists can serve as resources.[96]

Priority *Short-term priority (upon Plan adoption)*

Responsible department(s) ***Lead:*** *Community Services Department (Urban Forest, Parks and Open Space*



Left and right: 2025 Mountain View Earth and Arbor Day celebration. Photos courtesy of the City of Mountain View.

Action 6. Implement planting projects according to urban landscaping Zones indicated in Guide A: Urban Landscaping.

Implement native and biodiversity-supporting landscaping within the Ecological Enhancement Zone discussed in **Guide A: Urban Landscaping**, using relevant City guidelines and standards (**Action 4**), and native plant resources (**Action 5**) as they are developed and revised. At sites where multiple priorities or Zones overlap, design projects for multiple objectives.

Priority *Medium-term priority*

Responsible department(s) ***Lead:*** *Community Services Department*
Support: *Public Works Department*

Action 7. Develop and adopt a dark skies ordinance.

Adopt a dark skies ordinance to reduce the impacts of artificial light on wildlife.

- Explore model ordinances, resources, and programs.[145, 146]
- Upon adopting the ordinance, provide design guidance for residents and developers as needed or requested. The ordinance and associated resources should include lighting requirements for new developments (**Action 20**).

Priority *Short-term priority (in progress)*

Responsible department(s) ***Lead:*** *Community Development Department (Planning)*



Wilson's Warbler. Photo by Becky Matsubara, courtesy of CC BY 4.0.

Make the city safer for migrating birds.

Long-distance migratory birds like Wilson's Warblers migrate through west coast cities in huge numbers in the spring and fall as they travel between wintering and breeding grounds. While landing in cities during nighttime breaks in migration or voraciously foraging on insects and spiders in city trees to refuel, they can collide with lit or highly reflective windows. Designing and retrofitting buildings to be safer for birds will help Wilson's Warblers safely reach their destination.

Action 8. Further advance strategies that support bird-friendly standards and reduce collision risk.

Continue to evaluate options for incorporating bird-safe guidance and measures into building design and retrofit of City facilities and private development. Closely align this work with **Action 7**.

Leverage existing models and templates:

- Use the City's existing bird safety measures in both the North Bayshore Precise Planw and the East Whisman Precise Plan as a guide for City-wide design standards to minimize collision risk and reduce mortality throughout Mountain View. American Bird Conservancy resources[147] may also be used as a guide.
- Model strategies on regional efforts made over the last decade and update to incorporate the most recent science-based guidance.

Priority *Medium-term priority*

Responsible department(s) *Lead: Community Services Department, Community Development Department (Planning)*

Action 9. Support coexistence between people and wildlife in Mountain View by using approaches that prevent conflicts before they happen, such as protecting natural habitats, reducing wildlife attractants in unsafe areas, and creating spaces where people can enjoy wildlife safely.

Human-wildlife conflicts (HWC) can occur when wild animals and humans interact in unwanted or unsafe ways. Leverage existing educational resources, toolkits, laws, and regulations to proactively reduce risk of human-wildlife conflicts in the city.

- California Department of Fish and Wildlife, Santa Clara County, and several conservation NGOs have developed materials, laws, or regulations to address HWC and increase people's awareness and appreciation for wildlife species in their environment.[148,149]
- Incorporate measures for proactively reducing HWC into City-led outreach (**Action 18**) and through inter-agency coordination (**Action 24**) alongside efforts to support biodiversity in the city.

Priority *Medium-term priority*

Responsible department(s) *Lead: Community Services Department*

Objective 2B: Balance opportunities for community enjoyment of nature with the needs of native species

Action 10. Maximize biodiversity support within city parks and trail corridors while continuing to meet community needs.

Capitalize on any opportunity, large or small, to integrate biodiversity-friendly design.

- In high-activity recreational spaces, such as sports fields and play areas, implement biodiversity-friendly lighting (aligned with **Action 7**) and incorporate native landscaping around the perimeter or in underutilized spaces.[8]
- Incorporate native landscaping in low-intensity recreational spaces. Design landscaping to support ecological functioning by building plant palettes that resemble the local historical ecology, pairing species that historically co-occurred, as demonstrated in the Native Plant List (see **Guide B: Plant Lists**). Where feasible, enhance and protect special resources with high-value for native wildlife, such as natural water features (e.g., creeks, ponds, or wetlands), snags (standing dead or dying trees), and brush or rock piles.
- Add design elements to promote respite, enjoyment, and awareness of nature, such as benches and signage.
- Incorporate habitat enhancement and restoration goals into trail and recreational facility improvement projects. Maintain trails to prevent damage to sensitive surrounding habitats. Successful practices from existing trails (e.g., Stevens Creek Trail) may be used as a model.

Priority *Short-term priority*

Responsible department(s) ***Lead:*** *Community Services Department*
Support: *Public Works Department*



Children playing in Rengstorff Park. Photo courtesy of the City of Mountain View.

GOAL 3:
BUILD RESILIENCE

A healthy and resilient urban ecosystem can safeguard both the community and biodiversity from growing climate and environmental threats such as extreme heat, intensifying storms and flooding, urban forest pest invasions, and prolonged droughts. Strategically monitoring and enhancing the quality of natural resources in the city will better enable biodiversity, the urban forest, and climate-vulnerable communities to withstand these growing challenges and adapt over time.



Native landscaping in Mountain View. Photo by Shira Bezalel, SFEI.

Objective 3A: Grow, protect, and care for a resilient urban forest, continuing progress towards the goal of 22.7% canopy cover by 2030

Action 11. Expedite developing a public tree monitoring and maintenance plan.

Establish a public tree inventory schedule and standardized system.

- Conduct a new public tree inventory.
- Repeat the inventory every five years.
- Acquire access to an effective tree asset management software, and establish data management protocols and staff and contractor training to ensure standardized data collection, storage, and management.
- Expand and standardize the information collected, to include tree species, diameter at breast height, height, and planting site stocking status. Consider tracking new fields to align with International Society of Arboriculture (ISA) best management practices, including tree condition and maintenance.

Action 11. (continued)

Update the City's regular maintenance and monitoring practices.

- Establish a proactive tree care schedule.
    - Revisit every public tree for scheduled inspection and maintenance every five years, and no less frequently than every seven years, through a rotating block grid pruning schedule. This is carried over from the prior 2015 CTMP.
    - Establish a three-year maintenance cycle for specific fast-growing tree species.
    - Require a three- to five-year warranty on trees planted by contractors to ensure that establishment care and maintenance are built into planting contracts.
- Establish a monitoring plan for routine public tree data updates and urban forest management assessments.
    - Keep the public tree asset dataset up-to-date by conducting standard tree monitoring during regularly-scheduled tree care operations.
    - Standardize the public tree dataset and monitoring protocols in alignment with the public tree inventory protocol.
    - Annually analyze the public tree asset dataset to assess the urban forest condition. Use these results to prioritize tree care, update planting plans, and assess species' performance in a changing climate as a guide for future plantings, as well as for requesting and allocating financial resources for urban forestry.

Priority *Short-term priority (in progress)*

Responsible department(s) ***Lead:*** *Community Services Department*



Routine public tree maintenance operations. Photo courtesy of the City of Mountain View.

Action 12. Plant an additional 1,575 public trees by 2030.

The City has added 1,425 public trees since 2015, marking 47.5% progress towards its prior 2015 CTMP goal of planting 3,000 public trees between 2015 and 2030. The City should plant an additional 1,575 public trees, to reach a total of 29,166 public trees, by 2030.

- Plant approximately 315 trees per year between 2026 and 2030.
- Plant trees with larger canopies at maturity to maximize the amount of canopy cover provided by each individual tree where possible and appropriate.
- Consider a "No Net Loss" policy of replacing public trees, mirroring changes to the Tree Ordinance (**Action 13**).

Action 18 addresses support for privately managed trees.

Priority	*Short-term priority (in progress)*
Responsible department(s)	***Lead:*** *Community Services Department (Urban Forest, Parks and Open Space)*

Planting oaks with Acorn Woodpeckers in mind.

The chances of Acorn Woodpeckers setting up a city colony can be helped along by urban forest planning. Colonies need at least 20 oak trees spread across 15-20 acres. Enhancing habitat patches that already have oaks by planting more oaks nearby might just do the trick.



Acorn Woodpecker. Photo by David J. Mauk.

Action 13. Update the City tree list and Tree Ordinance to increase urban forest health, species diversity, and age diversity.

Diversify public tree plantings, reducing reliance on common street tree choices.

- Aim to increase species diversity of trees planted. In particular, reduce reliance on over-represented tree species in new tree plantings, particularly London Plane Tree and Chinese Pistache, and do not plant Coast Redwood; see "Public Tree Assessment" and "Balancing the Legacy of Redwoods in a Changing Climate" in **3.2 Urban Forest Assessment**.
- Aim to increase the proportion of trees planted that are regionally- or California-native, particularly to address gaps in the age diversity of native public trees (see **3.2 Urban Forest Assessment**).
- Develop and implement an interactive web-based plant selector tool (see **Action 5**) to select appropriate trees based on criteria such as tree form, area requirements, biodiversity support, known challenges and maintenance issues, and other benefits. The tool will update and replace the City tree list (**Guide B: Plant Lists**) and should be updated regularly based on monitoring, staff experience, and expert guidance.

Update the Tree Ordinance as follows, and in accordance with other best practices:

- Update the definition of Heritage Tree to improve clarity and protect the most valuable trees.
  - Explore revisions to the Tree Ordinance to remove Heritage Tree protections for invasive species (as classified by Cal-IPC for Northern California) and palm species.
  - Simplify permit requirements in cases of public urgency such as invasive pests, diseases, species, or other irreversible conditions.
  - Update Heritage Tree Removal findings to better align with City review processes and criteria.
- Improve development processes (see **Action 20**) to better support tree planting and protection, such as:
  - Set objective development standards for tree planting and preservation, accounting for different development types and zoning designations.
  - Designate development standards or required public improvements that may be waived or reduced if the proposed development promotes Heritage Tree preservation.
  - Clarify alternative mitigations for Heritage tree removals, and align them with the goals of this Plan. Designate mitigation trees with protected status regardless of size.
- Clarify processes and requirements for Street Tree and Heritage Tree replacements.
- Consider implementing a "No Net Loss" policy (see **Guide C: Urban Forest Policies and Practices**).

The Tree Ordinance, planting guidance, and related implementation tools should prioritize the protection of existing mature trees, habitat features, and ecological resources, alongside new plantings and enhancement.

Priority	*Short-term priority (upon Plan adoption)*
Responsible department(s)	*Lead: Community Services Department (Urban Forest, Parks and Open Space)*

Action 14. Explore and expand opportunities to repurpose public tree materials and green waste.

The CSD Urban Forestry Division should continue to explore opportunities to repurpose organic materials from tree care and removals in alignment with SB 1383 requirements. Continue to reuse wood chips and logs in parks. Evaluate new options such as investing in a wood mill saw, partnering with vendors to create furniture or other products, and improving coordination on mulch and compost procurement to support waste diversion targets. Continue to support opportunities for compost and mulch giveaways to residents to support the City's efforts to comply with SB 1383 implementation.

Priority *Short-term priority (in progress)*

Responsible department(s) ***Lead:*** *Community Services Department (Urban Forest)*
Support: *Sustainability and Solid Waste*

Objective 3B: Support quality habitat that sustains a diversity of life



Action 15. Establish priority areas and goals for habitat restoration of large open spaces.

Set habitat restoration Targets (see **Guide D: Monitoring and Targets**) that increase Mountain View's overall habitat diversity and representation of historical habitat types. These targets may leverage or tie in with synergistic programs such as those for floodplain management.

- Applying the findings in the Habitat Diversity discussion in **3.1 Biodiversity Assessment**, identify sites that may present opportunities to restore or enhance currently-underrepresented historical habitat types, such as Wet Meadow, Alkali Meadow, and Oak Woodland or Savanna; undertake feasibility assessments as appropriate.
- Where full habitat restoration is not feasible, design plant palettes that use a suite of species from historical habitat types (start with the Native Plant List found in **Guide B: Plant Lists**), and develop interpretive signage to educate the community (**Action 3**).

Priority *Short-term priority*

Responsible department(s) ***Lead:*** *Community Services Department (Urban Forest, Parks and Open Space)*

Action 16. Identify and pursue opportunities to enhance and expand existing vegetated patches providing habitat, particularly for native species that are less tolerant of urban disturbances.

Referring to the Ecological Enhancement Zone in **Guide A: Urban Landscaping**, explore creative opportunities to expand existing vegetated patches, reduce patch "edge" effects, fill gaps between neighboring patches, and establish new green spaces, especially those greater than two acres in size (i.e., "patches"). Vegetated patches will contribute to biodiversity support regardless of whether they occur on private or public lands–or a single patch can span both.

Take an inventory of patch areas that fall on or near land currently owned or managed by the City or other government agencies. On this publicly-managed land:

- Identify appropriate sites adjacent to patches where impervious cover can be replaced with soft-scape to expand the patch size and buffer patch core areas.
- Within and surrounding existing patches, implement wildlife-friendly maintenance practices (see **Action 21**), and enhance vegetation quality where possible.
- Provide special resources where appropriate. For example, snags (standing dead or dying trees), dead tree limbs, and tree cavities provide particularly high habitat value for wildlife, as does re-storing creek and wetland floodplains (see **Guide A: Urban Landscaping**).

In addition, assess and pursue opportunities for private land acquisition to:

- Expand or connect existing vegetated patches; and
- Pursue opportunities to create new vegetated patches.

Priority	*Long-term priority*
Responsible department(s)	***Lead:*** *Community Services Department* ***Support:*** *Public Works Department*

Objective 3C: Use greening opportunities to adapt to future climate conditions

Action 17. Prioritize shade tree planting in the Cooling Zone, mapped in Guide A: Urban Landscaping, to protect against heat and improve walkability.

Trees in the public realm will play an important role in protecting the community from intensifying extreme heat events, while also providing benefits to people and nature year round.

- Plant shade trees (trees with larger canopies at maturity) in areas with high heat risk, and near community resources, such as active transportation infrastructure, community facilities, and access routes to cooling centers and other emergency resources, as noted in the Cooling Zone guidance (see **Guide A: Urban Landscaping**). High-priority planting locations can be prioritized using the following concurrent assessment and planning efforts:
  - A climate vulnerability assessment is underway (to be completed FY25-26), led by the City Manager's Office Resilience and Sustainability team. The work will map 1) where the extreme heat hotspots are in greater granularity than this Plan, and 2) the facilities where people can go during a heat emergency.
  - The City of Mountain View Parks and Recreation Strategic Plan's (PRSP) planning area-based equity framework will inform prioritization of urban cooling, shade, and green infrastructure investments in areas experiencing higher heat exposure and lower access to parks, tree canopy, and other green amenities. PRSP Action item 2.1.1 also references this Plan's **Action 17**, reinforcing coordination between the two plans to advance equitable access to shade, cooling, and biodiversity benefits city-wide.
- Align tree plantings for urban cooling with biodiversity support functions, such as improving landscape connectivity for wildlife movement, and other City goals, such as walkability, traffic calming, and public safety.
- Establish 40% canopy cover for parking lots at 15-20 years after construction. Trees should shade at least 40% of the paved areas as measured at 20-year maturity, based on the tree species and mid-summer sun angle conditions. The parking lot shade goal is carried over from the prior 2015 CTMP. Establish a shade goal for active transportation corridors.
  - Plant trees with larger canopies at maturity, and provide adequate planting conditions (e.g., soil volume, structure, and suspended pavement) to promote tree longevity and growth to their full size potential.
  - Consider adding language to manage the common conflicts between tree-planting and solar panels.
- Ensure appropriate spacing between shade trees to allow adequate shade tree canopy at maturity per the standards and guidance developed through **Action 4.**

Priority *Short-term priority*

Responsible department(s) ***Lead:*** *City Manager's Office (Sustainability and Resiliency)*

GOAL 4:

ACTIVATE AND COLLABORATE WITH THE COMMUNITY

The community, City, and the region are ready to support biodiversity and the urban forest together. A coordinated and collaborative effort will pull together diverse stakeholders across and outside of the city. The City can facilitate this Goal by engaging residents and practitioners, and by coordinating across City departments and with external agencies and regional efforts.



Biodiversity & Urban Forest Plan workshop in 2024. Courtesy of the City of Mountain View.

Objective 4A: Activate and collaborate with the community

Action 18. Enhance residential and privately-managed tree support. Conduct City-led outreach and partner locally to activate the community in supporting biodiversity and the urban forest in neighborhoods across the city.

Expand outreach, educational guidance, and incentives for tree planting and care, native landscaping, and habitat enhancement and restoration.

- Continue promoting tree planting on private property, especially in higher-density and underserved neighborhoods.

Action 18. (continued)

- Conduct City-led outreach for residents across the city. Topics would include lawn replacement, impervious surface removal, residential landscaping for birds, pollinators, and other wildlife, expanded native tree giveaways, tree care and tree pest management, wildlife best practices, and others (see **Guide A: Urban Landscaping**).
- Develop a platform and outreach program to encourage property owners to share information about trees on their properties. This will allow the City to better track Mountain View's privately maintained trees (see **Metric M25** in **5.3 Metrics and Targets**) and understand how to better support this large component of the urban forest.

Strengthen partnerships, such as with local non-profit organizations, community-based groups, owners/managers of large properties, nurseries, landscapers, contractors, and schools, to support City initiatives and goals for promoting biodiversity and the urban forest, especially on private land.

- Work with community-based partners to support outreach; education; engagement; and distributing, planting, maintaining, and tracking trees or biodiversity-supporting plants. Encourage programming that supports multiple community objectives, such as education, supporting at-risk youth, and workforce development. Potential approaches includes implementing an Adopt-a-Tree program for city trees or recognizing schools, businesses, and neighborhood organizations for implementing biodiversity and native-friendly landscaping. The City's current partnership with Canopy may be used as a model for organizational partnerships.
- Continuing to partner with other private forest stakeholders, such as large property owners/managers and industry professionals (e.g., nurseries, landscapers, and contractors), will allow the City to forge deeper working relationships and understanding of Mountain View's privately managed trees, and those responsible for caring for them.
- Promote engagement with existing native landscaping certification programs, such as National Wildlife Federation Certified Wildlife Habitat, Xerces Society Pollinator Habitat Pledge, Monarch Watch Monarch Waystations, or North American Butterfly Association Certified Butterfly Gardens.

Priority *Short-term priority*

Responsible department(s) ***Lead:*** *Community Services Department, City Manger's Office*





Photos from 2025 Mountain View Earth and Arbor Day celebration. Photos courtesy of the City of Mountain View.

Action 19. Build partnerships and programs that enable the community to access and contribute to data about trees and nature in the city.

Investigate ways to engage the community in new or existing data collection efforts, such as:

- Collaborate with existing organizations and programs (e.g., Grassroots Ecology's Shoreline City Nature Challenge Bioblitz) to expand the annual City Nature Challenge bioblitz to the whole city.
- Explore opportunities to foster community participation in an inventory of privately-managed trees (see **Action 18**).
- Consider how data collected through the City Nature Challenge or other community science or bioblitz events can support tracking the Plan's proposed Metrics, such as **Metric M15** and **Metric M16**, in **5.3 Metrics and Targets**.
- Strengthen partnerships with schools, community-based organizations, and academic institutions to both provide student education opportunities and generate data and insights about the city's urban forest and ecology.

Priority *Medium-term priority*

Responsible department(s) ***Lead:*** *Community Services Department*



Horn-Faced Leafcutter Bee. Photo by iNaturalist user rojasburke, courtesy of CC BY 4.0.

Home gardens can support native bees.

The Horn-Faced Leafcutter Bee eats pollen from a variety of native plants that can be grown in gardens. Socially solitary, they nest in wood holes, plant stems, and other substrates. Gardens will not only support Leafcutters with nourishing pollen, but also the leaves they cut and place within their nests.

Objective 4B: Activate and collaborate with design practitioners and large landowners

Action 20. Conduct a biodiversity- and urban forest-focused review of City development processes to clarify various City department expectations and requirements.

Development and redevelopment create large-scale opportunities to transform the built environment to better support biodiversity and trees. City guidance, standards, and other resources should clearly communicate the expectations of the City's various Departments, requirements, and enforcement practices. A review of these resources, coordinated across City departments, will improve communication with developers and the public, and identify opportunities to support the Plan's Vision, Goals, Objectives, and Metrics.

- Review the General Plan, Code of Ordinances, and capital project requirements to identify opportunities to codify Plan commitments, such as pursuing canopy cover or landscaped area targets. Use Plan resources to develop objective standards, roadway design approaches, green infrastructure strategies, and other tools for development and public improvements.
- Review the development permitting process and opportunities to promote long-term tree retention at new developments.
    - Clarify expectations around development agreements. For example, a post-planting monitoring requirement would ensure trees and landscaping receive proper care, and that trees are not removed.
    - Prevent urban forest losses at the city scale. For example, establish a greater replanting requirement for any planted trees that are removed or die before the end of a development agreement. Establish a penalty system for failure to report.
    - Refer to **Action 13** for updating Heritage Tree protection and replacement policy in the Tree Ordinance.
- Conduct outreach to industry organizations and large landowners to find creative solutions (see **Action 18)**. One existing initiative to model off of is the City's current support for the school district's "Greening Initiative" project through purchasing trees and irrigation supplies.
- Implement any changes in coordination with updated guidelines and standards (**Action 4**).
- Identify opportunities to enhance the ecological value of landscaped spaces, such as side and rear yards, by encouraging plantings from **Guide B: Plant Lists** and future updated resources.

Priority *Medium-term priority*

Responsible department(s) ***Lead:*** *Community Services Department*

Support: *Community Development Department, City Attorney's Office*

Objective 4C: Enhance collaboration across City departments to optimize implementation of the Plan through City programs, projects, operations, and maintenance

Action 21. Develop and implement staff training for biodiversity-friendly landscape installation and maintenance.

As the City updates landscaping standards and guidelines and installs biodiversity-friendly landscaping, staff will also need to be trained to implement the new standards and maintain the updated landscaping.

- Develop training and informational materials for maintaining a more diverse and native plant palette and minimizing human-wildlife conflicts and pest species. Keep the training content and concepts up to date as new standards are applied.
- Maintain an adequate level of maintenance staff to maintain the City's facility, park, and roadway median landscaping.
- Where needed, seek training materials and support from Bay-Friendly Landscaping and the California Native Plant Society.
- Collaborate and exchange resources and feedback between the Community Services Department Parks staff and Public Works staff to align project designs with maintenance staff training and resources. Inter-departmental coordination should be conducted within budget, staffing, and/or schedule constraints.

Priority	*Short-term priority (in progress)*
Responsible department(s)	***Lead:*** *Community Services Department* ***Support:*** *Public Works*



Southern Alligator Lizard. Photo by Jerry Kirkhart, courtesy of CC BY 2.0.

Keeping it "messy" for lizards.

In addition to vegetation, Southern Alligator Lizards need logs and rocks for refuge and will benefit from landscaped areas and corridors where these types of debris are maintained. Tail breakages were found to be more common for this species in areas with more impervious surface cover—probably because of more human traffic and a lack of hiding places. Before tossing that log in the chipper, consider leaving it for a lizard!

Action 22. Establish an internal system across City departments for a) data collection and Target-setting, and b) regularly revisiting the Plan to maintain steady progress towards the Vision and Goals.

Conduct a cross-departmental review of Targets and associated Metrics identified in the Target-Setting Worksheet (see **Guide D: Monitoring and Targets**).

- Collaborate to set Target values, prioritizing those associated with the Recommended Metrics and considering the Supplemental Metrics where appropriate.
- Establish an internal system for data collection, tracking, and reporting on the Metrics and progress toward Targets (see below).

Conduct annual, cross-departmental check-ins to maintain the Plan and ensure its continued implementation. Inter-departmental coordination should be conducted within budget, staffing, and/or schedule constraints. The goal of these communications is to:

- Track and review progress towards the Goals of the Plan, including reporting the status of Actions completed, currently underway, and not yet initiated.
- Regularly measure and report progress towards Targets. Develop and implement a monitoring and data-tracking system to collect updates on each of the Plan's Metrics (see **5.3 Metrics and Targets** and **Guide D: Monitoring and Targets**).
- Update the Plan in 2035: Update the Biodiversity, Urban Forest, and Community Perspectives assessments and the Plan's Actions; make appropriate updates to the Goals, Objectives, Metrics, and Targets to better serve the City and community.
- Review and discuss existing opportunities, needs, challenges, and conflicts for City departments to align their strategies, guidelines, practices, and policies.
- Set goals for the upcoming year. Identify priority next steps and specify a task lead for each (see "Leadership and Responsibilities" in **5.4 Implementation Framework**).
- Provide an annual summary of implementation progress, supported by Targets and Metrics, to the Parks and Recreation Commission, City Council, and the public, with additional community-facing updates or engagement opportunities to share progress (see "Monitoring, Evaluation, and Reporting" in **5.4 Implementation Framework**).

Priority *Short-term priority (upon Plan adoption)*

Responsible department(s) *Lead: Community Services Department*

Action 23. Incorporate recommendations and guidelines from this Plan when developing new, or substantially updating existing, Precise Plans.

When the City develops new or updates existing Precise Plans, develop procedural mechanisms to ensure that recommendations in this Plan and the associated Guides are consulted.

- Identify opportunities to support the Objectives and other Actions promoted in the Plan, such as tree-planting (**Action 12** and **Action 18**), shade requirements (**Action 17**), development and roadway standards (**Action 20**), and active transportation corridor improvements (**Action 1** and **Action 17**).
- Incorporate guidelines and best practices presented in **Guide A: Urban Landscaping** and **Guide C: Urban Forest Policies and Practices**. Overlay the Precise Plan district with the zones outlined in **Guide A: Urban Landscaping** to assess which guidelines are most relevant in the district.
- Refer to the **Guide B: Plant Lists** or any updated plant selection tools developed through **Action 5** when developing neighborhood plant palettes.

Use the maps in **Guide A: Urban Landscaping** to inform decisions about development densities, intensities and character.

- Develop high-level goals policies consistent with this Plan that can further support future decision-making regarding the City's streets, open spaces and private properties.

Priority *Short-term priority*

Responsible department(s) ***Lead:*** *Community Development Department (Planning)*
Support: *Community Services Department*



Biodiversity and Urban Forest Plan Farmers' Market pop-up. Photo by Lauren Stoneburner, SFEI.

Objective 4D: Coordinate with other agencies to identify opportunities for aligning visions and collaborating on initiatives that enhance shared natural resources

Action 24. Explore collaborations with local and regional public/agency partners to identify potential opportunities to support biodiversity together.

Frequently communicate biodiversity and urban forest management Goals, Objectives, and Actions with Mountain View's partners, with the aim of maximizing benefits on a larger scale.

- Coordinate and seek opportunities to align priorities and initiatives with other government entities that manage land in Mountain View, such as Valley Water and SFPUC, as well as other major private utility providers, such as PG&E, beyond updating access agreements described in **Action 2**.
- Potential collaborating activities include pooling data, information, and funding; identifying strategies for managing shared resources (e.g., creeks or shoreline habitat) or adapting to shared challenges (e.g., climate change, sea-level rise, or pest management); partnering on implementation projects; and establishing MOUs and other agreements.
- Continue to participate in, or identify and join, existing regional networks, forums, or working groups, such as the Santa Clara Valley Urban Forest Alliance and the Santa Clara County Climate Collaborative.

Priority *Short-term priority*

Responsible department(s) ***Lead:*** *Community Services Department*
Support: *Public Works Department*



South Bay Salt Pond Restoration Project sign naming a broad suite of public, private, and NGO partners. Photo courtesy of the City of Mountain View.

Action 25. Continue to explore and apply for intergovernmental programs and networks to elevate Mountain View's leadership and recognition on a national and international platform.

Mountain View's bold commitments and resulting initiatives to strategically support its urban biodiversity and forest as a cohesive urban ecosystem sets the City apart as a leader and model for others to follow. Joining national and global networks and programs alongside other cities can yield numerous benefits, including gaining access to resources and forums for exchanging knowledge, staying aligned with the most up-to-date science and best practices, and offering a platform for Mountain View to share its accomplishments and lessons learned.

Mountain View has taken the Mayor's Monarch Pledge since 2021 and joined Tree City USA in 2001. Similar programs and recognitions can elevate Mountain View's profile on national and international stage, such as joining the Biophilic Cities network or seeking the Tree City USA Community with Growth Award.

Priority *Long-term priority*

Responsible department(s) ***Lead:*** *City Manager's Office*



City of Mountain View staff and Canopy staff partner to host the city's 2025 Earth and Arbor Day Celebration. Photo courtesy of the City of Mountain View.

5.3 Metrics and Targets

It is important to use Metrics and quantitative Targets to track progress towards Objectives outlined in **5.2 Vision to Action**. Metrics and Targets will enable the City to track progress and adapt to evolving challenges. These Metrics and Targets are for tracking progress toward this Plan's Goals and Objectives; they are different from the formal performance/workload measures that the City reports annually.

