






# EL MONTE URBAN AND COMMUNITY FORESTRY MANAGEMENT PLAN

Amigos de los Rios

DESIGN COMMUNITY & ENVIRONMENT

CAL FIRE SINCE 1885

EL MONTE
THE CITY OF
FOUNDED 1850
END of the SANTA FE TRAIL

# ACKNOWLEDGEMENTS

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The following individuals contributed to the preparation of the plan:

*City of El Monte Team*
Rene Bobadilla, City Manager
Jesus Gomez, Assistant City Manager
Damien Arrula, Economic Development Director
Minh Thai, Assistant Economic Development Director
Alex Chan, Planning Services Manager
Alexandra Lopez, Director Parks, Recreation, and Community Services
James Enriquez, Director Public Works/City Engineer
Bryan Hellein, Retired Public Works Maintenance Superintendent
Mike Rodriguez, Acting Public Works Maintenance Superintendent
Ken Ballinger, Public Works Maintenance Supervisor
Victor Jimenez, Public Works Water Systems Supervisor
Joe Hazlett, Public Works Field Supervisor
Randy Perrine, Public Works Field Supervisor
Frank Lopez, Public Works Field Supervisor
Richard Montanez, Public Works Field Supervisor
Jerry Moreno, ISA Certified Arborist
Cesar Roldan, Senior Engineer

*Amigos de los Rios Team*
Claire Robinson, Director
Jackie Flor
Loretta Quach
Kelli Rudnik

*Design, Community and Environment Consultant Team*
Sarah Sutton, Principal, D C & E
Isabelle Minn, Senior Associate, D C & E
Isby Swick Fleischmann, Project Manager, D C & E
Chris Kukula, Principal, Barry + Kukula Associates

**Community stakeholders played an important role in the planning process. In addition to providing input and guidance on the development of the Plan, community members conducted the survey of El Monte trees that serves as the basis for this report. Many of the photographs included here were taken by El Monte citizens during the community tree survey.*

# EL MONTE URBAN AND COMMUNITY FORESTRY MANAGEMENT PLAN

FALL 2010

This Urban and Community Forest Management Plan was funded by a grant from the California Department of Forestry and Fire Protection (CAL FIRE) Urban Forestry Program, and created by the City of El Monte in collaboration with Amigos de Los Rios and Design, Community & Environment.

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# CHAPTER ONE: INTRODUCTION - THE LIVING UMBRELLA

## El Monte Speaks

*This Plan defines the vision for a thriving, diverse urban and community forest that improves the quality of life, environmental and public health in El Monte. El Monte's community forest should provide a "living umbrella" shade canopy consisting of California native and drought tolerant trees that assist in lowering temperatures, reduce stormwater runoff, and filter airborne pollutants.*

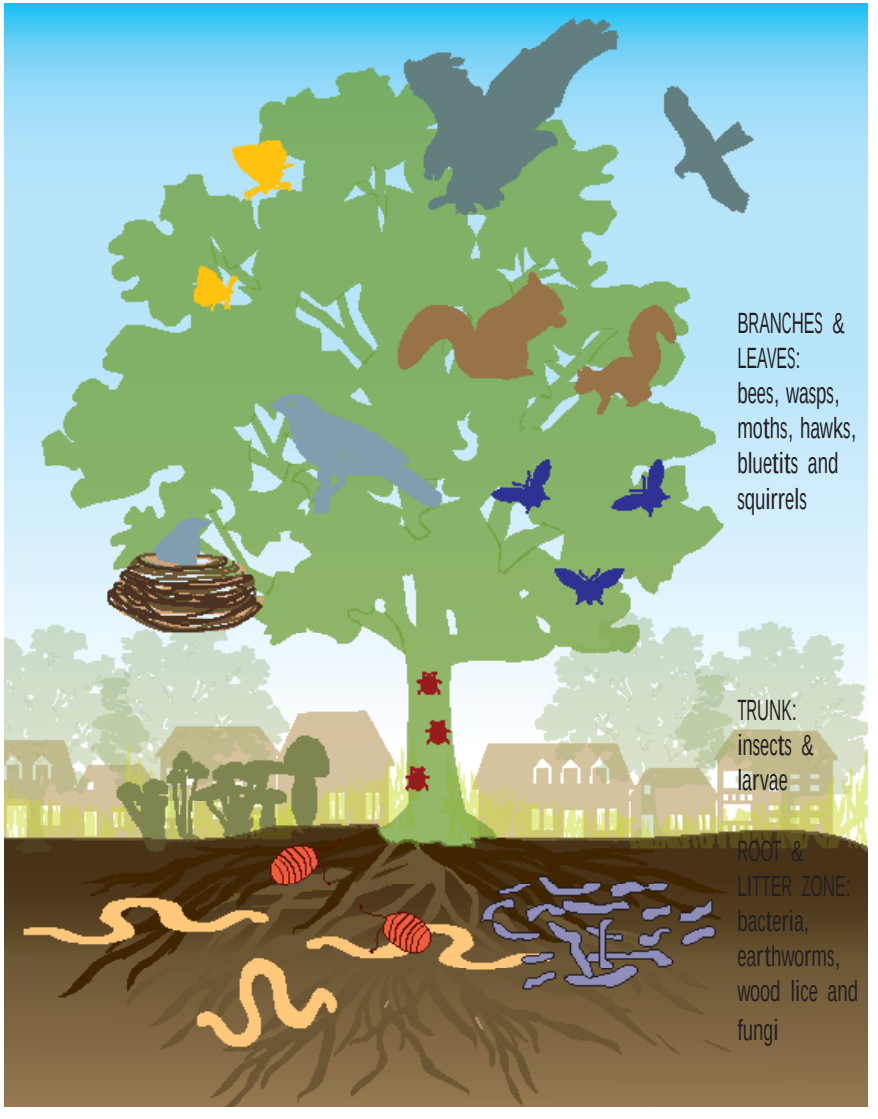
~Parks and Recreation Element, El Monte General Plan

El Monte's community forest is comprised of the nearly 6,000 street, park and civic trees owned by the City of El Monte or within the public right of way. These trees provide a wealth of social and environmental benefits to City residents and visitors, from shade and beauty to public heath and stormwater management. Although the community forest provides the equivalent of $737,435[1] in annual benefits and is recognized as an important component of the urban environment, the size and distribution of the forest is not adequate to provide the desired level of shade and other urban forest benefits throughout the City. With many trees reaching the end of their lifespan or struggling under constrained urban conditions and deferred maintenance practices, improving the health of existing trees and expanding the forest is becoming a necessity.

Recognizing the potential for the community forest to provide greater health benefits and to enhance the quality of life of residents, improving the condition and extent of the community forest has become a priority for the City and its residents. The City and its non-profit partner, Amigos de los Rios, were awarded an Urban Forestry Long-Term Management Plan Grant by the State of California Department of Forestry and Fire Protection Urban Forestry Program for the development of the El Monte Urban and Community Forestry Management Plan. In addition to providing the tools necessary to broaden and enhance the function of the community forest in El Monte, this Plan is intended to build citywide awareness about the social and environmental benefits of a healthy community forest.

*Native Oaks provide shade and habitat for local residents.*

[1] See Chapter 2, Understanding the Forest, for explanation of benefit.




**Trees as Habitat** *support many life forms and protect regional diversity.*

The Urban and Community Forest includes only City-owned trees, or trees within the public right-of-way on City streets, parks, civic facilities, and City-maintained parking lots. Trees that are not owned by the City (Trees along freeway on- and off- ramps, schools, residential yards, along the river within County right-of-way, under utilitiy lines, along the Union Pacific and Metro link rights-of-way, in adjacent public facilities such as Peck Water Conservation Park, and on private commercial developments) complement the Forest and provide substantial benefits throughout the City, forming a larger green umbrella. Creating and maintaining the green umbrella needs to be part of an effort that is citywide and lead by each sector. How the City manages its own trees is critical as an example for other sectors. Success of this plan will depend on the City to provide structure and guidelines which allow, permit, encourage, and require appropriate participation from all types of property owners.

## IMPORTANCE OF THE URBAN AND COMMUNITY FOREST

The community forest laces throughout the City's streets, parks and civic spaces, and adds significantly to the quality of life and the public health enjoyed by the City's residents. The benefits include, but are not limited to the following:

### Environmental, Social and Economic Benefits[2]

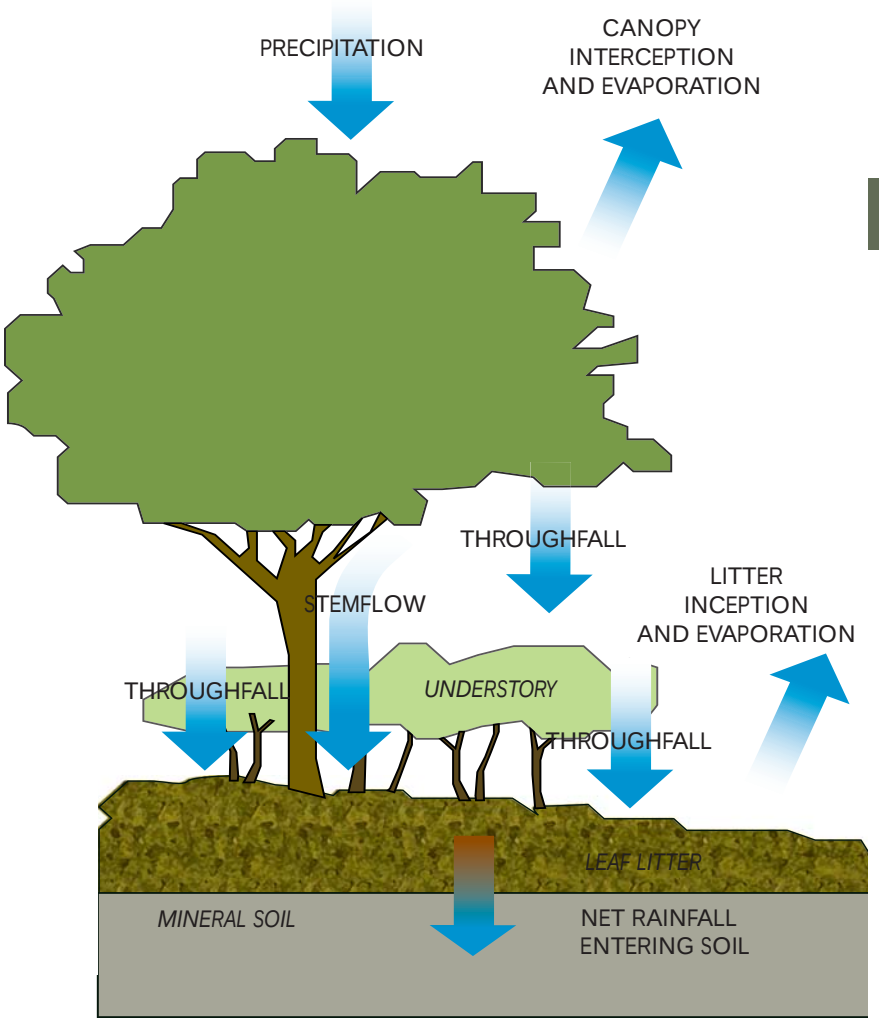
- **Connection with Nature – Support Habitat.** Trees provide shelter and food for birds and other small animals. A varied tree population supports a wide diversity of animals. In addition to being beneficial on a regional and global level, local habitat diversity creates a dynamic, educational, and enjoyable environment for humans.

[2]Southern Center For Forest Benefits and Benefits of Urban Trees, USDA Tree Benefits brochure, http://www.urbanforestrysouth.org/resources/library/benefits-of-urban-trees-booklet, accessed March 23, 2010.

◆ **Improved Public Health.** Nearly all of the benefits provided by trees contribute to health. While clean air and water directly benefit physical health, the provision of shade and aesthetically pleasing streets encourages walking and physical activity. Research has also demonstrated that trees and other vegetation soothe nerves, helping to accelerate healing processes and reduce behavior problems in children.

◆ **Improved Air Quality.** Trees can play several roles in improving air quality. The most direct way that trees help to improve air quality is by absorbing and filtering air pollutants. In addition, trees reduce air pollution by creating cool microclimates and by reducing the demand for air conditioning in buildings. When trees shade buildings and reduce the need for air conditioning, they also indirectly improve air quality. Air pollution increases with higher temperatures, so maintaining cool microclimates can actually improve air quality.

◆ **Stormwater Management.** Trees improve the quality of stormwater by reducing the amount of stormwater runoff that is lost to storm drains. The leaves of a tree capture rain and other precipitation. This slows the rate of rainfall, reduces lost runoff volume, and increases water percolation directly into the soil, which filters the water. Roots and duff (fallen leaf layer on top of the soil) hold soil in place during storm events and allow more time for water to percolate into the soil.




**Trees as Stormwater Management** collects and guides stormwater from the canopy, branches and trunk and infiltrates into soil, and underground aquifers which supply our freshwater.

*City of El Monte's goal is to install landscape planters in parkways such as in our peer City of Monrovia, CA*

## ENVIRONMENTAL, SOCIAL, AND ECONOMIC BENEFITS, continued

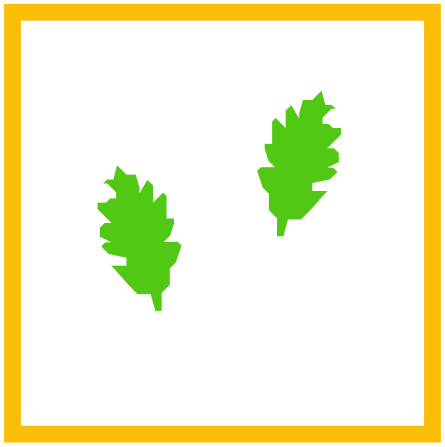
◆ **Benefits of trees for School Campuses and Academic Performance.**
The urban forest on school grounds facilitates environmental education opportunities and creates a healthy setting for learning. Access to greenery can help students concentrate and focus in school.

◆ **Energy Conservation.**
Trees can reduce the need for cooling and heating buildings, thereby reducing the cost of operating these systems.

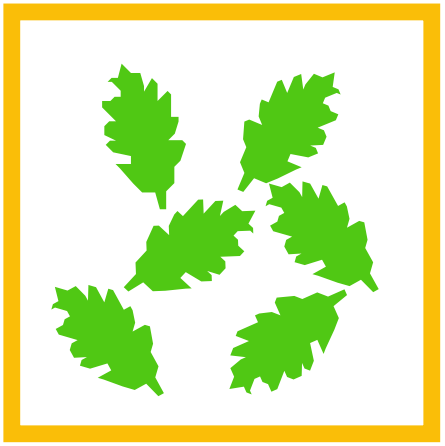
◆ **Increased Property Value.**
Street trees increase property value gains environmentally, socially, and aesthetically.

◆ **Increased Activity in Retail Areas.**
Street trees can raise the aesthetic appeal of a shopping street, and thus attract more shoppers to a retail block.

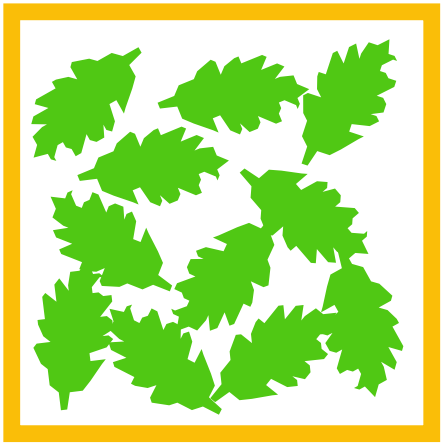
◆ **Community Safety.**
Crime levels can be reduced by strengthening and empowering communities through well managed urban forest growth.



*8% Shade Cover = 5% heat reduction*



*25% Shade Cover = 40% heat reduction*



*50% Shade Cover = 60% heat reduction*

◆ **Temperature Reduction – Heat Island Mitigation**. Urban areas can become "urban heat islands" due to the abundance of dark surfaces like asphalt and buildings that absorb the sun's heat and re-radiate the heat resulting in higher air temperatures. Trees and other vegetation can reduce this heat island effect by shading parking lots and other surfaces. In addition, trees can reduce the need for air-conditioning and heating in buildings. Trees located on the south side of buildings provide summer shade and cooling, while other trees can serve as windbreaks to reduce winter chill.

◆ **Well Being.** Trees in urban areas convey serenity by providing a sensory experience of being surrounded by nature, which helps to reduce stress.

◆ **Sense of Community.** Character and Beautification. Trees are important elements of most beautification projects for good reasons. Trees bring color, texture, movement, seasonal change, and life into urban environments. Planted alone, trees can provide beautiful accents in an urban landscape. Planted together, trees can transform an urban area by softening typical forms, creating scenic views, and making large spaces and streets pleasing for pedestrians.

◆ **Community Building.** The presence of a healthy urban forest and community-wide efforts to improve urban forest health can empower communities to work together to protect and/or expand the forest, and to build community identity.

*Peer City Monrovia has achieved a 'Walkable Street' with trees, buffer planting and seating areas.*

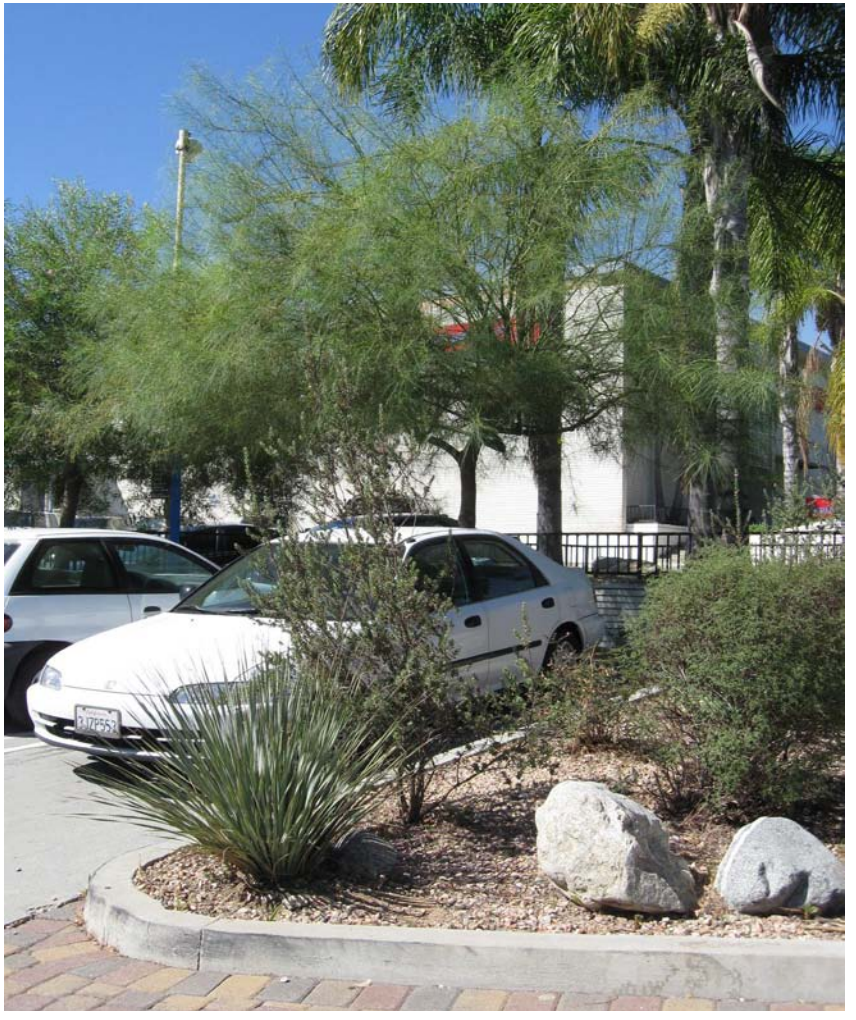
◆ **Walkable Streets.** Street trees offer pedestrians a buffer from nearby vehicles, respite from the hot sun, and colorful scenery to enjoy. In addition, street trees can provide dramatic view corridors and, when properly planned, facilitate way-finding within an urban area.