Definitions of Metric and Target. *Selecting Metrics and establishing Targets will help the City monitor progress in accomplishing Objectives.*

METRIC • A quantifiable measure intended to convey information about the City's progress in reaching a stated Objective

TARGET • Numeric goalposts to achieve within a specific timeframe (see **Guide D: Monitoring and Targets** for additional guidance on Targets)

METRICS

Below is a series of recommended Metrics to evaluate progress in achieving the biodiversity and urban forest Objectives outlined in the Plan. These Metrics blend local insights from the Mountain View community and City staff with international research and standards for tracking urban biodiversity performance, including from *Making Nature's City*, the City Biodiversity Index (also known as the Singapore Index on Cities' Biodiversity), the IUCN Urban Nature Index, and Biophilic Cities.[58,150-152] Aligning the City's Metrics with these international standards will elevate the City of Mountain View as a trailblazer, applying the most up-to-date science, setting benchmarks for cross-city comparisons, and preparing the City to join global networks that prioritize urban ecosystem health.

The Plan highlights two groups of Metrics:

- **Recommended Metrics** are those that the City can begin tracking immediately, using information already collected through regular City operations. These Metrics can be used to standardize consistent annual tracking as needed, though the relevance and utility of each Metric may vary over time as City priorities and initiatives evolve.
- **Supplemental Metrics** for further consideration would require data the City does not currently collect. While resource constraints may limit feasibility, the City can refer to this supplemental list to measure additional dimensions of success as priorities or capacity allow.

OBJECTIVES

1A | 1B | 2A | 2B | 3A | 3B | 3C | 4A | 4B | 4C | 4D

RECOMMENDED METRICS

Recommended, ready-to-use Metrics linked with the Objectives for which they track progress



M1. Tree canopy cover across the city (as percent of total area, excluding the Baylands)

M2. Proportion of public trees that are regionally- and California-native

Number of projects (or acres of project area) incorporating enhancements for native species habitat (e.g., native pollinator gardens, bat boxes, ponds, bioswales) in the urban matrix (**M3**) and specifically integrated into capital projects (**M4**)

Acres of landscaping converted from unprogrammed and un-derutilized natural or artificial turf (**M5**) or impervious surface (**M6**) to ecologically-functioning landscaping (e.g., native plants, green stormwater infrastructure, cooling, permeable surfaces)

Number of trees planted on City-managed lands (**M7**) and for new developments (**M8**), distinguishing between new and mitigation trees

M9. Average interval (years) between checkups (including a health assessment and upkeep activities such as pruning) on trees maintained by the City

M10. Percent or number of parks and community facilities that implement biodiversity-themed installations, including signage and art associated with physical landscaping

M11. Number of external stakeholders partnering with the City to implement biodiversity activities, projects, and programs

Number of attendees (**M12**) and volunteer or participant hours **(M13)** during City-sponsored or -partnered biodiversity and urban forest events and programs

M14. Number of trees distributed through Arbor Day Tree Giveaway or other City-sponsored or -partnered events and programs

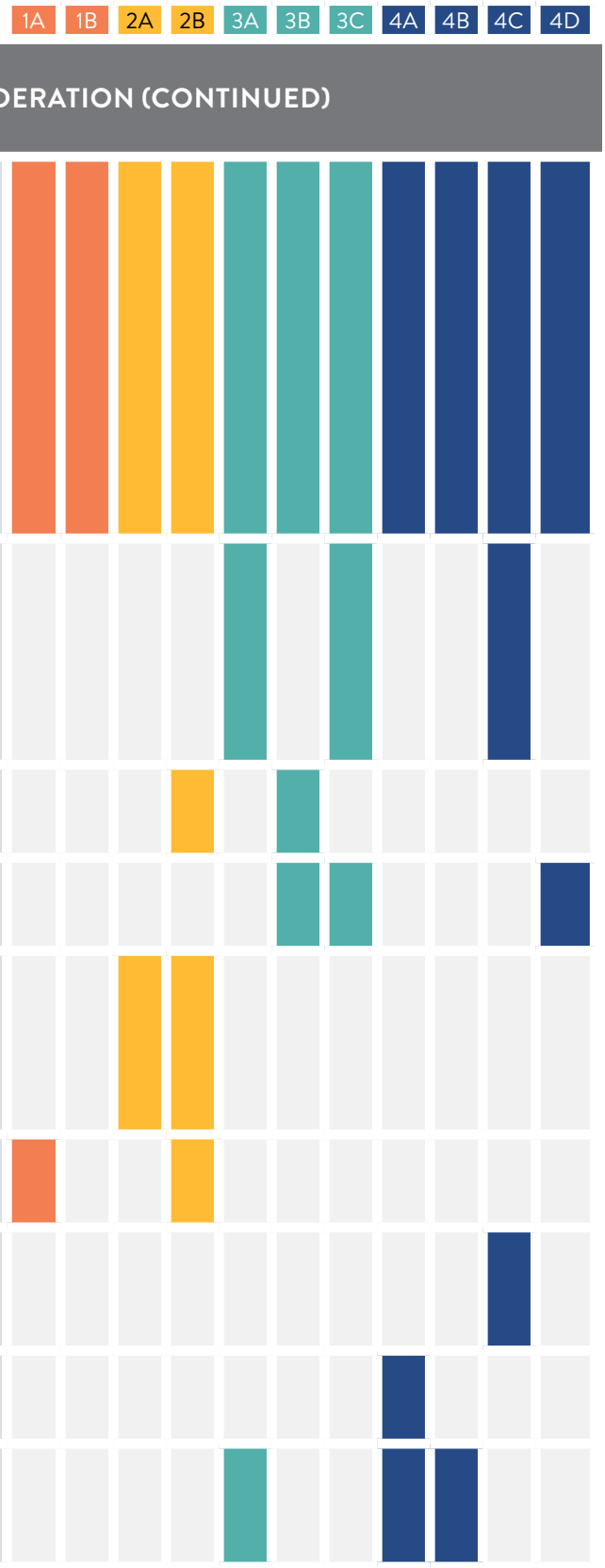
SUPPLEMENTAL METRICS FOR FURTHER CONSIDERATION

Additional Metrics that the City can consider evaluating to measure progress towards Plan Objectives; would require additional data collection and tracking, beyond current City activities

M15. Number of native vascular plant, bird, and arthropod[a] species

*Estimating the number of native vascular plant, bird, and arthropod[a] species in the city, measured through standardized, repeated surveys, will allow the City to track change in native species richness—an important measure of biodiversity—over time (see **Guide D: Monitoring and Targets**).*

SUPPLEMENTAL METRICS FOR FURTHER CONSIDERATION (CONTINUED)



M16. Percentage of native bird species in built-up[b] areas or within project site

This metric compares the number of native bird species found in an area of interest to the city-wide total, indicating how well the urban matrix supports native birds beyond parks and open spaces. This metric focuses on birds because of the availability and reliability of data[153,154] and the relative ease of monitoring.e.g.,[155] This metric can also be applied to other taxa (e.g., native vascular plants or arthropods). Pre- and post-project data can particularly demonstrate a project's impact on urban biodiversity.

How the Metric is calculated: (Number of native bird species in built-up areas/project site) ÷ (Total number of native bird species in the city) × 100%

M17. Percent of newly installed (within 3 years) public trees that are in good condition

Tracking tree condition (including lack of disease, canopy health, and structural issues) during regularly-scheduled tree monitoring visits can inform future tree planting decisions, maintenance needs, and site condition requirements.

M18. Acres restored for native species habitat and protected from human disturbance

M19. Linear footage ratio of nature-based vs engineered banks for freshwater streams

Number of properties with existing/updated wildlife-friendly lighting (**M20**), and number of structures with existing/updated bird-safe design (**M21**), e.g., on City-owned properties, new developments, or encouraged on private properties through ordinances

M22. Linear footage of trail extensions, improvements, or new trails amidst natural features

M23. Number of hours or FTE positions City staff work on biodiversity-related tasks, including training, to manage landscapes for supporting biodiversity.

M24. Number of acres enhanced for biodiversity during City-sponsored or -partnered events and programs

M25. Number of privately-managed trees tracked through data submitted by private community members (e.g., by community members and large landowners)

a A large group of species that includes insects, spiders, and crustaceans. Though cities are often most interested in monitoring bee and butterfly pollinators, the Plan purposefully uses this grouping to include other groups of ecological importance as predators (e.g., spiders) and in healthy soils (e.g., millipedes).

b Terminology retained from the City Biodiversity Index, "built-up" areas refer to the most-developed or highly urbanized areas within cities, excluding parks and open space

TARGETS

While Metrics are the method for measuring progress, Targets represent the milestones. Setting evidence-based, quantitative targets for improving biodiversity and urban forest health will motivate the City to make measurable progress towards its Objectives in a discrete timeline. Assigning quantitative targets requires deep consideration to balance what is needed to meet the community's goals with what is feasible to achieve in a given timeframe, which will make for an important immediate next step to follow this Plan, as recommended in **Action 22** (see **5.2 Vision to Action**). To support implementing this Action, **Guide D: Monitoring and Targets** also recommends a target-setting framework and worksheet for the City to use to determine Targets that align with the Objectives and Metrics.

Targets in the Prior 2015 Community Forest Master Plan

This Plan replaces the prior 2015 City of Mountain View Community Tree Master Plan (CTMP),[156] which originally set quantitative urban forest targets one decade ago. The following table lists these targets and reports progress toward their achievement.



Habitat restoration project at Shoreline Park. Photo courtesy of the City of Mountain View.

Quantitative urban forest targets from the prior 2015 CTMP and 2025 progress updates.

2015 CTMP QUANTITATIVE TARGET	2025 PROGRESS
Increase canopy by five percentage points from 17.7% to an overall canopy cover of 22.7% by 2030.	19.5% city-wide canopy cover in 2022 (a 1.8 percentage point increase), or roughly one third of the way towards meeting the target in seven years.
Plant 11,000 new trees over the next 15 years:	
Plant 300 new public trees per year until between 2015 and 2025, or a total of 3,000 new public trees.	Annual planting data has not been formally tracked, but 1,425 additional public trees were reported in the tree asset dataset between 2015 and 2024, amounting to 158 public trees planted on average per year between 2016 and 2024, or roughly half of the target pace set in 2015. This target is carried forward in **Action 12**.
Facilitate the planting of 535 new trees per year on private property until 2030.	Annual tree distribution data has not been formally tracked long-term, but roughly 370 trees in total were distributed to private residents in 2024, including Arbor Day tree giveaways and street tree planting. Recent annual Arbor Day tree giveaways amounts have increased steadily, at roughly: • 280 trees in 2024 • 220-230 trees in 2023 • 200 trees in 2022 This target is carried forward in **Action 18**.
Increase the tree stocking level of the public tree resource from 82% to 91% by 2030. This requires planting an additional 3,000 new public trees over the next 15 years, in addition to replacing trees that are removed due to failure.	Public tree stocking level is not able to be tracked and compared to 2015 levels using the public tree asset dataset due to formerly inconsistent data collection methods. A comprehensive repeat of the public tree inventory is needed to gauge the status of tree stocking levels.
Mitigation for tree removal should include calculation of the canopy being removed and a plan to mitigate that loss at a 2:1 ratio.	No known data tracking this target.
Establish a goal of 40% canopy cover of parking areas at 15-20 years after construction. Trees should shade at least 40% of the paved parking areas as measured at 20 year maturity, based on the tree species and mid-summer sun angle conditions.	Data are not available to track progress towards this target. As of 2015, zoning ordinance SEC. 36.32.80. "Development standards for off-street parking" sets tree-planting standards, but do not set enforceable canopy cover targets. In addition, El Camino Real Precise Plan and East Whisman Precise Plan have set 50% canopy cover goals over surface parking lots. This target is carried forward in **Action 17.**

5.4 Implementation Framework

The Plan provides a long-term, aspirational vision for protecting, enhancing, and managing the City's natural systems. Implementation of this Plan will be carried out through a coordinated and adaptive approach that allows the City to respond to new information, opportunities, and community needs over time. This Implementation Framework outlines how the City will organize responsibilities, prioritize actions, pursue funding, and monitor progress to support ongoing advancement toward the Plan's goals.

LEADERSHIP AND RESPONSIBILITIES

Successful implementation of the Plan will require a coordinated City-wide effort. To support this, the City will establish a cross-departmental Implementation Team responsible for advancing Plan Actions and maintaining steady progress toward the Vision and Goals. The City Implementation Team will include staff from the departments and divisions involved in development of the Plan, including Community Services, Public Works, Community Development, Sustainability, and others. A designated staff lead will oversee the team and coordinate plan execution, monitoring, and reporting activities to support continuity, accountability, and effective collaboration across departments.

Core Responsibilities. The City Implementation Team will:

- Coordinate the initiation and advancement of Actions across departments
- Align departmental work plans and the recommended sequencing of action items with Council Strategic Priorities and goals
- Review Actions for feasibility, resource needs, and opportunities for alignment with ongoing City projects
- Support the updates and/or development of ordinances, policies, objective standards, roadway design approaches, green infrastructure strategies, and technical resources that implement the Plan's direction
- Monitor progress using planned Metrics and maintain internal accountability
- Prepare updates for City leadership, Boards and Commissions, and the public
- Determine roles and actions of committees, commissions, and other advisory bodies to involve or consult
- Recommend adjustments to implementation strategies based on progress, challenges, or emerging opportunities

To further support the Implementation Team and designated lead staff, the City will continue to evaluate staffing and resource needs, which may include additional staff support and/or consultant assistance to advance specific Actions and initiatives. These resources may support technical analysis, grant pursuits, specialized project implementation, volunteer coordination, community engagement and partnership, interdepartmental coordination, and collaboration with regional agencies (see **Action 24**).

PRIORITIES AND INITIAL STEPS

The Plan identifies Actions with short-term, medium-term, and long-term priority levels (see **5.1 Components of the Plan**) to guide sequencing. These priorities provide general direction but remain flexible, recognizing that implementation will depend on staffing, funding, feasibility, and alignment with other City initiatives.

Short-term Priorities. Several short term-priority actions are already in progress and will be expanded upon or refined as part of implementation. Additionally, in response to strong community support, the City will prioritize **Action 5** (developing recommended plant palettes), **Action 13** (updating the Heritage Tree Ordinance), and **Action 22** (setting Targets and collecting data to track Metrics) for implementation beginning immediately upon Plan adoption.

Medium- and Long-term Priorities. Medium and long term-priority action items will be reviewed by the City Implementation Team and incorporated into implementation work plans based on:

- Assigned priority level
- Feasibility and timing considerations
- Estimated costs and funding availability
- Required staff capacity and technical expertise
- Opportunities to align with capital projects, development activity, green infrastructure investments, or partner initiatives
- Partnerships or collaborations that may support implementation
- Anticipated environmental, community, or operational benefits

Existing and future Capital Improvement Program (CIP) projects may provide opportunities to incorporate greening, urban forest, and green infrastructure improvements as part of the broader City investments and infrastructure projects. The City may accelerate or defer certain actions as needed to account for staffing, funding cycles, regulatory changes, or opportunities to integrate work with other planned City projects.



Stevens Creek Trail. Photo courtesy of the City of Mountain View.

COSTS AND FUNDING

The adoption of this Plan does not constitute any budget appropriations. Actions with associated costs and funding needs will advance based on the availability of resources and direction from City leadership.

Funding Approach. For Actions with no current funding allocated, the City Implementation Team will administer the following:

- Submit budget adjustment requests through the City's annual budget development process
- Identify and pursue external funding opportunities, such as State and Federal grants, regional programs, philanthropic sources, private partnerships, and other opportunities described in the Plan
- Explore and/or leverage partnerships with institutions, nonprofits, community-based organizations, and regional agencies where mutual benefits exist
- Consider phased approaches or pilot projects to manage costs or strengthen future funding eligibility
- Evaluate opportunities to integrate Actions into planned capital projects or routine maintenance work

Preliminary cost estimates in the following table are intended to guide work planning and budget development. Actual costs and funding strategies will be refined as specific actions advance.



Routine maintenance of bioretention system at Pyramid Park. Photo courtesy of the City of Mountain View.

Plan Actions sorted by phase, priority, and preliminary cost estimate.

ACTION	PRIORITY ** in progress* *** upon Plan adoption*	COST *staff time only Ø* *under $250k $* *$250k to $1M $$* *over $1M $$$*
CURRENT PHASE: ACTIONS ALREADY IN PROGRESS OR BEGINNING UPON PLAN ADOPTION		
7. Develop and adopt a dark skies ordinance.	Short-term *	$
11. Expedite the development of a monitoring and maintenance plan for public trees.	Short-term *	$$
12. Plant an additional 1,575 public trees by 2030.	Short-term *	$$$
14. Explore and expand opportunities to repurpose public tree materials and green waste.	Short-term *	$$
21. Develop and implement staff training for biodiversity-friendly landscape installation and maintenance.	Short-term *	$
5. Further develop native and climate-resilient planting guidance to support proper installation, maintenance, and sourcing of native plant materials.	Short-term **	$
13. Update the City tree list and Tree Ordinance to increase urban forest health, species diversity, and age diversity.	Short-term **	$$
22. Establish an internal system across City departments for a) data collection and Target-setting, and b) regularly revisiting the Plan to maintain steady progress towards the Vision and Goals.	*Short-term* **	*$*
FUTURE PHASE: TIMING TO BE PLANNED BY CITY IMPLEMENTATION TEAM		
3. Promote biodiversity-themed installations and educational content.	Short-term	$
4. When reviewing or updating existing City landscaping and planting guidelines, implement design standards for city parks, facilities, and streetscapes where feasible.	Short-term	$
10. Maximize biodiversity support within city parks and trail corridors while continuing to meet community needs.	Short-term	$$$
15. Establish priority areas and goals for habitat restoration of large open spaces.	Short-term	$$$
17. Prioritize shade tree planting in the Cooling Zone, mapped in Guide A: Urban Landscaping, to protect against heat and improve walkability.	Short-term	$$$

ACTION	PRIORITY ** in progress* *** upon Plan adoption*	COST *staff time only Ø* *under $250k $* *$250k to $1M $$* *over $1M $$$*
FUTURE PHASE: TIMING TO BE PLANNED BY CITY IMPLEMENTATION TEAM (CONTINUED)		
18. Enhance residential and privately-managed tree support. Conduct City-led outreach and partner locally to activate the community in supporting biodiversity and the urban forest in neighborhoods across the city.	Short-term	$
23. Incorporate recommendations and guidelines from this Plan when developing new, or substantially updating existing, Precise Plans.	Short-term	$
24. Explore collaborations with local and regional public/agency partners to identify potential opportunities to support biodiversity together.	Short-term	$
1. Strategically integrate green features in active transportation improvement project design to both increase ecological value and achieve other City priorities.	Medium-term	$$
2. Continue to review land management agreements and explore opportunities to enhance restoration and maintenance of high-value ecological areas along third-party creeks.	Medium-term	$
6. Implement planting projects according to urban landscaping Zones indicated in Guide A: Urban Landscaping.	Medium-term	$$$
8. Further advance strategies that support bird-friendly standards and reduce collision risk.	Medium-term	$
9. Support coexistence between people and wildlife in Mountain View by using approaches that prevent conflicts before they happen, such as protecting natural habitats, reducing wildlife attractants in unsafe areas, and creating spaces where people can enjoy wildlife safely.	Medium-term	$
19. Build partnerships and programs that enable the community to access and contribute to data about trees and nature in the city.	Medium-term	$
20. Conduct a biodiversity- and urban forest-focused review of City development processes to clarify various City department expectations and requirements.	Medium-term	$
16. Identify and pursue opportunities to enhance and expand existing vegetated patches providing habitat, particularly for native species that are less tolerant of urban disturbances.	Long-term	$$$
25. Continue to explore and apply for intergovernmental programs and networks to elevate Mountain View's leadership and recognition on a national and international platform.	Long-term	Ø

MONITORING, EVALUATION, AND REPORTING

A structured approach to monitoring and reporting will allow the City to track progress, evaluate outcomes, and refine implementation strategies over time. As a foundational City policy document, this Plan will guide City decision-making, capital project delivery, and budget development across departments.

Data Collection and Metrics. As outlined in **Action 22**, the City Implementation Team will initiate an internal process to collect the data necessary to track Recommended Metrics, as well as Supplemental Metrics where feasible, and set Targets using the Target-Setting Worksheet (see **Guide D: Monitoring and Targets**). The City Implementation Team will include a designated staff lead to coordinate monitoring efforts, ensure continuity, and support collaboration across departments.

Monitoring and Evaluation. Monitoring efforts will focus on:

- Measuring progress made toward Plan Objectives and Targets across all departments
- Evaluating resource needs, staffing capacity considerations, and other barriers or challenges that may require adjustment to more efficiently and effectively meet Plan Objectives and Targets
- Identifying opportunities for adaptive management or process improvements
- Evaluating how Plan commitments and guidance are being incorporated into City projects, programs, and budget development processes

Reporting. The City Implementation Team will determine appropriate methods and frequency for reporting progress. This will include:

- Regular updates including annual progress reporting to City Council, the Parks and Recreation Commission, and other governing bodies (see **Action 22**); periodic community updates or engagement opportunities, including a check-in at the first year of implementation, to share progress
- Integration with existing climate, sustainability, or environmental reporting
- Public dashboard and/or summary materials for community outreach

Reporting will emphasize transparency, clarity, and accountability while remaining flexible to evolving communication needs.

ADAPTIVE MANAGEMENT

Because the Plan is intended as a guiding document, implementation will be adaptive and responsive as conditions, funding opportunities, regulatory requirements, scientific knowledge, and community priorities evolve over time. The City Implementation Team will periodically review overall progress toward the Vision and Goals, assess the effectiveness of completed Actions, and recommend refinements or updates to priorities and approaches as needed.

Implementation will also include identifying partnerships and funding opportunities that support volunteer, stewardship, and community-based efforts.

Adaptive management ensures that the City can adjust course and make informed, timely adjustments that support long-term success. This includes incorporating feedback from City Council, advisory bodies, and the community to continuously refine implementation.

5.5 Commitment to Progress

This Plan marks a pivotal step in articulating the community's vision for a greener, healthier, and more biodiverse and resilient future and drawing a roadmap toward realizing the Goals and Objectives to get there. It sets a clear direction for implementation and measuring success along the way, ensuring that the City has the information and tools necessary to create real change.

By applying **5.4 Implementation Framework**, the City will lead the next steps, following through on these commitments and adjusting where needed. Resources and recommendations provided in the Guides appended to the Plan, such as the urban landscaping guidance and plant lists, can be applied to projects immediately. The Plan's Actions also offer tools to incorporate into municipal processes, such as planning, zoning, ordinance updates, and permitting, over the next few years. Transparency and accountability will define the Plan's success, and will require investment in tracking and reporting the recommended Metrics.

The City can guard against loss of momentum and institutional knowledge from staff turnover by formalizing a process for revisiting the Plan and reporting on progress. To ensure progress, departments responsible for each action should revisit commitments annually and publicly report progress, such as through the City website or reports to City Council.

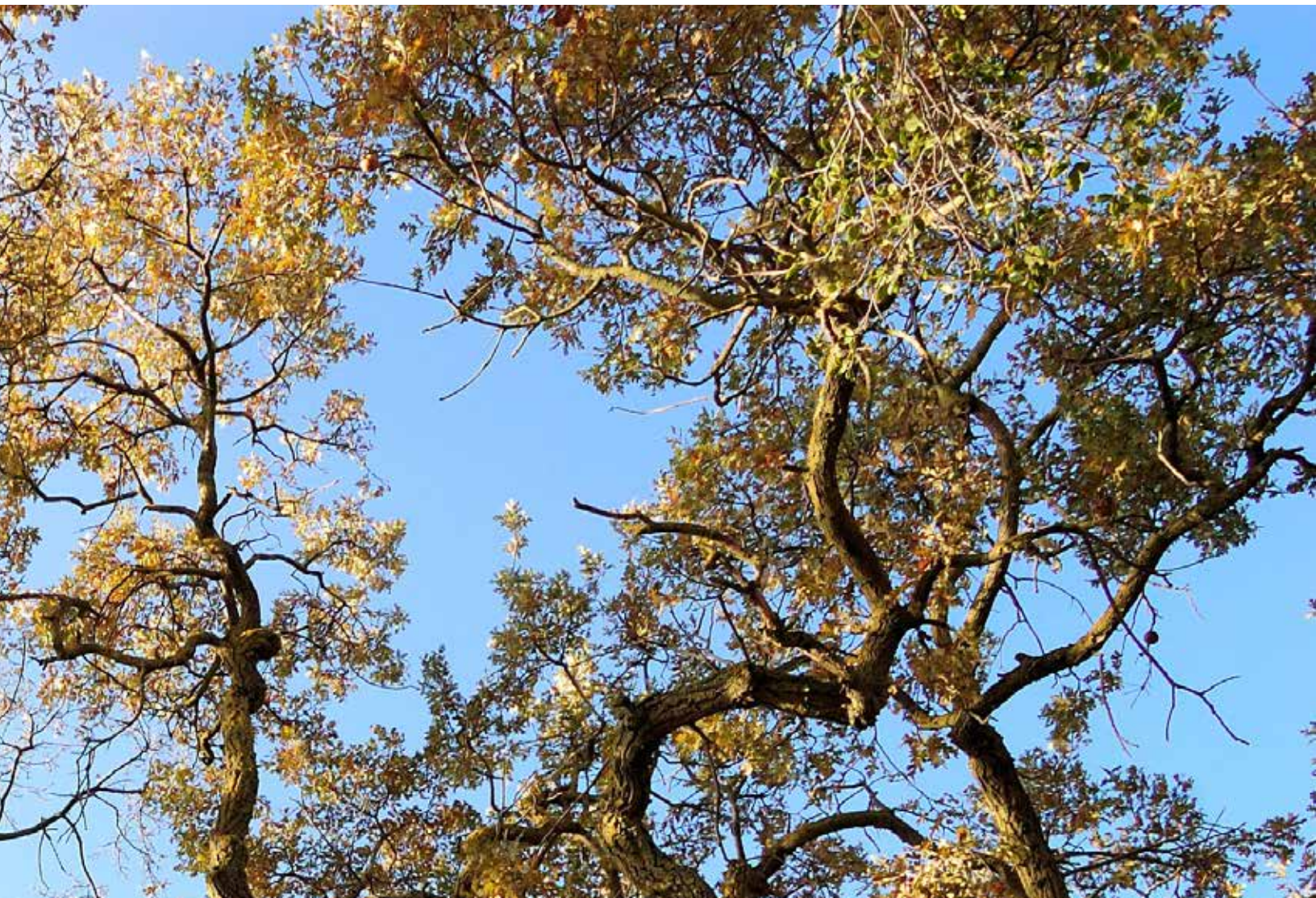


Coast Live Oak. Photo by Don DeBold, courtesy of CC BY 2.0.

The City should also commit to a more comprehensive assessment and formal update in five years to celebrate success, adapt to lessons learned, identify new opportunities, and reorganize priorities.

Sustained progress will require investment, both in staff resources and funding. Some recommendations will require additional resources and approval from City Council or leadership. There are also opportunities to align with external funding sources, regional initiatives, and state priorities to support this work. Santa Clara County's Urban Forest Master Plan may be a key source of external support, identifying regional urban forest needs and unlocking greater funding opportunities. Other funding opportunities to support the Plan could focus on urban greening, habitat restoration, transportation, stormwater, and climate adaptation, and should be explored.

The adoption of this Plan begins the City's paradigm shift towards managing its urban landscape as a cohesive ecosystem, in which people and organisms of all kinds can thrive. With the practical tools offered in this Plan and a commitment to invest in its implementation, combined with the community's passion to learn, collaborate, and take action, Mountain View has the power to bring its vision for a healthy, connected, and resilient urban ecosystem to life.



GUIDES & APPENDICES

GUIDE A: URBAN LANDSCAPING

This Guide translates the Vision, Goals, Objectives, and Actions of the Mountain View Biodiversity & Urban Forest Plan ("the Plan") into practical guidelines for landscape site design across the city. These guidelines are meant to serve as a reference resource containing general best practices and are not meant to be prescriptive. It may be used by the City, practitioners, and community members. Within the City, these guidelines apply to all project types, including new and existing development, public facilities, rights-of-way, and parks and open spaces.

Urban landscapes face unique challenges and opportunities for advancing local biodiversity and climate resilience. Individual sites with limited planting space must balance multiple competing demands—accommodating various land uses and infrastructure (such as transportation, recreation, and habitat creation), while delivering multiple benefits, including urban runoff management, pollutant capture, and urban cooling. The close proximity of built and natural systems adds further complexity, often creating conflicts that limit planting opportunities. Balancing these demands requires thoughtful design. These guidelines offer strategies to navigate these complexities to offer biodiversity and community benefits.

These guidelines include a map and overview of five Zones, which identify priority areas where landscaping strategies can generate the greatest impact for biodiversity and community well-being. Each Zone includes a set of landscaping guidelines applicable across different site types in the city. The maps in this guide are intended to provide an initial review of the zones in the City, and are not intended to be enforceable on their own. The City will conduct updates of the maps and additional policy development prior to using the maps.

Landscaping Guidelines by Zone

The landscaping guidelines presented here are organized into five Zones, to maximize impact for biodiversity and the community. These guidelines and zones were guided by the Plan's vision for ecological health and resilience, abundant access to nature, and fostering greater native biodiversity. Each Zone was mapped using results from **3.1 Biodiversity Assessment**. The results were summarized by city blocks or smaller (developed using a combination of public rights-of-way, U.S. Census blocks, land use and zoning designations, and street intersections) to delineate practical boundaries ("segments") for implementation.