## DEFINING THE COMMUNITY FOREST

El Monte's Community Forest is comprised of trees not only within the public realm, but is also of all trees within the border of the city, including trees on private property and within the jurisdiction of other agencies. Determining whether a tree is within public or private jurisdiction is often difficult, since these jurisdictional lines are not typically visible in the physical landscape. For instance, the width of the public right-of-way varies between streets and even different parcels. In some neighborhoods, there is a visible setback between street tree plantings and private yards. In others, street trees merge with private plantings and as a result it is difficult to discern whether trees are the responsibility of the City or private property owners. While the City assumes responsibility for trees within the public right-of-way, the blurry line between private and public private results in certain trees being overlooked or maintained by private property owners with inappropriate techniques. Undefined boundaries can also be an issue when commercial and institutional properties abut streets without parkways (such as shopping centers and schools.)

*Shaded outddoor seating, Gateway Park in downtown El Monte.*


*Native planting lined path, Gateway Park in downtown El Monte.*



*Landscaped parking lot with native shade trees, Peer City Altadena.*

In order to allow for efficient and effective management of the community forest, areas of responsibilities are clarified below.

## City of El Monte

The City's jurisdiction for the community forest is synonymous with the public right-of-way. The public right-of-way includes the following areas:

**Street Rights-of-Way.** Street rights-of-way vary between 5 and 20 feet and are not always clearly marked. The City Engineer provides right-of-way information to maintenance staff when necessary to clarify the jurisdiction of a particular tree. Figures 1-1 and 1-2 describes City jurisdiction on typical residential streets with and without parkways.

**Medians and Parkways.** All public medians and parkways are within the City's jurisdiction.

**Parks.** All existing and future City parks are within the City's jurisdiction.

**Public Facilities.** Public facilities include City Hall, El Monte Community Center, Jack Crippen Senior Center, El Monte Aquatic Center, El Monte Transit and Metrolink Station, and the Valley Mall Parking Lots

**Freeway Plantings.** The City is responsible for plantings located outside of the Caltrans right-of-way. In many cases, there is little room for planting in these narrow planting areas and litter removal is the most significant task. However, the large planting area near Flair Drive is also within the City's jurisdiction.

## Private Jurisdiction and Responsibility

Areas of the city that are within private jurisdiction include the following:

**Residential.** With the exception of the area within street rights-of-way (ranging from 5 to 20 feet from curb), residential front, back and side yards are maintained by individual property owners.

**Business/commercial/industrial.** Front, side and back areas, including parking lots, that are outside of the street right-of-way are within the jurisdiction of property owners.

## Other Designated Areas of Jurisdiction

**El Monte City School District, Mountain View School District, El Monte Union High School District.** Trees growing on school property are currently the responsibility of the school districts. However, all public schools in El Monte have the potential to enter into joint-use agreements under the General Plan. Under joint-use agreements, the City may assume partial or full responsibility for trees within school grounds.

**Southern California Edison.** Trees within overhead utility rights-of-way are within the jurisdiction of Southern California Edison.

**Caltrans.** Caltrans maintains the Caltrans right-of-way along Interstate Highway 10. The City does maintain the planting buffering at the Flair Drive from the freeway and planting strips outside of Caltrans' jurisdiction, which are typically marked by fence lines.

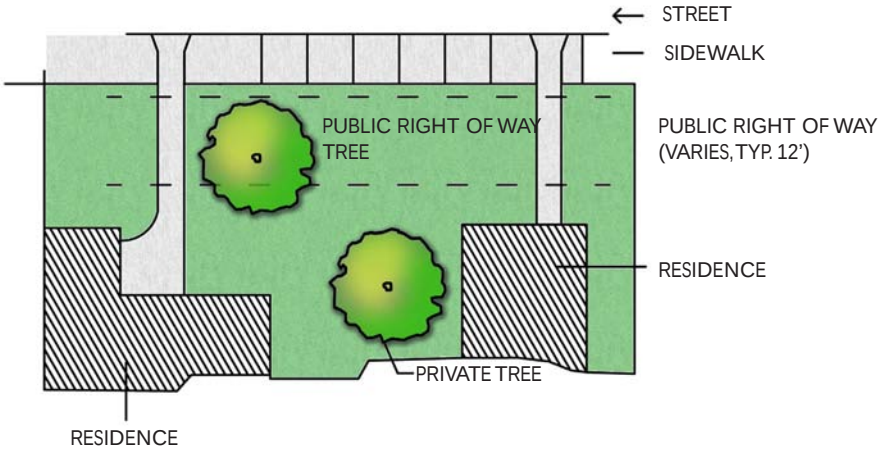



*Figure 1 - 2 Residence without Planting Strip.*

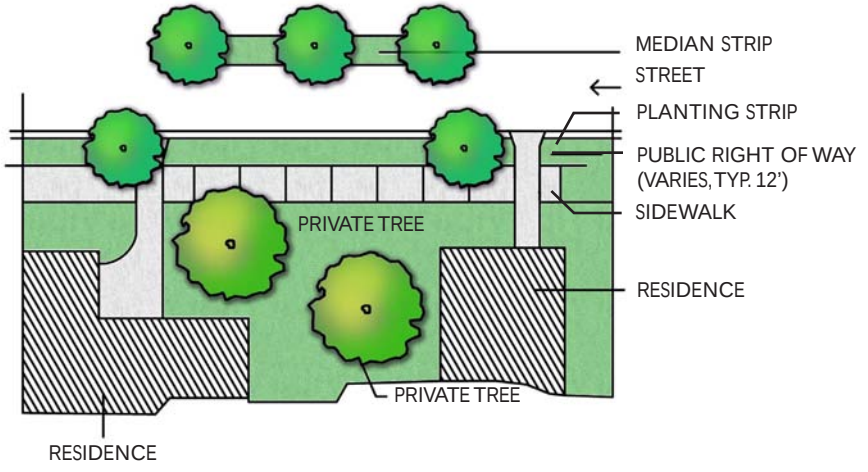



*Figure 1 - 2 Residence with Planting Strip.*

*Engelmann Oak, Valley Oak and Sycamore are indigenous to the El Monte area.*

## COMMUNITY FOREST CONTEXT

This section provides a brief overview of El Monte's historical and environmental setting as they relate to the community forest.

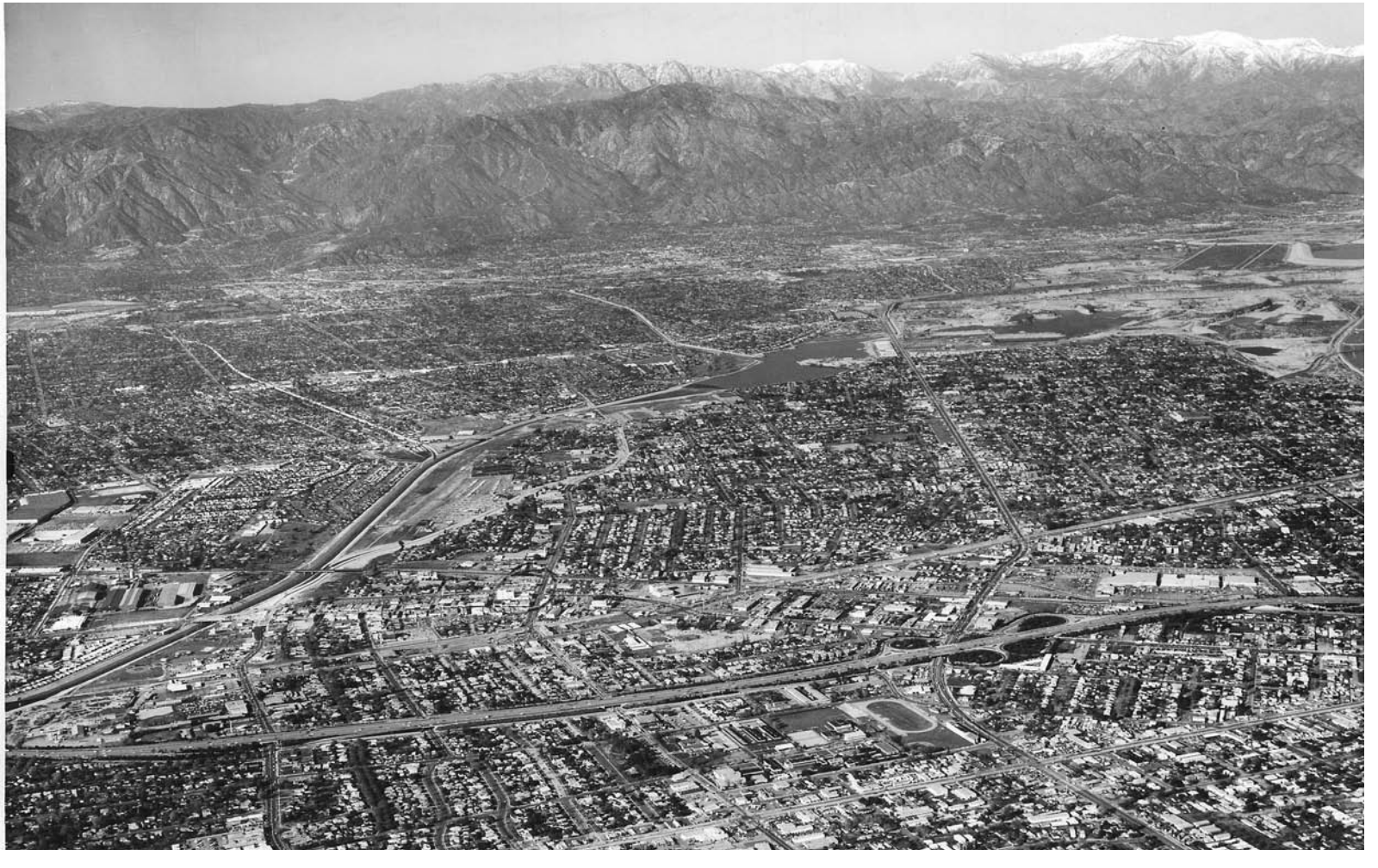
### Historical Perspective

The City of El Monte is located between the San Gabriel and Rio Hondo Rivers, and less than five miles from the base of the San Gabriel Mountains. Before supporting cropland, streets, train tracks, houses and larger buildings, the land known as El Monte was defined primarily by the two rivers that encircled it: The Rio Hondo and the San Gabriel. These rivers created a fertile oasis in a semi-arid environment, with deep alluvial soils and striking riparian woodlands. The willows, alders, sycamore, and cottonwood trees that thrived in the area inspired the Spaniards who came across the land to name the area El Monte, or "Wooded Place."[3] In addition to riparian habitats, El Monte and the surrounding area supported oak woodlands and coastal scrubland.

El Monte's fertile, alluvial soils and relatively cool and shaded environment lured settlers, and by the late 19th century had given rise to a successful agricultural economy. Fruit orchards, walnut groves, hay fields, and the dairy

[3]A Brief History of El Monte by Jack Barton, http://home.earthlink.net/~jackbarton/ElMonteHistory.htm; accessed February 2010.

*Aerial view of the San Gabriel River Floodplain, circa 1941.*

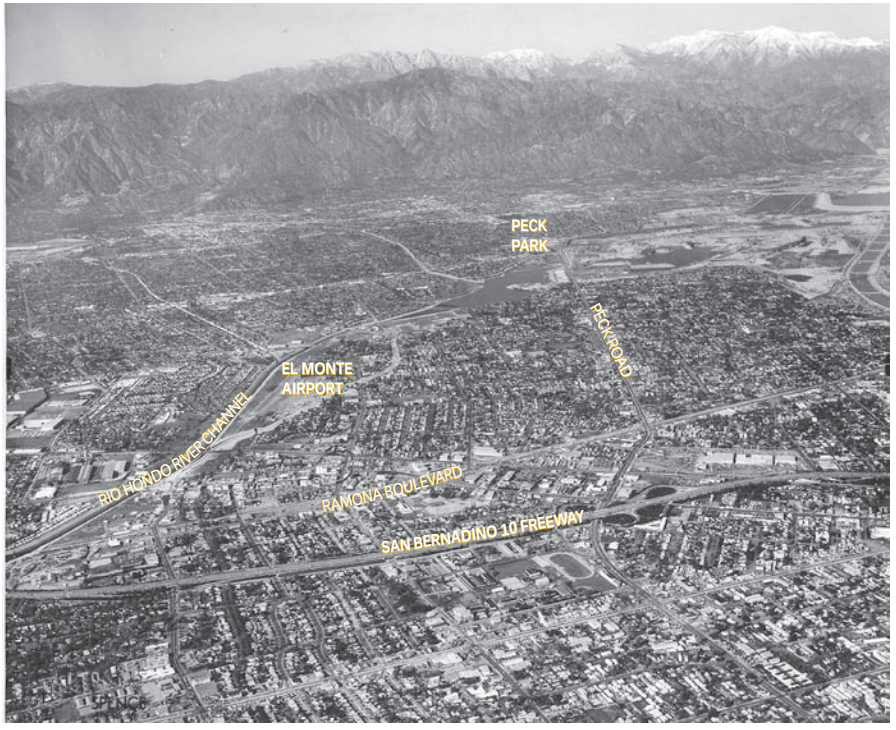


*Aerial View of El Monte , circa 1969.*

industry became prominent within El Monte. However, in the 1930s, much of the land was subdivided into small home sites and a "bedroom community" grew for people commuting to Los Angeles. In order to make land safer for development, both the Rio Hondo and San Gabriel Rivers were confined to concrete channels that separated them from the native soil. Today, there are schools, parks, shopping districts, and a range of employment opportunities within the city. In addition, the City boasts major transit stations including a Metrolink station, a bus terminal, and a major freeway (Interstate Highway 10), connecting it to a greater urban network.

From its transformation from oak woodlands to a dynamic urban environment, El Monte has retained elements of its natural and cultural heritage through its community forest. While some trees are reminiscent of the natural heritage, including the oaks and sycamores scattered across the city, especially in City parks, bright flowering trees and dense ficus trees are reminders of the Spanish and Latin American heritage of El Monte's population over the last two hundred years. Unfortunately, concrete and urban infrastructure dominate the City's limited tree population.

*Aerial View of El Monte with channelized rivers and major roadways mapped.*




## Environmental Setting

Alluvial soils and a Mediterranean climate with hot, dry summers have long been the backdrop and the foundation of El Monte. However, compacted urban soils are now common in the city, and the climate is becoming less predictable. Average temperatures for the summer are in the 70 degree range and tend to be in the 50s during winter months, with the hottest month in August reaching a maximum of 90 degrees. The annual average precipitation is 18.56 inches, with the winter months being the wettest. Water is an increasingly contentious concern in the region and the State.

*At Arceo Park residents enjoy the shade provided by canopies of mature Coast Live Oaks.*

## PURPOSE OF THE MANAGEMENT PLAN

The purpose of the Plan is to build an understanding of the character, benefits and costs of the City's community forest as it exists today, and to provide management tools for proactively improving the vitality and quality of the forest. Specific objectives of this Plan are described below.

- **Help City Maximize Public Health Benefit of Urban Forestry.** Define targets for future urban forest, lay out goals and visions clearly, and set parameters for assessing benefits.

- **Inventory.** Develop an inventory of the community forest that can be updated continually.

- **Assessment.** Establish a value for the community forest that acknowledges the environmental, economic, public health and aesthetic benefits of a healthy and diverse tree population. Set up the ground work for a robust Community Forestry Stewardship program that will sustain this initiative.

- **Design.** Provide design tools for building a healthy, diverse and aesthetically pleasing urban forest that reflects the character of El Monte and is compatible with the climate and geographic landscape of the Southern California region.

- **Community.** Increase public awareness of the community forest's value and actively engage community members in forest stewardship.

- **Implementation Strategy.** Define targets for the future urban forest that are both visionary and realistic, and identify funding sources, implementation strategies, and a proactive management approach for

achieving these targets. Recommend model landscape and tree ordinances for the City to consider for adoption. Create implementation tools, including a Plant palette, tree well guidelines, and Streetscape Green streets guidelines. Provide planning policies, staffing models, and financing approaches.

**Compliance with Climate Change Legislation.** Recent climate change legislation, including Assembly Bill 32 and Senate Bill 375, will require cities to reduce their greenhouse gas emissions.

This Urban and Community Forest Management Plan will contribute to the City's compliance with climate change legislation by documenting the existing and potential forest to sequester carbon dioxide.

*Newly planted trees at Rio Vista Park, El Monte.*

## RELATIONSHIP TO OTHER DOCUMENTS

The City has already taken strides towards enhancing the urban forest through the General Plan Update process and its leadership in the Emerald Necklace Coalition. This coalition aims to create a regional network of parks and greenways along the Hondo and San Gabriel Rivers. This Plan serves an implementation tool for realizing the goals set forward by other city and regional planning efforts, as well community-based efforts to improve the health of the City. The relationship between this management plan, the General Plan, the Emerald Necklace vision and community-based visioning processes are described below.

### El Monte General Plan

The El Monte General Plan is in the process of being updated, and is anticipated to be adopted in mid-to- late 2010. The policies and concepts presented in this Plan assume the adoption of the General Plan Update (General Plan). The General Plan includes several elements that set forth the vision for a community forest, including the Park and Recreation, Community Design, and Circulation Elements. The Parks and Recreation Element of the General Plan refers to the desired community forest as a "living umbrella" that enhances social, psychological, environmental and economic well-being. The Element establishes a goal for "a lush network of greenways, linear parks, and a community forest that enhances property values, public health, aesthetics, and quality of life," and identifies an urban forestry plan as the foundation for this effort. The City will be adding a Health and Wellness Element to the General Plan, which will propose goals for healthy lifestyles and physical activity. One component of the Health and Wellness Element will address the need for complete streets to promote walking access throughout the city. Urban forest growth enhances not only air quality but the walking quality of streets, and links integrally to Public Health.

*The Tree Power Team on assignment in downtown El Monte.*

This Urban and Community Forestry Management Plan responds to the General Plan by providing specific tools and policies for realizing General Plan goals related to the community forest, green infrastructure and improved streets. Relevant General Plan goals are listed below.

### Implementation Strategy

Define targets for the future urban forest that are both visionary and realistic, and identify funding sources, implementation strategies, and a proactive management approach for achieving these targets. Recommend model landscape and tree ordinances for the City to consider to the General Plan by providing specific tools and policies for realizing General Plan goals related to the community forest, green infrastructure, and improved streets.

◆ **Goal COMMUNITY DESIGN-1.** An attractive and unified community identity for El Monte that affirms its diverse heritage of multicultural influences, physical and natural environment, and collective vision for the future.

◆ **Goal COMMUNITY DESIGN-2.** Attractive commercial corridors exemplified by consistency of hardscape, landscaping, signage, sidewalks, and other treatments appropriate to their context to foster a pleasant driving and pedestrian experience.

◆ **Goal COMMUNITY DESIGN-3.** A green City with beautifully landscaped corridors, residential streets, commercial areas, developments, and public areas that are symbolically and physically encircled by an Emerald Necklace of parks and open space.

◆ **Goal COMMUNITY DESIGN-9.** Quality neighborhoods evidenced by distinct identities; focal points that provide recreation and social opportunities; attractive streetscapes that accommodate autos, pedestrians, and cyclists; and attractive and well-designed residential projects that improve property values.

◆ **Goal PARKS AND RECREATION-4.** A lush network of greenways, linear parks, and a community forest that enhances property values, public health, and quality of life.