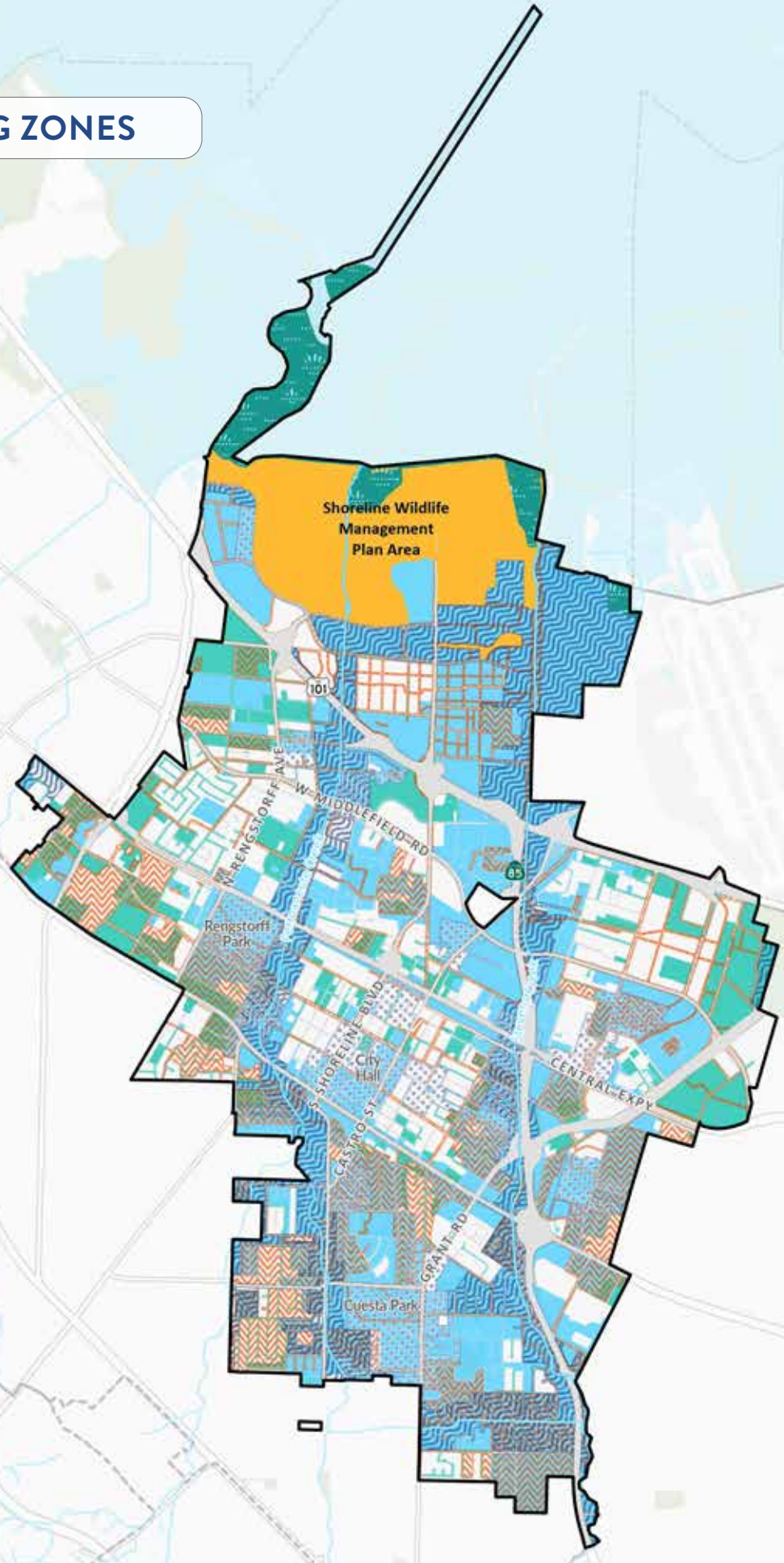
While these guidelines are tied to each Zone, these practices will likely generate benefits for biodiversity and the community wherever they are implemented in the city. The Zones simply serve as a framework for prioritizing resources and identifying opportunities for the highest impact. As a result, the Zones are highly generalized, and the guidelines must be considered alongside site conditions and project goals.

The Zones exclude Shoreline Regional Park and active wetland restoration sites, which have existing guidelines through management or restoration plans, including the recently-completed Shoreline Wildlife Management Plan.[10]

URBAN LANDSCAPING ZONES

Map of all five urban landscaping zones, including their areas of overlap.

- A. Ecological Enhancement Zone
- B. Water Resource Enhancement Zone
- C. Greening Zone
- D. Re-Oaking Zone
- E. Cooling Zone



- Shoreline Wildlife Management Plan Area
- Wetland Restoration Area
- Creeks and channels

N

0 0.5 1 Miles

A. Ecological Enhancement Zone

The Ecological Enhancement Zone highlights areas of Mountain View where native landscaping and wildlife-friendly management strategies are an especially high priority for supporting species that are more urban-sensitive and rely on consolidated habitat patches, special resources, and intact landscape connection. **Guide B: Plant Lists**, which provides a curated list of plants native to the Santa Clara Valley and an updated City tree list including California-native trees, can support plant selection in this zone.

This Zone targets creating and enhancing the quality of vegetation—especially native vegetation—in and around these important ecological resources. Targeting native planting in parks and schools is not only practical—because these sites offer relatively larger areas of open space—but also encourages interaction between people and native biodiversity in places where people spend time outside.

Targeted benefits: new and enhanced native habitat; attractive to more urban-sensitive wildlife; controlled invasive species; well-maintained planting; native species where people spend time

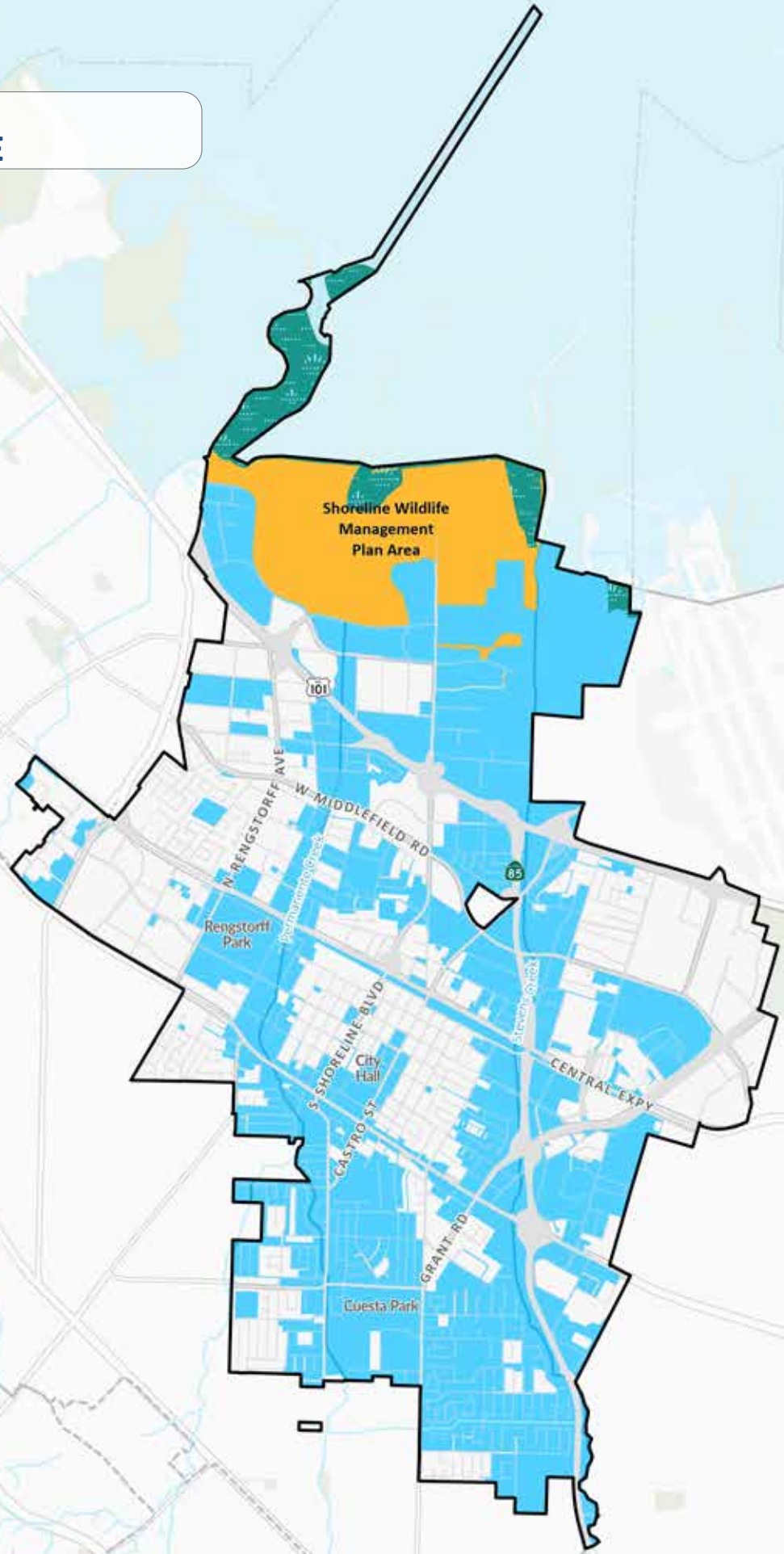
Landscaping guidelines to prioritize in the Ecological Enhancement Zone:

- A1: Prioritize native habitat creation or enhancement
- A2: Align with regional and local wildlife conservation efforts
- A3: Control invasive species
- A4: Provide maintenance and visual sense of care

A. ECOLOGICAL ENHANCEMENT ZONE

The Ecological Enhancement Zone was created using patches, barriers to movement, and matrix quality near patches and creeks from the Patches, Connections, and Matrix Quality assessments of **3.1 Biodiversity Assessment**. The resulting map includes segments within or near barriers to movement, those where improving matrix quality is important, and parks and schools.

Ecological Enhancement Zone



Shoreline Wildlife Management Plan Area

Wetland Restoration Area

Creeks and channels

N

0 0.5 1 Miles

GUIDELINE A1: PRIORITIZE NATIVE HABITAT CREATION OR ENHANCEMENT

Guideline A1.1: Create a native planting design for project sites, prioritizing species that—individually or together—provide especially high biodiversity support

- **Prioritize native, biodiversity-supporting plants:** Incorporate a variety of native species with staggered bloom times and fruiting periods, offer both herbaceous and woody cover for shelter, and include multiple planting layers (e.g., groundcover, shrubs, and canopy trees) to support a wide range of species, such as pollinators, birds, and mammals.
- **Create a diversity of microhabitats within a site:** Design to include horizontal and vertical diversity and complexity within habitat patches (e.g., a variety of vertical canopy heights overlapping within a single area as well as clusters of shrubs and/or trees interspersed horizontally with gaps of lower herbaceous vegetation between them) to accommodate different species' needs.
- **Incorporate native species that require special care where feasible:** Where site conditions and management practices allow, consider incorporating native species that require special care, such as annuals and low-disturbance-tolerant plants, that offer high ecological value and support local wildlife.
- **Enhance planting for multiple benefits:** Design habitat plantings to also provide aesthetic value, recreational enjoyment, and mental and physical human health benefits.[8] Where appropriate, select plantings that maintain sightlines while limiting physical access into native habitat areas. Incorporate varied vegetation layers and diverse habitat types, which has been linked to mental health benefits.)
- **Use low-water, drought-tolerant, and climate-resilient species** and consider recycled water and other site compatibility requirements. See **Guideline C5**.

Guideline A1.2: Place habitat-enhancing landscaping along slow streets and active transportation corridors to improve connectivity

- **Establish continuous tree canopy cover, prioritizing native tree species, along active transportation corridors:** Plant trees strategically in accordance with best practices, such as those in Caltrans Design Information Bulletins (DIB), Caltrans *Highway Design Manual*, and U.S. EPA *Green Streets Handbook*,[157–160] especially along lower-speed, local streets and active transportation corridors, to improve traffic safety, such as to provide traffic calming, reduced vehicle speeds, and bike and pedestrian safety. Tree-planting along local streets can also encourage canopy-dwelling birds, mammals, and invertebrates to move safely between patches.

- **Install landscaping features, especially with native vegetation, for multiple benefits:** Following best practices from the same design resources listed above, enhance landscape strips, medians, curb extensions, bioretentions, and other small planting features, prioritizing native vegetation. Sidewalk and roadway improvements can not only support movement, foraging, and cover for pollinators, ground-dwelling and lower-canopy birds, reptiles, amphibians, and small mammals, but also provide similar benefits as street trees for improving road safety.
- **Maintain trees and landscaping according to safety standards:** Regularly inspect and maintain tree and landscaping vegetation to ensure visibility of roads, crossings, traffic signals, signs, and other safety features remain clear.
- **Evaluate surrounding habitat to inform site design:** Evaluate vegetation and habitat surrounding sites to guide plant selection that promotes plant cross-pollination and facilitates wildlife movement across the landscape. Also see oak planting guidance in **D. Re-Oaking Zone**.

Guideline A1.3: Design safe street crossings

- **Conduct wildlife road crossing risk assessments** to identify key threats posed to wildlife by roads and evaluate opportunities to mitigate those threats, such as through roadway improvements or improving safe crossings, particularly through strategies that benefit both people and wildlife. Define the assessment goals, and collect existing data and potentially conduct field surveys to identify risk hotspots and key contributing risk factors.
- **Create safe, visible, low-speed traffic crossings** to support the safe movement of humans and wildlife.
- **Select appropriate plants within sight triangles** at intersections to prevent obstructing drivers' views, while also supporting pollinator and bird movement above traffic to help minimize roadkill.
- **Design planting plans near sensitive habitats** based on the needs of target species to support their habitat requirements and guide safe crossings between patches.
- **Use barriers, fencing, or other deterrents to protect sensitive habitat** from disturbances and to also discourage ground-dwelling animals from attempting unsafe crossings.

Guideline A1.4: Evaluate and treat reflective surfaces and artificial lighting adjacent to plantings

- **Install bird-safe design in high-priority locations:** Bird collision risk is heightened in areas where plantings are reflected in untreated, highly reflective surfaces. Coordinate with building managers and developers to reduce reflectivity of structures near planting areas where feasible.
- **Install wildlife-friendly light fixtures:** Use lower-intensity lighting and replace blue lights with warmer yellow or amber alternatives that are less disruptive to wildlife. Direct light only where needed, such as by utilizing shielded fixtures, to prevent unnecessary light spillover into planted areas.

Guideline A1.5: Preserve and protect interior habitat areas in large planting areas

- **Preserve interior habitat areas:** In large planting areas, maintain a protected interior habitat area by limiting pruning and mowing. Allow natural materials such as leaf litter, fallen branches, and fruits to accumulate, as they improve soil quality and provide habitat (e.g., cover and food) for urban wildlife.
- **Deter intrusion into interior habitat areas:** Use dense, low-growing plants along walkway edges to discourage dogs and people from entering interior habitat areas.

GUIDELINE A2: ALIGN WITH REGIONAL AND LOCAL WILDLIFE CONSERVATION EFFORTS

- **Consult historical ecology and local conservation efforts:** When planning landscape improvements, consider whether the plant palette can incorporate or mimic elements of historical habitat types once found at the site or in Mountain View. Also consult with nearby open space, habitat restoration, and species conservation projects to identify strategies for the planting areas to support target species recovery or ecosystem functioning.
- **Reference and incorporate other applicable conservation guidance:** Ensure planting and design strategies are aligned with local and regional wildlife protection efforts, including but not limited to:
    - Shoreline Wildlife Management Plan[10]
    - North Bayshore Precise Plan[133]
    - Shoreline Burrowing Owl Preservation Plan[132]
    - Santa Clara Valley Habitat Plan[125] (specifically the extended permit area for Western Burrowing Owl conservation)

GUIDELINE A3: CONTROL INVASIVE SPECIES

- **Focus invasive species control efforts in vegetated patches:** Prioritize invasive species removal in vegetated patches as shown in the "Patches" in **3.1 Biodiversity Assessment**, prioritizing larger patches and sensitive or restored habitats for treatment.
- **Align with the City's Integrated Pest Management Plan**[144]**:** Incorporate existing best practices to control invasive plants, weeds, and invertebrate pests.

GUIDELINE A4: PROVIDE MAINTENANCE AND VISUAL SENSE OF CARE

Guideline A4.1: Manage edges of planting areas to provide visual sense of care

- **Consider plant size and spacing at maturity in the design phase:** Visual sense of care is defined as how well-maintained and intentionally-designed a landscape appears to observers. During the design phase, consider the mature size of plantings and avoid placing plants, such as spreading groundcovers, too close to edges of planting areas, as this will increase maintenance costs (frequent pruning or mowing) and can negatively impact healthy plant success.
- **Maintain edges of planting areas:** Prune or mow plantings at the edges of entrances, major roads, primary walkways, local landmarks, and building foundations to ensure a neat appearance or to reinforce that a naturalistic design is intentional and cared for.
- **Clear debris from edges of core patches as needed:** If fallen leaves, branches, and other plant debris are left in core patches to provide habitat (see **Guideline A1**), remove from edges of planting areas to support a maintained and cared-for appearance.

B. Water Resource Enhancement Zone

Urban water resources are especially vital habitats for urban biodiversity. They face particular risk from urban runoff, which can contain pollutants such as pesticides, trash, and nutrients. Due to these risks, planting and management strategies that promote water absorption and reduce pollutants should be prioritized along riparian corridors and wetland boundaries.

The Water Resource Enhancement Zone highlights areas in the city where water quality management and riparian habitat enhancement is a high priority to support aquatic resource health. This zone is a subset of the Ecological Enhancement Zone, and its guidelines should be applied in addition to those of the larger zone.

Targeted benefits: improved water quality; recharged groundwater; increased native planting; controlled invasive species

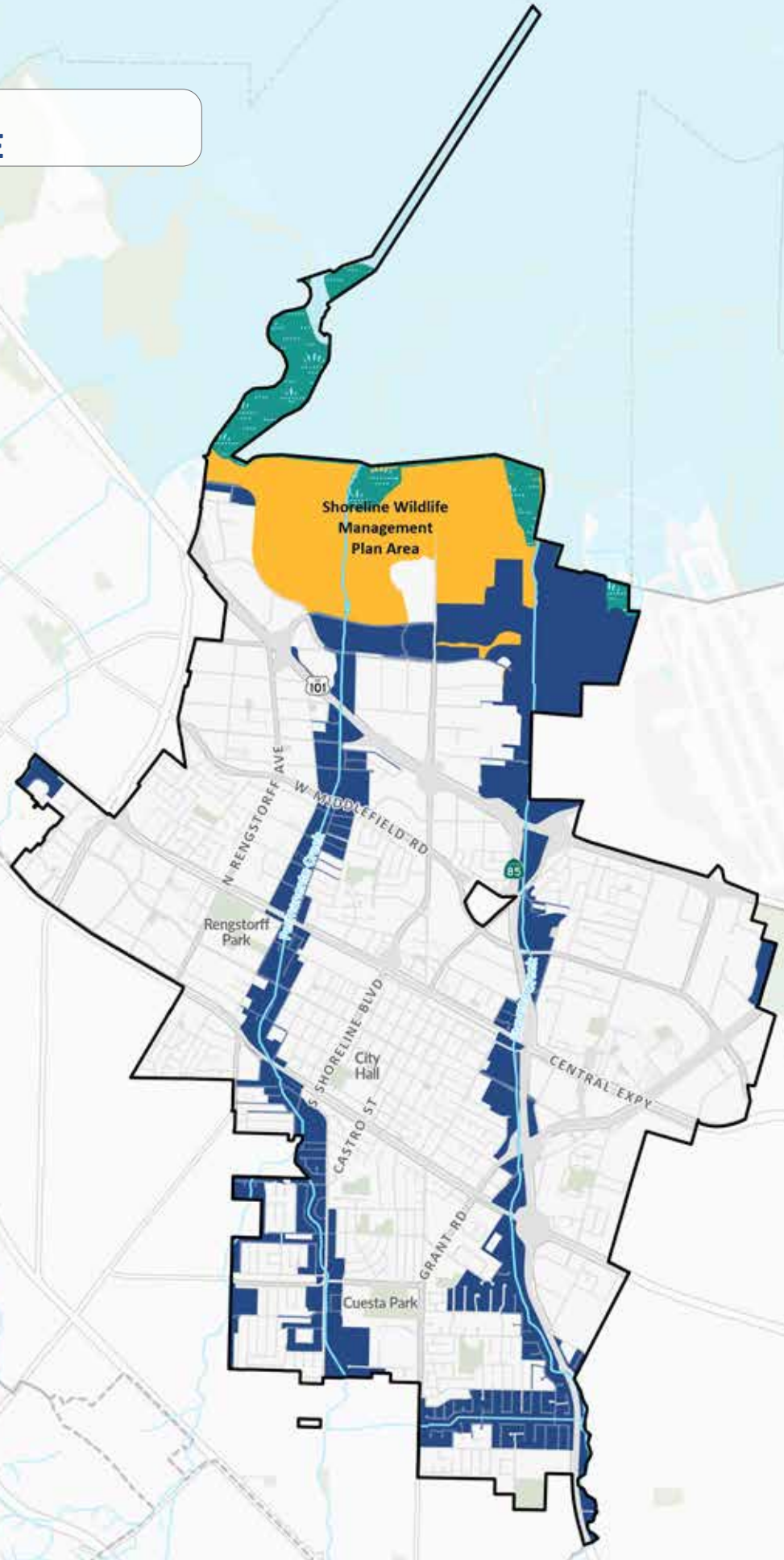
Landscaping guidelines to prioritize in this zone:

- B1: Prioritize planting and protection of native riparian vegetation
- B2: Promote water quality improvement and soil infiltration
- B3: Control invasive vegetation and limit pesticide and herbicide use
- B4: Align with riparian setbacks and regulatory requirements

B. WATER RESOURCE ENHANCEMENT ZONE

The Water Resource Enhancement Zone was created using a map of Mountain View's water resources, and a buffer of 100 meters around each resource. The resulting map includes segments where over 20% of the area is within the buffer. This zone is a subset of the Ecological Enhancement Zone.

Water Resource Enhancement Zone



Shoreline Wildlife Management Plan Area

Wetland Restoration Area

Creeks and channels

N

0 0.5 1 Miles

GUIDELINE B1: PRIORITIZE PLANTING AND PROTECTION OF NATIVE RIPARIAN VEGETATION

- **Plant native riparian species where appropriate:** Use native riparian species native to the Santa Clara Valley (see Curated List of Santa Clara Valley Native Plants in **Guide B: Plant Lists**), selected based on appropriate site assessments (e.g., groundwater table and soil conditions), to restore riparian habitat and support local hydrological systems.
- **Design for multi-layered habitat in riparian plantings:** Use plant layering—including understory, midstory, and overstory riparian plants (see "Curated List of Santa Clara Valley Native Plants" in **Guide B: Plant Lists**)—to provide a variety of nesting, foraging, and roosting locations for riparian wildlife.

GUIDELINE B2: PROMOTE WATER QUALITY IMPROVEMENT AND SOIL INFILTRATION

- **Site green stormwater infrastructure features to improve water quality:** In addition to siting GSI closer to the runoff source (see **Guideline B4**), some forms of GSI are well-suited near riparian areas. Create vegetated riparian buffers between urban development and riparian corridors—such as vegetated swales and filter strips—to filter pollutants, trap sediment, and reduce erosion. Expand the use of permeable surfaces and vegetated GSI to promote ground infiltration, enhance groundwater recharge, and support the removal of pollutants from urban runoff. Evergreen trees offer greater stormwater treatment benefits than deciduous trees in the Bay Area, so consider this tradeoff with other desired project outcomes.
- **Design plantings to improve soil conditions:** Where appropriate, select nitrogen-fixing or deep-rooted plants to reduce soil compaction and erosion, and to further support the removal of pollutants from urban runoff before it reaches sensitive riparian habitats.

GUIDELINE B3: CONTROL INVASIVE VEGETATION AND LIMIT PESTICIDE AND HERBICIDE USE

- **Control invasive species:** Prioritize the removal of invasive species along streambanks and adjacent riparian areas and wetlands to protect native ecosystems.
- **Avoid toxic chemical treatments**: Reduce or eliminate the use of pesticides and herbicides by selecting pest-resistant plant species, applying proper maintenance practices, and using physical, biological, and other non-chemical control methods to reduce pollutants in urban runoff and downstream waters. See **Guideline A3** for additional guidance.
- **Seek expert guidance:** Recommendations for invasive vegetation removal should be prepared by, or reviewed by, a qualified ecologist and pest control advisor (PCA).

GUIDELINE B4: ALIGN WITH RIPARIAN SETBACKS AND REGULATORY REQUIREMENTS

Reference and incorporate riparian and wetland protection regulations: Ensure planting and design strategies are aligned with local and regional water and habitat protection goals, including but not limited to the Water Resources Protection Collaborative Guidelines and Standards for Land Use Near Streams adopted by City of Mountain View, and specific permitting requirements and regulations from the City, Valley Water, and other relevant entities around landscaping adjacent to riparian areas.

C. Greening Zone

While native vegetation plays the most significant role in supporting biodiversity in the city, non-native (and non-invasive) plants also provide multiple benefits such as stormwater management, human health support, and cooling, while providing resources to more urban-adapted species. Using native plants in the Greening Zone and across Mountain View is strongly encouraged, but sites farther from important ecological resources with little existing vegetation would benefit from greater greening overall. This more flexible approach may be needed in the most sparsely-vegetated areas of Mountain View, to favor plants that accommodate common urban site constraints like high impervious surface, greater levels of pollutants, and more disturbed and compacted soil.

The Greening Zone highlights areas in the city where increasing overall vegetative cover is the primary goal.

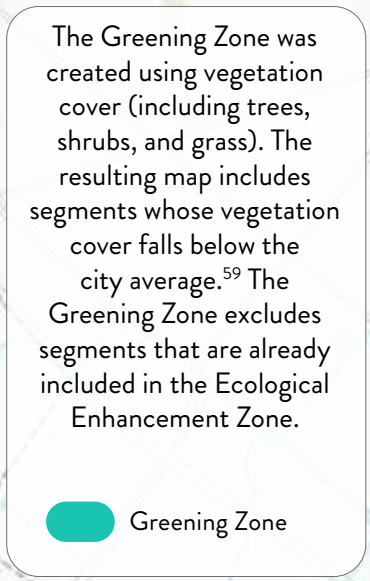
Targeted benefits: increased green cover; new and enhanced stepping stone habitat for wildlife; expanded soil volume; improved soil quality; vegetated green infrastructure; increased recycled water use

Landscaping guidelines to prioritize in this zone:

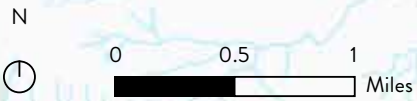
- C1: Quickly establish green cover using urban-resilient plants
- C2: Consider opportunities to create small habitat enhancements even in small areas
- C3: Improve soil quality and expand soil volume wherever feasible
- C4: Incorporate vegetated green stormwater infrastructure
- C5: Provide irrigation using recycled water where possible

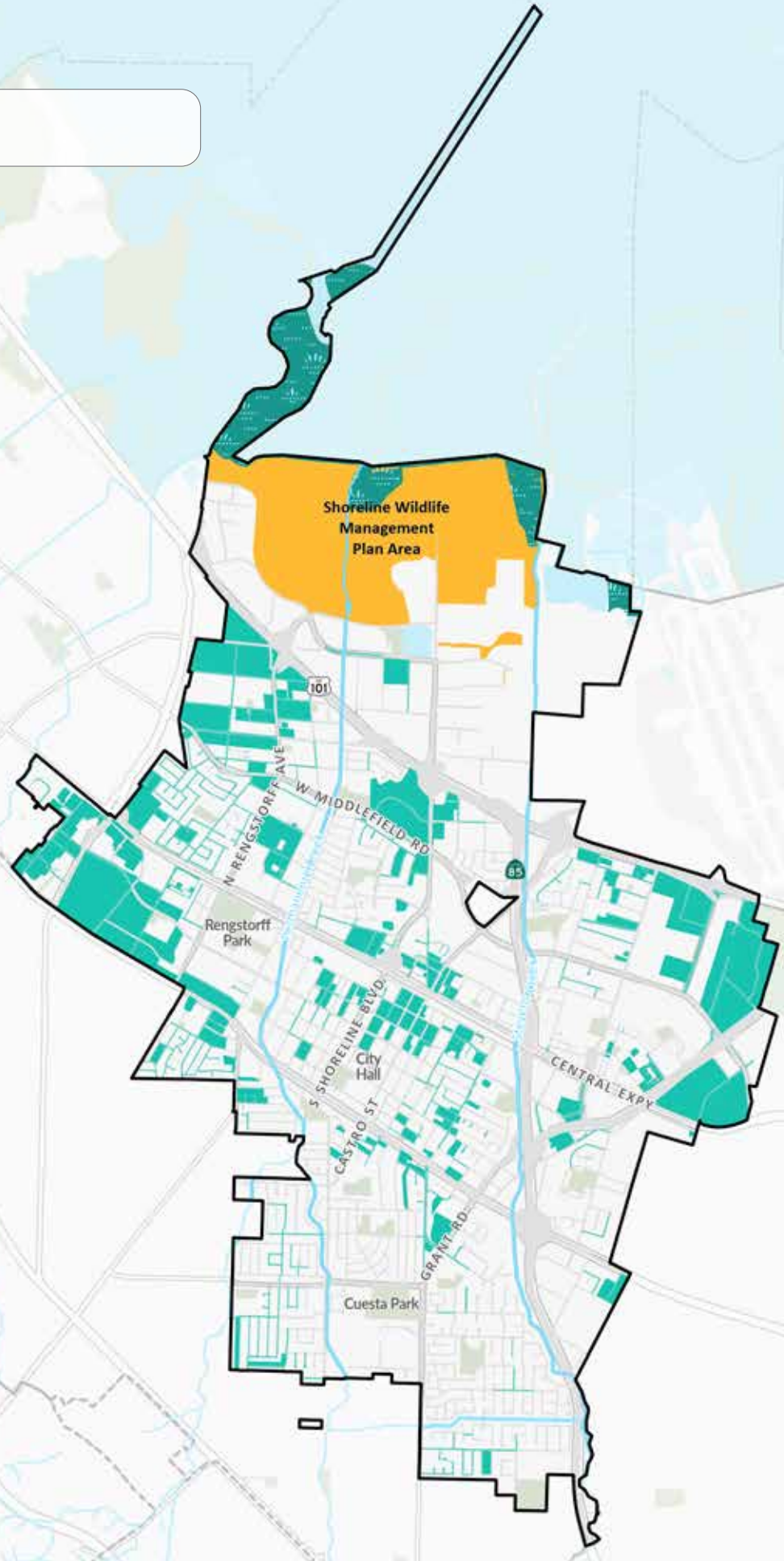
C. GREENING ZONE

The Greening Zone was created using vegetation cover (including trees, shrubs, and grass). The resulting map includes segments whose vegetation cover falls below the city average.[59] The Greening Zone excludes segments that are already included in the Ecological Enhancement Zone.