## Emerald Necklace Vision

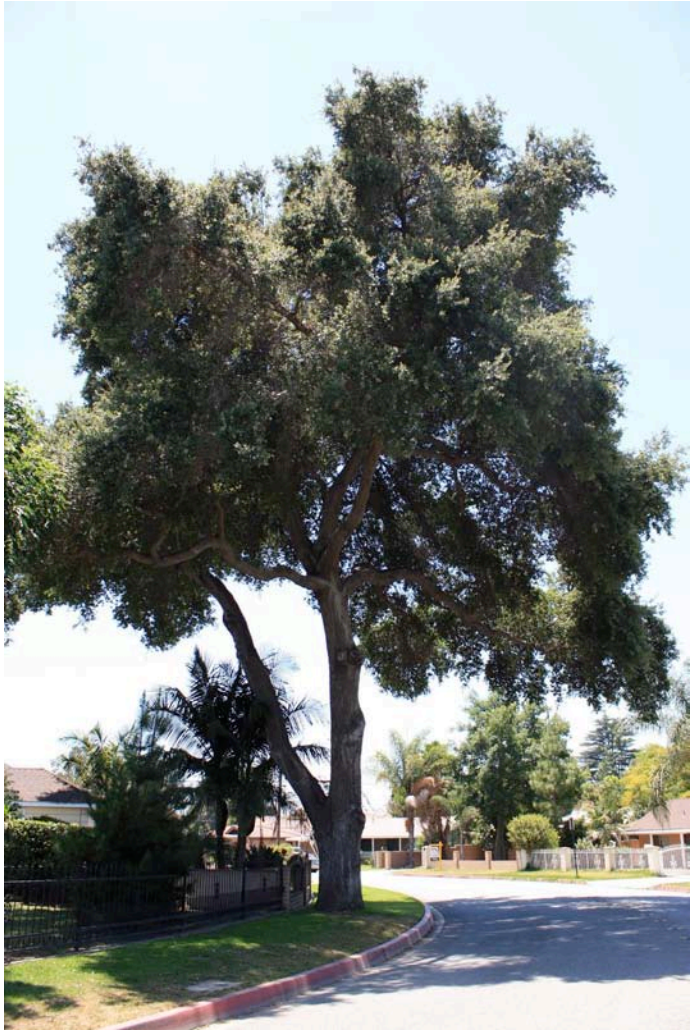
The Emerald Necklace is a regional vision for a network of parks and greenways along the Rio Hondo and San Gabriel Rivers. Amigos de los Rios and the City of El Monte have taken the lead in realizing this vision. Emerald Necklace projects that have been completed in El Monte include the Lashbrook Park installation and the Rio Vista Park retrofit, both located along the Rio Hondo Channel. Consistent with the regional vision, both parks are planted predominantly with native and culturally significant plants, and showcase sustainable design features such as stormwater retention. Further urban forest growth will enhance the string of parks beginning to comprise the visionary necklace.

## Other Community Visioning

Amigos de los Rios has championed numerous community visioning processes throughout the City, working with students, residents, business owners and families to improve the livability and vitality of the City.

These efforts include the "Youth Design the City" project, which engaged students from Shirpser, Gidley and Maxon schools in planning and designing healthy urban environments, and provided opportunities to explore urban design and related career paths.

As part of this project, students identified opportunities for creating safer and more pleasant paths to their schools. This Plan and the General Plan build upon these efforts by identifying school access routes as priority areas for the community forest. Complementing these efforts through a Community Building Initiative, El Monte is working to improve physical environments within target areas of the city, establishing a goal of a more equitable environment for all neighborhoods. This Plan has a commitment to climate action, taking a leadership position with respect to new legislation focused on the environment and prioritizing the greening of the city.



*Mature neighborhood tree*

## PLANNING PROCESS

A community-based tree survey coordinated by Amigos de los Rios initiated the development of this management plan. Community and stakeholder participation also played a fundamental role. Participants in the community survey dedicated significant time to collecting the essential, foundational data that made this plan possible. In addition, community members participated in two stakeholder meetings during the development of this plan. Stakeholders included community members at large, members of the survey team, and business owners, students, school district representatives, utility company representatives and others.

City staff also advised the development of this plan, providing regular input on the existing conditions and challenges, as well as the potential for implementing new programs and concepts. Public Works Department staff participated in three meetings throughout the planning process to review and discuss draft products.

In addition to direct communication with community members and City staff, the planning team conducted interviews with other cities and urban forestry experts, reviewed recent research in the field of urban forestry and completed urban forestry management plans, and utilized data modeling and analysis programs including ArcGIS and i-Tree-Streets. iTree-Streets is a program developed by the USDA forestry service for the purpose of assessing and quantifying the benefits of an urban forest. Resources utilized during the preparation of this plan are listed in Chapter 9, References.

*Planting at Lashbrook Park, El Monte, California.*

## ORGANIZATION OF DOCUMENT

**Chapter 1: *Introduction.*** This chapter provides an overview, identifies the purpose of the document, and outlines document organization.

**Chapter 2: *Understanding the Forest.*** This chapter presents the community forest inventory, describing the extent and structure of the existing forest. In addition, this chapter explains the current management structure and the value of the forest.

**Chapter 3: *Envisioning the Forest.*** The vision for the community forest is described in this chapter, emphasizing recommended plants and planting targets for expanding the forest. Citywide and neighborhood-specific visions are included in this chapter.

**Chapter 4: *Community Forest Policies*.** Chapter 4 recommends goals, objectives and policies to be adopted by the City, and presents model landscape and tree ordinances.

**Chapter 5: *Design Tools.*** Principles and opportunities that should be considered when planning community forest projects are identified. Design concepts for typical urban conditions within the City are presented, demonstrating the potential for the community forest to enhance the City.

**Chapter 6: *Tree Planting and Care Guidelines.*** This chapter outlines tree planting and maintenance for use by City staff and community members.

**Chapter 7: *Community Stewardship.*** The role of community stewardship in implementing the Plan is described in this chapter, and key program areas are explained.

**Chapter 8: *Implementation.*** This chapter includes recommendations for management structure and identifies funding options and sources.

**Chapter 9: *References.*** References used during the development of this Plan are listed in this chapter.

*Native Oaks provide shade and habitat for local residents.*

# CHAPTER TWO: UNDERSTANDING THE FOREST

El Monte Speaks

*El Monte is really BIG and walking it has made me appreciate the diversity in both the people and the nature here.*

~Moises Mercado, Community Tree Survey Team Member

Settlers and Farmers chose the wooded environment with ample shade and running water long before it became known as El Monte. As the City urbanized, many native trees were removed. Other trees were planted along streets and in parks. However, little planting has been done in recent years and the City no longer resembles a wooded, cool place. The current decimated Urban Forest is a result of 150 years of gradual urbanization. The remaining Urban Forest is very mature, and cannot provide shade and benefits indefinitely. The City also faces the challenges of budget, staffing, and available park space.

Understanding the extent, condition, benefits, and cost of the community forest is essential to making good management decisions regarding tree planting, maintenance, removal, and replacement. El Monte has had to manage its forest without the benefit of a comprehensive inventory, and as a result has had to make reactionary decisions in order to respond to emergency situations. Without a comprehensive understanding of existing Urban Forest conditions, it can be difficult to identify chronic Urban Forest problems before they become major issues or identify windows of opportunity for improvement. Furthermore, without a big picture understanding of the community forest, it is almost impossible to take efficient steps toward a greater vision.

This chapter present a comprehensive view of El Monte's Urban Community Forest based on inventory and assessment of the trees that comprise it. The chapter describes the community forest inventory conducted as part of this planning process for the Urban and Community Forest Management Plan. The chapter then details how the community forest is currently managed, and assesses the forest's current value.


*Indexing the Urban and Community forest on CherryLee Street.*

## INVENTORY

A community based tree survey coordinated by Amigos de los Rios was utilized to gather the data that comprises the inventory. The City felt strongly about including citizens in the process of developing the plan rather than relying solely on arborist experts, electing to create training and temporary job opportunities for residents of El Monte. As such, Amigos trained 32 residents who participated in conducting a survey of the Urban Forest within the public right-of-way. Working in small teams, community members collected information on the existing trees that are maintained by the City such as street, park, plaza, and parking lot trees. According to participants in the community survey, the experience allowed them to make a meaningful contribution to the furture of the City, and to build community with other team members, and to learn about the trees and the importance fo the Urban Forest. Furthermore, the experience instilled a deep sense of stewardship in many of the participants. The following quotes describe the experience in the participants' own words.

### Community Experience

In the months of November and December of 2009, the team measured approximately 4,000 trees citywide. For each tree surveyed, the teams reecorded the circumference of the tree at its base and at breast height, idenetified the species of the tree when possible, and located the tree utilizing a hand-held GPS (Geographic Positioning System) unit. In addition, the survey teams took photographs of each tree. These photographs as well as field visits were used by the consultant team, including a certified arborist, to complete the species identification. The consulatant team utilized i-Streets to quantify values of the Urban Forest and GIS to visualize and analyze the inventory.



*Compiling data for the Tree Survey.*

## The participants reflect on their field experience:

*"It was truly an amazing group experience. For me, the opportunity to put a group of people together, instruct them on how and what to do and then set them free into the community. Most of the team members were more than excited to be part of a city based project and to contribute to the community."*

*"We helped each other By creating this broad task. several of the team members had a little better holiday season, getting paid for their services. They were very proud of being able to have a little something for their kids and holiday meals. I'm very proud of and happy for what we have accomplished for the brighter, cleaner, future of the City of El Monte."*
~ George Loyo, Creative Director, Stepping Stone Studios

*"I will never look at trees the same way. It was an interesting experience, working for the Emerald Necklace. I've learned how important it is to have more trees in our city. It does affect the community when we don't have enough trees in our city. Surprisingly, we don't have enough trees in our city! I'm glad I was able to participate and thanks for the opportunity to be a part in this project that will benefit our community in the long run."*
~ Beatrice Juarez

*"This experience has taught me about the variety of trees that exist in the public areas of the city, as well as the great need that exists for planting even more trees."*
~ Eduardo Mercado

*"I enjoyed helping out my community and Planet Earth."*
~ Abraham Molina

*"This was an amazing experience. Not only did I learn more about trees, but I'm giving back to my community and a better future for my kids."*
~ Carmen Aviva


*"This experience has been so good because we didn't know the importance of the trees to our own health, especially for the kids. I will never see them like I did before, that they were only for decoration. I was wrong. We have something to share with our grandchildren. My husband and I are very happy to have done this project together. It was a lot of fun."*
~ Jose and Blanca Rodriguez

*"We are very happy to be able to work on this project. Knowing that by planting more trees in the community will benefit everyone in the long run is really great. To be able to do these things for mother Earth is wonderful."* ~ Emma Rodriguez

*The Tree Power Team.*

## Reconciling Data

This Community-based inventory represents a substantial step towards understanding the existing condition of the community forest. There are challenges with conducting a survey with a team of residents who are not experts, and have relatively little experience in tree species identification, measurement, and indexing. In many ways having one expert do the whole project in a consistent manner would have produced a more accurate data set. Because of the community values, the choice was made to prioritize citizen involvement over a degree of accuracy of the data. In order to process and analyze the inventory, the following assumptions were made by the consultant team:

**Location of Trees** In some instances, GPS locations and tree survey data were provided for trees that could not be located in the field. In these instances, it is assumed that the survey data is correct but that the GPS location was inaccurately entered. When possible, the consultant team identified the correct location of the tree. When this was not possible, the data was retained as part of the survey in order to receive the most accurate information from i-Streets regarding community forest benefits.


*Members of the Tree Power Team in the field.*

**City-Maintained:** Trees included in the survey were limited to public trees owned and/or maintained by the City.

**Species Identification:** Trees included in the survey without species identification were identified by the consultant team using photographs and field visits. When the consultant team was unable to identify species due to poor photo quality, poor condition of tree, or inability to locate the tree in the field, the tree was noted as "unknown species." Species identified by the community were assumed to be correct unless spot-checking by the consultant team revealed otherwise.

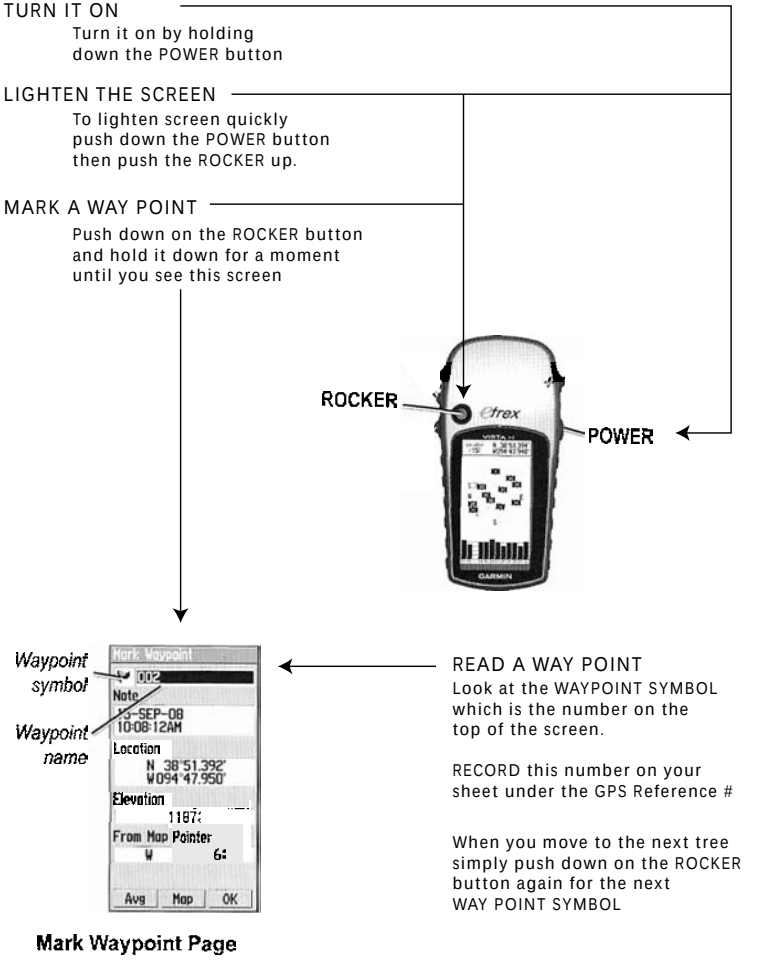
**Missing Tree Information:** Trees without reported diameter-at-breast-height (DBH) were assumed to have a 15-inch DBH.

**Missing Streets:** While the community survey included most streets with city trees, some streets were missed by the survey. Using aerial photography, 395 additional street trees were identified and included in the inventory as "unknown" trees. Criteria for the inclusion of additional trees were that trees were generally regularly spaced and of the similar size, that a pattern was evident at the block scale, and that trees were clearly not along private, commercial, industrial, or institutional property.

## Extent of Forest

This section presents information obtained using a database analysis and management tool called i-Tree Streets. Additional data obtained from this analysis is provided in Appendix A.

***i-Tree Streets*** was developed by a team of researchers with the USDA Forest Service, adapted from the program STRATUM, or Street Tree Resource Assessment Tool for Urban Forest Managers. This tool allows cities to analyze the benefit of their Forest. ***i-Tree Streets*** uses tree inventory data to assign dollar values to energy savings, carbon dioxide reduction, air quality, stormwater control, and property value increase.




**Mark Waypoint Page**

*GARMIN - Global Positioning system used by the Tree Power Team in the field.*

The inventory of El Monte's Urban and Community Forest identified 3,992 trees. Together, these trees provide coverage for approximately 5% of the City's public right-of-way. The National Arborist Society recommends a range of 15- to 30-percent canopy in urban areas. Compared to the national average of 22-percent and other cities such as San Francisco (12-percent[1]), Portland (26-percent[2]) and DC (36-percent[3]), El Monte has a low overall coverage.

*White-blooming Crape Myrtle provides shade and interest with its long-lasting bloom and mottled bark. In fall, its leaves acquire a burnished hue before dropping.*

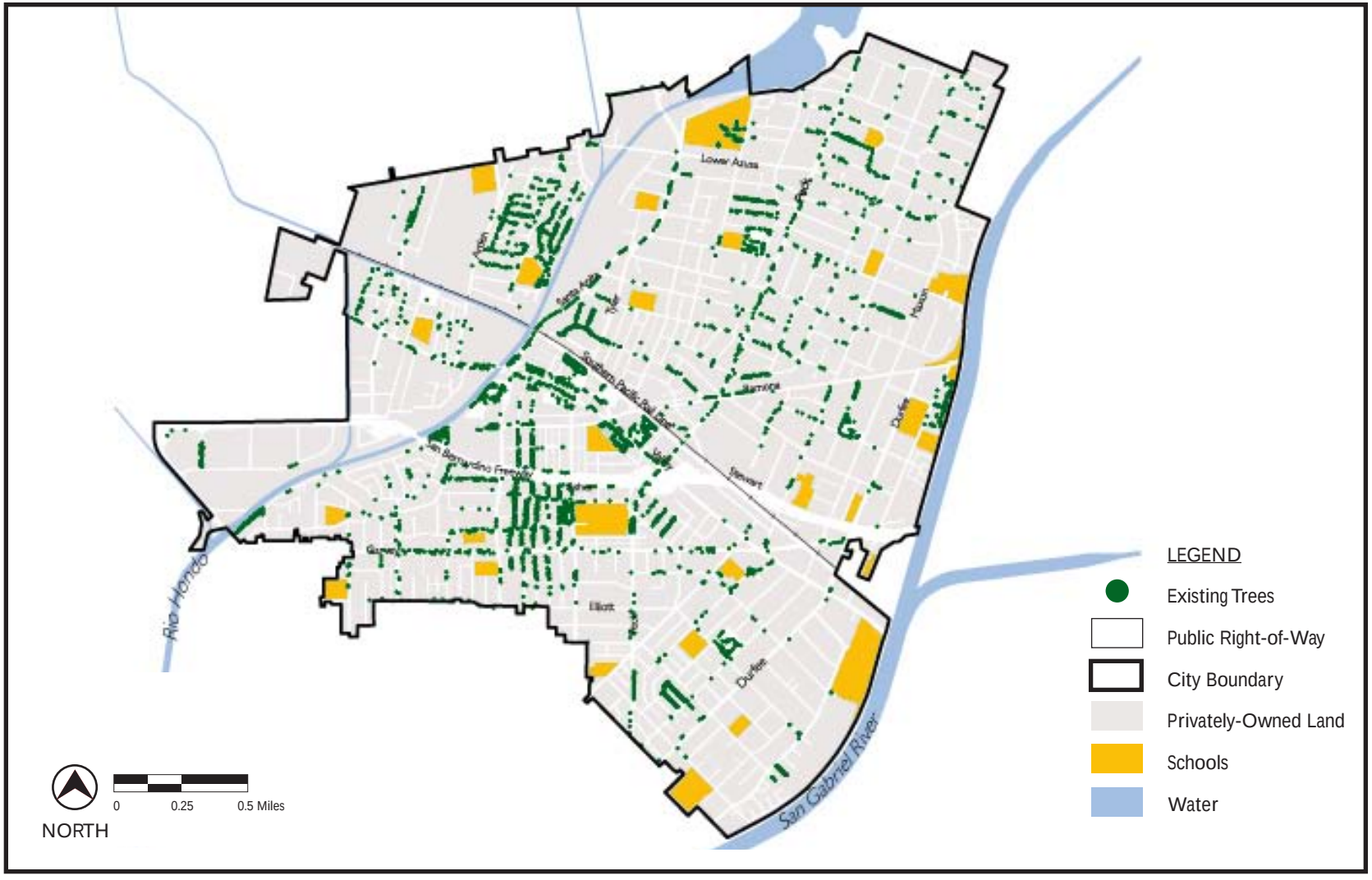
Table 2-1 DISTRIBUTION BY NEIGHBORHOOD

| Neighborhood | Acres of Right of Way | Canopied Acres | Number of Trees | Percent Canopy Cover |
|---|---|---|---|---|
| Downtown | 196 | 21.231 | 1325 | 10.83% |
| Norwood Cherrylee | 326 | 16.884 | 974 | 5.18% |
| Northwest | 161 | 7.56 | 548 | 4.69% |
| Park El Monte | 161 | 5.841 | 361 | 3.41% |
| Mountain View | 300 | 9.45 | 589 | 3.15% |
| River East | 109 | 2.52 | 195 | 2.31% |
| Airport | 17 | 0 | | 0%* |
| **City ROW Total** | **1,270** | **63** | **3992** | **4.96%** |

**no data collected*

The locations of existing trees, as shown in Table 2-1 and Figure 2-1, illustrates that the Forest is not evenly distributed throughout the City. There is great disparity between areas. Certain neighborhoods streets have 80% less canopy than other neighborhood. The downtown has over 10% canopy coverage, while the River East Neighborhood's canopy cover is less than 3%. As no trees were included in the community survey for the Airport neighborhood, the canopy for this neighborhood is considered to be nonexistent.

[1] Friends of the Urban Forest, San Francisco, CA.
[2] www.oregonlive.com
[3] www.dcgreenmap.org




Source DC&E El Monte Community Tree Inventory, 2010

## Species Composition

A portion of the trees in the inventory were not identified as a specific type of tree, either because the tree was identified using aerial imagery or because information collected during the community survey was inconclusive. However, the trees that were identified are suggestive of the species composition of the forest as a whole. The dominant species in El Monte's community forest include Sycamore *(Platanus species)* Crape Myrtle *(Lagerstroemia species)* Carrotwood *(Cupaniopsis anacardiodes)*, and Chinese Elm *(Ulmus parviflora)*. Species distribution for the forest is described visually in Figures 2-2 and 2-3. Since all unknown trees were assumed to be broadleaf evergreen trees, the actual percentage of trees in this category may be lower than reflected in Figure 2-2.

It is important to understand that not all trees provide the same values. For instance, palms and conifers are generally tall and narrow trees, providing minimal shade. Broadleaf trees provide greater canopy coverage and shade and should be planted more often.

## Age Composition

Few trees have been planted in recent years in El Monte's public right-of-way. As a result, the Community Forest is fairly mature as a whole. In several areas throughout the City, these senescent trees are reaching the end of their life span. In preparing this Community Forest Management Plan, city staff will also develop a tree risk management plan that consists of a tree risk assessment and mitigation program for these senescent trees that could become potentially hazardous.

Figure 2-2 FOREST COMPOSITION

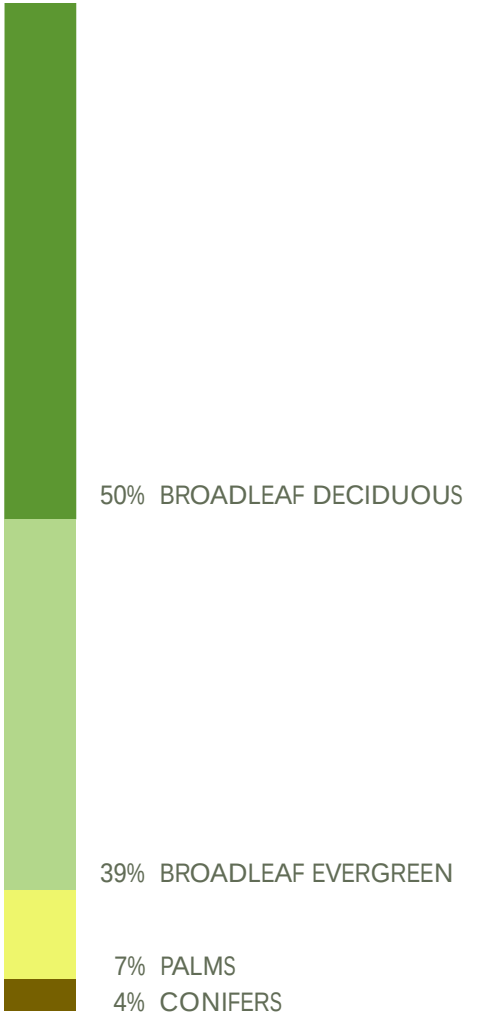
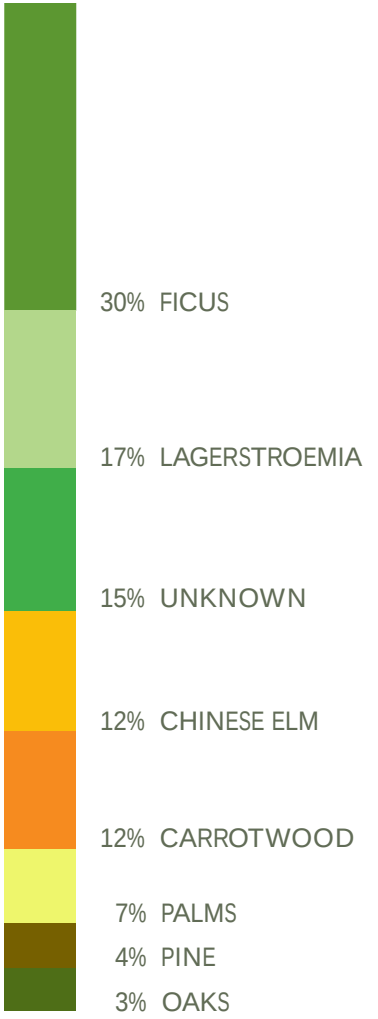



Figure 2-3 SPECIES COMPOSITION



## FOREST HEALTH

It is best when a forest includes a balanced percentage of young, semi-mature, and mature trees so that the forest will not become over-mature/senescent and require replacement all at once. It is also advantageous to have the right balance of species diversification to avoid mass failure that may occur from planting a monoculture, or single specie of tree. These monoculture plantings can be susceptible to pests or diseases such as Dutch Elm disease or emerald ash borer. Streets or blocks may be lined with single species on specific streets, but not every street or adjacent streets. A goal to follow in reaching specie diversity is to follow the 10/20/30 rule. This rule limits any one specie or cultivar to 10%, any one genus to 20%, and any one family to 30% of the tree population.

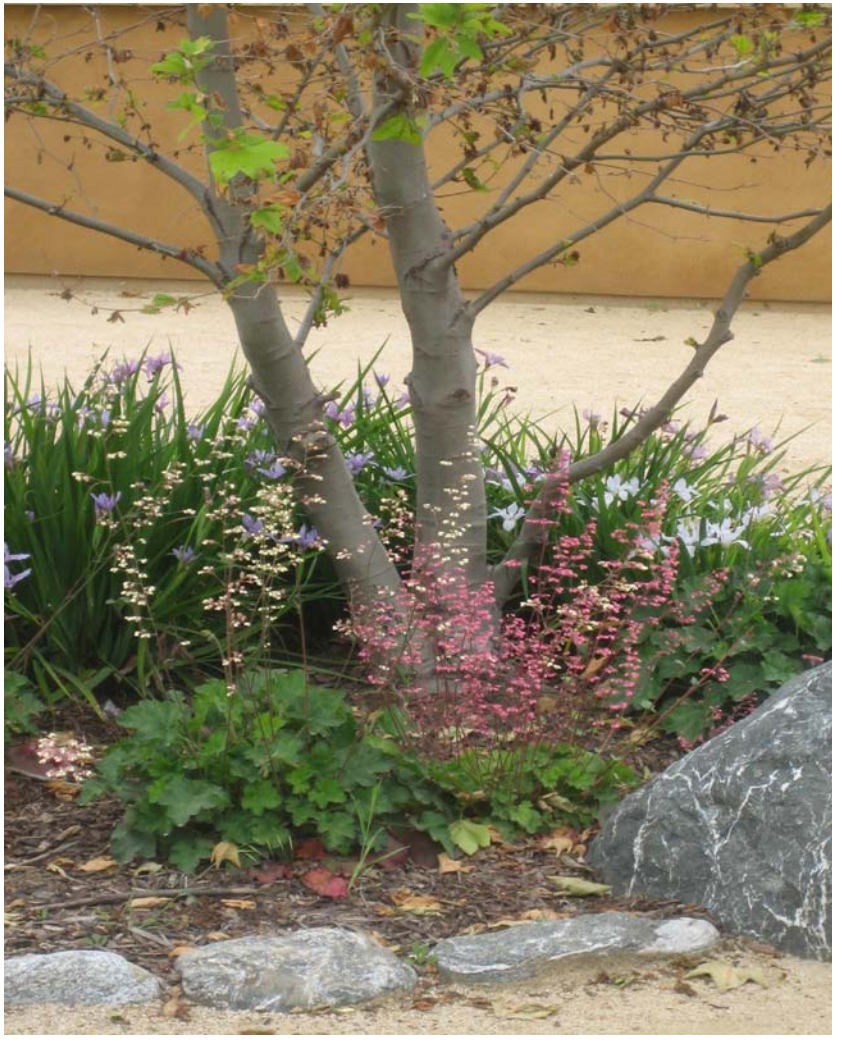
In an urban environment, forest health is artificial and dependent upon humans for selection, planting, and nurturing from youth to maturity. The forest cycle, including biochemical cycles, gas exchange, productivity, competition, succession, and regeneration, does not operate the same in an urban setting as it would in a natural setting. The Urban Forest, intertwined with human production and action, is therefore dependent on humans to plant and care for it.

### Specimens of Good Health

El Monte hosts pockets of dense canopy coverage and striking specimen trees. An abundance of mature trees stand in celebration of the City's cultural roots; well-maintained street trees invite pedestrians to stroll along residential streets; beautiful urban parks provide respite and scenic backdrop for urban life.

One of the greatest indicators for the future health of the Community Forest is the community's visible enthusiasm for its trees. Many trees in the private realm are planted and cared for by community members, some of which are even festively decorated. Given the proper training and tools, community

*The lush, welcoming canopy at the Huntington Library.*



*Native Sycamore underplanting at the Audubon Center at Debs Park.*

## Challenges to Forest Health

Practices affecting the health of the community forest are described below.

**Planting Practices:** Poor nursery stock root development and improper purning cuts made at the nursery and not corrected in the field can lead to the development of weak branch attachments. Without corrective pruning within the first few years after planting, a tree will likely develop structural problems such as weak or multiple limb attachments.

**Use of Stakes and Ties:** Improper use of stakes and ties affect the health of many of El Monte's maturing trees. Nursery ties and stakes are intended to support a tree's growth, but left too long they hinder the development of a tree's core and root strength to combat wind.

**Surroundings:** Conditions such as specific soil, light, moisture, and well space can affect tree health adversely.

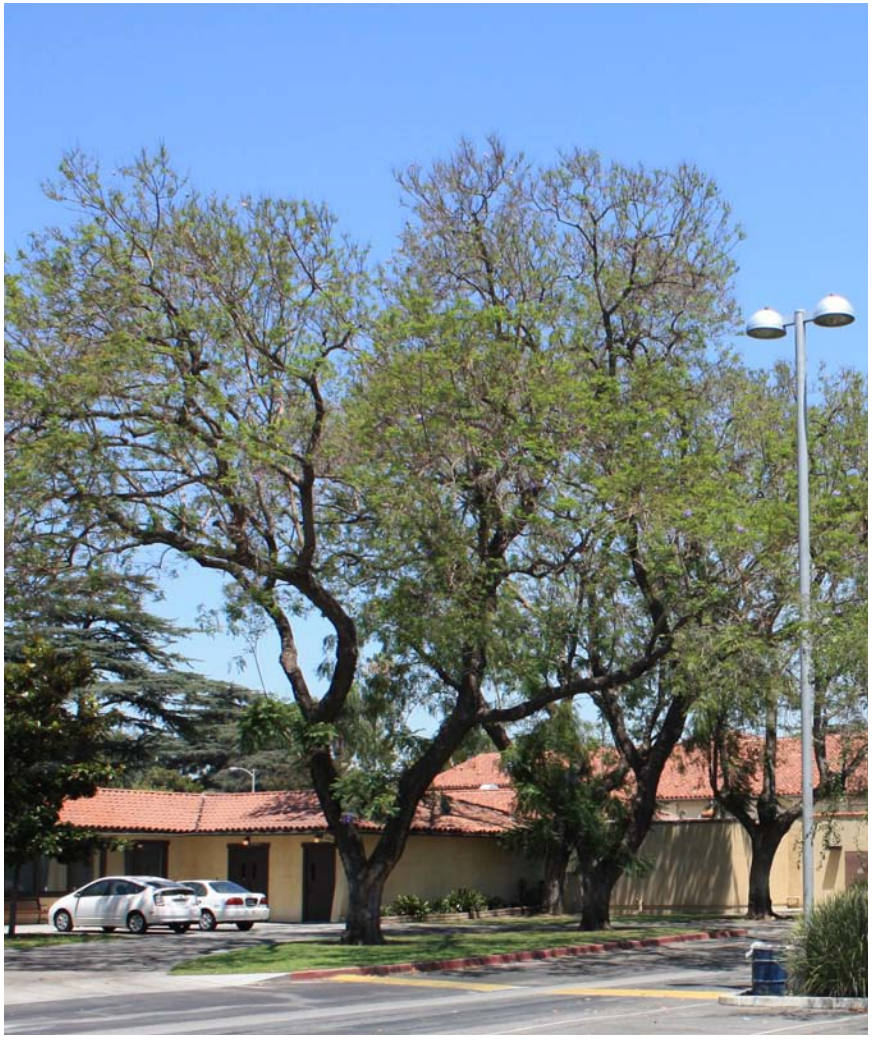
**Pruning Practices:** Lack of pruning or incorrect pruning has damaged many of El Monte's mature trees. These practices result in structurally weak trees and susceptibility to breakage and other hazards. These trees have become hazardous, unattractive, and costly to maintain. The following poor pruning practices create prominent tree health concerns:

- Topping or severe heading cuts
- Co-dominant trunks (adjacent trunks of equal size)
- Multiple branch attachments in one location
- Improper root pruning
- Decay from improper pruning cuts, pests, and disease
- Excessive thinning

**Conflicts with Utility Lines:** Topping is perhaps the most harmful tree pruning practice ¬¬known. It leads to vigorous watersprouting (epicormic shoot growth), increases maintenance costs, and destroys the structure and natural form of the tree. Topping stresses the tree, which will become more vulnerable to insect and disease infestation. When pruning trees under utility lines, directional pruning should be used on every cut. Pruning styles that should be used for utility line clearance are crown reduction, side pruning, V-pruning and/or through-pruning.

**Soil and Root Care:** Tree health depends as much on good soil, healthy roots, and trunk as it does on the upper branches and canopy. When trees are planted in the wrong location, root growth can conflict with sidewalks and other urban infrastructure and become a costly maintenance issue. When root growth is not addressed early enough or with the proper techniques, the structure and health of the tree can also be permanently damaged. Avoid planting in areas too shallow or small to allow for optimum growth.

Another prevalent challenge in El Monte is compacted, barren soil in planting areas devoid of nutrients and a living soil food web full of abundant, beneficial, microorganisms. Trees growing in such conditions are much more susceptible to disease and less likely to thrive. These conditions can be corrected with proper soil preparation, planting, and maintenance practices. Adding organic matter in the form of compost and mulch is a relatively easy way to begin to build soil health. Additional recommendations for building healthy soil are described in Chapter 6 (Standards and Guidelines.)



*Healthy, well-maintained Trees at El Monte community center.*

## CURRENT MANAGEMENT

The City of El Monte Public Works Maintenance Division currently maintains and manages the trees in the city's parks, parkways, medians, municipal facilities, municipal parking lots, and public right-of-ways.

Street trees maintained by the Building Maintenance Division include all trees in the public right-of-way. The size of the right-of-way varies between 5- and 20 feet, depending primarily on the street width and lot size. When in question, staff will confirm setbacks with the City Engineer prior to maintaining a tree. When necessary and when funding is available, the City contracts with Trimming Land for pruning and other tree maintenance needs.

Trees that come into conflict with utility lines are the responsibility of Southern California Edison, who contracts pruning work out to the private companies. Maintenance practices undertaken under this contract has unfortunately included a significant amount of tree topping. While this provides clearance for overhead utility lines, topping trees is a short-term solution that has a profound impact on tree health and has a weakened the overall health of the Urban and Community Forest. The City of El Monte Should work with local utility companies to plant suitable species of trees under power lines.

### Is the Current System Working?

Over the last few years, there have been several advances in the City's tree management system intended to increase maintenance quality and efficiency. In addition to adding a certified arborist to staff, a management grid has been developed to help facilitate and guide maintenance efforts. Dividing the city into a grid is also intended to provide maintenance staff with a sense of accomplishment. However, due to the back log of request for specific tree maintenance and removal by residents, the City has not been able to initiate regular pruning cycles within this grid.

While tree management has improved over the last few years due largely to the devotion of staff, the existing structure divides management throughout the Public Works Department and leads to the following challenges:

1. The City does not have one key person to oversee all of the City's trees and ensure clear communication between divisions and with utility companies.

2. The city does not have a guiding vision for the Community Forest or standards for plantings and maintenance.

3. Baseline data regarding the cost of management is difficult to track, and therefore it is difficult to assess the need for additional funds.

### How Much Does Management and Maintenance Cost?

Determining the actual annual cost of the Forest is difficult since the City does not have a clear vision dedicated to the maintenance of the Community Forest and does not track Community Forest expenses from other expenses. For the purposes of this management plan, the annual City budget for the Community Forest is estimated to be the cost of staff dedicated to tree maintenance and as well as the 2009-2010 budget dedicated to park and street tree maintenance supplies and the Sewer Enterprise Fund. This is equivalent to $491,826, as shown in Table 2-2. The Sewer Enterprise Fund is provided through the General Fund and is dedicated to preventative tree

Table 2-2 ESTIMATED ANNUAL BUDGET

| Category | Budget |
|---|---|
| Street Trees Salaries | $ 274,100 |
| Park Salaries (assumes 15% of City trees maintained by Parks and Recreation Department) | $ 47,726 |
| Park/ Street Maint. Supplies (2009-2010 budget) | $70,000.00 |
| Sewer Enterprise Fund | $ 100,000 |
| **Total Estimated Annual Budget** | $ 491,826 |

## VALUE OF THE FOREST

Trees, like people, are more productive and require less maintenance when they are healthy. As a result of this, the value of the Urban Forest hinges upon its health. A healthy Urban Forest will provide abundant benefits for relatively minimal costs, while an impaired forest will provide fewer benefits and likely require more maintenance. While El Monte's Community Forest boasts great beauty and includes fantastic specimen trees, its health is affected by improper planting maintenance and practices. As discussed above, improper practices are often directly connected to restrictive budgets.

This section provides an assessment of the value of the Community Forest based on i-Streets analysis. i-Streets assessment of forest value does not consider the specific health of El Monte's forest, but uses generalized assumptions based upon regional data to provide the most accurate assessment possible. Appendix A provides complete results of the i-Streets analysis.


*Considerable maintenance effort and cost is devoted to preserving the unnatural forms of these olive trees.*

*Deciduous trees in Peer City Monrovia.*

## Annual Benefits

The value of an Urban Forest is difficult to quantify, since the services it provides are generally seen as free. Through i-Streets, the Forest Service has provided a tool for assessing the economic value of Urban Forests based upon recent research. Based on this software, El Monte's Community Forest currently has an estimated gross value of $737,453, in the combined benefits related to energy savings, carbon dioxide sequestration, air quality, stormwater management, aesthetic and other benefits. Table 2-3 below identifies these following benefits:

**TABLE 2-3 ANNUAL COMMUNITY FOREST BENEFITS**

| Benefits | Total Value ($) | Average Value/Tree | Value/ Capita |
|---|---|---|---|
| Energy Savings | $55,002 | $13.78 | $0.47 |
| Carbon dioxide reduction | $8,632 | $2.17 | $0.07 |
| Air Quality | $130,295 | $32.64 | $1.12 |
| Stormwater | $7,936 | $1.99 | $0.07 |
| Aesthetic/ Other | $535,588 | $134.15 | $4.62 |
| **Total Benefits** | **$737,453** | **$184.73** | **$6.36** |

## Energy Savings

Trees save energy by reducing the need to heat and cool buildings. The value of energy savings is calculated by i-Streets based on assumptions for tree species regarding shading, canopy coverage, species size, and assumptions relating to regional climate and wind patterns.

## Carbon Dioxide Reduction

The value of reductions in carbon dioxide are calculated by i-Streets based upon costs associated with global warming. The amount of carbon dioxide sequestered depends upon tree size and species. Carbon dioxide released and generated by tree maintenance (use of chain saws, etc.) and by decomposition of trees are also considered by i-Streets.

## Stormwater Runoff Reduction

The implied value of stormwater reduction considers the amount of stormwater captured and the cost of urban stormwater management.

## Aesthetic and Other Benefits

The fiscal value of beautification, shade, habitat, privacy, comfort, and great urban spaces is difficult to quantify. i-Streets estimates the fiscal value of these benefits based upon estimated property values. Research shows that buyers are willing to pay more for houses and properties with trees, and therefore trees increase property value.

## Net Benefits of the Community Forest

The value of the Urban and Community Forest is estimated to be nearly double the cost of Forest Management and maintenance, equivalent to an annual net benefit of $ 245,627 as shown in Table 2-4.

Table 2-4 ESTIMATED NET FOREST BENEFITS

| Category | Total ($) | Per Tree ($) | Per Capita ($) |
|---|---|---|---|
| Benefits | $ 737,453 | $ 184.73 | $ 6.36 |
| Costs | $ 491,826 | $ 123.20 | $ 4.24 |
| **Net Benefits** | **$ 245,627** | **$ 61.53** | **$ 2.12** |

*Deciduous trees like the one shown here in Central Park, lend seasonality and interest.*


EL MONTE

# CHAPTER THREE: ENVISIONING THE FUTURE

This Plan serves as a critical step towards realizing the vision for a thriving, diverse urban and community forest that improves the public health, quality of life and environmental health in the City of El Monte. How will we know when we've reached this vision? The following indicators further define this vision and provide benchmarks for success.