GUIDELINE C1: QUICKLY ESTABLISH GREEN COVER USING URBAN-RESILIENT PLANTS

- **Prioritize hardy and disturbance-tolerant plants:** Select plants with a proven track record of success under challenging urban site conditions—such as limited soil volume, soil compaction, frequent and high-volume winter runoff, non-point source pollution, and urban heat (see guidelines in **E. Cooling Zone**).
- **Prioritize medium- to fast-growing plants:** Select faster-growing plant species that can quickly establish vegetation cover, improve soils, and control invasive species in challenging urban site conditions. Their early growth can also mitigate urban heat, retain moisture, and create more favourable conditions for slower-growing, native plants to establish.
- **Design plantings to improve soil conditions:** Where appropriate, include nitrogen-fixing or deep-rooting plants that can gradually improve soil nutrient content and soil structure over time.
- **Use low-water-use, drought-tolerant plants** to reduce irrigation demand.
- **Use climate-resilient species:** Prioritize native plant species adapted to local and future climate conditions.
- **Select salt and salt spray tolerant species** closer to the shoreline.
- **Consider recycled water compatibility:** For plants that will require ongoing irrigation, even in areas currently irrigated with potable water, select species that are compatible with recycled water as the City expands its use of recycled water (also see **Guideline B5**).

GUIDELINE C2: CONSIDER OPPORTUNITIES TO CREATE HABITAT ENHANCEMENTS EVEN IN SMALL AREAS

- **Incorporate native, wildlife-supportive plants:** Prioritize native species that provide foraging and refuge opportunities for urban-adapted wildlife with smaller space requirements (e.g., insect pollinators) or during highly mobile life stages (e.g., migratory birds). Also consider non-native (and non-invasive) species that are urban resilient and known to support urban wildlife.
- **Create "stepping stones" of vegetation:** Enhance connectivity in areas where *physical* connectivity is challenging by establishing small, distributed tracts of vegetation within appropriate range distances of target wildlife species.[58] These "stepping stones" support urban biodiversity while also contributing to increased nature contact, reduced urban heat, and enhanced mental wellbeing.

GUIDELINE C3: IMPROVE SOIL QUALITY AND EXPAND SOIL VOLUME WHEREVER FEASIBLE

Guideline C3.1 Improve soil quality

- **Pre-installation testing and preparation:** Before planting, conduct pre-installation testing of in-situ soils to assess soil structure, drainage capacity, nutrient content, and over-

all health. This step will help determine whether soil amendments or imported fill soil are needed to support successful plant establishment.

- **Tailor amendments to plant species needs:** Any soil improvement measures should be based on test results and aligned with the specific requirements of the selected plant palette.
- **Post-installation soil protection:** After soil preparation and planting, protect soil structure by applying mulch (avoiding areas immediately surrounding tree trunks and stems of smaller plants). In areas with heavy foot traffic, consider using appropriate fencing to prevent trampling and other damage.

Guideline C3.2 Expand soil volume in limited-size planters wherever feasible

- **Plan for plant maturity:** Evaluate the mature size and root zone needs of trees and understory plants when designing planters, and expand soil volume accordingly to support healthy long-term growth. If adjusting the soil volume is not feasible, select plant species appropriate for the existing soil volume.
- **Incorporate continuous or connected soil systems in paved environments:** Prioritize the creation of continuous planting strips or interconnected soil volumes using strategies such as soil cells or structural soil. These systems allow for root expansion, water infiltration, and oxygen exchange, which are especially critical for tree health and longevity.

GUIDELINE C4: INCORPORATE VEGETATED GREEN STORMWATER INFRASTRUCTURE

- **Create green stormwater infrastructure (GSI) features with multiple benefits:** Site GSI features—such as green roofs, bioswales, rain gardens, and bioretention areas—strategically throughout the city, prioritizing upland and higher elevation areas, to capture, slow, and treat runoff closer to its source. This decentralized approach supports infiltration and evapotranspiration before runoff concentrates, while also reducing pollutant loads downstream (see guidelines in **B. Water Resource Enhancement Zone**). When integrated with wildlife-supporting, multi-layered planting, GSI can enhance urban biodiversity (see **Guideline A1**) and contribute to urban cooling (see guidelines in **E. Cooling Zone**).

GUIDELINE C5: PROVIDE IRRIGATION USING RECYCLED WATER WHERE POSSIBLE

- **Select appropriate plants:** Choose plant species that are tolerant of the elevated salt content and nutrient levels found in recycled water.
- **Use recycled water:** Where a connection to a recycled water system exists, prioritize its use for landscape irrigation. In areas without access to recycled water, incorporate onsite water harvesting per the City's standards. Note that all North Bayshore buildings connected to the recycled water system are required to use it for landscape irrigation[49,133].
- **All irrigation practices** should align with the Mountain View Water Conservation in Landscaping Regulations[162] and Recycled Water Ordinance[163].

D. Re-Oaking Zone

Native oaks (*Quercus* spp.; see "Curated List of Santa Clara Valley Native Plants" in **Guide B: Plant Lists**) play an outsized role in the region both ecologically and culturally, historically and today. Native oaks support an especially wide range of native wildlife, with many native species having specialized relationships with native oaks. The biodiversity support that oaks provide can be maximized by creating "nodes" of oak trees, where a minimum of 20 regionally-native oak trees are planted within a 1,000-foot diameter area[11].

The Re-Oaking Zone highlights areas of the city that already have a concentration of regionally-native oak trees, where additional oak plantings could feasibly establish new oak nodes, or enhance existing ones.

Targeted benefits: New and expanded oak node habitat; healthy oak trees; increased food source and habitat for oak-associated wildlife

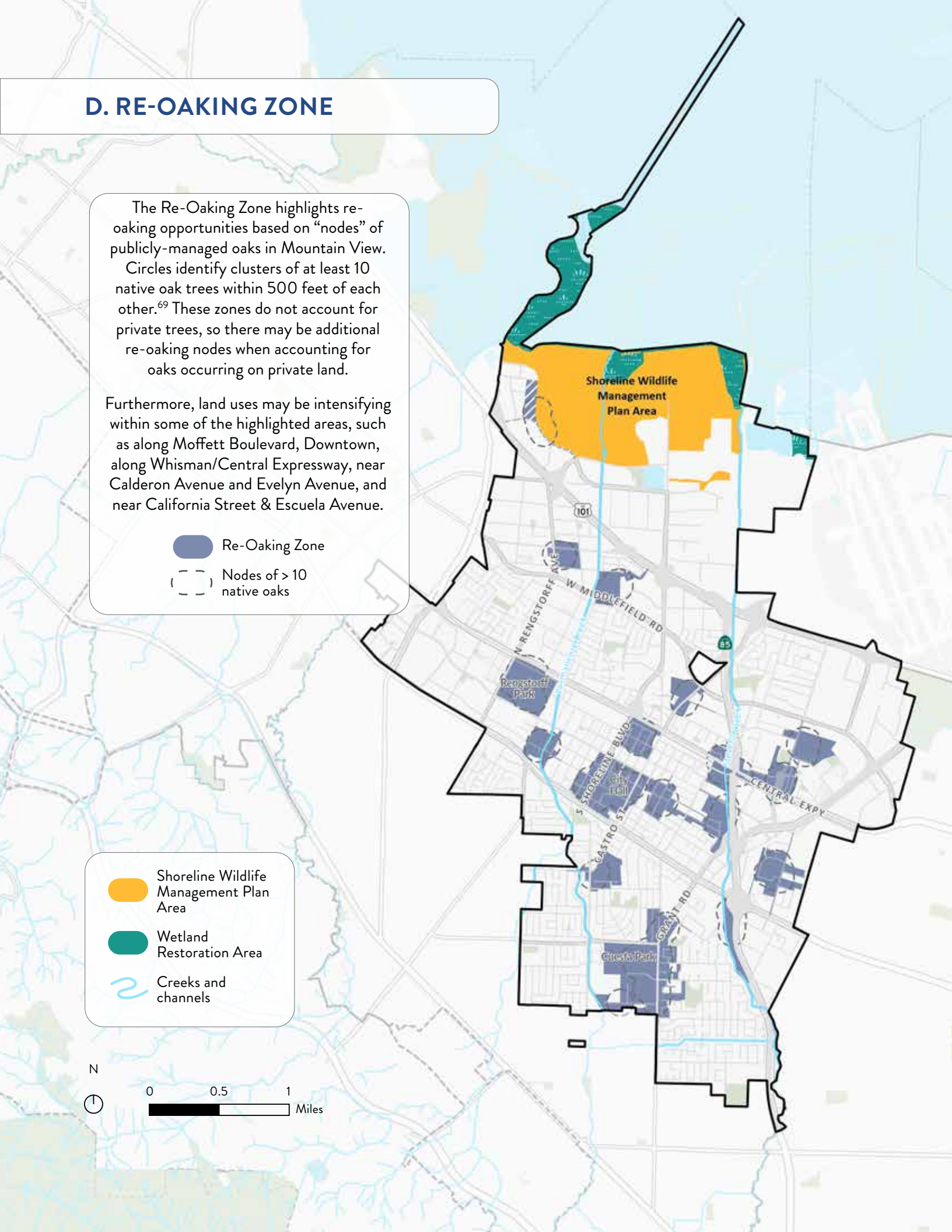
Landscaping guidelines to prioritize in this zone:

- D1: Analyze re-oaking locations
- D2: Carefully source native oak species to promote genetic diversity
- D3: Plan maintenance for oaks and Oak Woodland

D. RE-OAKING ZONE

The Re-Oaking Zone highlights re-oaking opportunities based on "nodes" of publicly-managed oaks in Mountain View. Circles identify clusters of at least 10 native oak trees within 500 feet of each other.[69] These zones do not account for private trees, so there may be additional re-oaking nodes when accounting for oaks occurring on private land.

Furthermore, land uses may be intensifying within some of the highlighted areas, such as along Moffett Boulevard, Downtown, along Whisman/Central Expressway, near Calderon Avenue and Evelyn Avenue, and near California Street & Escuela Avenue.



GUIDELINE D1: ANALYZE RE-OAKING LOCATIONS

Guideline D1.1: Create or expand existing oak habitat

- **Cluster oak plantings:** Where possible, cluster new oak plantings around existing large oak trees, which provide a natural seed source (acorns) to support regeneration, especially when site conditions are favorable for seedling establishment. Increased acorn production from clustered oaks supports urban wildlife, such as the Acorn Woodpecker, California Ground Squirrel, California Scrub Jay, and other animals that rely on multiple oaks in close proximity for foraging and movement[11].
- **Mimic historical oak habitats:** Plant oaks with associated understory vegetation to enhance the habitat structure and ecological functions of the Oak Woodland and Oak Savanna ecosystems. (See "Curated List of Santa Clara Valley Native Plants" in **Guide B: Plant Lists** to select plants historically associated with Oak Woodland and Oak Savanna.) Cluster oaks of the same species to support cross-pollination and avoid hybridization between different oak species[11].
- **Promote oak age diversity:** Within these oak clusters, evaluate the diversity of their size, age, and health. Tree age diversity not only creates greater diversity of habitat for biodiversity, but also ensures continuous habitat is provided as older trees age and die.

Guideline D1.2: Confirm site suitability for oak planting

- **Conduct a site assessment to evaluate:**
  - Soil conditions (preferably well-drained with a low water table; Coast Live Oak, *Q. agrifolia*, is not suitable for areas with high water table)
  - Water availability and irrigation requirements
  - Sun exposure and canopy competition
  - Coastal exposure, avoiding areas with regular salt spray, high soil salinity, or high sea-level rise risk
  - Surrounding land use and planting compatibility
- **Ensure sufficient growing space:** Allow ample room for each oak's canopy and root system to mature. Avoid planting near buildings, utilities, other infrastructure such as sidewalks/curbs, or densely-vegetated areas that could limit long-term growth or cause infrastructure conflicts.
- **Avoid disease risks:** Reduce the risk of spreading Sudden Oak Death, a disease caused by the plant pathogen *Phytophthora ramorum*. Plant oaks a minimum of 30 feet away from California Bay Laurel (*Umbellularia californica*), increase spacing to 50 feet in areas that are downhill, downwind, or particularly favorable to *P. ramorum* spore production, and limit the abundance of Bay Laurels, keeping them primarily within riparian zones.[11]

GUIDELINE D2: CAREFULLY SOURCE NATIVE OAK SPECIES TO PROMOTE GENETIC DIVERSITY

- **Develop a process to vet plant materials and sources:** Prioritize the use of high-quality, regionally-sourced genetic stock for re-oaking efforts when available to preserve regionally-adapted genetic diversity and support local habitat.
- **Make arrangements for plant stock at design phase:** Ensure that the plant stock planned at the project design phase is available during the plant purchase and project construction phase by contracting directly with nurseries to pre-order critical plant stock, especially for large projects.

GUIDELINE D3: PLAN MAINTENANCE FOR OAKS AND OAK WOODLAND

- **Improve oak habitat quality through management:** Preserve leaf litter, dead tree limbs and cavities, tree stumps and snags (standing dead trees), and fallen limbs where they do not pose a risk to public safety or compromise the visual sense of care. Oak trees generate large amounts of leaf litter, which enriches soil organic matter beneath the canopy and creates islands of fertility compared to surrounding open areas. The dense canopy provides shelter for birds, dead limbs offer nesting cavities and habitat for arboreal ants, and downed branches and leaf litter serve as cover for small mammals, reptiles, and amphibians.[11] Also see **Guideline A4** for additional maintenance recommendations.

E. Cooling Zone

Urban trees, vegetation, and green spaces play a critical role in supporting cooling, both in their immediate vicinity and collectively across the city. Cooling can be maximized by increasing tree canopy and vegetation and reducing impervious cover. Importantly, extending the lifespan of trees, such as through proactive management, providing adequate growing conditions, and protections from removal, will maximize each trees' ability to contribute to a cooler city.

The Cooling Zone highlights areas of the city where guidelines can be applied to reduce human health risks from extreme heat and improve outdoor mobility along existing or planned bike lanes where cooling is especially vital.

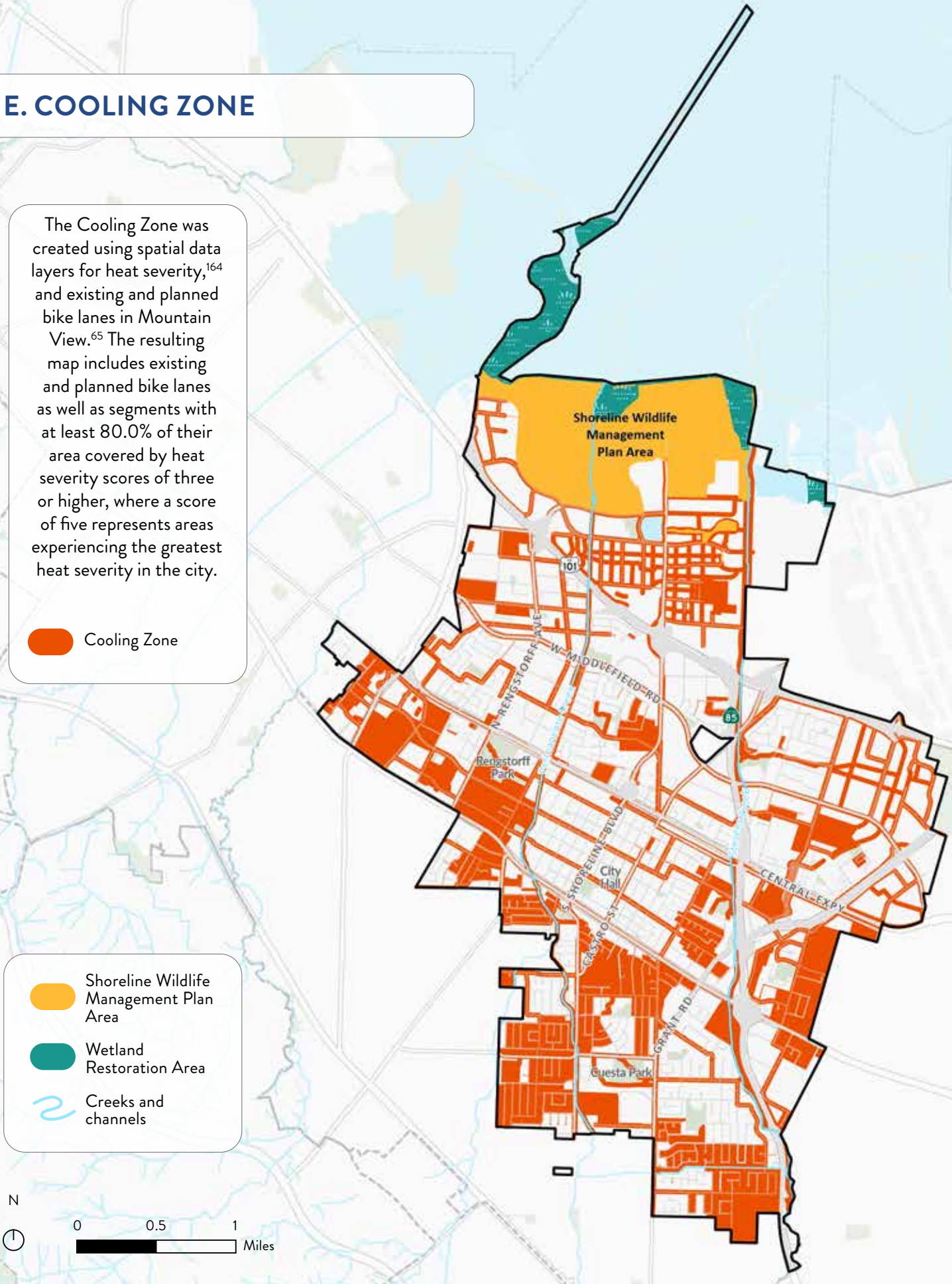
Targeted benefits: Natural cooling; improved ground shading; reduced heat absorption of buildings and pavement; building heat insulation

Landscaping guidelines to prioritize in this zone:

- E1: Strategically expand and preserve tree canopy for urban cooling
- E2: Maximize use of plant, building, and paving materials that limit heat gain
- E3: Integrate vegetative roofs and vertical structures for cooling and other environmental benefits

E. COOLING ZONE

The Cooling Zone was created using spatial data layers for heat severity,[164] and existing and planned bike lanes in Mountain View.[65] The resulting map includes existing and planned bike lanes as well as segments with at least 80.0% of their area covered by heat severity scores of three or higher, where a score of five represents areas experiencing the greatest heat severity in the city.



GUIDELINE E1: STRATEGICALLY EXPAND AND PRESERVE TREE CANOPY FOR URBAN COOLING

- **Continuous canopy:** Plant a diverse mix of evergreen and deciduous tree species based on site conditions and the surrounding landscape context. In human-centered areas such as sidewalks, plazas, parks, and building facades, prioritize deciduous species with broad, continuous canopies to maximize shade over paved surfaces during hot summer months, while allowing sunlight to reach these areas in the winter.
- **South-facing and west-facing building facades and outdoor spaces:** Prioritize deciduous shade trees in these areas to provide cooling summer shade while allowing winter sunlight to reach buildings and outdoor spaces (see tradeoffs with evergreen trees in **Guideline C2**). This approach also supports building energy efficiency by reducing cooling and heating demands seasonally. In Mountain View, south-facing areas receive consistent sunlight year-round, while west-facing areas experience intense afternoon sun during the summer.
- **Wind-exposed areas:** Use evergreen trees to buffer against prevailing winter winds, based on site-specific conditions.
- **Sufficient planting volume for tree health**: Design tree planting areas to provide adequate soil volume for trees based on species and site conditions. Mature trees would require greater rooting volume, but ensure sufficient space for root expansion as trees grow. Adequate soil volume also promotes the longevity and canopy development of trees, so that each tree delivers the greatest amount of shade and cooling benefits over time. In addition, expanded soil volume also enhances infiltration and contributes to urban cooling. Also see soil management strategies in **Guideline C3**.
- **Use structural soil and other planting systems to address compaction**: Where planting space is constrained by hard paving, heavy foot traffic, or other site conditions, consider using structural soil which typically includes coarse aggregates and low-silt soil. This mixture provides structural support while maintaining soil porosity, which is essential for air and water movement in the root zone and supports healthy root growth for urban trees. Other planting systems may include soil cells, suspended pavement systems, or shared root zones to increase rooting capacity.

GUIDELINE E2: MAXIMIZE USE OF PLANT, BUILDING, AND PAVING MATERIALS THAT LIMIT HEAT GAIN

Guideline E2.1: Enhance planting areas for ground cooling

- **Increase natural surface cover:** In low foot-traffic areas, use native grasses or other low-growing herbaceous plants to help retain soil moisture and reduce surface temperatures.
- **Minimize non-functional turf (natural or artificial) wherever possible:** Turfgrass, especially when frequently mowed, has high water demand during the warm season and

offers limited cooling benefits, such as soil moisture retention or ground shading. Prioritize planting alternatives that offer greater cooling benefits, such as mowable native grasses and unmowed groundcovers.

- **Multi-layered planting for cooling and habitat:** Incorporate diverse planting layers—groundcovers, understory, midstory, and canopy vegetation—wherever feasible to improve ground-level shading. This approach has the additional benefit of supporting a greater diversity of nesting species (from ground-level to tree canopies), and overall human well-being. Also see **Guideline A1** for additional multi-layered planting guidance.

Guideline E2.2: Use high solar reflectance materials while also minimizing glare

- **Minimize heat absorption:** Select paving and building materials with high solar reflectance, such as light-colored pavers and concrete, to minimize heat absorption and mitigate urban heat buildup.
- **Minimize excessive glare:** Light-colored materials that reduce heat absorption can also cause excessive glare, which can increase heat in the ambient environment and cause visual discomfort. Apply textures or a matte finish to these light-colored materials.

GUIDELINE E3: INTEGRATE VEGETATIVE ROOFS AND VERTICAL STRUCTURES FOR COOLING AND OTHER ENVIRONMENTAL BENEFITS

- **Build and promote green structures:** Implement vegetative roofs and vertical structures where feasible, considering cost and structural capacity. Explore options based on project priorities:
- Common vegetative roof types include:
    - **Green roofs:** Highly vegetated planting systems that reduce urban heat, manage stormwater, improve building insulation, and enhance biodiversity support —ideal for urban cooling.
        - Extensive green roofs (shallow and light weight): soil depth equal to or less than six inches on roofs that have limited load capacity. Grasses, sedums, and other herbs are often planted.
        - Intensive green roofs (deeper and heavier): soil depth more than six inches to support multi-layered planting, such as groundcovers, shrubs, and small trees. Offers greater shading, thermal insulation, and habitat value but requires higher construction cost and maintenance.
    - **Brown roofs:** Designed with natural substrates to mimic wildlife habitats. Different from green roofs, they may include bare ground, leaf litter, logs, stones, and selective planting to create additional habitat for wildlife.

    - **Blue roofs:** Engineered for stormwater detention (commonly designed for 2-4 inches of ponding depth). They are often combined with vegetation or integrated into green roofs to slow runoff and ease pressure on drainage systems.
- Common vegetative vertical structure types:
    - Green facades: Vines and climbing plants grow up a structure or trellis, rooted in the ground or containers.
    - Living walls: Plants are rooted in a modular panel or other systems attached to the wall. Compared to green facades, living walls can require significantly more maintenance, often requiring irrigation or recirculating water systems. Plants are under more stress than in-ground plants due to little or no soil volume, rendering them more susceptible to heat and wind.
- **Manage conflicts between tree-planting and solar panels**: Discourage tree-planting near photovoltaic (solar panel) structures, such as rooftop and ground-mounted systems, to prevent shading or debris accumulation that reduces solar power generation and tree root interference with underground utilities. Low-growing, shallow-rooted, and shade-tolerant understory plants, such as grasses and sedum, can be planted as groundcover beneath the panels.
- **Consider hybrid solutions:** Solar-integrated green roofs maximize benefits for cooling, energy efficiency, biodiversity support, and stormwater management.

GUIDE B: PLANT LISTS

This Guide provides two plant lists: 1) Santa Clara Valley native plants associated with Mountain View's historical ecology, and 2) an updated City Tree List, which identifies trees suited for streets, parks, and open space and highlights species native to California. Both lists may be used by the City, practitioners, and community members as a reference to select plants and urban-adapted tree species for projects throughout Mountain View.

These plant lists can support expanding the use of native and regionally appropriate species where feasible, while recognizing that successful urban forest management also requires consideration of climate resilience, site constraints, habitat value, ecological and biodiversity functions, maintenance needs, and long-term species diversity.

These lists are a first step toward developing an interactive Tree Selector tool and more comprehensive planting guidance, as recommended in **Action 13** and **Action 5** in the **5.2 Vision to Action**. These recommended plants should be used in conjunction with the urban landscaping guidelines provided in **Guide A: Urban Landscaping**.



Native Leafcutter Bee in Mountain View. Photo by Lauren Stoneburner, SFEI.

Curated List of Santa Clara Valley Native Plants

The table below includes a curated list of plants native to the Santa Clara Valley which may be used to integrate elements of Mountain View's historical plant communities into restoration and enhancement of public and private green spaces (see **2.1 History**). The list includes plants from different structural groups in each of the major canopy layers: The overstory (trees), the midstory (shrubs and vines) and the understory (herbaceous forbs and grasses). When planning a project, practitioners may first consider selecting and combining plants from one of the historical habitat types and then selecting species from the different structural groups, as appropriate.

This list is not exhaustive; species were selected to represent a diversity of structures and canopy heights, bloom times, taxonomy, likely nursery availability, and benefits to biodiversity (i.e., sources of nectar, berries, plant matter, and shelter). This list is a modified version of the list published originally in SFEI's *Urban Ecological Planning Guide for Santa Clara Valley*[12] (see Appendix of that document for sources and selection methodology). It was cross-checked with the plant palette developed for urban landscapes in the City of Mountain View's North Bayshore Precise Plan,[165] and against an internal resource that SFEI is developing to assess plant maintenance requirements. Finally, scientific names were updated using a combination of databases that regularly update and resolve conflicts in plant taxonomic nomenclature.[2,166,167]

Curated list of plants native to the Santa Clara Valley floor, their structural type, and association with major historical habitat types in Mountain View. Plants in this list have been vetted to include a diversity of taxonomic groups, bloom times, canopy layers, and structures. These species are expected to succeed in an urban environment, but because their tolerance to urban conditions varies, a site assessment is required prior to planting. The list is non-exhaustive, but provides a first step in the development of a city-wide plant palette or plant selector tool (see **Action 5** in **5.2 Vision to Action**). This is a modified version of the plant lists in the Urban Ecological Planning Guide for Santa Clara Valley.[12]

Scientific Name	Common Name	Major historical habitat types in Mountain View			
		Oak Woodland, Oak Savanna/ Grassland [a]	Riparian Forest and Scrub [b]	Wet Meadow	Alkali Meadow
Overstory: Trees *					
Acer negundo	Box Elder		■	■	
Aesculus californica	California Buckeye				
Alnus rhombifolia	White Alder		■	■	
Platanus racemosa	Western Sycamore		■	■	
Populus fremontii	Fremont Cottonwood		■	■	
Quercus agrifolia	Coast Live Oak	■			
Quercus kelloggii	California Black Oak	■			
Quercus lobata	Valley Oak	■			
Salix laevigata	Red Willow		■	■	■
Salix lasiolepis	Arroyo Willow		■	■	■
Umbellularia californica [c]	California Bay Laurel	■			
Midstory: Woody Shrubs and Vines					
Artemisia californica	California Sage	■			
Baccharis pilularis	Coyote Bush		■	■	■
Cornus sericea	Red Osier Dogwood		■		
Corylus cornuta var. californica [d]	Hazelnut	■	■		
Diplacus aurantiacus	Sticky Monkeyflower	■			
Frangula californica	Coffeeberry	■			
Heteromeles arbutifolia	Toyon	■			
Lupinus albifrons	Silver Lupine	■			
Morella californica	Pacific Wax Myrtle			■	
Rosa californica	California Rose		■		
Sambucus nigra ssp. caerulea	Blue Elderberry		■	■	
Solanum umbelliferum	Blue Witch				
Symphoricarpos albus	Common Snowberry	■	■		
Vitis californica	California Grape		■		

Scientific Name	Common Name	Major historical habitat types in Mountain View			
		Oak Woodland, Oak Savanna/ Grassland [a]	Riparian Forest and Scrub [b]	Wet Meadow	Alkali Meadow
Understory: Herbaceous Forbs and Grasses					
Achillea millefolium	Yarrow				
Agrostis pallens	Diego Bent Grass				
Artemisia douglasiana	Mugwort				
Asclepias fascicularis	Narrowleaf Milkweed				
Baccharis glutinosa [e]	March Baccaris				
Baccharis salicifolia	Mulefat				t
Clarkia purpurea [f]	Purple Clarkia				
Clematis ligusticifolia	Virgin's Bower				
Cyperus eragrostis	Tall Flatsedge				
Danthonia californica	California Oatgrass				
Deschampsia cespitosa ssp. holciformis	Pacific Hairgrass				
Distichlis spicata	Salt Grass				
Elymus glaucus	Blue Wild Rye				
Eschscholzia californica	California Poppy				
Festuca rubra	Red Fescue				
Frankenia salina	Alkali Health				
Hordeum depressum [e]	Alkali Barley				
Juncus patens	Common Rush				
Leymus triticoides	Beardless Wild Rye				
Lupinus bicolor	Miniature Lupine				
Mimulus guttatus	Seed Monkeyflower				
Nassella pulchra	Purple Needle Grass				
Nemophila menziesii	Baby Blue Eyes				
Rubus ursinus	California Blackberry				
Sisyrinchium bellum	Blue-Eyed Grass				
Symphyotrichum chilense	California Aster				

* Avoid planting tall trees near tidal marsh (within ~ 200 ft.;[168] Western Burrowing Owl habitat,[132] or Wet and Alkali Meadows due to concern of creating additional raptor perches for species using those habitats that historically have lacked trees.

[a] The three listed oak species are the most common native oaks to the Santa Clara Valley floor. Additional regionally-native species include Blue Oak (*Q. douglasii*) and two species more closely associated with higher elevations of the foothills and coast ranges Interior Live Oak (*Q. wislizeni*) and Canyon Live Oak (*Q. chrysolepis*). Other California-native oaks are listed in the Updated City Tree List

[b] Includes species associated with the historical Willow Grove habitat type in Mountain View

[c] Do not plant within 50 feet of oaks as precaution for Sudden Oak Death

[d] Plant upslope of immediate riparian area

[e] Nursery availability may be limited

[f] Annual species are difficult to maintain in urban environments where there's limited maintenance, but could be used as suggested in **Landscaping Guideline A1.1** *Incorporate native species that require special care where feasible.*

Updated City Tree List

Updated from the prior 2015 Community Tree Master Plan[156] tree list, prepared by Davey Resource Group with support from SFEI

This Updated City Tree List is an informational resource designed to support appropriate tree selection by the City and private landowners, with the goal of ensuring that all trees planted support increased urban forest health, diversity, and resiliency.

It is important to note that this list is not prescriptive. The City may recommend or approve plantings that may vary or deviate from this list, depending on site and project type.

What this list does and does not include:

- This list is not comprehensive and will be updated on a continual basis;
- Not all trees included on the list will be suitable for each individual planting area;
- Trees on the list should not be considered automatically approved; and
- Final plant selections should be made in coordination with the relevant City departments and/or a consulting accredited arborist.

As indicated in **Action 13**, the City may replace this tree list with an interactive Web-Based Tree Selector tool. Once developed and implemented, the tree selector tool will enable anyone to identify appropriate trees for a site based on relevant selection criteria, such as tree form, planting site conditions, maintenance requirements, and potential for biodiversity support and other benefits.

The list is divided into two parts:

1. **Street Trees**: a list of trees recommended for planting along city streets, as well as in other less-constrained site types. This table includes species both native and not native to California and excludes any species known to be invasive. Trees recommended as street trees may also be appropriate to plant in parks and open space.
2. **Parks and Open Space Trees:** a brief list of additional trees that are less suitable as street trees, but are recommended for planting in parks and open spaces (excluding Shoreline Park, which has unique planting constraints). These species, including many additional California-native species, have larger growth potential, higher root disruption risk, or more intensive water or site requirements, such as those suited to riparian zones or larger rooting areas. These characteristics make them less suitable for confined urban planters but well-suited to naturalistic or open park environments. Trees from both lists may be appropriate to plant in parks and open space.

To support informed planting decisions, the list identifies minimum recommended planting space for each species, along with mature height and canopy spread. This additional

context will help determine whether a tree is suitable for a narrow sidewalk strip, a larger streetscape planter, or a less restricted setting.

Species included in the recommended plant list were selected through a climate-forward, resilience-based framework tailored to the urban conditions of Mountain View and the broader Santa Clara Valley region. The selection criteria were as follows:

- **Demonstrated strong tolerance to key urban stressors**, including prolonged drought, extreme heat, limited rooting space, compacted soils, and exposure to pollutants.
- **Tolerance of both water scarcity and heat stress**, in recognition that drought and rising temperatures are interconnected and intensifying due to climate change. These dual stressors are projected to increase in severity and duration in California's urban environments, as supported by findings from the UC Davis Climate-Ready Trees Program and USDA Forest Service research. Trees with proven tolerance to these conditions are more likely to persist and thrive as average temperatures rise and heatwaves become more frequent. Native trees with high water needs were included in the Parks and Open Space list for strategic planting, particularly within riparian settings.
- **Suitability for Mountain View's likely future climate.** This list also incorporated SFEI's original research on climate-resilient trees, which identifies tree species—and particularly California-native species—that currently thrive in cities that have climates today that are analogous to Mountain View's likely future climate.
- **Salt tolerance**—important for successful irrigation with reclaimed water.
- **Resistance to pests and diseases** expected to worsen with climate stress.
- **Species known to be invasive were excluded**.
- **Regional nursery availability** was reviewed to ensure practical sourcing.

Each species was also classified as California-native or non-native. This broader definition of native status in the City tree list—rather than a more narrow focus on species native to Santa Clara Valley and Mountain View's historical plant communities—reflects a City tree inventory that values native status while minimizing maintenance and long-term care burdens in the context of a changing climate.

The lists were compiled by Davey Resources Group from multiple sources, including the SelecTree database,[3] CalScape[1] and academic and nursery-based resources and government technical reports.[169–175]

UPDATED CITY TREE LIST: STREET TREES

Street trees were selected based on their tolerance to drought, heat, pests, and urban stressors such as salt exposure and soil compaction. Each species was classified as California-native or California non-native. The list excludes any species considered to be invasive. All trees are hosts to other species (fungal, microbial, animal, etc.) that rely on them for food and shelter; species that might be detrimental to the tree are identified under pest susceptibility. (Trees recommended as street trees may also be appropriate to plant in parks and open space.)

Street Trees

Scientific Name	Common Name	Height (ft)	Spread (ft)	Growth rate	Relative Size	Water needs (WUCOLS)	Growth Strategy	Root Damage Potential	Min. Grow Space (ft)	CA Native Status	Pest, Pathogen, and Stress Susceptibility
Acer rubrum	Red Maple	40-50	40-50	Slow	Medium	Moderate	Deciduous	Moderate	>10		Armillaria, Phytophthora, Root Rot, Verticillium, Aphids, Beetle Borers, Scales, Maple Shoot Borer (Proteoteras aesculana)
Acer x Freemanii	Freeman Maple	30-40	30	Fast	Medium	Moderate	Deciduous	Moderate	>10		Armillaria, Phytophthora, Root Rot, Verticillium, Aphids, Beetle Borers, Scales
Agonis flexuosa	Peppermint Tree	35	15-30	Fast	Medium	Low	Evergreen	Moderate	5-10		Phytophthora, Root Rot
Callistemon citrinus	Lemon Bottlebrush	25	25	Fast	Small	Low	Evergreen	Low	5-10		Chlorosis
Carpinus betulus	European Hornbeam	30-40	40	Moderate	Medium	Moderate	Deciduous	Low	5-10		Armillaria, Root Rot, Chestnut Blight, Scales
Catalpa speciosa	Western Catalpa	40-60	20-40	Moderate	Med.-Lrg.	Moderate	Deciduous	Moderate	>10		Anthracnose, Powdery Mildew, Root Rot, Verticillium, Caterpillars
Cedrus atlantica 'Glauca Fastigata'	Fastigate Blue Atlas Cedar	60	25-40	Moderate	Large	Low	Evergreen	Moderate	>10		Phytophthora, Root Rot, Sooty Mold, Armillaria
Cercis occidentalis	Western Redbud	20-25	10-20	Fast	Small	Moderate	Deciduous	Low	2-4	Native	
Chionanthus retusus	Chinese Fringe Tree	15-25	15-25	Slow to Moderate	Small	Moderate	Deciduous	Low	2-4		Scale, Aphids

Street Trees

Scientific Name	Common Name	Height (ft)	Spread (ft)	Growth rate	Relative Size	Water needs (WUCOLS)	Growth Strategy	Root Damage Potential	Min. Grow Space (ft)	CA Native Status	Pest, Pathogen, and Stress Susceptibility
Cornus glabrata (nuttallii)	Brown Dogwood	5-20	8-10	Fast	Small	Moderate -High	Deciduous	Low	5-10	Native	Anthracnose, Powdery Mildew, Dogwood Borer, Root Rot
Corylus americana	American Hazelnut	18-20	10-12	Moderate	Small	Moderate	Deciduous	Low	2-4		Chlorosis, Leaf Blight, Powdery Mildew, Sooty Mold, Aphids, Scales, Gypsy Moth
Corymbia ficifolia	Red Flowering Gum	25-40	25-40	Mod.-Fast	Sm./ Med.	Low	Evergreen	Moder-ate	4-7		Armillaria, Phytophthora, Root Rot, Beetle Borers, Thrip
Crinodendron patagua	Lilly of the Valley Tree	20-25	20	Slow-Mod.	Small	Moderate	Evergreen	Moder-ate	5-10		
Eriobotrya deflexa	Bronze Loquat	15-30	15-30	Moderate	Small	Moderate	Evergreen	Low	5-10		Fire Blight
Eriobotrya japonica	Japanese Loquat	15-30	15-25	Moderate	Small	Moderate	Evergreen	Low	5-10		Fire Blight, Armillaria, Root Rot
Gingko biloba	Maidenhair Tree 'Autumn Gold'	40-60	30-50	Fast	Medium	Moderate	Deciduous	Moder-ate	4-7		Anthracnose
Gymnocladus dioicus	Kentucky Coffee Tree	50-75	40-50	Moderate	Large	Moderate	Deciduous	Moder-ate	>7		
Heteromeles arbutifolia	'Davis Gold' Toyon	25	8-15	Moderate	Small	Low	Evergreen	Low	4-7	Native	Sudden Oak Death, Ar-millaria, Root Rot, Scales, Thrip
Jacaranda mimosifolia	Jacaranda	25-40	15-30	Moderate	Medium	Moderate	Semi-Evergreen	Moder-ate	4-7		Armillaria, Root Rot, Bee-tle Borers
Koelreuteria bipinnata	Chinese Flame Tree	20-40	20-30	Moderate	Sm./ Med.	Moderate	Deciduous	Low	4-7		Armillaria, Root Rot, Invasive Shot Hole Borer, Beetle Borers, Scales

Street Trees

Scientific Name	Common Name	Height (ft)	Spread (ft)	Growth rate	Relative Size	Water needs (WUCOLS)	Growth Strategy	Root Damage Potential	Min. Grow Space (ft)	CA Native Status	Pest, Pathogen, and Stress Susceptibility
Lagerstroemia indica	Crape Myrtle	10-30	15-25	Moderate	Sm./ Med.	Moderate	Deciduous	Low	2-4		Leaf Blight, Sooty Mold, Powdery Mildew, Aphids
Lagerstroemia indica 'biloxi'	Biloxy Crape Myrtle	25	25	Mod.-Fast	Small	Very Low	Deciduous	Low	4-7		Powdery Mildew, Sooty Mold, Aphids
Lophostemon confertus	Brisbane Box	40-50	20-30	Moderate	Medium	Low to Moderate	Evergreen	Low to Moder-ate	4-7		Thrips, Scale, Root Rot
Metasequoia glyptostroboides	Dawn Redwood	80-70	12-20	Fast	Large	High	Deciduous	Moder-ate	>7		Armillaria, Root Rot
Metrosideros excelsa	New Zealand Christmas Tree	35	30-35	Moderate	Medium	Low	Evergreen	Moder-ate	4-7		Phytophthora, Root Rot
Myrica californica	Pacific Wax Myrtle	25-30	10-30	Moderate	Small	Moderate	Evergreen	Low	4-7	Native	
Olea 'Swan Hill'	Swan Hill Olive	30	20-30	Moderate	Medium	Low	Evergreen	Moder-ate	>7		Anthracnose, Armillaria, Phytophthora, Root Rot, Scales, Psyllid
Photinia serrulata 'aculeata'	Chinese Hawthorn	15	25-30	Moderate	Small	Low	Evergreen	Low	4-7		Powdery Mildew, Sooty Mold, Armillaria, Root Rot, Aphids, Scales
Pinus sabiniana	Foothill Pine	50-70	10-20	Fast	Large	Low	Evergreen	Moder-ate	>7	Native	Pitch Canker, Mistle-toe, Western Gall Rust, Armillaria, Aphids, Califor-nia Five Spined Engraver Beetle, IPS
Pistacia chinensis	Chinese Pistache	30-60	30-50	Moderate	Medium	Low	Deciduous	Low	4-7		Verticillium Wilt, Aphids, Scale
Platanus racemosa	Western Sycamore	60-80	20-50	Fast	Large	High	Deciduous	Moder-ate	>7	Native	Anthracnose, Armillaria, Phytophthora, Mistletoe, Invasive Shot Hole Borer, Leaf Miner, Scales, Spider Mites

Street Trees

Scientific Name	Common Name	Height (ft)	Spread (ft)	Growth rate	Relative Size	Water needs (WUCOLS)	Growth Strategy	Root Damage Potential	Min. Grow Space (ft)	CA Native Status	Pest, Pathogen, and Stress Susceptibility
Podocarpus gracilior	Fern Pine	30-50	25-35	Slow	Medium	Moderate	Evergreen	Low	>7		
Prunus ilicifolia	Hollyleaf Cherry	30	10-25	Moderate	Medium	Low	Evergreen	Low	4-7	Native	Armillaria, Root Rot, Rust, Sooty Mold, White Flies, Aphids, Caterpillars
Prunus lyonii	Catalina Cherry	35	20-30	Slow	Medium	Low	Evergreen	Low	>7		Armillaria, Canker, Leaf Spot, Aphids, Beetle Borers, Caterpillars, Scales
Punica granatum	Pomegranate	8-10	6-10	Moderate	Small	Moderate	Deciduous	Low	2-4		Chlorosis, Sooty Mold, Plant Bug, White Fly
Pyrus kawakamii	Evergreen Pear	15-30	15-30	Moderate	Small	Moderate	Semi-Evergreen	Low	4-7		Fire Blight, Sooty Mold, Aphids, White Fly
Quercus acuta	Japanese Evergreen Oak	30	15-20	Moderate	Medium	Low	Evergreen	Low	>10		Armillaria
Quercus agrifolia	Coast Live Oak	30-70	40-70	Slow	Large	Moderate	Evergreen	Moderate	5-10	Native	Sudden Oak Death, Crown Rot, Mistletoe, Armillaria, Carpenterworm, Invasive Shot Hole Borer, Goldspotted Oak Borer, Aphids
Quercus chrysolepis	Canyon Live Oak	50-70	20-30	Moderate	Large	Low	Evergreen	Moderate	>10	Native	Sudden Oak Death, Crown Rot, Mistletoe, Armillaria, Invasive Shot Hole Borer, Goldspotted Oak Borer, Aphids, Caterpillars
Quercus canbyi	Chisos Oak	50	30-50	Moderate	Large	Low	Deciduous	Low	>10		Armillaria, Anthracnose, Root Rot, Scales, Spider Mites

Street Trees

Scientific Name	Common Name	Height (ft)	Spread (ft)	Growth rate	Relative Size	Water needs (WUCOLS)	Growth Strategy	Root Damage Potential	Min. Grow Space (ft)	CA Native Status	Pest, Pathogen, and Stress Susceptibility
Quercus douglasii	Blue Oak	60-70	40-50	Slow	Large	Very Low	Deciduous	Low	>10	Native	Crown Rot, Mistletoe, Armillaria, Brown Rot, Caterpillars, Insect Galls, California Oak Moth, Gall Wasp
Quercus garryana	Oregon Oak	70-90	30-60	Slow	Large	Moderate	Deciduous	Low	>10	Native	Crown Rot, Mistletoe, Armillaria, Root Rot, Beetle Borers, Caterpillars, Insect Galls, Scales
Quercus kelloggii	Black Oak	50-70	30-50	Moderate	Large	Moderate	Deciduous	Moderate	>10	Native	Sudden Oak Death, Anthracnose, Armillaria, Brown Rot, Goldspotted Oak Borer, Insect Galls, Carpenterworm, California Oak Moth
Quercus lobata	Valley Oak	50-70	40-50	Moderate	Large	Moderate	Deciduous	Moderate	>10	Native	Armillaria, Crown Rot, Mistletoe, Root Rot, Invasive Shot Hole Borer, Beetle Borers, Caterpillars, Insect Galls
Quercus macrocarpa	Bur Oak	70-80	20-30	Fast	Large	Moderate	Deciduous	Moderate	>10		Armillaria, Aphids, Spider Mites
Quercus rubra	Scarlet Oak	50-75	40-50	Moderate	Large	Moderate	Deciduous	Moderate	>10		Armillaria, Phytophthora, Root Rot, Aphids, Caterpillars, Insect Galls, Anthracnose
Quercus rugosa	Netleaf Oak	60	20-40	Fast	Large	Low	Evergreen	Moderate	>10		
Quercus suber	Cork Oak	30-60	30-50	Slow	Med.-Lrg.	Moderate	Evergreen	Moderate	5-10		Armillaria, Phytophthora, Root Rot, Invasive Shot Hole Borer

Street Trees

Scientific Name	Common Name	Height (ft)	Spread (ft)	Growth rate	Relative Size	Water needs (WUCOLS)	Growth Strategy	Root Damage Potential	Min. Grow Space (ft)	CA Native Status	Pest, Pathogen, and Stress Susceptibility
Quercus tomentella	Island Oak	50	25-40	Moderate	Large	Low	Evergreen	Moderate	>10		Armillaria
Quercus wislizeni	Interior Live Oak	50-70	40-75	Slow	Large	Moderate	Evergreen	Moderate	>10	Native	Armillaria, Crown Rot, Mistletoe, Caterpillars, Coddling Moths, Insect Galls, White Fly, Powdery Mildew
Quillaja saponaria	Soapbark Tree	45	15-25	Slow	Medium	Low	Evergreen	Low	>10		Phytophthora
Tilia tomentosa	Silver Linden	40-50	20-30	Moderate	Medium	Moderate	Deciduous	Moderate	>10		Root Rot, Sooty Mold, Verticillium, Aphids
Ulmus parvifolia	Chinese Evergreen Elm	40-60	50-60	Fast	Large	Moderate	Semi-Evergreen	Moderate	>10		Dutch Elm Disease, Armillaria, Phytophthora, Root Rot, Aphids, Beetle Borers, Beetle Leaves, Caterpillar
Laurus nobilis	Sweet Bay	40	15-30	Slow	Medium	Moderate	Evergreen	Moderate	5-10		Phytophthora, Root Rot, Psyllid, Scales
Umbellularia californica	California Bay	60-80	60-75	Slow	Large	High	Evergreen	Moderate	>10	Native	Armillaria, Sudden Oak Death, Anthracnose, White Mottled Rot, Beetle Borers, Leaf Miner, Cottony Cushion Scale, Beetle Leaves, Invasive Shot Hole Borer
x Chitalpa tashkentensis	Chitalpa	20-30	20-30	Fast	Sm./Med.	Low	Deciduous	Low	5-10		Root Rot, Verticillium, Aphids
Zelkova serrata	Saw-Leaf Zelkova	40-50	50	Moderate	Medium	Moderate	Deciduous	Moderate	>10		Dutch Elm Disease, Beetle Leaves, Spider Mites

UPDATED CITY TREE LIST: PARKS AND OPEN SPACE

Updated City Tree list recommended for parks and open space trees. *This list includes species with larger growth potential or higher root disruption risk, which is expected to reduce their tolerance for being planted in confined sidewalk plant strips. All trees are hosts to other species who rely on them for food and shelter; those that might be detrimental to the tree are identified under pest susceptibility. (Trees recommended as street trees may also be appropriate to plant in parks and open space.)*

Parks and Open Space Trees

Scientific Name	Common Name	Height (ft)	Spread (ft)	Growth rate	Relative Size	Water needs	Growth Strategy	Root Damage Potential	Min. Grow Space (ft)	CA Native Status	Pest Susceptibility
Acca sellowiana 'coolidge'	Coolidge Pineapple Guava	15-25	18-25	Fast	Small	Low	Deciduous	Low	4-7		
Acer macrophyllum	Bigleaf Maple	80'	30'-50'	Fast	Large	High	Deciduous	High	>7'	Native	Sudden Oak Death, Root Rot, Armillaria, Annosus Root Disease, Invasive Shot Hole Borer, Beetle Borers, California Flathead Borer, Caterpillars
Acer negundo	Box Elder	50-60	30-40	Moderate	Large	Moderate	Deciduous	Moderate	>7	Native	Anthracnose, Armillaria, Phytophthora, Powdery Mildew, Aphids
Aesculus californica	California Buckeye	25	20-30	Fast	Small	Low	Deciduous	Low	4-7	Native	Armillaria, Sudden Oak Death, Powdery Mildew, Root Rot, Invasive Shot Hole Borer, Thrip
Arbutus 'Marina'	Strawberry Tree	30-40	20-30	Moderate	Medium	Moderate	Evergreen	Low	2-4		Anthracnose, Phytophthora, Root Rot, Rust, Scales, Thrip
Arctostaphylos spp.	Manzanita species	20	5-10	Fast	Small	Low	Evergreen	Low	2-4	Native	Armillaria, Sudden Oak Death, Aphids, Insect Galls
Betula occidentalis	Water Birch	20-30	10-20	Fast	Medium	High	Deciduous	Low	4-7	Native	Armillaria, Root Rot, Aphids, Beetle Borers

Parks and Open Space Trees

Scientific Name	Common Name	Height (ft)	Spread (ft)	Growth rate	Relative Size	Water needs	Growth Strategy	Root Damage Potential	Min. Grow Space (ft)	CA Native Status	Pest Susceptibility
Ceanothus 'Ray Hartman'	Ray Hartman Ceanothus	20	15-20	Fast	Small	Low	Evergreen	Low	2-4	Native	Armillaria, Crown Rot, Fusarium, Phytophthora, Root Rot, Aphids
Diospyros virginiana	Persimmon (American)	15-30	15-30	Moderate	Small	Moderate	Deciduous	Moderate	>7		Crown Rot, Root Rot, Verticillium, Caterpillars
Fraxinus latifolia	Oregon Ash	70-80	40-50	Fast	Large	Moderate	Deciduous	Low	>7	Native	Anthracnose, Root Rot, Rust, Sooty Mold, Armillaria, Caterpillars, Scales
Juglans nigra	Black Walnut	50-80	40-50	Slow	Large	Moderate	Deciduous	High	>7	Native	Armillaria, Anthracnose, Phytophthora, Root Rot, Beetle Borers, Caterpillars
Persea americana	Avocado	40-50	40-50	Moderate	Medium	Moderate	Deciduous	Low	4-7		Root Rot, Leaf Spot, Invasive Shot Hole Borer, Mites, Scales
Populus fremontii	Fremont Cottonwood	60-80	30-50	Fast	Large	High	Deciduous	High	>15	Native	Anthracnose, Canker, Crown Rot, Mistletoe, Aphids, Beetle Borers, Beetle Leaves, Caterpillars, Invasive Shot Hole Borers
Quercus wislizeni	Interior Live Oak	50-70	40-75	Slow	Large	Moderate	Evergreen	Moderate	>7	Native	Armillaria, Crown Rot, Mistletoe, Caterpillars, Coddling Moths, Insect Galls, White Fly, Powdery Mildew
Salix gooddingii	Goodding's Black Willow	20-25	15-25	Fast	Small	High	Deciduous	Moderate	4-7	Native	Anthracnose, Willow Blight, Armillaria, Phytophthora, Root Rot, Invasive Shot Hole Borer, Aphids, Beetle Borers, Caterpillars

Parks and Open Space Trees

Scientific Name	Common Name	Height (ft)	Spread (ft)	Growth rate	Relative Size	Water needs	Growth Strategy	Root Damage Potential	Min. Grow Space (ft)	CA Native Status	Pest Susceptibility
Salix laevigata	Red Willow	40-50	15-35	Fast	Medium	High	Deciduous	High	>7	Native	Anthracnose, Willow Blight, Armillaria, Phytophthora, Root Rot, Invasive Shot Hole Borer, Aphids, Beetle Borers, Caterpillars
Salix lasiandra	Shining Willow	30-40	10-25	Fast	Medium	High	Deciduous	High	4-7	Native	Anthracnose, Willow Blight, Armillaria, Phytophthora, Root Rot, Aphids, Beetle Borers, Caterpillars, Spider Mites
Salix lasiolepis	Arroyo Willow	30-40	15-20	Fast	Medium	High	Deciduous	High	4-7	Native	Anthracnose, Willow Blight, Armillaria, Phytophthora, Root Rot, Invasive Shot Hole Borer, Aphids, Beetle Borers, Caterpillars
Salix sitchensis	Sitka Willow	20-25	15-25	Fast	Small	High	Deciduous	High	4-7	Native	
Sambucus nigra	Black Elderberry	25-30	10-20	Fast	Small	Moderate	Deciduous	Low	4-7	Native	Verticillium, Beetle Borers, Invasive Shot Hole Borer

GUIDE C: URBAN FOREST POLICIES AND PRACTICES

prepared by Davey Resource Group with support from SFEI

This Guide includes an assessment of the City of Mountain View's urban forestry policies and practices. This work, conducted by Davey Resources Group, Inc. (DRG), identifies gaps, needs, and opportunities, and recommends actions the City can take to improve urban forest health, expansion, and protection. These assessments examine the City's urban forestry operations and pest management strategy.

Background and Operations Review

A comprehensive review of Mountain View's urban forestry policies and operational procedures was conducted to identify areas for improvement. The approach included in-depth interviews with key personnel and a thorough review of relevant documentation. This documentation included City ordinances, technical manuals, and other guiding documents. The findings and recommendations aim to enhance and optimize Mountain View's urban forestry practices and ensure sustainable management of the city's green spaces.

DOCUMENT REVIEW

Tree Technical Manual

The Mountain View Tree Technical Manual provides guidelines for all aspects of tree management in the city. It supports the City's sustainability goals by promoting a healthy urban forest and standardizing tree-related practices.

Recommendations

General Suggestions:

- Remove all gendered language found in the document
- Fix broken web links
- Expand the manual to serve as a training resource for City staff, developers, and tree care companies
    - Include clear, step-by-step guidance on enforcement procedures and permitting workflows
    - Add annotated examples of arborist reports and site assessments to improve consistency and quality
    - Provide visual references and process flowcharts to support onboarding and ongoing staff training
    - Align all additions with updated ordinance language and industry standards to ensure consistency and legal compliance

Section 2. Definitions:

- Update definitions

Section 3. Heritage Trees:

- Update process for measuring diameter to bring into line the standard measurement of a tree trunk at 54 inches above the natural grade
- Consider using this section to explain the reasoning for protecting Heritage Trees, including their value, their contribution to the community, and the actual cost of their removal
- 3.50 Heritage Tree Removal Permits
    - Detail process for mitigation plantings
        - Link to included timeline
        - Link to official City of Mountain View Tree Species List
        - Link to the suggested vendor list
    - Detail reinspection process and the possibility of penalties for failing to comply

Section 5. Best Management Practices for Construction Site Management:

- This section is robust and in line with industry standards, but lacks details around the enforcement of these BMPs
- This section needs to be paired with an addition to the ordinance
- Enforcement should be funded and staffed to ensure compliance
- Standards should be consistently expressed in all applicable areas, including development codes, tree ordinances, and specific plans

Section 6. Arborist Report Requirements:

- Detail that when the term "Arborist" as used in this section, refers to an International Society of Arboriculture (ISA) Certified Arborist
- Consider the addition of "Certified" Arborist to the Title
- Consider creating an approved vendor list for Certified Arborists
    - Create a standardized vetting process as well as a term for renewal
    - Detail requirements and possible causes for removal from the list
    - Mandate that all Arborist Reports submitted for permitting or appeals must be made by an approved Certified Arborist
    - Maintenance of this list would help ensure better quality of submitted reports
- Detail the benefits of retaining a Certified Arborist while considering the removal of a tree

Section 7. Tree Planting and Maintenance Information:

- This section should refer to the official City of Mountain View Tree Species List
- Consider the creation of an approved vendor list for tree purchases

- 7.10.2 Tree Selection Concepts
  - Define the term "locally" as this is a vague term that could cause confusion
  - Detail the value of a diverse urban forest
  - Include pest susceptibility as a factor to consider during species selection
  - Planting materials
    - Align guidelines for water with Section 4.30 Street Tree Ownership and Responsibility

Precise Plans

Mountain View has adopted multiple precise plans, each tailored to specific neighborhoods and offering opportunities to test new landscaping, urban forest, and development standards. For the purpose of this Plan, The City of Mountain View selected the El Camino Real Precise Plan and Downtown Precise Plan as representative examples for this review. These plans address common urban forestry challenges and opportunities that appear across multiple development contexts in Mountain View.