## Thriving Forest

The trees that comprise the forest will be maintained using following industry standards for tree care operations, ANSI A300 (Part 1)-2008 Tree, Shrub, and Other Woody Plant Management—Standard Practices (Pruning) along with its companion publication, Best Management Practices—Tree Pruning (Revised 2008). Trees that will be selected and newly planted will follow the industry standards for quality nursery stock, ANSI Z60.1-Nursery Stock. For tree care operations and maintenance, these operations shall comply with all applicable Federal and State Occupational Safety and Health standards and ANSI Z133.1-Arboricultural Operations—Safety Requirements.

## Diverse Forest

Plants native to the region will be a signature part of the forest, adding to each neighborhood's unique selection of trees.

## Quality of Life

Indicators of quality of life include streets that call out to pedestrians, parks that resonate with natural surroundings, and dynamic corridors that let residents and visitors know they are in El Monte. Property values will increase, and commercial areas will be attractive magnets for shoppers. Community members will be engaged in forest care, and students will feel safe walking around their neighborhoods and to their schools.

## Environmental Health

Improvements to air quality, water, and reduction in energy use will be seen in the upcoming years thanks to the community forest. Tools like i-Streets software can help to quantify the contribution of the forest to environmental health.

*Community Tree Indexing Member at Pioneer Park.*

## RECOMMENDED TREE LIST

The central tool for building the character of El Monte's community forest is the Recommended Tree List (Table 3 – 1 through Table 3 - 4).The List celebrates the City's natural and cultural character with a refined palette of species selections. Trees were selected based on their ability to thrive in the area as defined by the Sunset Climate Zone 20 and taking into account El Monte's urban conditions. Tree life span and maintenance requirements were also determining factors.

The Recommended Tree List is divided into the following categories: Large Trees, Medium-to-Small Ornamental Trees, Native Understory Shrubs and Tree-like Shrubs, and Urban Agriculture Selections. Each category represents a specific element in the community forest. Particular emphasis is placed on California native trees and shrubs in order to build the natural character of the City and enhance local habitat and biodiversity.

***Large Trees.*** Given the great need for shaded streets and parks in El Monte, broad canopied shade trees should be prioritized for planting whenever possible.

***Medium-to-Small Ornamental Trees.*** These smaller scale trees should be used when space or other constraints prevent the use of a larger canopy tree. They may also serve as understory components to add layers and interest to the palette.

***Native Understory Shrubs and Tree-like Shrubs.*** This subset of natives includes plants that often may serve either as small trees or large shrubs, depending on the amount of space, time and care they are given. Toyon, for example, may be pruned into a shrub form or small canopy tree. California Laurel may achieve the dimensions of a largish tree, over time, but because they grow so slowly they may be contained in shrub form. This subset is useful for rounding-out civic, school and/ or park plantings.

***Urban Agriculture Selections.*** This subset of fruit-bearing trees provide the basis for an urban orchard. The selections harken to El Monte's past citrus and stone fruit industry and include other climate-compatible trees such as pomegranate and macadamia that would provide additional crops. Because fruit-bearing trees have very different and generally much higher irrigation, nutrient and maintenance requirements these varieties should only be grown in situations were adequate care will be provided.

All trees should be selected and planted with efficiency to keep capital and operating costs to a minimum. Chapters 6 and 8 provide further detail on planting, maintenance, and financing.

# EL MONTE URBAN & COMMUNITY FOREST RECOMMENDED TREE LIST

## Large Trees

| | | |
|---|---|---|
| 1. | *Alnus rhombifolia** | White Alder |
| 2. | *Cinnamomum camphora* | Camphor Tree |
| 3. | *Gingko biloba* | Maidenhair Fern |
| 4. | *Juglans californica** | California Walnut |
| 5. | *Pinus coulteri** | Coulter Pine |
| 6. | *Platanus racemosa** | California Sycamore |
| 7. | *Platanus x. acerifolia* | London Plane Tree |
| 8. | *Quercus agrifolia** | Coast Live Oak |
| 9. | *Quercus engelmannii** | Engelmann/ Mesa Oak |
| 10. | *Quercus ilex* | Coast Live Oak |
| 11. | *Quercus lobata** | Valley Oak |
| 12. | *Quercus suber* | Cork Oak |
| 13. | *Quercus virginiana* | Southern Live Oak |
| 14. | *Tipuana tipu* | Tipu Tree |

## Medium-Small Ornamental Trees

| | | |
|---|---|---|
| 15. | *Acer buergeranium* | Trident Maple |
| 16. | *Arbutus marina* | ncn |
| 17. | *Cassia leptophylla* | Gold Medallion Tree |
| 18. | *Cercis canadensis* | Eastern Redbud/ Forest Pansy |
| 19. | *Chilopsis linearis** | Desert Willow |
| 20. | *Chionanthus retusus* | Chinese Fringe Tree |
| 21. | *Jacaranda mimosifolia* | Jacaranda Tree |
| 22. | *Koelreuteria bipinnata* | Chinese Flame Tree |
| 23. | *Lagerstroemia indica 'Natchez'* | White-bloomng Crape Myrtle |
| 24. | *Olea europaea* | Fruitless Olive |
| 25. | *Parkinsonia aculeata"* | Mexican Palo Verde |
| 26. | *Pistacia chinensis* | Chinese Pistache |
| 27. | *Rhus lancea* | African Sumac |
| 28. | *Tabebuia impetiginosa* | Pink Trumpet Tree |
| 29. | *Umbellularia californica** | California Laurel |

## California Native Shrubs/ Shrub-like Trees

| | | |
|---|---|---|
| 30. | *Aesculus californica** | CaliforniaBuckey |
| 31. | *Cercis occidentalis** | Western Redbud |
| 32. | *Fremontodendron 'San Gabriel'** | San Gabriel Flannelbush |
| 33. | *Garrya Eliptical 'James Roof'** | J.R. Coast Silk-Tassel |
| 34. | *Heteromeles arbutifoia** | Toyon |
| 35. | *Sambucus mexicana** | Western Elderberry |

## Urban Agriculture Trees

| | | |
|---|---|---|
| 36. | *Apricot 'Blenheim'* | Blenheim Apricot |
| 37. | *Citrus varieties* | Blood Orange, Meyer Lemon |
| 38. | *Macadamia 'Beaumont'* | Beaumont Macadamia |
| 39. | *Peach 'Lovell'* | Lovell Peach |
| 40. | *Pomegranate 'Wonderful'* | Wonderful variety Pomegranate |

**indicates California Native*

## LARGE TREES

| | DESCRIPTION | | | | | | PLANTING REQUIREMENTS | | | | | | | SUITABLE AREAS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TABLE 3 - 1 RECOMMENDED LIST** | *CALIFORNIA NATIVE* | **EVERGREEN OR DECIDOUS** | **LIFESPAN (IN YEARS)** | **GROWTH RATE : FAST, MODERATE, SLOW** | **CANOPY HEIGHT / FEET** | **CANOPY WIDTH / FEET** | **WATER USE: HIGH, MODERATE, LOW** | **SPACING (BETWEEN TREES)** | **TREE WELL (FOR MAXIMUM SOIL VOLUME)** | ONGOING INRRIGATION REQUIRED | DROUGHT TOLERANT ONCE ESTABLISHED | **RESIDES BELOW UTLITY LINES** | **MAY BE PRUNED AROUND UTLITY LINES** | **MAINTENANCE ISSUES AND/ OR SPECIAL CONSIDERATIONS** | **FREEWAYS** | **MAJOR ARTERIALS, MEDIANS** | **PARKING LOTS** | **CIVIC, PARKS, SCHOOLS** | **NEIGHBORHOOD STREETS** |
| *1. ALNUS RHOMBIFOLIA* **WHITE ALDER** | ✓ | D | 50 - 60 | F | 50'- 90' | 40' | H | 30' | 4'-8' 36 sq' | ✓ | | | | Riparian. produces root and trunk sprouts. Generally short-lived. | ✓ | | | ✓ | |
| *2. CINNAMOMUM CAMPHORA* **CAMPHOR TREE** | | E | 30 - 60 | M | 50' | 60' | M | 30' | 8' 48 sq' | | ✓ | | ✓ | Competitve roots are problematic are ultimately will buckle sidewalk. | | | | | |
| *3. GINKGO BILOBA* **MAIDENHAIR FERN** | | D | 60+ | S | 35'- 80' | 17'- 40' | M | 25'- 30' | 4'-8' 36 sq' | ✓ | ✓ | | ✓ | Benefits greatly from expert structure cutting and pruning. | | ✓ | ✓ | | ✓ |
| *4. JUGLANS CALIFORNICA* **CALIFORNIA WALNUT** | ✓ | D | 30 - 60 | F | 15'- 30' | 15'- 30' | M | 30' | 6'-8' 40 sq' | ✓ | ✓ | | | Worthwhile planting this tree as native population is in decline. | ✓ | | | ✓ | |
| *5. PINUS COULTERI* **COULTER PINE** | ✓ | E | 30- 60 | M | 30'- 80' | 20'- 40' | M | 20' | 6'-8' 40 sq' | ✓ | ✓ | | | ∗ ∗∗ Huge pine cones are dangerous around play or pedestrian areas. | ✓ | | | ✓ | |
| *6. PLATANUS RACEMOSA* **CALIFORNIA SYCAMORE** | ✓ | D | 60+ | M | 30'- 80' | 20'- 50' | M | 30' | 6'-8' 40 sq' | ✓ | ✓ | | | Protected species so pruning guidelines must be followed; heavy seasonal pollen. | ✓ | ✓ | | ✓ | ✓ |
| *7. PLATANUS X.ACERIFOLIA* **LONDON PLANE TREE** | | D | 60+ | F | 40'- 80' | 30'- 40' | M | 30' | 6'-8' 40 sq' | ✓ | ✓ | | | To be used only when a site is not appropriate for the native Sycamore. | | ✓ | ✓ | | ✓ |

## LARGE TREES

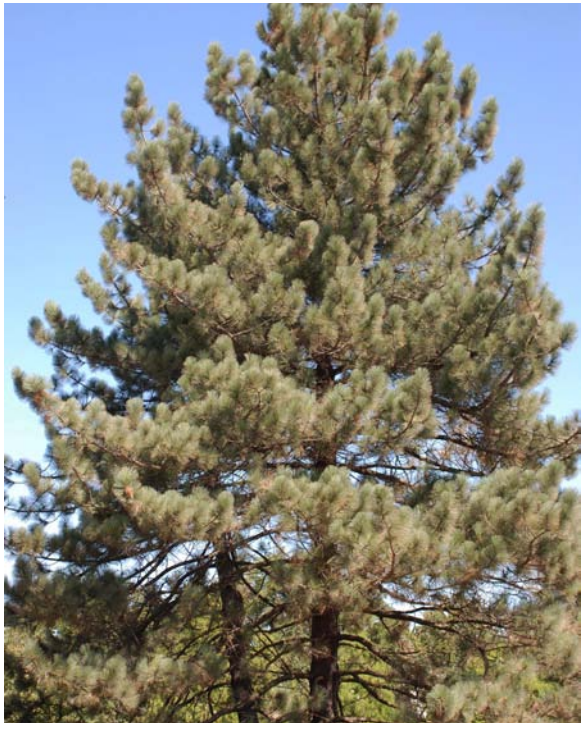
| TABLE 3 - 1 RECOMMENDED LIST | DESCRIPTION: CALIFORNIA NATIVE | DESCRIPTION: EVERGREEN OR DECIDOUS | DESCRIPTION: LIFESPAN (IN YEARS) | DESCRIPTION: GROWTH RATE : FAST, MODERATE, SLOW | DESCRIPTION: CANOPY HEIGHT / FEET | DESCRIPTION: CANOPY WIDTH / FEET | PLANTING REQUIREMENTS: WATER USE: HIGH, MODERATE, LOW | PLANTING REQUIREMENTS: SPACING (BETWEEN TREES) | PLANTING REQUIREMENTS: TREE WELL (FOR MAXIMUM SOIL VOLUME) | PLANTING REQUIREMENTS: ONGOING INRRIGATION REQUIRED | PLANTING REQUIREMENTS: DROUGHT TOLERANT ONCE ESTABLISHED | PLANTING REQUIREMENTS: RESIDES BELOW UTLITY LINES | PLANTING REQUIREMENTS: MAY BE PRUNED AROUND UTLITY LINES | MAINTENANCE ISSUES AND/ OR SPECIAL CONSIDERATIONS | SUITABLE AREAS: FREEWAYS | SUITABLE AREAS: MAJOR ARTERIALS, MEDIANS | SUITABLE AREAS: PARKING LOTS | SUITABLE AREAS: CIVIC, PARKS, SCHOOLS | SUITABLE AREAS: NEIGHBORHOOD STREETS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *8. QUERCUS AGRIFOLIA* **COAST LIVE OAK** | ✓ | E | 60+ | M | 20'-70' | 20'-70' | L | 30' | 6'-8' 40 sq' | | ✓ | | ✓ | Do not overwater. Benefits from structure cutting to nurture form over time. | ✓ | ✓ | ✓ | ✓ | ✓ |
| *9. QUERCUS ENGELMANII* **ENGELMAN, MESA OAK** | ✓ | E | 60+ | M | 40'-50' | 50'-70' | L | 30' | 6'-8' 40 sq' | | ✓ | | ✓ | Heritage oak local to the area. In declining numbers in nature, so plant whenever possible. | ✓ | ✓ | ✓ | ✓ | ✓ |
| *10. QUERCUS ILEX* **HOLLY OAK** | | E | 60+ | M | 30'-60' | 30'-60' | L | 25' | 4'-6' 30 sq' | | ✓ | | ✓ | Good tree where quercus agrifolia is difficult to maintain, i.e. lawns, though lesser in form. | ✓ | ✓ | ✓ | | ✓ |
| *11. QUERCUS LOBATA* **VALLEY OAK** | ✓ | D | 60+ | M | 70+ | 70+ | L | 35' | 6'-8' 40 sq' | | ✓ | | ✓ | Fastest growing of recommended oaks; use only in large spaces. Prune to nurture over time. | ✓ | | | ✓ | |
| *12. QUERCUS SUBER* **CORK OAK** | | E | 60+ | M | 30'-60' | 30'-60' | L | 30' | 6'-8' 40 sq' | | ✓ | | ✓ | Use this Mediterranean native where its attractive furrowed bark may be appreciated. | ✓ | ✓ | ✓ | | ✓ |
| *13. QUERCUS VIRGINIANA* **SOUTHERN LIVE OAK** | | E | 60+ | M | 40'-80' | 50'-70' | M | 30' | 6'-8' 40 sq' | ✓ | | | ✓ | Best oak for lawn planting in low desert; preferes deep, rich, moist soil. | ✓ | ✓ | ✓ | | ✓ |
| *14. TIPUANA TIPU* **TIPU TREE** | | D | 30 - 60 | F | 25'-40' | 30'-60' | M | 30' | 4'-8' 30 sq' | ✓ | | ✓ | | Broad flat canopy. Short deciduous period. Benefits greatly from early structure cutting. | | | ✓ | | ✓ |

***1. ALNUS RHOMBIFOLIA***
**WHITE ALDER**

***2. CINNAMOMUM CAMPHORUM***
**CAMPHOR TREE**

***3. GINKGO BILOBA***
**MAIDENHAIR FERN**

RECOMMENDED LIST
## LARGE TREES



***4. JUGLANS CALIFORNICA***
**CALIFORNIA BLACK WALNUT**

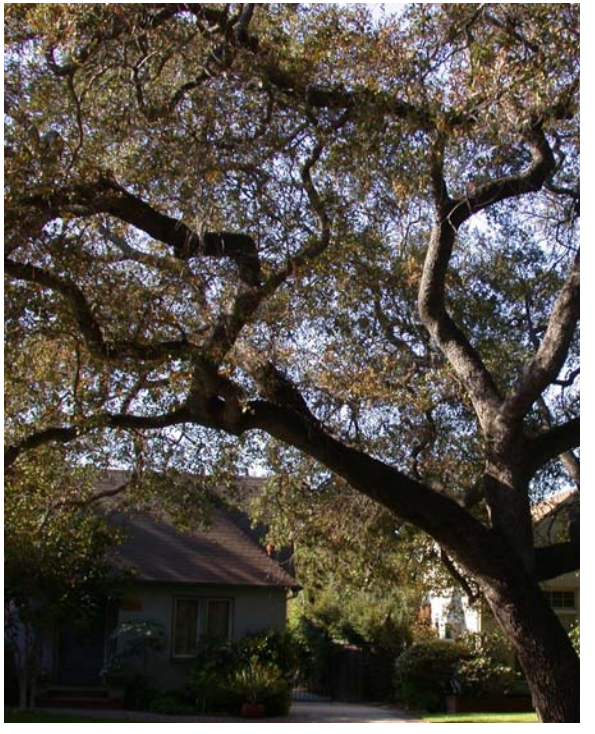
**5. *PINUS COULTERI***
**COULTER PINE**

**6. *PLATANUS RACEMOSA***
**CALIFORNIA SYCAMORE**

RECOMMENDED LIST
## LARGE TREES

*7. PLATANUS X. ACERIFOLIA*
**LONDON PLANE TREE**

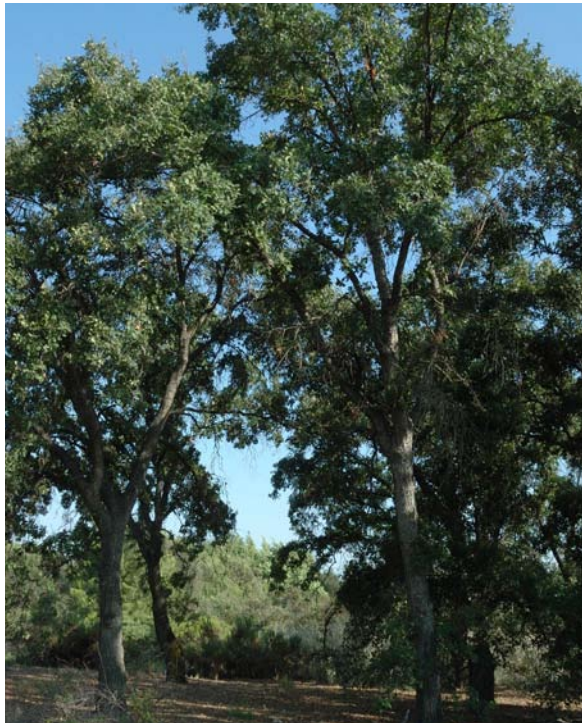
*8. QUERCUS AGRIFOLIA*
**COAST LIVE OAK**



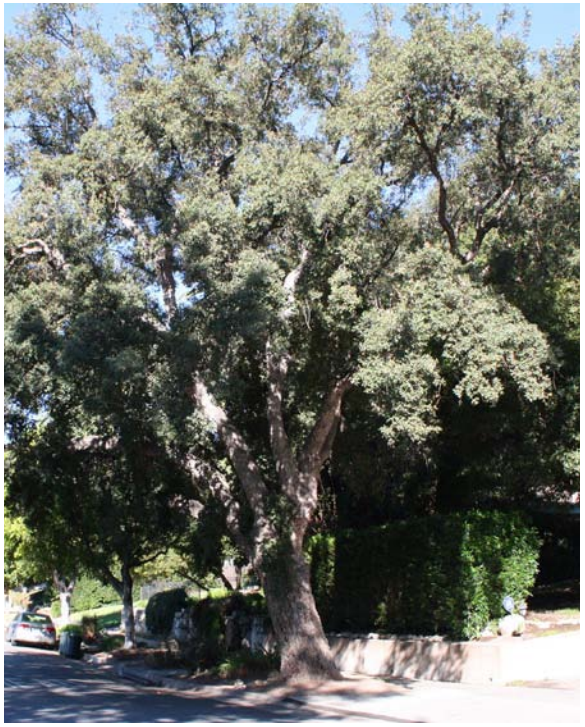
*9. QUERCUS ENGELMANNI*
**ENGELMAN, MESA OAK**

RECOMMENDED LIST
## LARGE TREES

***10. QUERCUS ILEX***
**HOLLY OAK**

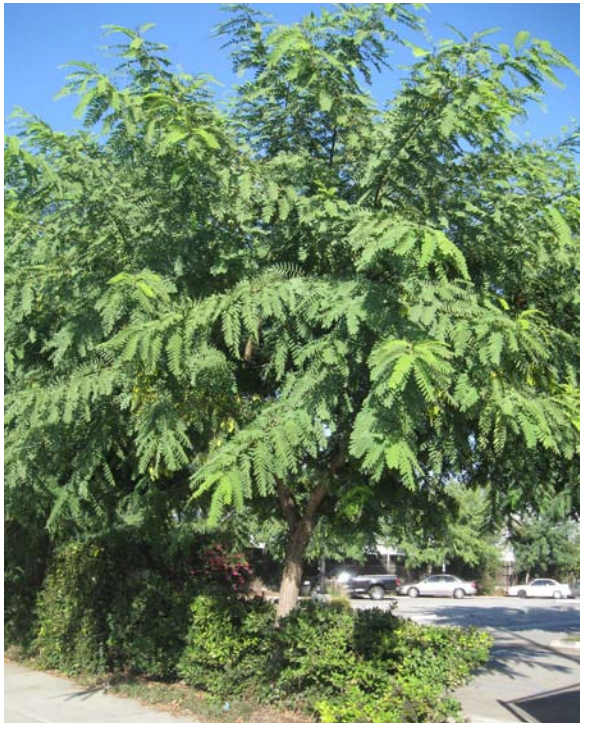


***11. QUERCUS LOBATA***
**VALLEY OAK**



***12. QUERCUS SUBER***
**CORK OAK**

RECOMMENDED LIST
## LARGE TREES



***13. QUERCUS VIRGINIANA***
**SOUTHERN LIVE OAK**

***14. TIPUANA TIPU***
**TIPU TREE**

RECOMMENDED LIST
## LARGE TREES

## Precedent and Inspiration

The geographic region where the City of El Monte resides historically was Oak Savannah, or California Oak Woodland, defined as a plant community where the dominant trees are oaks, interspersed with broadleaf (Sycamore), coniferous (Pines), and understory trees and shrubs. The Oak woodlands of Southern California were dominated by Coast Live Oak (Q. agrifolia), but also included Valley Oak (Q. lobata), Canyon live Oak (Q. chrysolepis), and the Engelmann Oak (Q. engelmannii),

*The Engelmann Oak is unique to the area and presents a unique opportunity: because its native range is specific to southeastern Los Angeles County, its existence is endangered by development. Restoring as much of this variety to the area will help ensure its survival.*

*A double allée of native Engelmann oak frame the entrance to Peer City Pasadena's city hall. Ultimately the canopies will reach across the walkway and form a stately arch.*

In its simplicity, the native Oak palette functioned both ecologically and aesthetically. It supplied the indigenous fauna with sustenance, and from the time the first missionaries and explorers recorded their impressions of the area, provided a majestic, stately, backdrop of welcoming filtered shade, fine textures and gentle subdued hues.

Designing El Monte's Urban Forest should take its cues from this historical precedent. Great effort should be undertaken to 'cleanse' the palette, i.e. remove as many of the random, inappropriate and jarring exotic species brought to the area as possible to make way for the restoration of an over arching and unifying native Oak Tree palette.

*Two rules of thumb should apply to all areas of the city:*

1. Use native Oaks and trees to knit together a coherent backbone and
2. Use only the most compelling nonnative (exotic) varieties that do no harm, e.g. invade, compete, grow to an ungainly size, and demand too much water, nutrient, or special care.

By being deliberately selective with both native and nonnative species a simplified ergo a very refined palette will emerge.

## MED-SMALL TREES

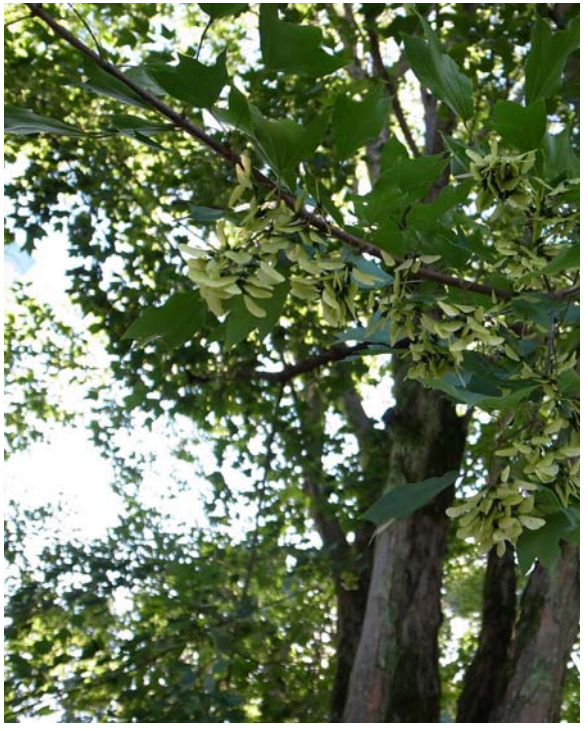
DESCRIPTION | PLANTING REQUIREMENTS | SUITABLE AREAS

| TABLE 3 - 2 RECOMMENDED LIST | CALIFORNIA NATIVE | EVERGREEN OR DECIDOUS | LIFESPAN (IN YEARS) | GROWTH RATE : FAST, MODERATE, SLOW | CANOPY HEIGHT / FEET | CANOPY WIDTH / FEET | WATER USE: HIGH, MODERATE, LOW | SPACING (BETWEEN TREES) | TREE WELL (FOR MAXIMUM SOIL VOLUME) | ONGOING INRRIGATION REQUIRED | DROUGHT TOLERANT ONCE ESTABLISHED | RESIDES BELOW UTLITY LINES | MAY BE PRUNED AROUND UTLITY LINES | MAINTENANCE ISSUES AND/ OR SPECIAL CONSIDERATIONS | FREEWAYS | MAJOR ARTERIALS, MEDIANS | PARKING LOTS | CIVIC, PARKS, SCHOOLS | NEIGHBORHOOD STREETS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *15. ACER BUERGERANUM* **TRIDENT MAPLE** | | D | 60+ | M | 20'-70' | 20'-25' | M | 25' | 4' 24 sq' | ✓ | | ✓ | | Stake and prune to elevate branches. Prune in summer/ fall to minimize sap bleed. | | | | | ✓ |
| *16. ARBUTUS MARINA* **NCN (no common name)** | | E | 50-60 | M | 40' | 40' | L | 25'-30' | 4' 24 sq' | | ✓ | ✓ | | Attractive bark, flowers and fruit. Use multi-trunks when possible. Good in lawn, raised beds. | | | | ✓ | ✓ |
| *17. CASSIA LEPTOPHYLLA* **GOLD MEDALLION TREE** | | D | 50 | F | 20'-25' | 35' | L | 20'-30' | 4' 24 sq' | | ✓ | ✓ | | Nearly evergreen. Benefits fom structure pruning to prevent becoming gangly. | | | | ✓ | ✓ |
| *18. CERCIS CANADENSIS* **EASTERN REDBUD** | ✓ | D | 30 | S | 25'-35' | 25'-35' | M | 20'-25' | 4' 24 sq' | ✓ | | ✓ | | Fastest growing and most tree-like in form of all redbuds. Good understory or specimen tree. | ✓ | | | ✓ | ✓ |
| *19. CHILOPSIS LINEARIS* **DESERT WILLOW** | ✓ | D | 30 | F | 15'-30' | 20'-30' | L | 15'-20' | 4' 24 sq' | | ✓ | ✓ | | Fragrant, trumpet-shaped flowers attract hummingbirds. Willow-like, provides dappled shade. | | | ✓ | ✓ | ✓ |
| *20. CHIONANTHUS RETUSUS* **CHINESE FRINGE TREE** | | D | 30-60 | M | 20' | 20' | M | 20' | 4' 24 sq' | ✓ | | ✓ | | Ensure good drainage. Little pruning needed. Attractive whilte blooms. | | | | ✓ | ✓ |
| *21. JACARANDA MIMOSIFOLIA* **JACARANDA** | | D | 30-60 | M | 25'-40' | 15'-30' | M | 25' | 4' 24 sq' | ✓ | | ✓ | | Blooms can be messy. Requires ongoing structure cutting to develop form. | | | | ✓ | ✓ |

## MED-SMALL TREES

DESCRIPTION | PLANTING REQUIREMENTS | SUITABLE AREAS

| TABLE 3 - 2 RECOMMENDED LIST | CALIFORNIA NATIVE | EVERGREEN OR DECIDOUS | LIFESPAN (IN YEARS) | GROWTH RATE : FAST, MODERATE, SLOW | CANOPY HEIGHT / FEET | CANOPY WIDTH / FEET | WATER USE: HIGH, MODERATE, LOW | SPACING (BETWEEN TREES) | TREE WELL (FOR MAXIMUM SOIL VOLUME) | ONGOING INRRIGATION REQUIRED | DROUGHT TOLERANT ONCE ESTABLISHED | RESIDES BELOW UTLITY LINES | MAY BE PRUNED AROUND UTLITY LINES | MAINTENANCE ISSUES AND/ OR SPECIAL CONSIDERATIONS | FREEWAYS | MAJOR ARTERIALS, MEDIANS | PARKING LOTS | CIVIC, PARKS, SCHOOLS | NEIGHBORHOOD STREETS |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *22. KOELREUTERIA BIPINNATA* **CHINESE FLAME TREE** | | D | 30-60 | M | 20'-40' | 20'-40' | M | 20' | 4' 24 sq' | ✓ | | ✓ | | Blooms, seed pods and changing foliage provide seasonal interest. Requires control of self-seeding. | | | ✓ | | ✓ |
| *23. LAGERSTROEMIA 'NATCHEZ'* **WHITE CRAPE MYRTLE** | | D | 30-60 | S | 25' | 15' | M | 15' | 4' 24 sq' | ✓ | | ✓ | | Attractive bark, long -lasting white blooms and red foliage in fall. Prune in winter/ early spring. | | | ✓ | | ✓ |
| *24. OLEA EUROPAEA* **FRUITLESS OLIVE** | | E | 60+ | M | 25'-30' | 25'-30' | L | 25' | 4'-8' 36 sq' | | ✓ | ✓ | | Requires expert pruning to develop shape. Ethephon spray prevents fruiting. | | | | ✓ | |
| *25. PARKINSONIA ACULEATA* **MEXICAN PALO VERDE** | ✓ | D | 30-60 | F | 15'-30' | 15'-30' | L | 15'-30' | 4' 24 sq' | | ✓ | ✓ | | Rapid growth at first and then slows. Filtered shade. Minimal care once established. | | | ✓ | ✓ | ✓ |
| *26. PISTACIA CHINENSIS* **CHINESE PISTACHE** | | D | 30-60 | M | 30'-60' | 25'-40' | M | 25'-30 | 4'-8' 30 sq' | ✓ | | ✓ | | Colorful fruit and foliage. Reliable streetside tree. Benefits from structure pruning early on. | | | ✓ | ✓ | ✓ |
| *27. RHUS LANCEA* **AFRICAN SUMAC** | | E | 30-60 | S | 20'-30' | 20'-35' | L | 20' | 4' 24 sq' | | ✓ | ✓ | | Open, spreading habit with graceful weeping outer branchlets. | | | ✓ | ✓ | ✓ |
| *28. TABEBUIA IMPETIGINOSA* **PINK TRUMPET TREE** | | D | 60+ | S | 25'-50' | 25'-50' | M | 25' | 4'-6' 30 sq' | | ✓ | | | Pink blooms in winter (does not bloom when young). Gangly in youth; prune to correct. | | | ✓ | ✓ | ✓ |
| *29. UMBELLULARIA CALIFORNICA* **CALIFORNIA LAUREL** | ✓ | E | 60+ | S | 20'-25' | 20'-25' | L | 15'-20' | 15'-20' | | ✓ | ✓ | | Makes an excellent screen. Pleasantly fragrant foliage and flowers. | ✓ | | | ✓ | |



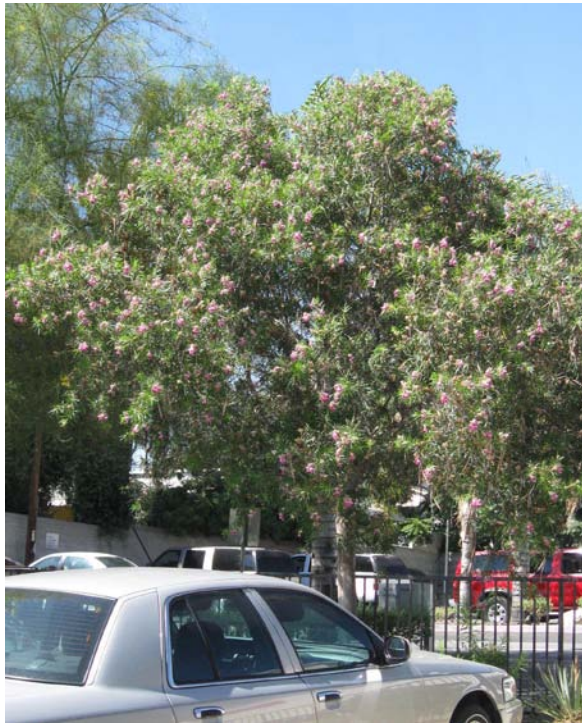
***15. ACER BUERGERANUM***
**TRIDENT MAPLE**

***16. ARBUTUS MARINA***
**(No Common Name)**

***17. CASSIA LEPTOPHYLLA***
**GOLD MEDALLION TREE**

RECOMMENDED LIST
## MEDIUM - SMALL TREES

***18. CERCIS CANADENSIS***
**EASTERN REDBUD**



***19. CHILOPSIS LINEARIS***
**DESERT WILLOW**

***20. CHIONANTHUS RETUSUS***
**CHINESE FRINGE TREE**

RECOMMENDED LIST
## MEDIUM - SMALL TREES

*21. JACARANDA MIMOSIFOLIA*
**JACARANDA TREE**

*22. KOELREUTERIA BIPINNATA*
**CHINESE FLAME TREE**

*23. LAGERSTROEMIA INDICA 'NATCHEZ'*
**WHITE BLOOMING CRAPE MYRTLE**

RECOMMENDED LIST
## MEDIUM - SMALL TREES

***24. OLEA EUROPAEA***
**FRUITLESS OLIVE**

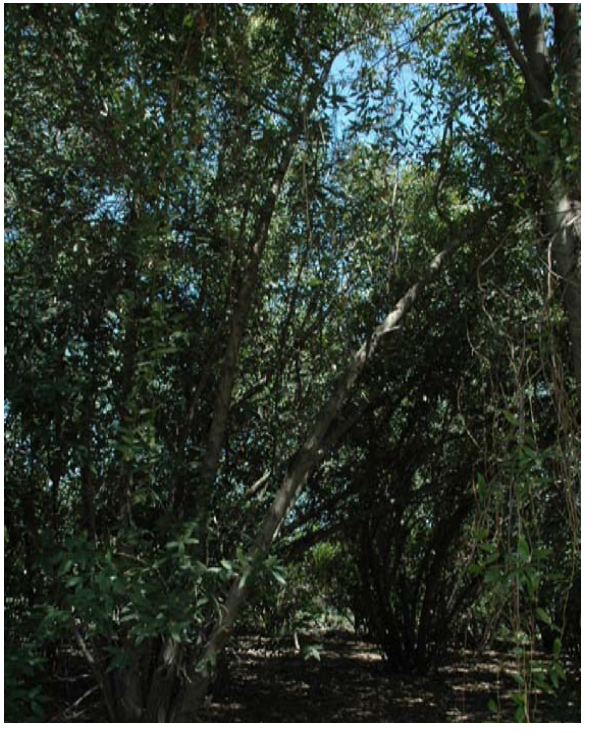
***25. PARKINSONIA ACULEATA***
**PALO VERDE TREE**

***26. PISTACIA CHINESIS***
**CHINESE PISTACHE**

RECOMMENDED LIST
## MEDIUM - SMALL TREES

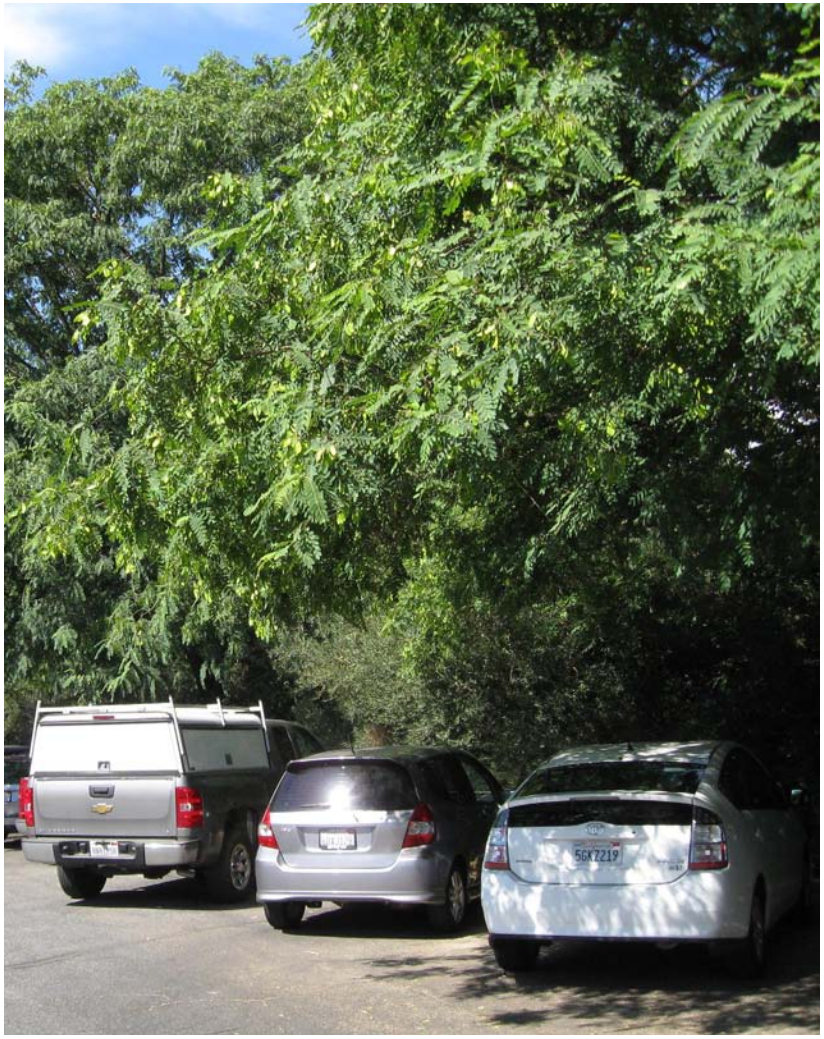
*27. RHUS LANCEA*
**AFICAN SUMAC**

*28. TABEBUIA IMPETINOSA*
**PINK TRUMPET TREE**



*29. UMBELLULARIA CALIFORNICA*
**CALIFORNIA LAUREL**

RECOMMENDED LIST
## MEDIUM - SMALL TREES



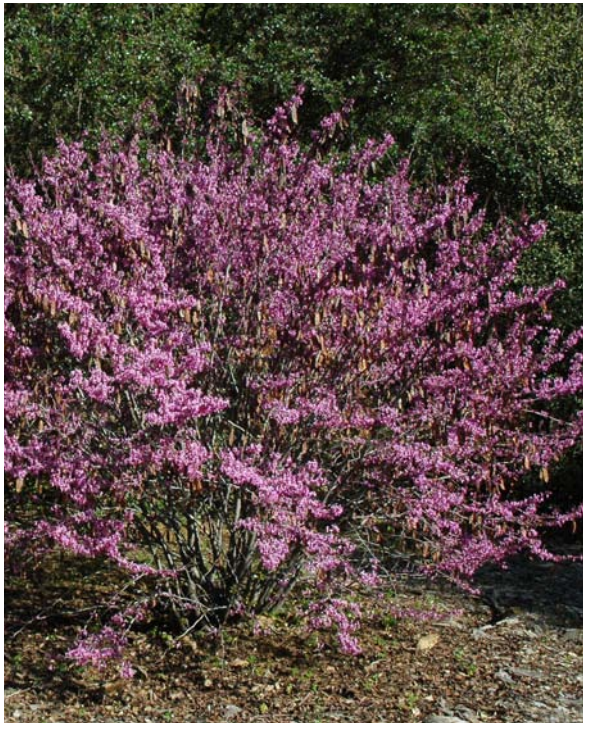
*Both the mid-sized African Sumac (above) and large Tipu Tree (pictured right) both provide meaningful shade canopies in parkling lot situations, depending on the desired effect.*