This section focuses on highlighting urban forestry best practices that may be integrated into Chapter 32 of the City Code. Implementing these recommendations holistically will help ensure consistent tree protection, canopy expansion, and climate resilience across the city.

Recommendations

While this review focused specifically on the El Camino Real and Downtown Precise Plans, the recommendations outlined below are intended for city-wide application.

Strengthen Protection for Existing Mature Trees:

- Adopt a "No Net Loss" Policy: Establish policies and standards that promote no net loss of canopy cover, while building in flexibility with how requirements are met. First, consider setting minimum canopy cover requirements for developments: prioritize on-site tree retention and planting and encourage creative designs that provides adequate soil volume and growing space for long-term tree health. Where full canopy retention or replacement is not feasible, contributions (such as in-lieu fees to support off-site urban forestry initiatives) may be used to achieve equivalent canopy gains elsewhere in the city. The policy should clarify whether replacement goals are measured immediately after project completion or at tree maturity (e.g., 15 years after planting)
- Require Tree Disposition Plans for Development: Require developers to identify all mature trees on-site and identify the reason for removal, and what the project design effects would result if the tree was preserved.
- Set Strict Criteria for Removal: Update Heritage Tree removal findings to be more objective
- Offer Incentives for Tree Retention: Develop a list of incentives for Heritage Tree preservation that may allow for reduction or modifications of development standards

Construction Protection Standards:

- All construction protections match both the Section 5 of the Mountain View Tree Technical Manner as well as Chapter 32 Trees, Shrubs and Plants in Mountain View's City code
  - Require Tree Protection Zones (TPZs) Following ANSI A300 Standards
  - Follow ISA Best Management Practices (BMP) for Managing Trees During Construction
- Enforce Root Zone Preservation: Prohibit mechanical excavation within a minimum radius of one (1) foot per inch of the tree's diameter measured at 54 inches above natural grade without prior assessment and written approval from an ISA Certified Arborist. Any approved encroachment into the root zone must include appropriate mitigation measures, such as clean root pruning, air excavation, and soil protection, to minimize damage and preserve tree stability and health. Tree protection fencing should be installed at the Critical Root Zone (CRZ) as determined by the project arborist and remain in place for the duration of construction.
- Regulate Heavy Equipment and Material Storage: Prohibit staging of construction materials, vehicles, or chemicals near tree root zones
- Monitor Tree Health During Construction: Require on-site arborist inspections during construction to ensure compliance with ANSI A300 and ISA BMP standards throughout the construction process

Improve Post-Planting Maintenance & Enforcement:

- Require a Minimum 5-Year Maintenance Period: Developers must maintain newly planted trees, including irrigation, pruning, and pest management, for at least 5 years post-planting
- Mandate Performance Bonds: Require a tree survival bond that is refunded only if trees survive and thrive after the initial care period
- Increase Tree Replacement Penalties: Establish higher fines for unauthorized tree removal or damage during construction such that fees cover not just tree replacement but also the lost ecological and cooling benefits
- Fund and staff positions responsible for ensuring compliance with ordinances, including mitigation planting requirements

Strengthen Ordinances for Public & Private Trees:

- Establish a Pre-Development Canopy Retention Standard: Require new commercial and multi-family developments to preserve existing trees such that at least 30–40% of the site's original canopy coverage is maintained post-construction.

Increase Public Oversight & Accountability:

- Consider the creation of objective standards in relation to tree planting requirements, such as minimum dimensions of planting areas and allowed plant lists; for nonresiden-

FORESTRY OPERATIONS REVIEW

This section provides an overview of the current operational challenges and recommended improvements for the Mountain View Urban Forestry Division. The information presented was obtained through the Document Review described in the previous section and interviews conducted with the Mountain View Urban Forestry Division. It highlights key areas needing attention to enhance the Division's effectiveness in managing and preserving the city's urban forest. The analysis is based on current Division practices, resource availability, and identified areas for growth and optimization.

Challenges and Recommendations

Current Challenges	Recommendations
Staffing	
Current staffing levels can address basic and reactive urban forest management operations, with little capacity for proactive urban forest management	Consider adding Urban Forest positions and/or collaborating with other City divisions, such as the Sustainability Division which has experience securing grants that could support urban forestry efforts through shared resources and streamlined grant management.
Planning and Tracking Planting	
The lack of a current planting plan and unmapped planting sites delays mitigation efforts. Additionally, the City does not have a designated plant palette or planting plan, particularly to address climate change. Compounding these challenges, there is no plan or budget for regularly updating the public tree inventory, and the poor quality of existing data has made planning and management increasingly difficult.	Develop a comprehensive Planting Plan with clear goals, including canopy cover targets—such as the 22% by 2030 goal set in the prior 2015 Community Tree Master Plan—and mapped, inventoried planting sites. Invest in GIS tools, tree inventory and care request tracking software. Commit adequate staffing and resources to meet these objectives and follow through on long-term urban forestry goals.

Current Challenges	Recommendations
Permitting	
Chapter 32, Article II - Protection of the Urban Forest ("Heritage Tree Ordinance") is hindered by confusion and an ineffective online permitting process. There is a lack of enforcement regarding required replanting, and developers can exploit loopholes, such as the limited timeframe for managing mitigation plantings. It is challenging to obtain high-quality, unbiased arborist reports, which undermines the integrity and consistency of permit decisions. Enforcement of Post-Removal Permits is lacking, undermining accountability and compliance.	Clarify the definition of a Heritage Tree. Simplify the permit application process, including improving the online application system. Implement a transparent reinspection and enforcement process. Increase follow-up inspection and enforcement efforts to strengthen compliance, and ensure that enforcement staff are trained and resourced to support consistent, proactive oversight. Establish clear standards for arborist reports, including potentially using a City-approved list of certified, independent arborists or a peer-review system to ensure unbiased evaluations. Implement financial penalties for non-compliance and close developer loopholes—such as the five-year mitigation planting timeframe that allows tree removal after minimal maintenance.
Development	
Tree preservation is hindered by redevelopment pressures, limited space for replanting, and outdated tree codes. Developers often design projects without initially considering tree preservation opportunities. State law (such as State Density Bonus and the Housing Accountability Act) limit the City's ability to deny or require changes to housing projects to preserve trees.	Develop specific development codes and standards, including structural soil provisions and designated space for larger trees. Develop standards or requirements for minimum landscaped areas around the entire building footprint—not just front-facing planting spaces. Align tree removal permit and development permit expiration dates. Develop procedures and submittal requirements that encourage developers to consider tree preservation in their designs.

Current Challenges	Recommendations
Pest Management	
The current pest management approach is reactive, with limited monitoring, especially regarding the Invasive Shot Hole Borer (ISHB).	Implement a proactive pest monitoring and trapping program (especially for ISHB). Develop comprehensive pest control strategies, adapting to climate change impacts.
Community Engagement	
Community engagement in urban forestry has historically been low, though it is gradually increasing. The City uses annual, term-limited contracts with the nonprofit Canopy to support community engagement and private tree planting. Persistent public misconceptions exist about the purpose and requirements of the Tree Ordinance and permitting processes, and the benefits of trees in urban settings.	Expand community outreach through hands-on opportunities like volunteer planting days, training workdays, and guided tree walks. Convert the agreement with Canopy to a permanent contract for continual, consistent levels of support. Develop and distribute clear, accessible educational materials that directly address common misconceptions—such as when a permit is required, why certain trees are protected, and how tree removals and replacements are evaluated. Use infographics, short videos, and FAQs to make information digestible. Incorporate this content into a new resident welcome packet and post it on the City website and social media. Partner with neighborhood associations and schools to broaden the reach and credibility of messaging.
Funding	
Existing funding levels provide for base-level operations, maintenance, and community outreach and education. These shortages have constrained operations, deferred maintenance, resulted in missed opportunities for program expansion, and hindered the ability to apply for and manage grants or explore alternative funding mechanisms.	Prepare a comprehensive budget proposal aligned with the Urban Forestry Division goals and priorities, including those recommended in this Plan, to justify increased funding for added positions and services, which are needed to implement the proposed proactive management practices and community engagement. Explore partnerships with nonprofits and private entities to supplement public funding. Pursue grant opportunities where feasible, prioritizing those with manageable administrative requirements. Where appropriate, pair contracted work with in-house staff to increase capacity while maintaining oversight and quality control.

Current Challenges	Recommendations
Department Structure & Operations	
The urban forestry program faces several operational challenges, including staffing shortages, certification gaps, and inadequate enforcement practices. Key positions, such as the Urban Forestry Manager, were vacant for extended periods, creating a strain on the remaining staff and leading to a reactive, rather than proactive, approach to tree management. Additionally, there is a shortage of certified arborists and tree workers, which hinders the department's ability to perform specific tasks. Enforcement of tree removal permits and mitigation planting requirements is also insufficient, with minimal follow-through and penalties for non-compliance. The department currently relies on outdated, paper-based systems for tracking service requests and tree maintenance, contributing to operational inefficiencies.	To address these challenges, the city should implement a digital system for tracking service requests, tree inventory, and maintenance tasks, integrating with GIS tools for better monitoring and efficiency. Increasing contractor inspection frequency to daily will help ensure quality and accountability in contracted work. Ensure sufficient staffing by filling essential roles and enhance team capabilities through necessary certifications and training programs. Lastly, strengthening enforcement measures for tree removal permits and mitigation requirements, including the introduction of penalties for non-compliance, will ensure adherence to city policies and promote better compliance.
Interdepartmental Collaboration	
Challenges exist in interdepartmental collaboration, especially when related to development projects and deciding how to manage tree-planting trade-offs and conflicts with utilities, such as powerlines, gas lines, water and sewer services, and buried fiber optic and electrical conduit lines. Other infrastructure (sidewalk location, utilities, etc.) are often prioritized over trees that are difficult to replace in kind.	Establish clearer interdepartmental coordination policies and procedures. Improve communication between teams managing development projects throughout the city. Develop guidelines for managing utility conflicts with tree planting. Create an approved vendor list.

Urban Forestry Pest Report

Current and Emerging Tree Pests in Mountain View, California

Mountain View, California is home to a diverse urban forest that provides numerous ecological, aesthetic, and community benefits. However, various pathogens and pests threaten the vitality of the city's tree canopy. Among the most concerning pests are Sudden Oak Death (SOD), bark beetles, and ambrosia beetles such as the Invasive Shot Hole Borer (ISHB). This section outlines these current and emerging pest concerns, detailing their impacts on the urban forest and offering best management practices (BMPs) for managing these threats.[176–183]

GENERAL BEST PRACTICES

- **Public Outreach:** Engage the community through workshops, informational campaigns, and volunteer programs to raise awareness about tree health and pest management.;
- **Education:** Provide resources and training for residents, arborists, and City staff on pest identification, prevention, and proper tree care practices.
- **Community Monitoring:** Encourage citizen participation in tracking and reporting pest activity to support early intervention efforts.
- **Tree Health & Maintenance:** Strengthen tree resilience through proper pruning, watering, mulching, and species diversification.

CURRENT THREATS

Sudden Oak Death (SOD)

Status	
Pathogen	Sudden Oak Death (SOD) is caused by the *Phytophthora ramorum* pathogen.
Species affected:	Oak species, particularly Coast Live Oak (*Quercus agrifolia*) and Black Oak (*Q. kelloggii*). While oaks are the primary targets, SOD can also affect other plant species, exacerbating ecological damage.
Status	SOD has been a major concern in the Bay Area for over two decades, leading to significant oak mortality.
Mode of transmission	The disease spreads through water and soil, infecting trees and causing rapid decline.
Symptoms	Infected trees typically exhibit dark lesions on the trunk, bleeding cankers, and leaf dieback.

Best Mangagement Practices	
Monitoring and Early Detection	Regularly inspect oak trees for signs of SOD, including bleeding cankers, lesions on leaves, and overall tree decline. Early pathogen detection using PCR assays can help confirm infection.
Cultural Controls	Proper watering, fertilization, and pruning can improve tree health and reduce stress, increasing tree resistance to infection.
Sanitation	Remove and properly dispose of infected trees and materials to minimize pathogen spread. Disinfect tools between cuts to prevent transferring the disease.
Chemical Control	Fungicides like phosphonates can help slow disease progression on high-value trees. Early treatment can significantly improve tree survival.
Quarantine Measures	Establish quarantine measures for infected trees and materials to reduce the spread of SOD to new areas.

Bark Beetles

Status	
Pathogen	Bark beetles, including *Dendroctonus* species
Species affected	Primarily affect Ponderosa and Coulter Pines, but also Lodgepole, Sugar, and other pine species, as well as Douglas-Fir and fir trees.
Status	Bark beetles continue to pose a significant threat to trees in the San Francisco Bay Area, particularly during periods of drought. Stressed trees become more susceptible to infestation, leading to widespread decline and mortality in native and ornamental forests.
Mode of transmission	These beetles bore into the phloem, just under the bark, to feed. This feeding causes damage and introduces the beetles' symbiotic fungi, such as *Grosmannia sp., Ophiostoma sp.,* and *Entomocorticium sp.*, which can disrupt a tree's nutrient flow and lead to tree stress, decline, and eventual mortality.
Symptoms	Infected trees typically have sawdust or frass at the base of the tree or in the bark furrows, small holes leaking sap, and foliage will show signs of chlorosis.

Best Management Practices	
Monitoring and Early Detection	Regularly inspect trees for signs of infestation, including bore holes, pitch masses, and leaf discoloration, especially during periods of active infestation. Pheromone traps can be used to monitor beetle populations.
Sanitation	Prune and remove infested branches to limit beetle spread. Properly dispose of infested tree material by chipping, burning, or burying it to prevent re-infestation.
Cultural Controls	Minimize tree stress by providing adequate water and nutrients and ensuring proper tree spacing to reduce competition.
Chemical Control	For high-value trees, consider the use of insecticides. Insecticides must be applied according to the label. Pheromone packets can be attached to trees to deter beetles from colonizing.

EMERGING THREATS

Invasive Shot Hole Borer Beetle (ISHB)

The Invasive Shot Hole Borer Beetle (ISHB; *Euwallacea* spp.) is an increasing threat to Mountain View and the surrounding Bay Area. The pest is established in Southern California and is rapidly moving north, leading to its detection in San Jose in August of 2024. The beetles bore into the bark, where they introduce and cultivate a fungus (*Fusarium* sp.), leading to Fusarium dieback, which causes tree decline and mortality. The beetle and fungus reproduce within 78 tree and shrub species worldwide, including California-native trees and common landscape trees. Tree death results from infestation in only 17 of the 78 species; of those, 10 are native to California, 6 of which are native to the San Francisco Bay Area.

Additionally, the beetle has attacked 247 plant species across 64 families; however, these plants do not support the reproduction of the beetle and fungus. These pests are of particular concern in drought-prone regions, where stressed trees are more vulnerable to infestation. The fungus associated with ISHB significantly exacerbates the damage, as this disease complex can spread quickly, particularly in areas with high tree density.

Since identifying signs of ISHB infestation can be difficult, active monitoring, early detection, and proactive removal are essential to curbing the spread and preventing outbreaks.

Status	
Pathogen/Pest	Invasive Shot Hole Borer Beetle (ISHB) – *Euwallacea spp.*
Species affected	Box Elder, Maples, Sycamore, Willow, Oaks, Poplars, Sweet Gum
Status	Established in Southern California, rapidly moving north. Detected in San Jose in August 2024[184]
Mode of transmission	The beetles bore into the bark, where they introduce and cultivate a fungus (*Fusarium sp.*), leading to *Fusarium* dieback
Symptoms	Black bark staining, round 1/8-inch holes, frass, white powder on trunks, limb dieback, tree death

Basis for Concern	
Wide Host Range	ISHB affects a wide range of tree species, including ornamental and high-value trees commonly planted in urban areas, increasing the likelihood of significant tree mortality and loss of biodiversity.
Rapid Spread	The beetles can spread quickly across the landscape, infesting new trees and contributing to a rapid increase in pest population densities. Early detection and management are critical to preventing widespread infestations.
Fusarium Dieback	The fungus carried by ISHB causes *Fusarium* dieback, leading to dieback and eventually tree mortality. Once a tree becomes infected, the disease progresses quickly.
Limited Control Options	Unlike some other pests, ISHB is difficult to manage with traditional methods. Chemical treatments and biological control options are still being explored, but there is no fully effective solution currently available.

Best Management Practices (BMPs)	
Monitoring	Regularly inspect trees for signs of ISHB infestation, including small, round holes in the bark, black staining around the entry points, leaf discoloration, and branch dieback. Focused monitoring on boxelder species as it is a preferred host. Using pheromone traps can help detect early infestations and track beetle movement. Stay up to date on regional monitoring and control efforts.
Cultural Controls	Prune and remove infested branches promptly to limit beetle spread. Proper sanitation practices, including disposing of infected wood and tree material by chipping, burning, or burying it, are critical to stopping the spread.
Chemical Control	In areas with high beetle activity, insecticides may be applied to protect trees. Information on potential insecticides can be found at University of California Agriculture and Natural Resources.
Biological Control	Research into biological control options, such as introducing parasitoid wasps or other natural predators of ISHB, is ongoing. Eventually, this may offer long-term pest population suppression.
Public Education	Engage the community in identifying and reporting potential ISHB infestations. Education on the importance of tree care, pathogen management, and the role of ISHB can help reduce the spread of this invasive pest across the urban landscape.

CONCLUSION

Proactive management, including early detection, monitoring, and management of tree health, is essential to mitigating the effects of pest and pathogen threats. Once a pest is identified, implementing BMPs, such as a combination of cultural, chemical, and biological control, are key to reducing pest severity and spread.

As pests and diseases continue to threaten Mountain View's trees, continued research, regional collaboration, public education, and community engagement will be vital to sustaining the health of the urban forest and protecting its biodiversity.

GUIDE D: MONITORING AND TARGETS

This Guide provides recommendations for establishing a standard monitoring protocol to track change in the biodiversity Metrics recommended in the Mountain View Biodiversity & Urban Forest Plan ("the Plan;" see **5.3 Metrics and Targets**) and setting Targets that pair the Metrics with concrete, time-bound goalposts the City can work towards.

Monitoring: Biodiversity Metrics

There are several ecological and methodological factors that could influence a change in detected species numbers over time, across space, or between projects.[185] These include:

- **Species' responses to changes in habitat availability in the city.** Being able to detect this is the target of monitoring. With standardized methodology the goal is to confidently detect changes in the presence or absence of species in the area of interest, while accounting for the other factors that might influence detection.
- **Survey effort.** This is standardized to reduce its influence on the data. Performing repeated surveys during the same time of day, for the same amount of time, with the same numbers of observers, and in the same locations are several ways to standardize effort.
- **The life history and annual phenology of a species.** This is something to be aware of and plan for so that data is collected during the time period and life history stage of interest. Using birds as an example: Depending on the species, birds will occupy the city during different times of year;[e.g., 186] they can either be year-round residents or migrants who pass through the city in spring and/or fall, breed in the city (arrive in spring, leave in fall), or overwinter in the city (arrive in the fall, leave in the spring). Similarly, different species may be using habitat in the city for different life history stages (e.g., nesting, raising fledglings, foraging, roosting and shelter). Monitoring should be planned accordingly, so that data is collected for the time periods and life history stages of interest.

The goal of a monitoring program is to control for as many factors as possible, so that the data reflect actual changes in the response variable (e.g., number of species) instead of inconsistency in methodology. The ability to compare species counts over time or across space, in a statistically meaningful way, will require repeated surveys using the same methods and standardized effort.

Three monitoring levels are recommended for tracking biodiversity-related Metrics, depending on the desired results and resources available (as shown in the following table). Where appropriate, monitoring efforts may incorporate available community science data and partnerships to support biodiversity tracking and public engagement (see columns "Compile Existing Partner Data" and "Managed Community Science Data Collection").

Monitoring levels the City can employ to track biodiversity Metrics.

Monitoring Level	Compile Existing Partner Data	Managed Community Science Data Collection	Technical Expert Monitoring Program
Amount of effort	Lowest	Medium	Highest
Approach	Compile City biodiversity data being collected by partners (including academic researchers, NGOs, or agencies) and by community scientists through well-vetted online platforms.	Use existing tools and organized events such as iNaturalist and the City Nature Challenge and work with community volunteers to gather data across an established array of City biodiversity data collection sites.	Hire qualified sub-contractors or City staff to design a city-wide monitoring program and carry out repeated surveys at regular intervals.
Types of results	Opportunistic lists of species presence in the city	Targeted and more comprehensive lists of species presence (and possibly absence*) Comparisons of species numbers between sites and over time* * if effort is standardized and well-managed, and observer skillsets are validated (and/or photographic evidence can be employed)	City-wide comprehensive lists of species presence and absence that allow for robust occupancy analysis Statistical comparisons of species numbers between sites and over time, accounting for detection error
Advantages and Disadvantages	+ Lower effort + Builds partnerships – Unable to use statistics to meaningfully evaluate or compare	+ Community engagement + Greater longevity + Lower cost for observers and often more data + Statistical comparisons are possible* – Data quality dependent on technical skill available and effort put toward preparation (i.e., establishing sites and protocols) and data collection management –/+ High effort and technical skill needed initially to establish protocols and set up sampling array, but with trained volunteers and staff managers, subsequent years require less effort	+ High quality data + Highest effort in terms of standardization and data quality, but little effort by City beyond expense + Potential for additional data collection (e.g., individual abundance, vegetation), to be more efficiently collected as part of the program, allowing for more robust analysis and reporting – Higher cost – Longevity of study dependent on availability of funds

A recommended resource to help the City plan its biodiversity monitoring effort is Urban Biodiversity Inventories, an ongoing project of cities and organizations—including the California Academy of Sciences and the City of San Francisco—to create tools and a roadmap for cities to implement the Urban Biodiversity Inventory Framework. [187]

Targets

Setting quantitative targets for improving biodiversity is an important step in meeting planning Objectives.[152,188]

The SMART Framework, originally developed in management and educational settings,[189] has been validated, modified, and recommended by scientists and biodiversity planners to help develop achievable biodiversity-related targets.[188,190,191] Applying this framework is recommended when developing biodiversity and urban forest targets for the City of Mountain View.

Specific	Biodiversity is complex, so targets need to be specific and clearly defined.
Measurable	It is essential to quantitatively measure progress toward targets.
Ambitious	Targets should aim sufficiently high to achieve goals, while also being **A**ssignable to specific parties and organizations who are **A**ccountable for the target's delivery.
Realistic	Targets should be developed using evidence to assess if they are realistic.
Time Bound	Targets should be accompanied by a clear timeline for achievement and assessment.

Source: 188

The following target setting worksheet was developed to assist the City in setting Targets that align with the SMART framework, the Plan Objectives (see **5.2 Vision to Action**), and with each of the Plan's recommended Metrics (see **5.3 Metrics and Targets**). It is recommended that this worksheet be completed by collaborating across City departments and seeking input from external technical experts, so that targets are ambitious, yet realistic.

Target setting worksheet. *Example language for developing and setting quantitative time bound Targets for meeting plan Objectives (see **5.2 Vision to Action**), paired with the relevant Metrics (see **5.3 Metrics and Targets**).*

TARGET SETTING WORKSHEET	
Plan Metric	**Example Target Language**
RECOMMENDED METRICS Recommended, ready-to-use Metrics linked with the Objectives for which they track progress	
M1. Tree canopy cover across the city (as percent of total area, excluding the Baylands)	___ % tree canopy cover by 20___
M2. Proportion of public trees that are regionally- and California-native	___ % regionally-native and ___ % California-native trees on City-managed lands by 20___
M3. Number of projects (or acres of project area) incorporating enhancements for native species habitat in the urban matrix	___ # projects (or ___# acres of project area) incorporating enhancements for native species habitat in the urban matrix by 20___
M4. Number of projects (or acres of project area) incorporating enhancements for native species habitat integrated into capital projects	___ # projects incorporating enhancements for native species habitat integrated into capital projects by 20___
M5. Acres of landscaping converted from turf to ecologically-functioning landscaping	___ # acres of turf converted to ecologically functioning landscaping by 20___
M6. Acres of landscaping converted from impervious surface to ecologically-functioning landscaping	___ # acres of impervious surface converted to ecologically functioning landscaping by 20___
M7. Number of trees planted on City-managed lands, distinguishing between new and mitigation trees	___# new trees and ___# mitigation trees planted on City-managed lands by 20___
M8. Number of trees planted for new developments, distinguishing between new and mitigation trees	___# new trees and ___# mitigation trees planted for new developments by 20___ -themed installations by 20___
M9. Average interval (years) between tree care visits (including a health assessment and upkeep activities such as pruning) on trees maintained by the City	___average # years between tree care visits conducted on City maintained trees by 20___
M10. Percent or number of parks and community facilities that implement biodiversity-themed installations, including signage and art associated with physical landscaping	___% of parks and community facilities that implement biodiversity-themed installations by 20___

TARGET SETTING WORKSHEET	
Plan Metric	**Example Target Language**
RECOMMENDED METRICS Recommended, ready-to-use Metrics linked with the Objectives for which they track progress	
M11. Number of external stakeholders partnering with the City to implement biodiversity activities, projects, and programs	___ # external organizations the City has partnered with on biodiversity-related activities by 20___
M12. Number of attendees during City-sponsored or -partnered biodiversity and urban forest events and programs	___ # attendees at City-sponsored or -partnered biodiversity and urban forest events and programs by 20___
M13. Number of volunteer or participant hours during City-sponsored or -partnered biodiversity and urban forest events and programs	___ # volunteer hours at City-sponsored or -partnered biodiversity and urban forest events and programs by 20___
M14. Number of trees distributed through Arbor Day Tree Giveaway or other City-sponsored or -partnered events and programs	___ # trees given away to residents during City's Arbor Day Tree Giveaway program by 20___
SUPPLEMENTAL METRICS FOR FURTHER CONSIDERATION Additional Metrics that the City can consider evaluating to measure progress towards Plan Objectives; would require additional data collection and tracking, beyond current City activities	
M15. Number of native vascular plant, bird, and arthropod species	___ # native vascular plant species (or bird species or arthropod species) recorded in the city by 20___
M16. Percentage of native bird species in built-up areas or within project site	___% point increase of percentage of native bird species in built-up areas/project sites by 20 ___
M17. Percent of newly installed (within 3 years) public trees that are in good condition	___ % newly installed public trees (within 3 years) in good health by 20___
M18. Acres restored for native species habitat and protected from human disturbance	___ # acres restored in protected areas for native species habitat, by 20___
M19. Linear footage ratio of nature-based vs engineered banks for freshwater streams	___ # linear feet of stream banks converted from engineered to nature-based by 20___
M20. Number of properties with existing/ updated wildlife-friendly lighting	___ # properties with wildlife-friendly lighting by 20___

TARGET SETTING WORKSHEET	
Plan Metric	**Example Target Language**
M21. Number of structures with existing/ updated bird-safe design	___ # structures with bird safe design by 20___
M22. Linear footage of trail extensions, improvements, or new trails amidst natural features	___ # linear footage of trail extensions, improvements, or new trails amidst natural features by 20___
M23. Number of hours or FTE positions City staff work on biodiversity-related tasks, including training, to manage landscapes for supporting biodiversity.	___ # hours or FTE positions City staff work on biodiversity-related tasks by 20___
M24. Number of acres enhanced for biodiversity during City-sponsored or -partnered events and programs	___ # acres enhanced for biodiversity at City-sponsored or -partnered biodiversity and urban forest events and programs by 20___
M25. Number of privately-managed trees tracked through data submitted by private community members (e.g., by community members and large landowners)	___ # privately-managed trees tracked by 20__



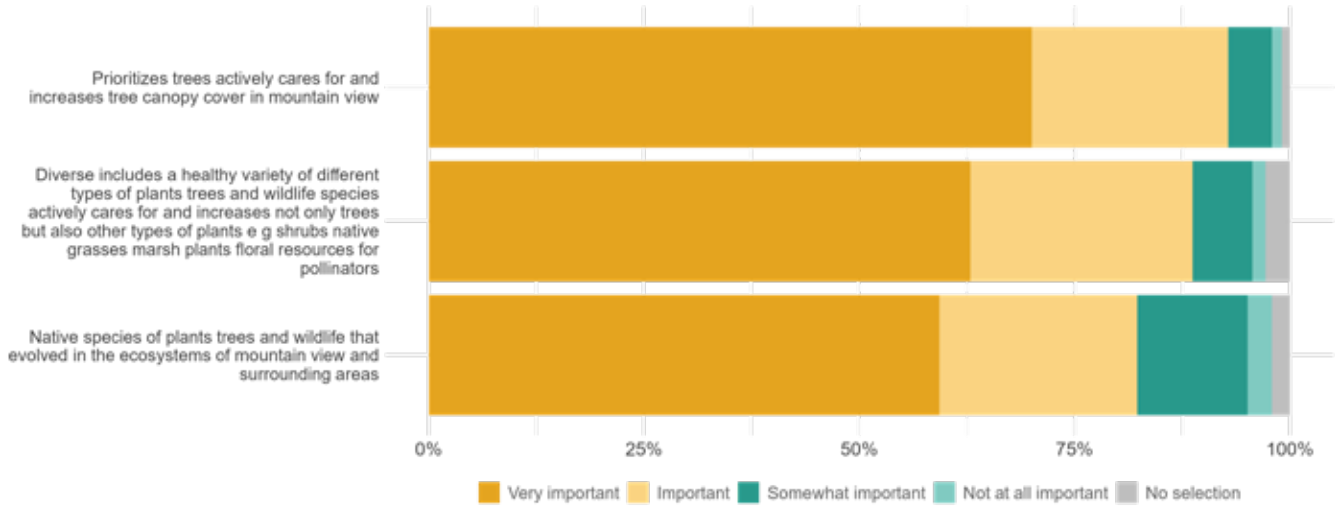
2024 Biodiversity & Urban Forest Plan community workshop. Photo courtesy of the City of Mountain View.