*Layered planting comprised of native Sycamore and Redbud, Peer City Sierra Madre.*

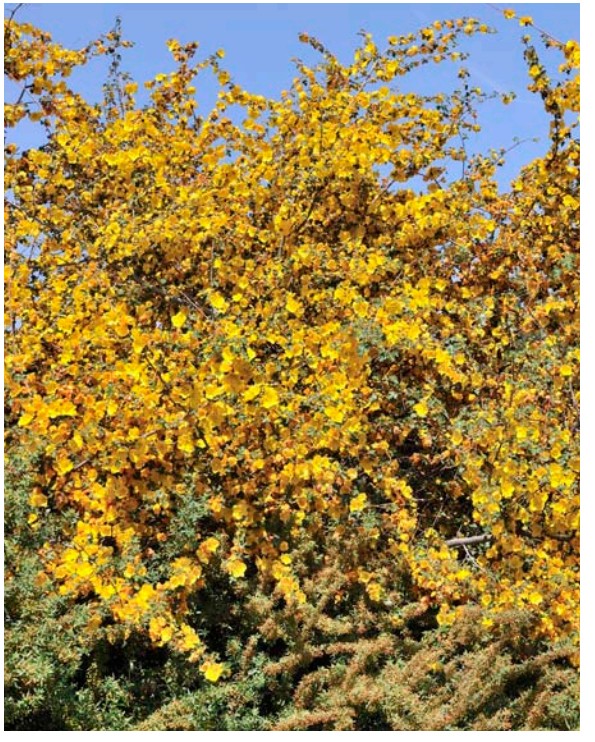
## NATIVE SHRUBS

| | DESCRIPTION | | | | | | PLANTING REQUIREMENTS | | | | | | SUITABLE AREAS | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| **TABLE 3 - 3 RECOMMENDED LIST - SUBSET** | *CALIFORNIA NATIVE* | **EVERGREEN OR DECIDOUS** | **LIFESPAN (IN YEARS)** | **GROWTH RATE : FAST, MODERATE, SLOW** | **CANOPY HEIGHT / FEET** | **CANOPY WIDTH / FEET** | **WATER USE: HIGH, MODERATE, LOW** | **SPACING (BETWEEN TREES)** | ONGOING INRRIGATION REQUIRED | DROUGHT TOLERANT ONCE ESTABLISHED | **RESIDES BELOW UTLITY LINES** | **MAY BE PRUNED AROUND UTLITY LINES** | **MAINTENANCE ISSUES AND/ OR SPECIAL CONSIDERATIONS** **ALL SELECTIONS (EXCEPT THE WESTERN REDBUD) GENERALLY ACQUIRE THE SCALE OF LARGE SHRUBS, BUT OVER TIME MAY ATTAIN MORE TREE-LIKE PROPORTIONS.* | **FREEWAYS** | **MAJOR ARTERIALS, MEDIANS** | **PARKING LOTS** | **CIVIC, PARKS, SCHOOLS** | **NEIGHBORHOOD STREETS** |
| *30. AESCULUS CALIFORNICA* **CALIFORNIA BUCKEYE** | | D | 20-60 | M | 15'-45' | 30'-60' | M | 25'-30' | ✓ | ✓ | ✓ | | Use where its striking sculptural form can be showcased. Showy flowers attract hummingbirds. | ✓ | | | ✓ | |
| *31. CERCIS OCCIDENTALIS* **WESTERN REDBUD** | | D | 30 | S | 6'-18' | 6'-10' | M | 10' | ✓ | ✓ | ✓ | | Usually multi-trunked. Provides year-round interest. Responds well to annual pruning, performed while dormant. | ✓ | | | ✓ | |
| *32. FREMONTODENDRON 'S. G.'* **SAN GABRIEL FLANNEL BUSH** | | E | 20 - 25 | F | 25' | 20' | L | 10'-20' | | ✓ | ✓ | | Showy although persistent flowers. Foliage is extremely irritating to skin. Shallow rooted. Easily killed by overwatering. | ✓ | | | ✓ | |
| *33. GARRYA 'JAMES ROOF'* **J. R. COAST SILK-TASSEL** | | E | 30 | M | 8'-12' | 8'-12' | L | 10'-20' | | ✓ | ✓ | | The name refers to the pendulous catkins which appear in winter. Prune annually to remove dead foliage. | ✓ | | | ✓ | |
| *34. HETEROMELES ARBUTIFOLIA* **TOYON** | | E | 60+ | M | 6'-10' | 6'-10' | M | 15'-20 | ✓ | | ✓ | | Tolerates drought but looks better if watered. Effective as informal hedges, screens or as specimen shrubs. | ✓ | | | ✓ | |
| *35. SAMBUCUS MEXICANA* **WESTERN ELDERBERRY** | | D | 60+ | F | 10'-30' | 8'-20' | M | 15'-20' | ✓ | ✓ | | ✓ | Drought tolerant, but looks better if given moderate summer water. Great habitat plant, especially for birds. | ✓ | | | ✓ | |

***30. AESCULUS CALIFORNICA***



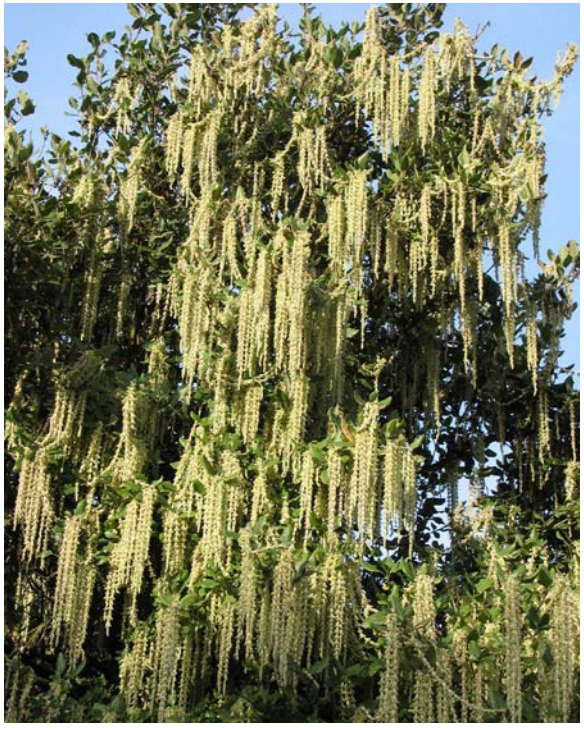
***31. CERCIS OCCIDENTALIS***



***32. FREMONTODENDRON 'SAN GABRIEL'***

RECOMMENDED LIST

## CALIFORNIA NATIVE SHRUBS/ SHRUB-LIKE TREES



***34. GARRYA ELIPTICA 'JAMES ROOF'***
**J. R. COAST SILK-TASSEL**

***35. HETEROMELES ARBUTIFOLIA***
**TOYON**

***36. SAMBUCUS MEXICANA***
**WESTERN ELDERBERRY**

RECOMMENDED LIST
## CALIFORNIA NATIVE SHRUBS/ SHRUB-LIKE TREES

***36. APRICOT 'BLENHEIM'***
***37. CITRUS MEYER LEMON***
***38. MACADAMIA 'BEAUMONT'***
***39. PEACH 'LOVELL'***
***40. POMEGRANATE 'WONDERFUL'***

RECOMMENDED LIST
**URBAN AGRICULTURE SELECTIONS**

| TABLE 3 - 4 RECOMMENDED LIST - SUBSET | EVERGREEN OR DECIDOUS | PRODUCTIVE LIFESPAN (IN YEARS) | GROWTH RATE : FAST, MODERATE, SLOW | CANOPY HEIGHT / FEET | CANOPY WIDTH / FEET | WATER USE: HIGH, MODERATE, LOW | MAINTENANCE ISSUES AND/ OR SPECIAL CONSIDERATIONS *SELECTIONS AND SPECIFIC VARIETIES WERE CHOSEN BASED ON THEIR VIABILITY AND/ OR HISTORICAL PRECEDENT FOR SUNSET ZONE 20. ALL ARE OF COMPATIBLE SCALE AND WATER USE.* |
|---|---|---|---|---|---|---|---|
| *36. APRICOT 'BLENHEIM'* **BLENHEIM APRICOT** | D | 8 - 15 | M | 15'-20' | 15'-20' | H | Prune into a vase shape to improve air flow sunlight exposure, during dry summer days instead of in winter when the chance of bacterial infection increases. Up until harvest, water once a week, then twice a week during the fruiting period. Apply fertilizer in late winter and a second time during fruiting. |
| *37. CITRUS VARIETIES* **BLOOD ORANGE LEMON 'IMPROVED MEYER'** | E | 50+ | M | 20'-25' | 20'-25' | H | Keep soil moist but not wet. Ensure drainage. Citrus are heavy feeders and should be fertilized once a week in the summer and every two weeks in the spring and fall. Use a fertilizer that includes iron, manganese and zinc. Wilted leaves indicate too little watering; yellowing leaves can indicate lack of fertilizer or overwatering. |
| *38. MACADAMIA 'BEAUMONT'* **BEAUMONT MACADAMIA** | E | 60 | M | 30'-40' | 20'-35' | H | Protect from strong winds; roots are shallow. Ensure soil has good drainage. Requires 3-5 years before it will start to produce, but once tree has matured it will yield up to 150 lbs of nuts per year. Plant in fall to avoid stress and moisture loss, in deep, rich soil. Lightly fertilize 2x a year. Weak-wooded, so prune to fortify structure. |
| *39. PEACH 'LOVELL'* **LOVELL PEACH TREE** | D | 15 - 20 | M | 25' | 25' | H | Prune annually to encourage fruiting throughout the tree. Requires regular water during fruit development, adequate summer watering, deep well-drained soils, high nitrogen fertility, and pest control sprays to prevent peach leaf curl and brown rot. To reduce strees and improve crop, emove some fruit when it reaches 1" across. |
| *40. POMEGRANATE 'WONDERFUL'* **WONDERFUL VARIETY POMEGRANATE** | D | 60+ | M | 15'-20' | 15'-20' | H | Plant 18'-20' apart to ensure trees receive adequate sunlight and air flow. Can withstand long periods of drought although not much fruit is produced under these conditions. Irrigate with about the same amount of water and frequency of application as citrus. Adequate soil moisture must be maintained throughout the growing season, particularly in late summer and early fall. Mature trees require from ½-1 pound of nitrogen per tree per year, which may be applied once in fall or winter or divided into two applications. |

## CITYWIDE TARGETS FOR FOREST EXPANSION

Setting targets for expansion of the community forest establishes a benchmark for measuring the growth of the community forest over time. The percentage of the City right-of-way covered by forest canopy is a good measure of community forest extent and value, and serves as the basis for the planting targets established by this Plan. Canopy coverage goals established by this Plan are to reach coverage of 15-percent within the public right-of-way. This is equivalent to tripling the extent of the 2010 forest.

Since the amount of canopy cover provided by a tree varies depending upon size, species, and health, it is difficult to create clear road maps for meeting targets based upon canopy coverage alone. In order to provide clear planting goals that can inspire and bring together community members, City staff and other stakeholders, canopy coverage targets have been translated into tree planting targets based upon the probable coverage that they will provide, as shown in Figure 3-1.

### How Targets Were Established

Canopy coverage targets were developed for the City based on American Forests[1] recommended targets for the Southwest and Dry West, as well as consideration of El Monte's existing canopy coverage and budgetary constraints. Further discussion of necessary budget is provided in Chapter 8, Implementation.

Research conducted by American Forests recommends an overall average canopy coverage of 25-percent as appropriate for urban areas in the Southwest and Dry West, based on recommended coverage for specific land uses of 35-percent for suburban residential, 18-percent for urban residential zones, and 9-percent for central business districts. Unlike the areas covered by these recommended targets, El Monte's community forest applies only to the public right-of-way and therefore does not include planting space in yards, schools and other areas not maintained by the City.

A target of 15-percent was established as adequate for addressing all of the areas identified as "community forest" in the General Plan Update and building the community forest within parks and along the Emerald Necklace. While this target is lower than American Forests recommendation for citywide coverage, it is comparable to recommended targets for urban residential areas and represents an ambitious increase to the existing forest.

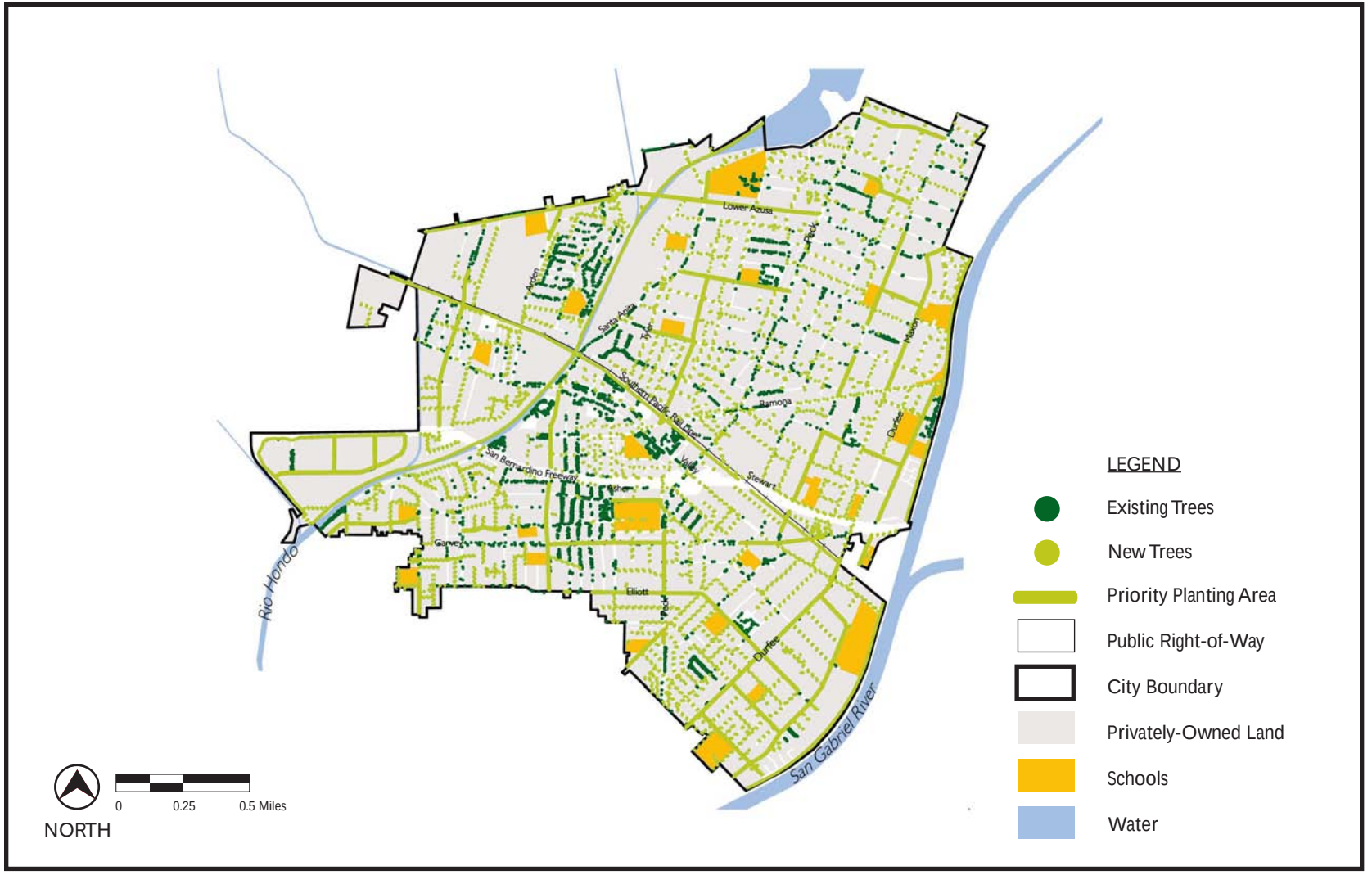
The tree planting target associated with the 15-percent canopy coverage target assumed that 0.5 percent of the community forest would need to be replaced each year. This is equivalent to 41 trees per year on average, considering that the forest will grow in size each year. The planting target also assumed that each tree would provide an average of 690 square-feet of cover. This figure is based on the average coverage provided by existing trees. This figure is based on the average cover provided by existing trees.

### Priority Areas for Forest Growth

The El Monte General Plan Update identifies specific corridors as "community forests" and "greenways." Many of the areas designated as community forest have little to no forest coverage. If planted, these corridors could serve as beautiful, shaded connections between the City's parks, schools and neighborhoods. In addition to these corridors, the General Plan Update describes linear parks along the Rio Hondo Channel and the San Gabriel River.

[1]American Forests is a nonprofit conservation organization that is recognized for their pioneering work in the science and practice of urban forestry.

Figure 3-1 COMMUNITY FORESTRY VISION 2035




This map illustrates the 2035 vision for 15% canopy coverage in the public right of way. Locations of existing trees are based on info gathered from the community survey. Locations of new trees are conceptual based on priority planting areas.

Plantings along these corridors would improve walkability and connections within the City, while contributing to the greater Emerald Necklace vision. These areas should be prioritized for new plantings within urban forest.

### Citywide Right-of-Way Target

This management plan aims to increase the City's canopy coverage from 5-percent to 15-percent by 2035. This is equivalent to adding an additional 8,012 trees to the community forest to reach a total of 12,004 trees, tripling the current number of trees. Reaching this target will also require that when existing trees are removed, they are replaced by a new tree. Currently, annual benefits of the community forest are estimated to be nearly double the annual cost of the forest. As the forest expands, the benefits of the forest will only increase and the cost of maintaining each tree will begin to decrease due to appropriate planting and maintenance practices. Generally speaking, tripling the community forest will, at a minimum, triple the value of the forest. Based on current forest value, it is anticipated that reaching the 2035 target will result in a benefit-cost ratio of at least 6:1. In 2010 dollars, this would be equivalent to a net benefit of approximately $1.7 million.

### Neighborhood Right-of-Way Targets

The City's seven neighborhoods provide manageable zones for implementation of the management plan, and therefore specific planting targets are identified for each neighborhood. Setting specific targets for each zone promotes community involvement at the neighborhood scale and ensures that the benefits of the urban forest are distributed relatively evenly across the City. The canopy coverage target for each neighborhood varies slightly depending upon the amount of priority planting areas within the neighborhood, and the existing coverage within those areas. Canopy coverage targets range between 9-percent and 16-percent. It is anticipated that the priority planting areas will be planted by 2035, at the sunset of this plan. At this time, new planting targets should be considered at the neighborhood scale.