APPENDIX A: COMMUNITY ENGAGEMENT SUMMARY

This appendix summarizes the Plan's public survey responses, lists recommendations result-

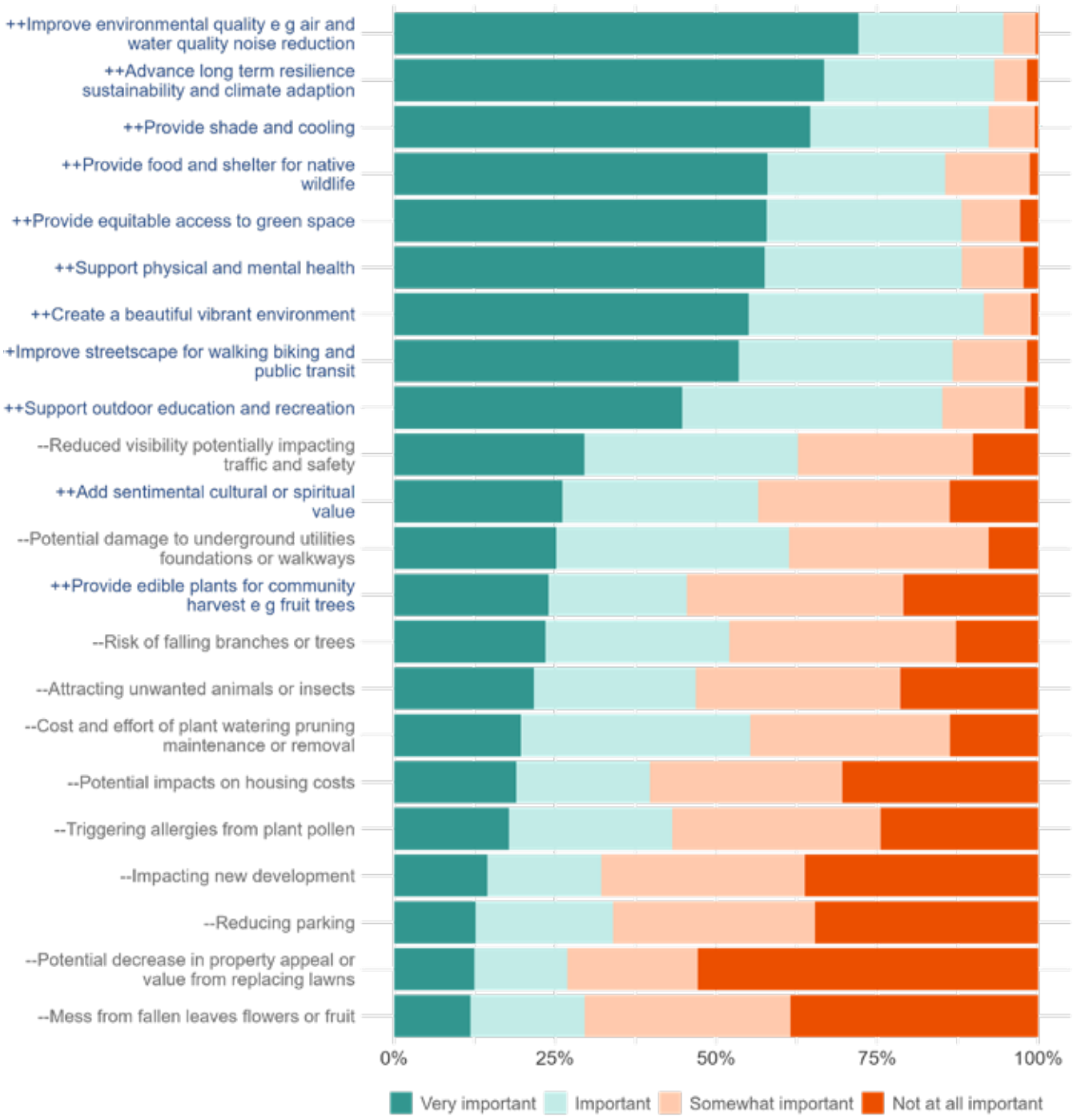


ing from the public stakeholder workshop, and highlights key values that emerged from the community's written comments.

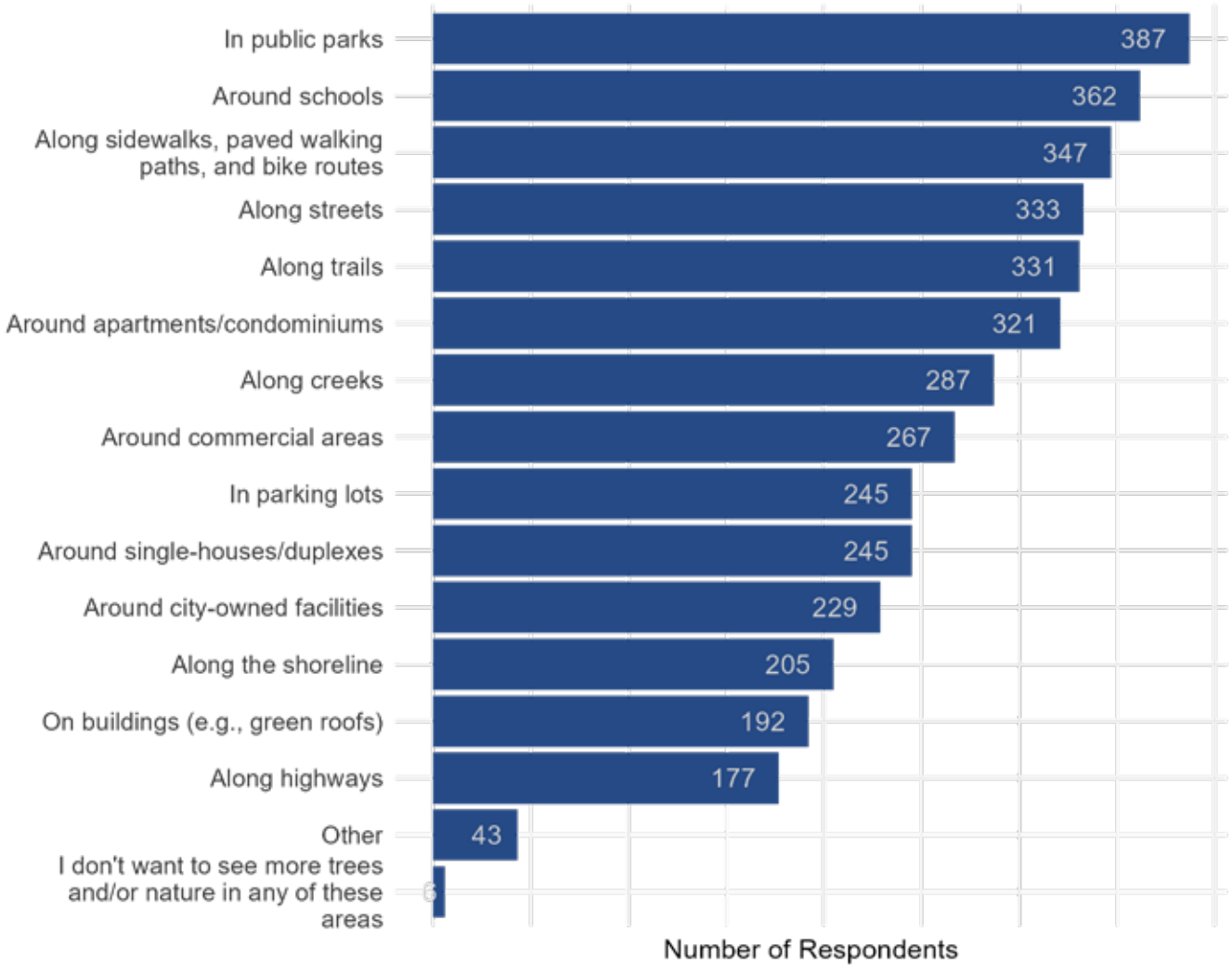


Full public survey: question and summary of responses

1. Use three words to describe what you hope nature will look like in the City of Mountain View in the future. (How should it look or sound? What should it feel like?)

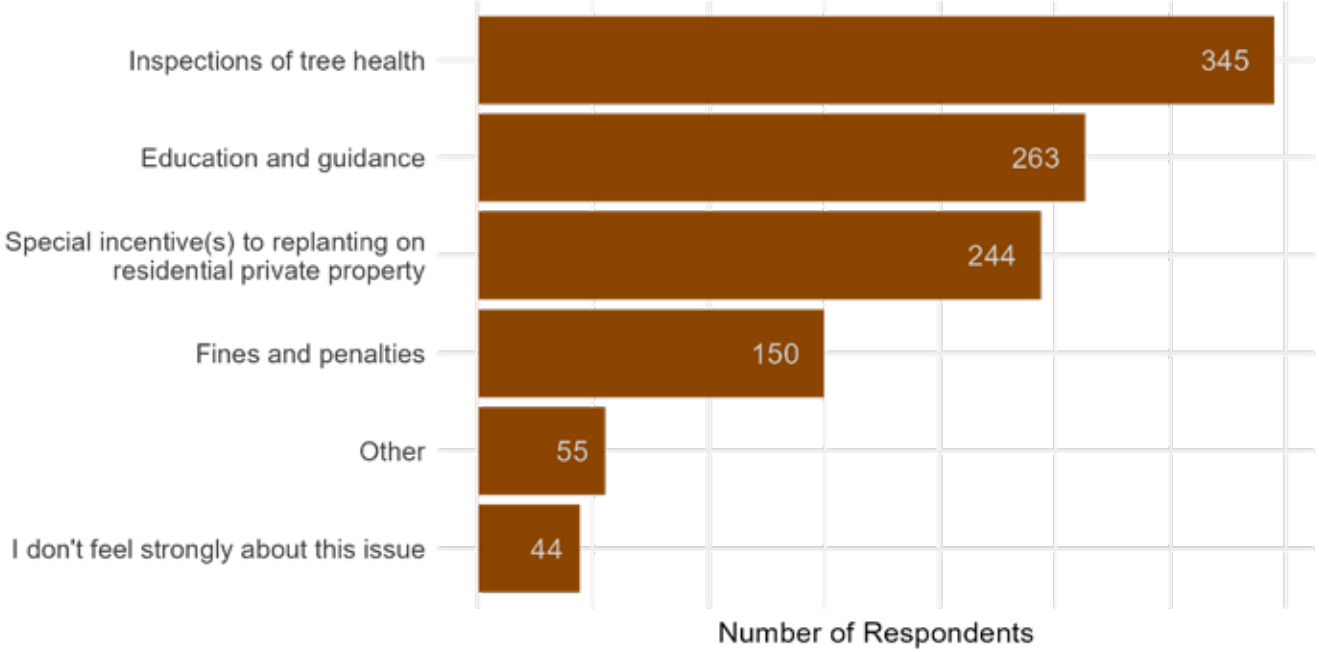


2. How important is it to you that Mountain View supports a community of plants, trees and animals that fits the following descriptions?

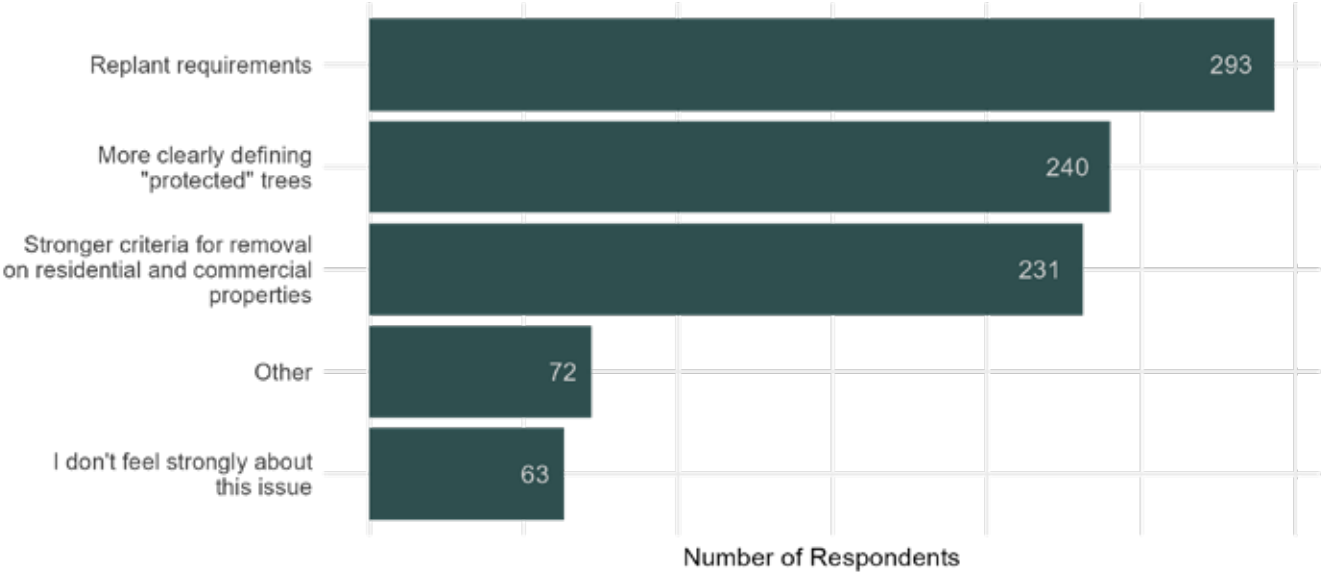


3-4 (results combined)

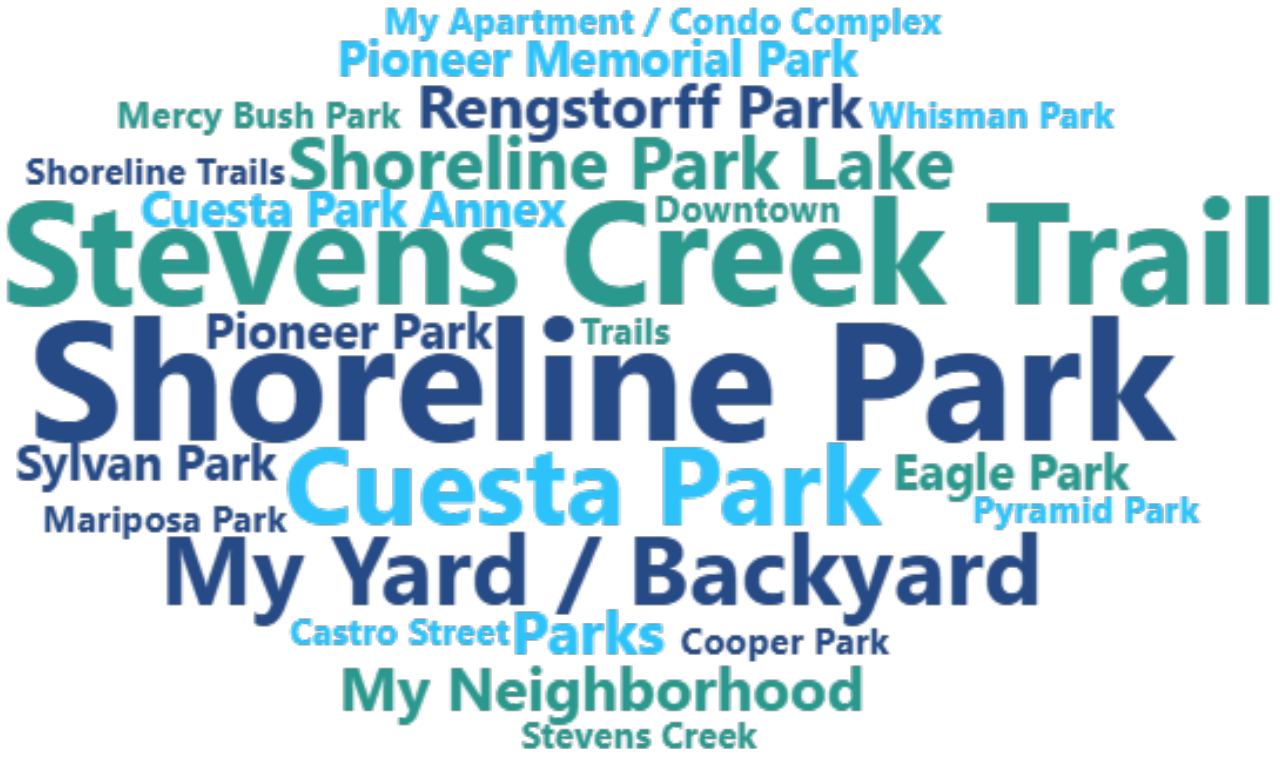
3. Biodiversity and the Urban Forest provide many benefits to the community. How important are each of the following benefits to you? Please consider trees and nature in all areas including parks, commercial areas, along streets, and on residential properties.



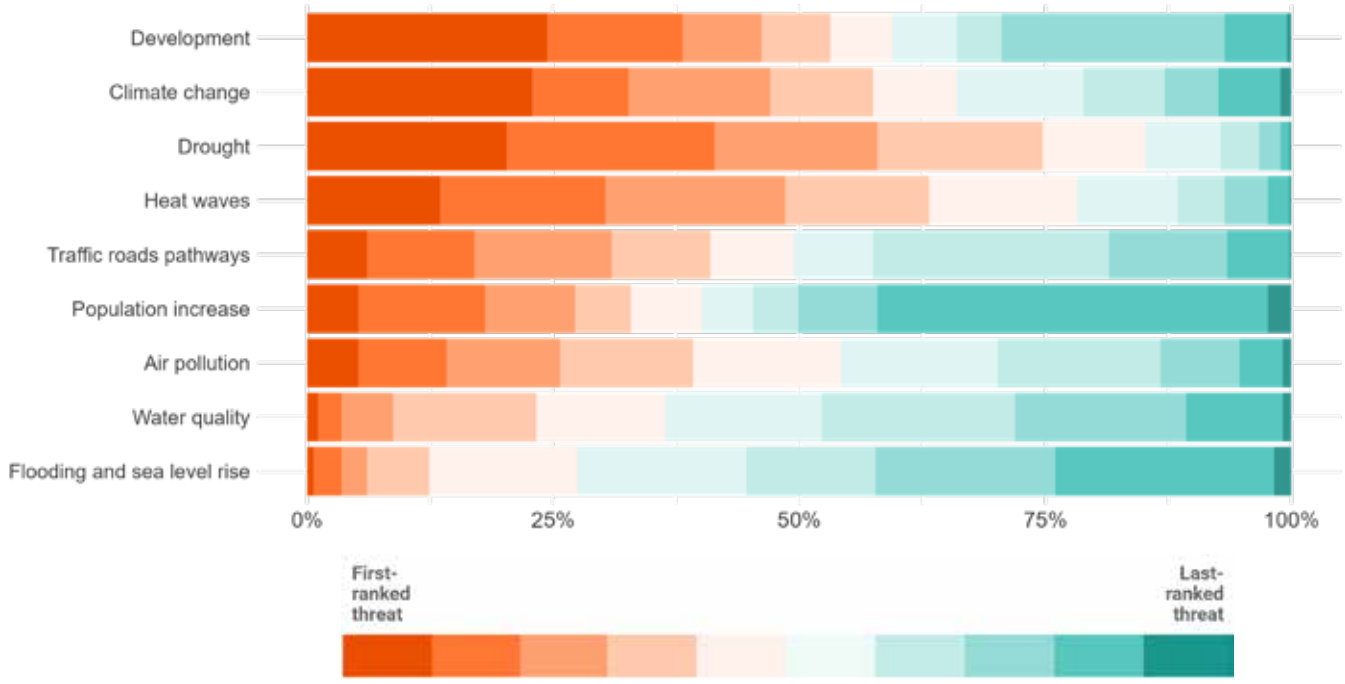
4. Trees and nature in the city can also create challenges for people in their daily lives. How important are these potential challenges to you? Please consider trees and nature in all areas including parks, commercial areas, along streets, and on residential properties.



5. Where in Mountain View do you think trees and nature are most needed? Please click on one spot on the map.



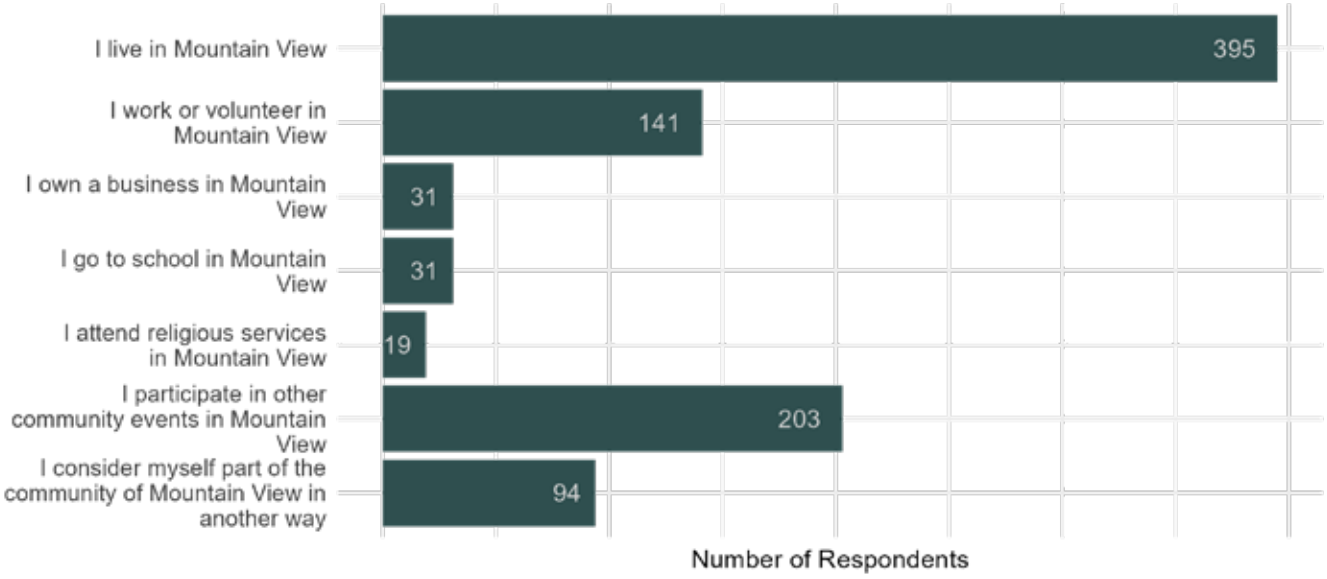
See map of "Places Where Nature and Trees Need More Support" in **4.2 Community Perspectives**, which combines survey and public event responses.

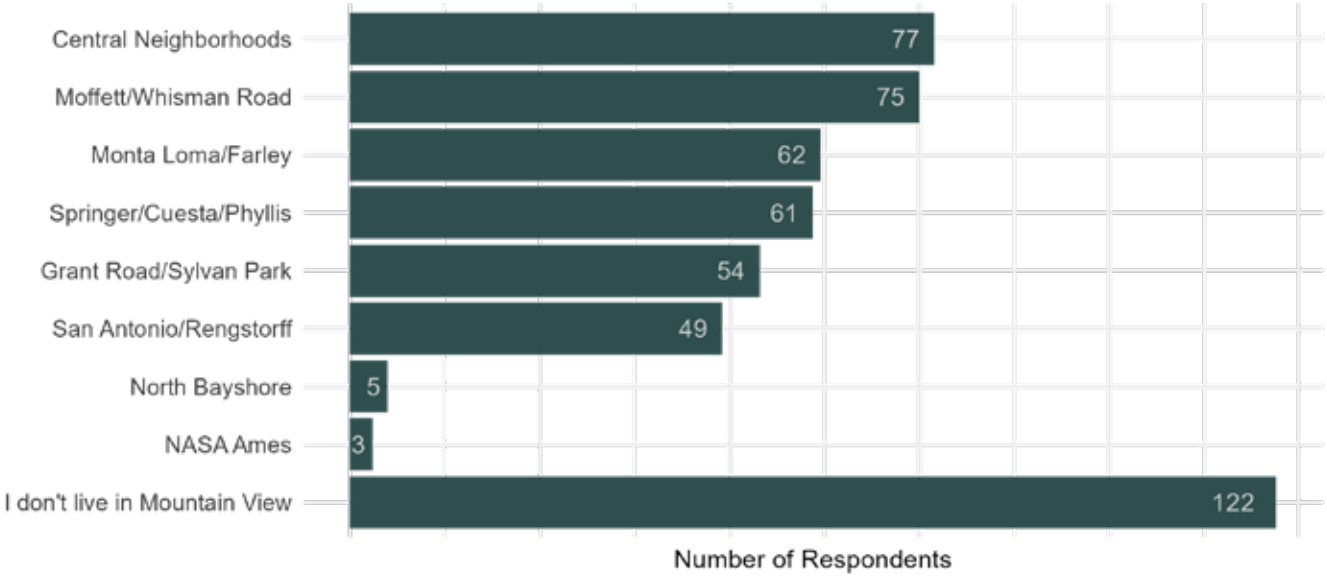


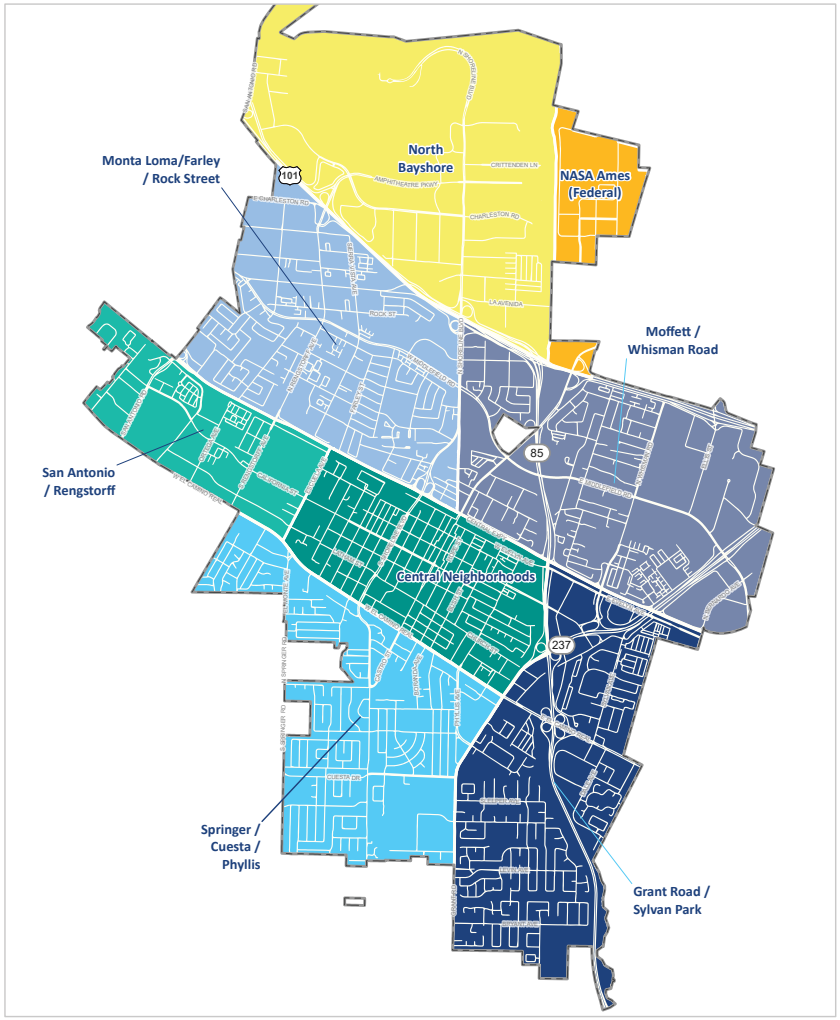


6. In which types of areas in Mountain View do you think trees and nature are most needed? Select all that apply.

7. To preserve the health and growth of the urban forest, the City of Mountain View has a tree protection ordinance that requires a permit to remove trees of a certain size if it meets certain criteria, with associated fees, replant requirements, and fines. Which of these current practices do you feel are most important for tree protection (Please select up to two choices.)





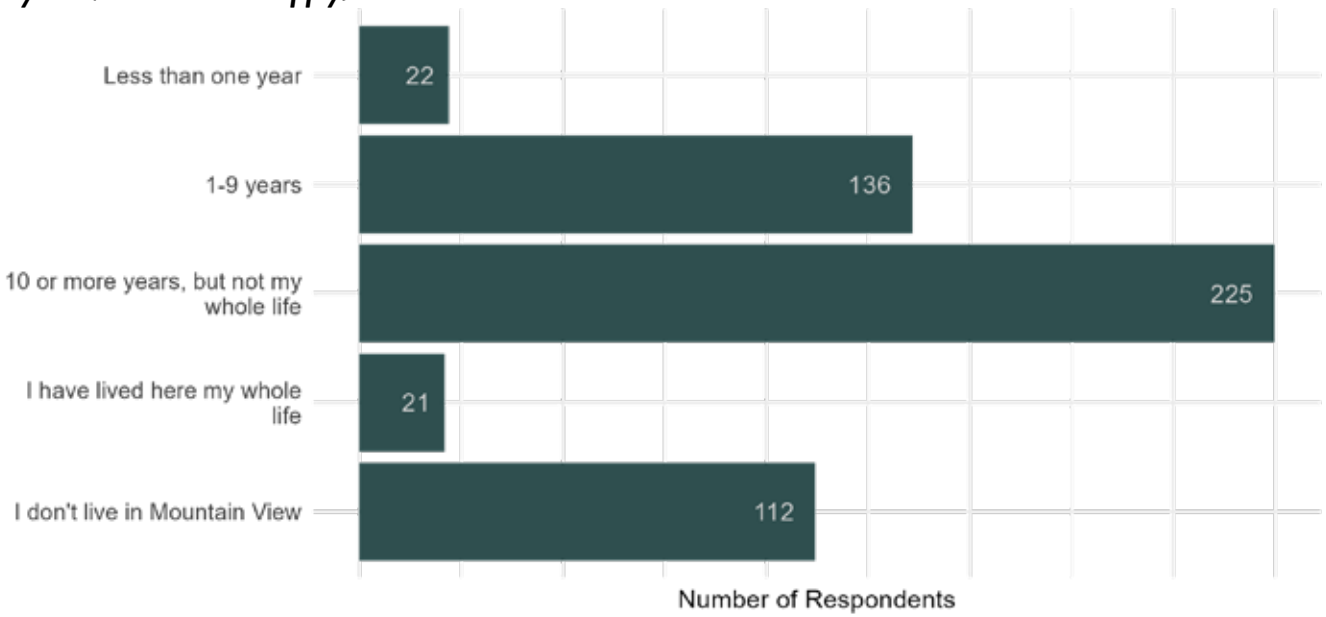


City of Mountain View
Information Technology • GIS

Neighborhood Meeting Areas

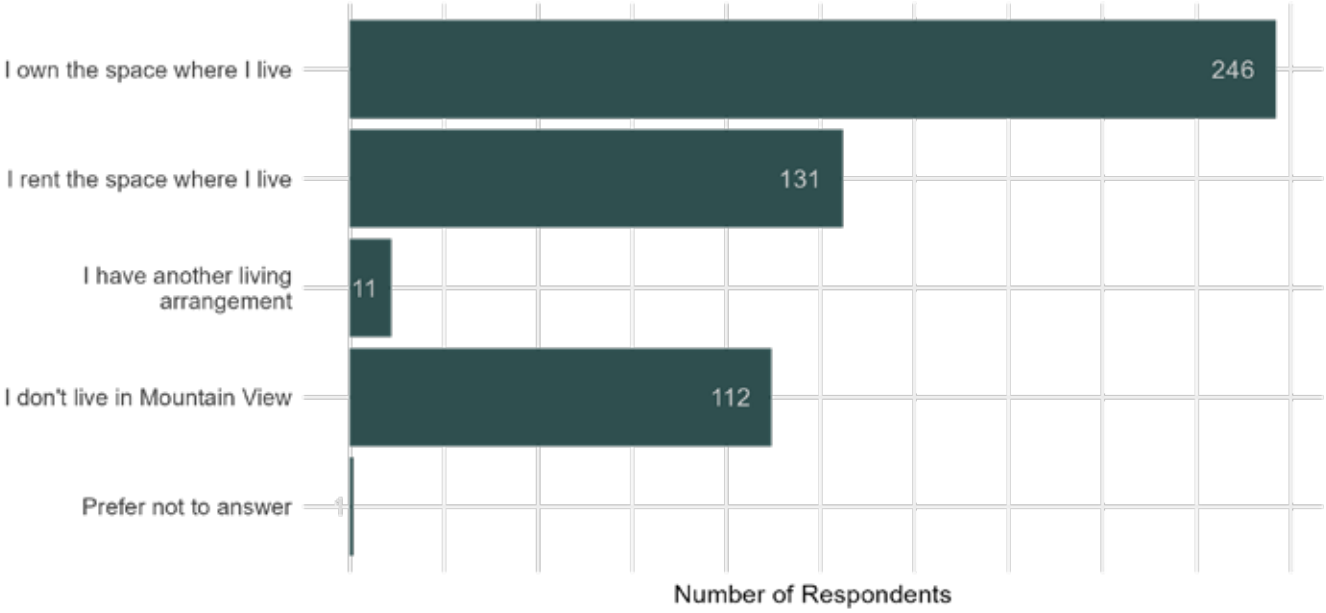
June 2024

8. If the City of Mountain View were to update its tree protection ordinance, what would be most important to you? (select all that apply)

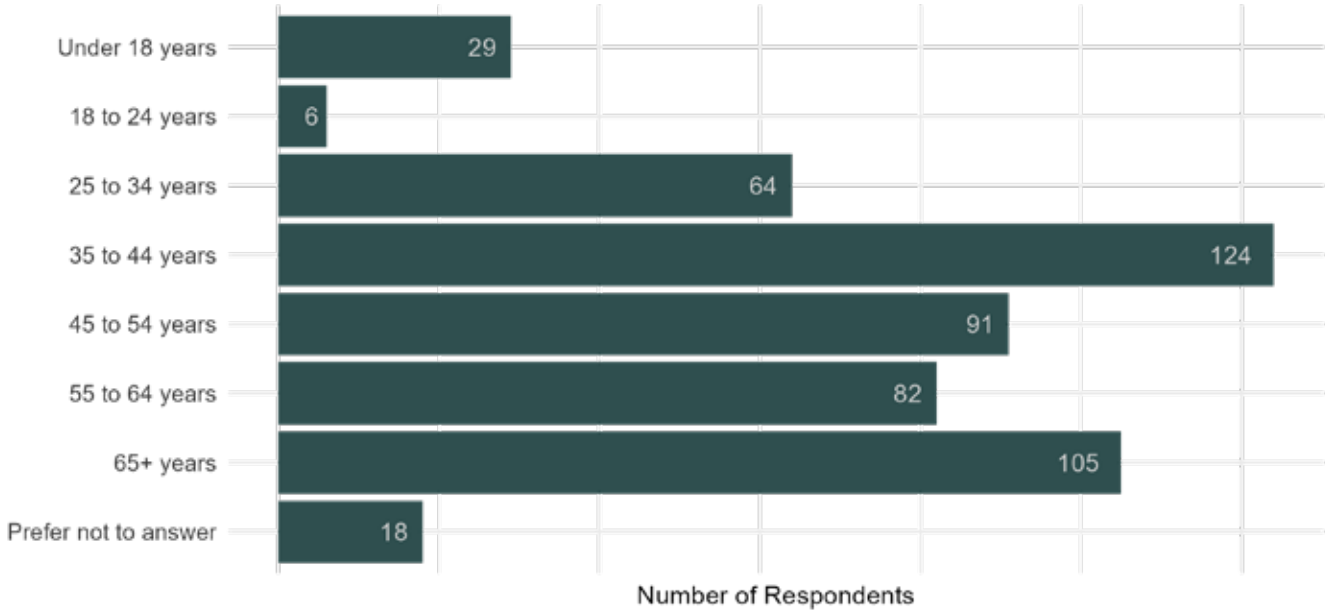


9. Where is your favorite place to spend time in nature in Mountain View? (E.g., Shoreline, my backyard, Pioneer Memorial Park, Stevens Creek Trail). What makes that place so special to you?

10. In your opinion, what are the biggest threats to nature in Mountain View? Rank these from biggest threat (top) to smallest threat (bottom)

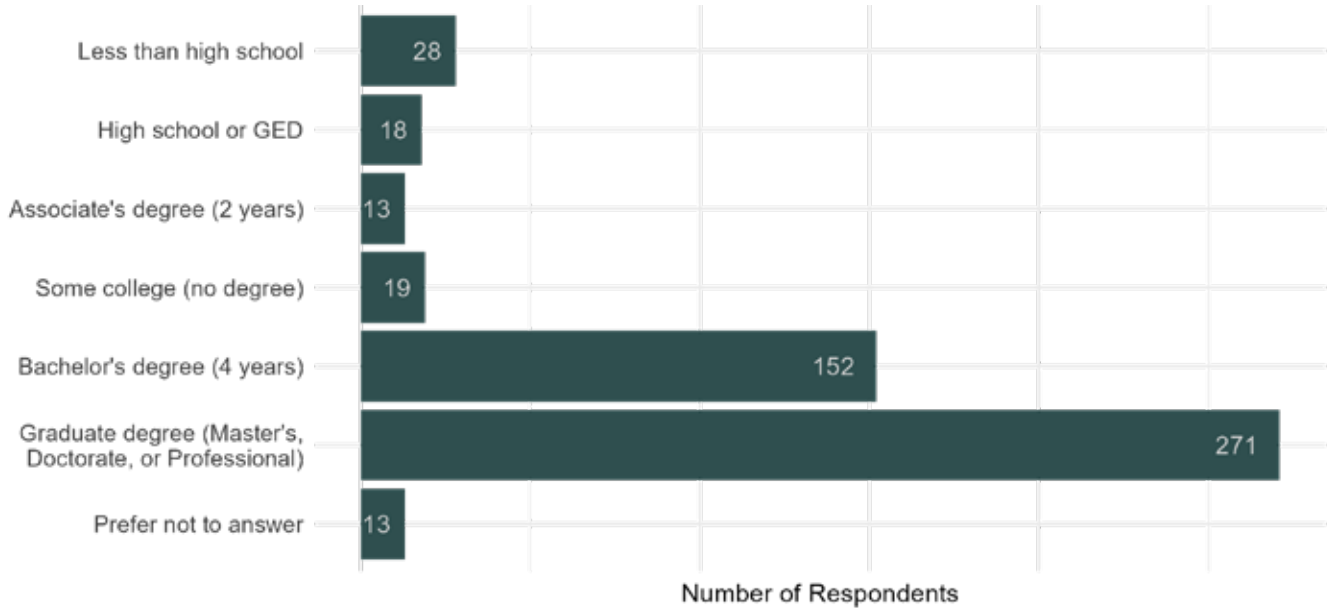


11. Which wildlife species adds to your enjoyment of nature in Mountain View?

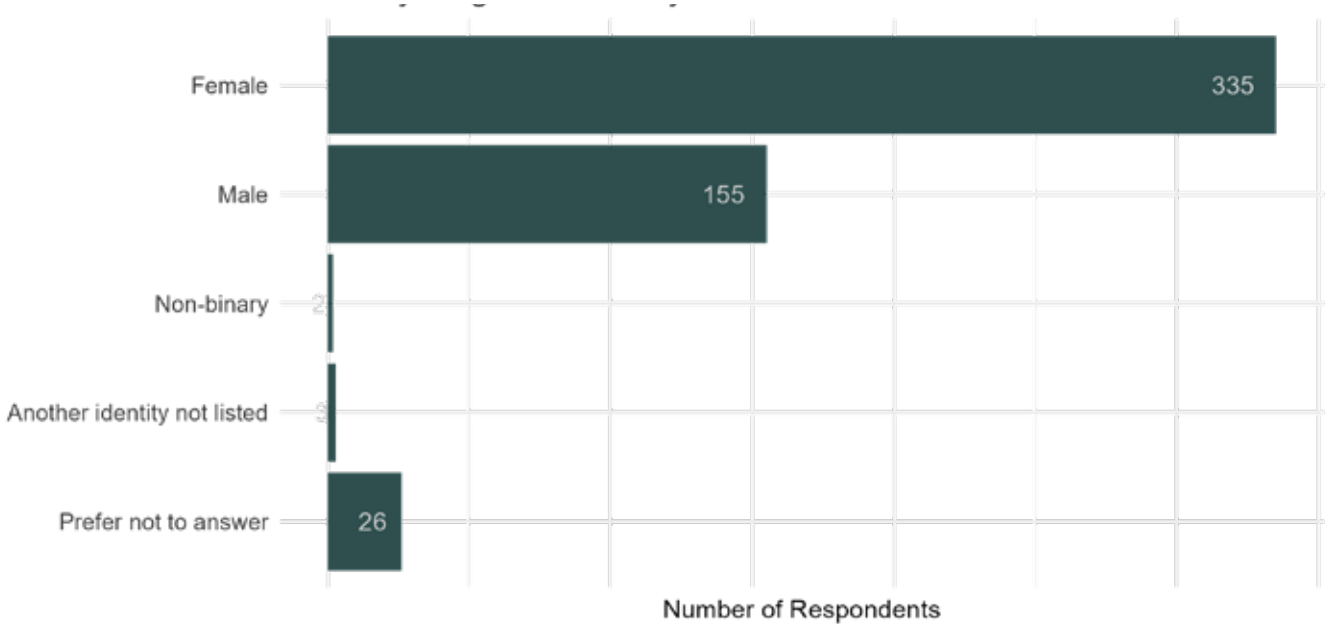


12. Do you have additional input or comments you wish to provide?

See table of "Key Values" at the end of this section, which combines survey and public event responses.

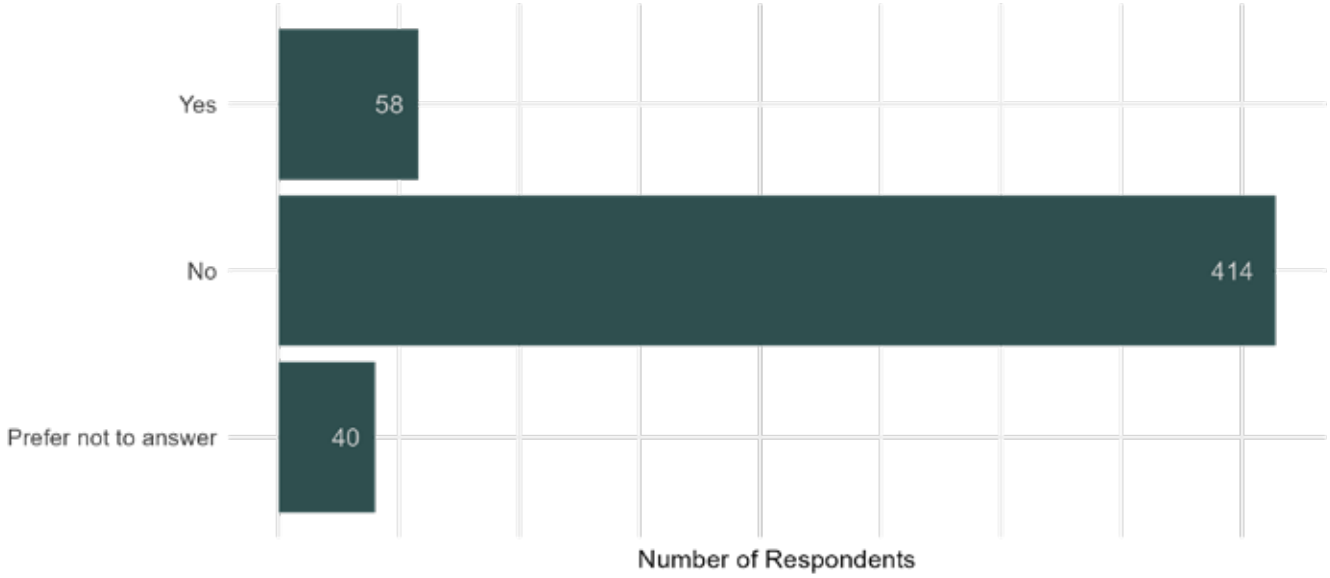


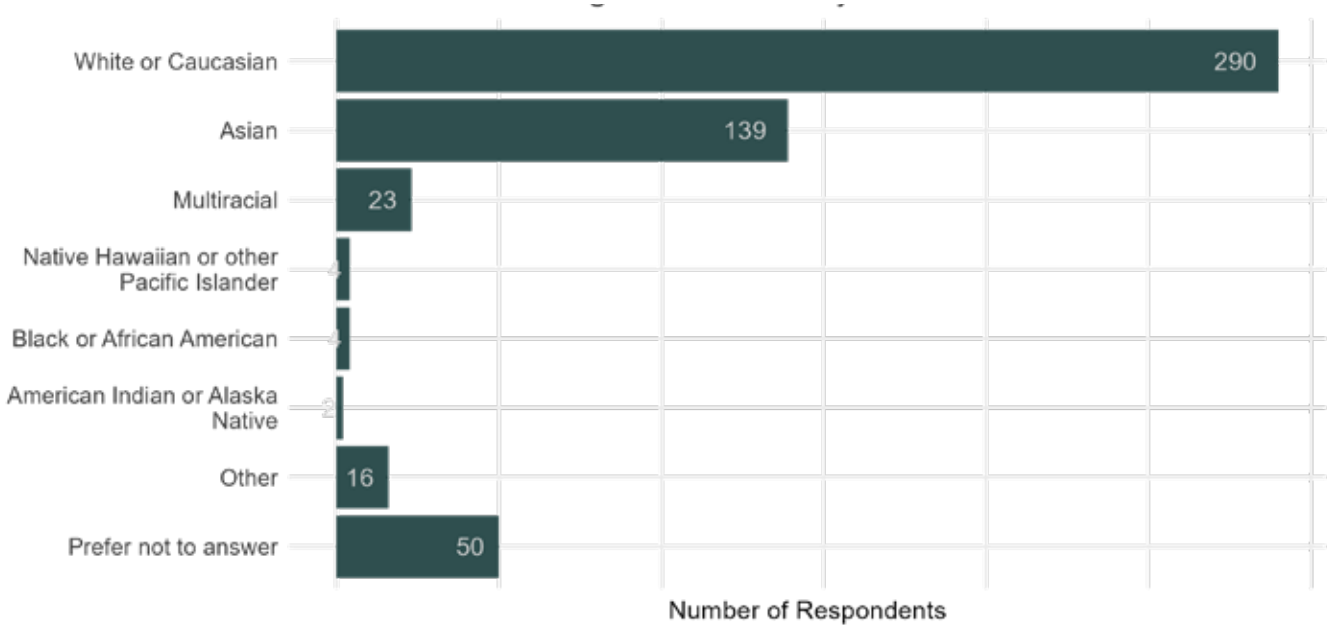
13. What is your connection to Mountain View? Select all that apply.



14. In which Mountain View neighborhood do you currently live?

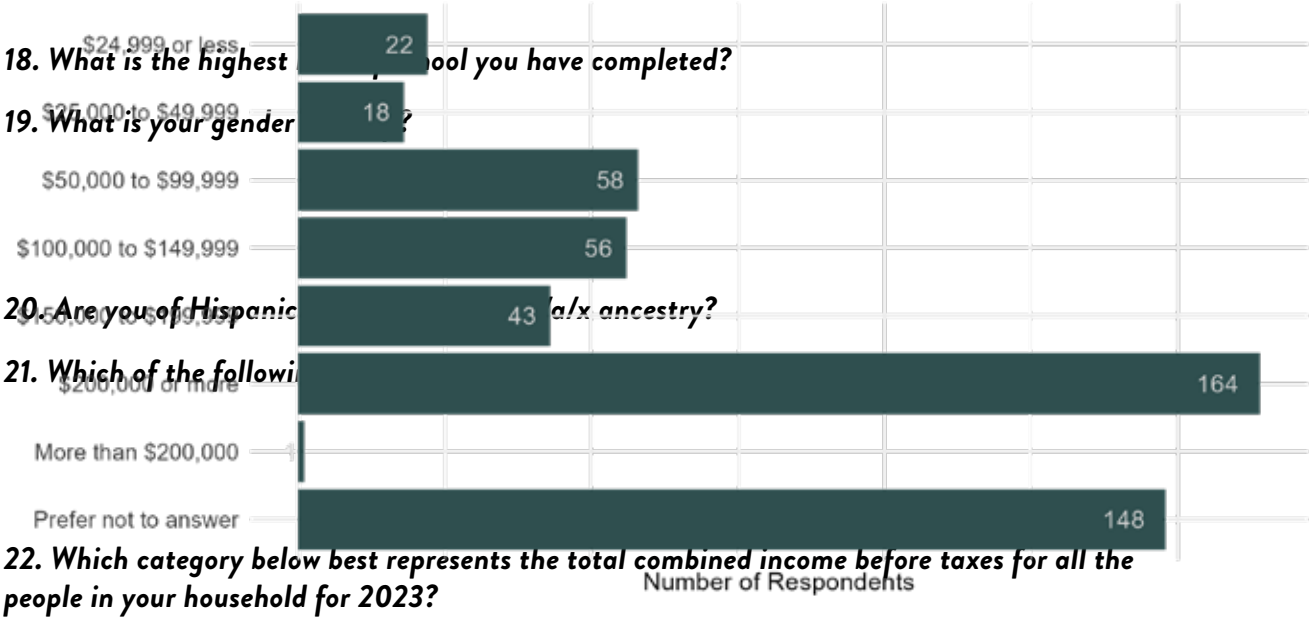
15. How long have you lived in Mountain View?





16. Do you rent or own your residence in Mountain View?

17. What is your age?



18. What is the highest ... ool you have completed?

19. What is your gender ...?

20. Are you of Hispanic ... a/x ancestry?

21. Which of the followi...

22. Which category below best represents the total combined income before taxes for all the people in your household for 2023?

Recommendations Received from the Stakeholder Workshop

DISCUSSION TOPIC: DESIGNING AND PLANTING AROUND THE BUILT ENVIRONMENT

1. Plant more trees in places where people and all living things will benefit.
2. Create a City-wide "Green Team" to specifically implement biodiversity. (Biologist, ecologist, landscape architect, gardener).
3. Partner with local groups/organizations to implement biodiversity enhancement.
4. Focus biodiversity enhancement in shopping areas & commercial/industrial areas (e.g., Middlefield/Rengstorff Shopping, near Wyandotte Park)
5. More targeted outreach to notify/educate public of the City's free street tree planting program (literature, or going door to door, etc).
6. Share development plans sooner
7. More than one planner reviewing projects
8. More green spaces is streetscapes
9. Provide "welcome packets" on transfer of property that discusses city values, services, etc. related to biodiversity and the urban forest
10. Convert some roadways in industrial areas to green spaces

DISCUSSION TOPIC: INCORPORATING HABITAT FOR BIODIVERSITY INTO TRANSPORTATION AND TRANSIT

1. Plan for plant maintenance, including proper training for planting and maintaining new and future plantings.
2. Improve canopy and habitat through appropriate native and non-native plantings.
3. Complete green streets program.
4. Identify best practices for existing successful trails (i.e. Stevens Creek Trail) and implement in existing/future trails.
5. Update road design standards to require natural elements including street width, corner radii, driveway triangle, dark skies, plant palette.
6. Think of natural spaces as amenities
7. Link parks, for example: Hetch Hetchy, Miramo, Cuesta, Shoreline, Mdlfd, Evlyn,

SCT, Cal...

8. Funding Recommendations: O&M training, street sweeping in bike lanes, trimming crews to help owners not remove trees, trail maintenance, City native gardener expert
9. Achievable metrics
10. Place lines underground
11. Convert non-functional turf to native plants
12. No pesticides and herbicides
13. Curve roads and sidewalks around trees

DISCUSSION TOPIC: PROTECTING SPACES FOR NATURE

1. Utilize under-used areas for biodiversity support and native plantings
2. More food gardens
3. Reduce grass
4. More native trees
5. Increase bioswales to help limit water runoff
6. Pollinator garden
7. Implement Shoreline Habitat Plan and Burrowing Owls Preservation Plan
8. Manage and reduce light pollution
9. Foster meaningful partnership with NGO and private entities for biodiversity enhancement.
10. Envision urban restoration, including creek corridor, native trees, and green stormwater infrastructure

Key Values

The following table summarizes key values that emerged from written comments, open-ended responses to the public survey, and comments provided via the City webpage.

Key values and themes from community written and verbal comments. *An asterisk (*) next to a value indicates especially high support.*

KEY VALUES *(* notes especially high support)*
TREES
* Generally want more trees to be planted and maintained
* Focus on increasing shade, combatting high temperatures, combatting urban heat island effect
Focus on the feeling trees give -- calm, a good gathering place, improving "barren" areas
* Focus on increasing native species in Mountain View's tree canopy
* Increase canopy and other natural elements near schools, in commercial areas, to promote foot traffic and beauty
Interest in fruit trees as a community benefit, edible landscapes
Concern about pollen and allergies, and desire for consideration of that when choosing which species to plant
Concern about conflicts between trees and infrastructure (e.g. leaf and needle litter on sidewalks, tripping hazards from roots breaking concrete)
* Protection for Heritage Trees
OTHER VEGETATION
* Increase native species and drought-tolerance
Desire for beauty, "cleanliness"
* Promote native plantings specifically to support native wildlife species, and especially pollinators, protected wildlife species (see also **Wildlife**)
* Focus on resilience to withstand drought, urban impacts, climate tolerant
Concern that vegetation is sustainable, and either gets the attention it needs to thrive, or is able to thrive without tending
PUBLIC HEALTH AND WELLNESS
Biodiversity should balance environmental and human needs
Build green belts through under-vegetated areas, combine green belts and bike/walking paths, paths along waterways, connecting parks/patches
Consider accessibility for different abilities, and accessibility from different neighborhoods, equitable access, when designing greenways, open space
Improve/increase mixed-use paths as a viable transportation alternative to driving
Improve general walkability of the city; improve safety of paths with thoughtful landscaping, better lighting
* Combat urban heat island effect, increase shade for public safety
* Desire to take care of parks in a way that they continue to be welcome gathering places, places for exercise, places for children to play
* General desire for the city to feel lush; find areas that feel separate, calmer, and quieter than city
Include benches to linger and rest
* Concern about the use of pesticides

KEY VALUES *(* notes especially high support)*

Narrow existing streets and incorporate street trees and planted medians to slow traffic, reduce accidents (see also **Development and Management Policies**)

Providing walking paths along waterways, riparian corridor access

Greening schools to provide nature space for both students and community (off hours)

DEVELOPMENT AND MANAGEMENT POLICIES

* Share biodiversity and urban forestry education opportunities (requirements?) for developers

* Native plant list shared for guidance/requirements when landscaping development/redevelopment

* Desire to change policies, ordinances to require "integration of the natural environment" into development proposals, plans, designs; require ongoing stewardship and the inclusion of bird-safe building design. "welcome packets" on transfer of property that discusses city values, services, etc. related to biodiversity and the urban forest

Share development plans sooner and have more than one planner reviewing projects

* Promotion of native plant gardening and landscaping among residents

* Encourage/incentivize residents and developers to replace lawns with native landscaping (see also **Water and Water Conservation**)

Include vegetated paths and sidewalks to promote alternative transportation and recreation

Consider water conservation, including incorporating green stormwater infrastructure in commercial-area street design and planters

Narrow existing streets and incorporate street trees and planted medians to slow traffic, reduce accidents (see also **Public Health and Wellness**)

* Preserve trees during development/redevelopment, instead of removing them

Support tree care: bigger tree wells, trim branches, engineered soil, space for roots

Remove dead plants, weeding

Reduce impervious surface

Funding support/incentives to keep trees to help with cost of pruning/care

* Suggested changes to existing Heritage Tree protections: enforcement, ensuring re-planting

* Monitoring and metrics

Training for operations and management to support biodiversity

Creation of City "Green Team" to implement (Biologist, ecologist, landscape architect, gardener).

KEY VALUES *(* notes especially high support)*

More targeted outreach to notify/educate the public of the City's free street tree planting program (literature or going door to door, etc).

WILDLIFE

Ensure there are wildlife corridors, habitat connectivity

* Promote native plantings specifically to support native wildlife species, and especially pollinators, protected wildlife species (see also Other Vegetation)

* Comments re: bees, burrowing owls, egrets, black skimmers, birds in general, monarchs (and milkweed), butterflies in general, pollinators in general, salt water harvest mouse

* Reduce light pollution

Areas where wildlife are not disturbed/Limit access to sensitive areas

YOUTH AND COMMUNITY

Include education component for elementary aged children

Include service learning for K-12 aged children

Include youth corps or similar program for teens to have edu/work opportunities in biodiversity or urban forest within MV

* Host community education about biodiversity and best practices for at-home gardening; volunteer opportunities, community planting opportunities

* Build and maintain school gardens and community gardens as gathering spaces, food sources, recreation and education opportunities

WATER AND WATER CONSERVATION

* Interest in water conservation; reuse of run-off

Desire to have water bodies to visit, as a component of parks (ponds, streams)

Reduce irrigated footprint of parks (though others look for "lush" landscape as the ideal)

* Encourage/incentivize residents and developers to replace lawns with native landscaping (see also **Developme and Management Policies**)

Creek/habitat restoration and riparian corridor protection, daylighting, improve habitat connectivity

Green infrastructure and stormwater design for flooding/ground water absorption

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