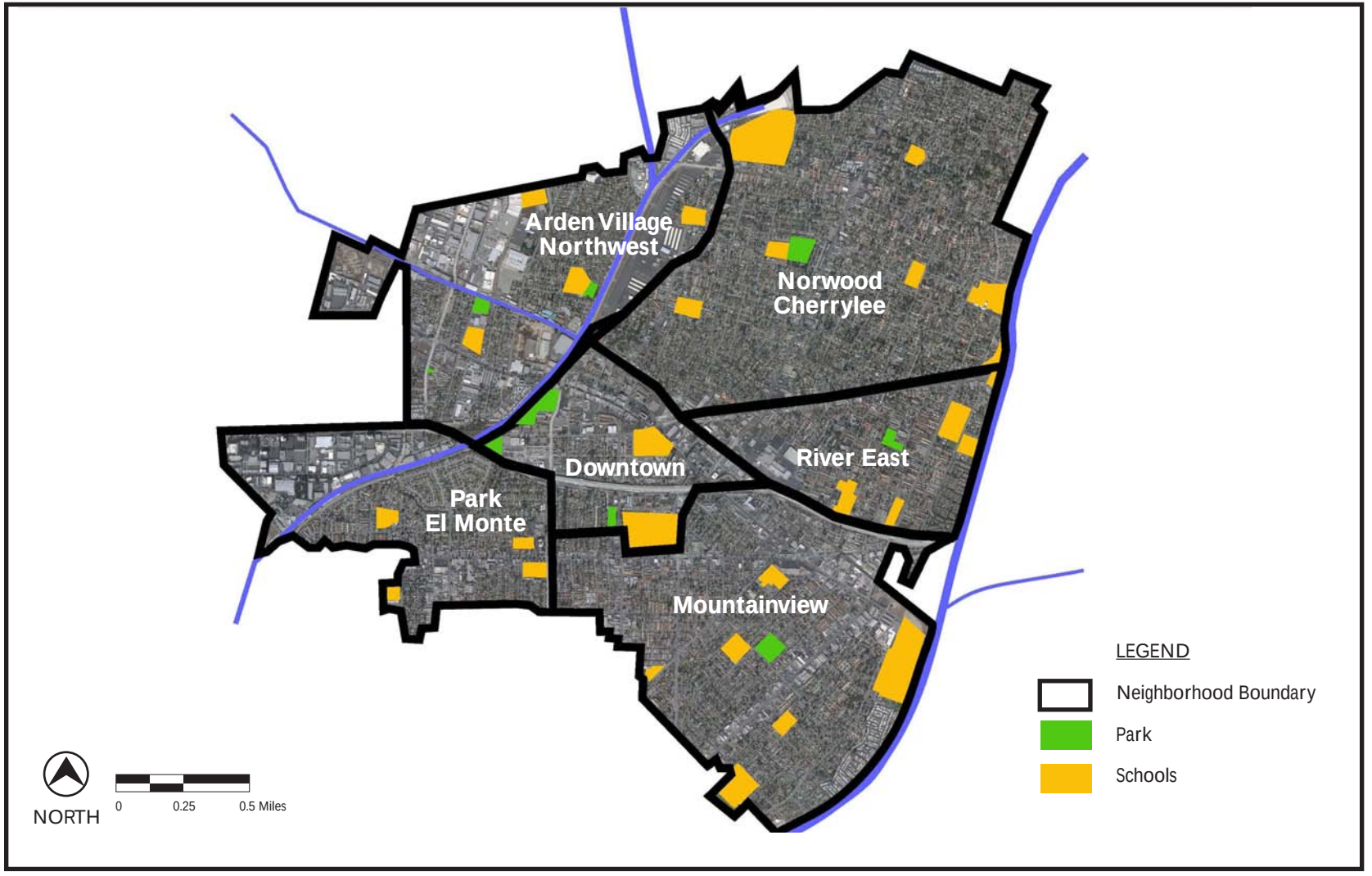
### Beyond the Public Right-of-Way

The inventory presented in this Plan only includes city-owned trees, and therefore does not assess canopy coverage for the City as a whole (including privately owned property). However, aerial photography and the low percentage of canopy cover in public right-of-way suggests that canopy coverage is low across the City. Planting additional trees on privately owned land will be necessary to address overall canopy coverage. Although the city of El Monte plans on attaining between 15% to 18% canopy coverage under the public right-of-way by 2035, the target for combined public and private lands should be greater. American Forests recommends a 25 percent total coverage for areas for in the southwest and dry west. Community members can work towards this greater vision by planting trees on private lands, including schools and homes.

## NEIGHBORHOOD VISION

The recommended tree list and canopy targets for El Monte will be implemented largely at the neighborhood scale. The following pages include a number of tables that describe the existing conditions of each neighborhood and a vision for building the character and expanding the forest in each neighborhood. Neighborhood boundaries are shown in Figure 3-2.

Figure 3-2 CITY NEIGHBORHOODS



## Neighborhood Streets

While large-stature trees can create continuous canopies over residential and commercial streets and provide notable environmental benefits, smaller stature trees are sometimes better suited to cultural preferences and/or physical site constraints. For this reason, the list of recommended neighborhood street trees includes a variety of trees that are suited to urban conditions. Neighborhood trees are listed in Table 3-20 at the end of this chapter. It is recommended that oak trees be prioritized for oak-appropriate planting sites, and that these trees be accented by other trees according to the neighborhood. By emphasizing specific trees in each neighborhood, the character of each neighborhood will become evident and an understanding of place will grow.

Trees should be selected for residential streets with consideration to lot size, housing types, and the width and orientation of the street, in order to optimize/minimize shade, calm traffic and to create a more walkable neighborhood. Trees should be watershed sensitive, drought tolerant, and act as a transition between disparate housing types and landscaping. Plantings should help residents connect to their context within a larger watershed. Depending on the scale of the neighborhood, these trees should reduce energy demand for cooling and heating through strategic planting. Trees that should be emphasized in each of the city's six neighborhoods are identified in the Neighborhood Vision section of this chapter.

## Transitioning the Forest

Transitioning from the current forest to the future forest will be an incremental process involving the building of a new forest and the phasing out of another.

This process is described as follows:

a. Preparing for the Future Forest

Native Oaks and Sycamore Trees are emphasized in the Recommended Tree List. However, these trees should only be planted where adequate space is provided and if site-specific conditions allow for the trees to thrive. Creating appropriate conditions for these trees should be considered for all potential planting areas. In general, providing greater room for root growth is important to these native trees. Landscaping that complements these trees should also be planted where possible. For instance, lawns will generally need to be removed in proximity to areas where oak trees are to be planted.

b. Transitioning Existing Trees

Throughout the city, there are existing trees that do support the vision for the future community forest. In most cases, existing trees that are not included in the recommended tree list should be cared for and retained in optimal health. Since existing trees are generally well established and provide numerous benefits, tree removal should not take place until necessary (see Chapter 6 for more information on tree removal). However, whenever a tree is removed, it should be replaced with trees from the recommended tree list.

Unfortunately, there are certain cases when existing trees are likely to become costly and/or hazardous or when it is advantageous to remove an existing tree in order to enhance the character of the City.

The following trees fall into this category and should be prioritized for removal:

- Liquidambar trees are associated with numerous problems related to root growth, conflicts with utility lines, and inappropriate topping. These trees are in poor condition, and often are hazardous in structure.
- Elm, Ficus, and Carrotwood trees can be actively removed in locations where they are causing cost issues for the City due to topping or other poor maintenance practices.
- Olive trees along Valley Mall Boulevard are in poor condition due to years of inappropriate pruning. Replacement of these trees would reduce long term maintenance costs while providing opportunity to enhance this important corridor. It is recommended that trees not be replaced all at once, as it is important that this corridor retains its character during the transition.
- Palms and Eucalyptus trees that are small and can be transplanted are good candidates for removal. These trees were intentionally excluded from the Recommended Tree List because they do not offer significant benefits to the City nor do they add to the desired character of the City. These trees include all Palm trees and Eucalyptus trees.

Any tree that is removed should be immediately replaced with a tree from the recommended tree list, unless the planting site is not appropriate for planting. See Chapter 6 for appropriate planting sites.

*An awesome native oak canopy.*

## CITYWIDE VISION

From the Recommended Tree List, appropriate tree selections are proposed in the following sections for the different urban conditions found within El Monte's jurisdiction, including arterials, neighborhood streets, civic spaces, freeways and parking lots. It should be noted that the design concepts identified for these public spaces are applicable to private sector sites throughout the City as well, and it is therefore hoped that property owners and residents will be inspired by the model set forth by the City to incorporate these concepts into their own projects.

### Arterials

For many visitors coming to El Monte, arterial streets are the only part of the City they will experience. For residents and commuters, arterials form the backbone that will meet their daily shopping, eating, and traveling needs. In addition to being visually prominent, arterials are generally wide streets that can be significantly enhanced by shade, color, and improved stormwater drains through a well-planned urban forest. The priority for the arterial tree canopy is to create a network of unifying greenways throughout the city, consistent with the vision established by the General Plan. The choice of trees provides an appropriate canopy to increase walkability, improve air quality, provide shade and enhance the quality of experience for people in cars. The street trees will transform the city to a thriving neighborhood that embraces its natural resources.

◆ Because historically the region was defined by oak woodland communities, oak trees are recommended as the dominant plant for arterials, with other key woodland members like sycamore dispersed throughout. Smaller trees and accent trees can be used in place of the oaks for sites that have greater spatial constraints.

◆ Visual access to commercial business signage along arterials requires thoughtful coordination between the views to signs from vehicles coming from both directions, what available planting locations exist, and the education and cooperation of the business owners. The trees selected for the arterials possess the structural criteria that meet and respond well to raise pruning techniques. Therefore, early train pruning plays a significant role in the balance between infrastructure and people.

◆ When a planting site is not appropriate for the native sycamore, London Plane Trees (Platanus x acerifolia) may be used as a substitute.

**TABLE 3-5 El Monte Oak Woodland Palette for Arterials**

| *Scientific Name* | Common Name |
|---|---|
| *Quercus agrifolia* | Coast live oak |
| *Quercus engelmannii* | Engelmann oak |
| *Quercus lobata* | Valley Oak |
| *Quercus suber* | Cork Oak |
| *Platanus racemosa* | California Sycamore |

◆When appropriate and as space permits, use California natives from the understory palette (table 3 -3) in planting areas along arterials.

**TABLE 3-6 El Monte Oak Woodland Understory Palette**

| *Scientific Name* | Common Name |
|---|---|
| *Cercis canadensis* | Eastern Redbud |
| *Cercis occidentalis* | Western Redbud |
| *Fremontodendron californica S.G.* | San Gabriel Flannelbush |

## Civic Spaces, Parks, and Schools

Civic spaces, parks, and schools provide opportunities to plant trees that require more space, and to further define and unify the City's character. The canopy can reduce energy demand for cooling and heating through strategic planting near buildings. The recommended tree list for these areas emphasizes plants that are native to El Monte and the surrounding region, demonstrating watershed sensitive landscaping practices to conserve water and to protect water quality. Designed specifically for school areas, the intent is to protect children's health by providing shade canopies and to further reduce ambient temperatures. This will improve conditions of playgrounds and encourage safe physical activity. The school tree planting provides the opportunity to connect children to the ecology and watershed they live in, as well as its natural and cultural history. Recommended native plants for these areas include Oak (Quercus species), Sycamore (Platanus racemosa), California Bay (Umbellularia californica) and Buckeye (Aesculus californica). It is recommended that oak trees be prioritized for oak-appropriate planting sites, and that these trees be accented by other trees according to the neighborhood.

**TABLE 3-7 El Monte Parks & Municipal Extended Palette**

| *Scientific Name* | Common Name |
|---|---|
| *Aesculus californica* | California Buckeye |
| *Juglans californica* | California Walnut |
| *Platanus racemosa* | California Sycamore |
| *Pinus coulteri* | Coulter Pine |
| *Quercus agrifolia* | Coast live oak |
| *Quercus engelmannii* | Engelmann oak |
| *Quercus lobata* | Valley Oak |
| *Quercus suber* | Cork Oak |
| *Sambucus Mexicana* | Western Elderberry |
| *Cercis canadensis* | Eastern Redbud |
| *Cercis occidentalis* | Western Redbud |
| *Fremontodendron 'San Gabriel'* | San Gabriel Flannel Bush |
| *Heteromeles arbutifolia* | Toyon |

Trees should be selected for residential streets with consideration to lot size, housing types, and the width and orientation of the street, in order to optimize/minimize shade, calm traffic and to create a more walkable neighborhood. Trees should be watershed sensitive, drought tolerant, and act as a transition between disparate housing types and landscaping. Plantings should help residents connect to their context within a larger watershed. Depending on the scale of the neighborhood, these trees should reduce energy demand for cooling and heating through strategic planting. Trees to be emphasized in each of the city's seven neighborhoods are identified in the Neighborhood Vision section of this chapter.

## Freeways

The I-10 freeway runs east to west through El Monte crossing over the Rio Hondo and San Gabriel Rivers. Trees planted along the freeway corridor can offer a variety of benefits to the city. From the freeway, trees can visually illustrate the city boundaries and demonstrate its ability to incorporate the built environment to its natural surroundings. For surrounding residential and commercial properties, trees can offer a visual and psychological separation from the freeways as well as providing environmental benefits such as reducing air pollution. Public health of residents living near the freeway was a primary concern in identifying species to be planted in these areas, as a result, trees with the greatest ability to protect residents from the effects of carbon and pollution were selected. In addition, aesthetic characteristics were taken into consideration in order to enhance the city's unique character. The resulting tree list is dominated by plants reminiscent of the City's native communities, including Oak, Sycamore, and Bay Trees, and are accented by native plants such as Western Redbud. Juglans species, Cork Oak, and California Bay are also identified by i-Species as having strong potential to sequester carbon dioxide and reduce VOCs in the atmosphere. Recommended plants for freeways are listed in Table 3-5.

**TABLE 3-8 El Monte Freeway Palette**

| *Scientific Name* | Common Name |
|---|---|
| *Aesculus californica* | California Buckeye |
| *Cercis occidentalis* | Western Redbud |
| *Gingko biloba* | Maidenhair Fern |
| *Juglans californica* | California Walnut |
| *Platanus racemosa* | California Sycamore |
| *Pinus coulteri* | Coulter Pine |
| *Quercus agrifolia* | Coast live oak |
| *Quercus engelmannii* | Engelmann oak |
| *Quercus lobata* | Valley Oak |
| *Quercus suber* | Cork Oak |
| *Sambucus Mexicana* | Western Elderberry |
| *Tipuana tipu* | Tipu Tree |

## Parking Lots

Parking lot trees should create well shaded areas, reduce ambient temperature, help manage storm water and protect water quality. The canopy will improve the shopping experience for all, as well as attracting new shoppers to the area. Recommended parking lot trees include a variety of relatively low-maintenance trees that are suited for the various conditions found in parking lots, from wide drainage swales to constrained planters. Recommended trees for parking lots include Oak species and Sycamore as well as small native trees such as Western Redbud (cercis occidentalis) for accents and tall shade trees such as London Plane (Platanus acerifolia) when Sycamore are not appropriate, as listed in Table 3-6.

### TABLE 3-9 El Monte Parking Lot Palette

| *Scientific Name* | Common Name |
|---|---|
| *Chilopsis linearis* | Desert Willow |
| *Koereuteria bipinnata* | Chinese Flame Tree |
| *Parkinsonia aculeata* | Mexican Palo Verde |
| *Platanus racemosa* | California Sycamore |
| *Platanus x. acerifolia* | London Plane Tree |
| *Quercus agrifolia* | Coast live oak |
| *Quercus engelmannii* | Engelmann oak |
| *Quercus suber* | Cork Oak |
| *Tipuana tipu* | Tipu Tree |

*Mexican Palo Verde*

## RECOMMENDED TREES FOR ARDEN VILLAGE

Foliage and bloom *Tipuana tipu*

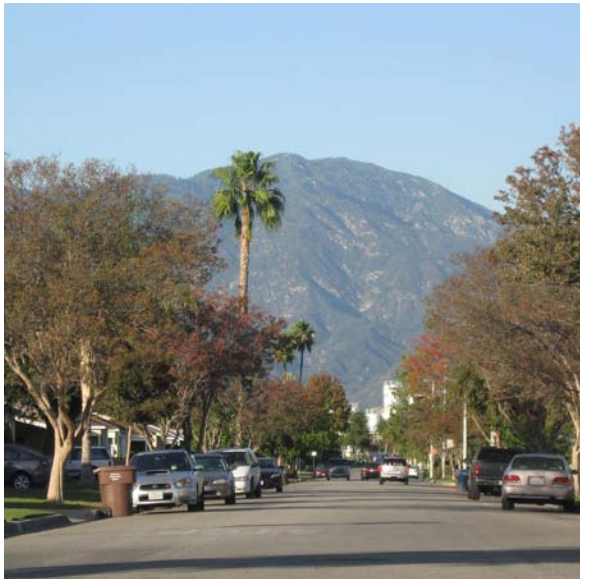
Mottled bark and foliage *Platanus racemosa*

Heart-shaped seasonal foliage *Cercis canadensis*

EXISTING CONDITION


Short yards without parkways are typical of the residential streets of Arden Village.

Trees that can tolerate lawn-level irrigation will be successful here, like these Cottonwood.



Seasonal foliage color adds interest, like these Crape Myrtle, which also have attractive bark.

Table 3 - 10 Existing Conditions: Arden Village Northwest

**Inventoried Forest**

***548 trees***

***4.34% canopy cover***

**Dominant Species**

Carrotwood, *Cupaniopsis anacardiodes*
Crape Myrtle, *Lagerstroemia indica*
London Plane Tree, *Platanus x. acerifolia*
Fig Tree, *Ficus species*

**Character and Condition**

Arden Village is Rio Hondo- adjacent and includes the El Monte Airport. The neighborhood consists of small uniform lots and traditional single-family homes. Generally, there are relatively small setbacks from the street, *incomplete and or no sidewalks* and inconsistent trees. Historically, the the site supported labor camps for agricultural industries.

Table 3 - 11 2035 Vision: Arden Village Northwest

**Forest Targets**

***1,637 trees (2,081 new)***

***16% canopy cover***

**Annual Planting Target**

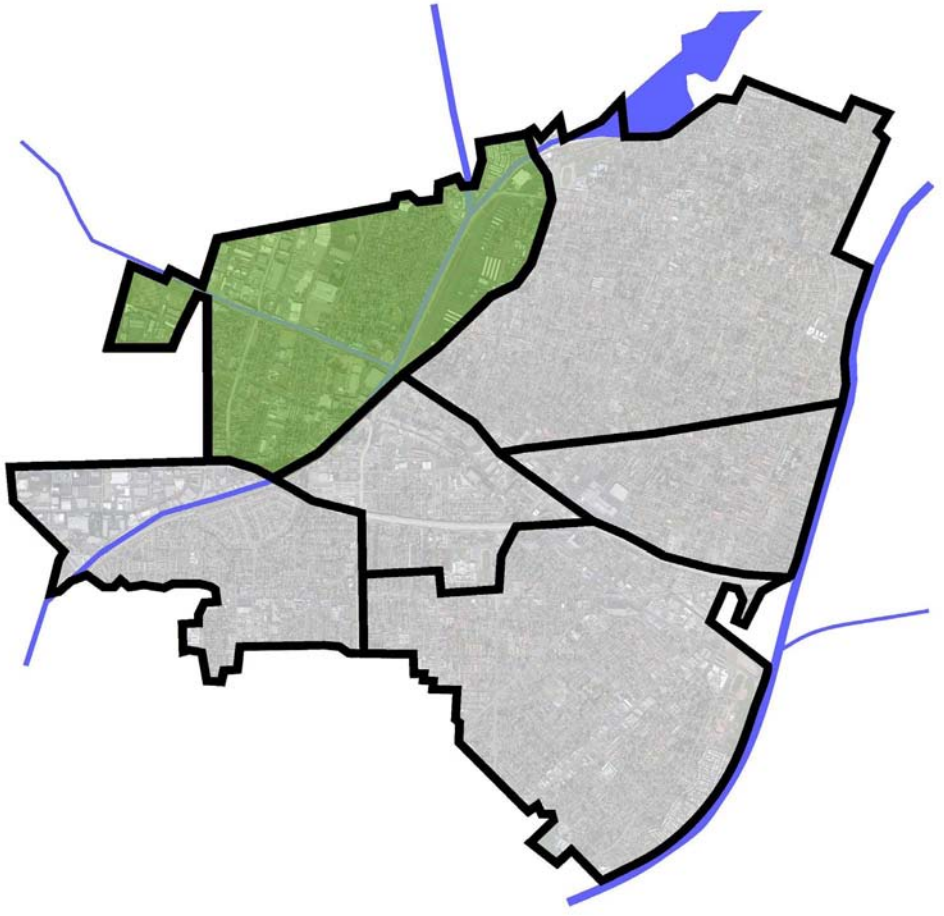
49 trees, including replacement of removed trees

**Planting Goals**

Much of Arden Village lies west of the Rio Hondo and currently supports numerous Sycamore and London Plane Trees *(Platanus species)*. Planting here should support the Platanus theme.

**Recommended Trees**

- Signature Tree: California Sycamore, *Platanus species*
- Tipu Tree, *Tipuana tipu*
- Eastern Redbud, *Cercis canadensis*



NORTH

0 0.25 0.5 Miles

**ARDEN VILLAGE NORTHWEST**

# RECOMMENDED TREES FOR NORWOOD CHERRYLEE

Broad, airy canopy *Quercus agrifolia*

Blue-green foliage *Quercus engelmannii*

Delicate blooms *Chianonanthus retusus*

EXISTING CONDITION

The wide streets typical of Norwood Cherrylee provide ample air space for large broad-canopied trees.

The correctly pruned canopies of these Camphor Trees clear vehicular circulation and provide filtered shade.

The incorrectly pruned canopy of this Camphor Tree has left an odd profile.

Table 3 - 12 Existing Conditions: Norwood Cherrylee

**Inventoried Forest**

***974 trees***

***5.21% canopy cover***

**Dominant Species**

Carrotwood, *Cupaniopsis anacardiodes*
Camphor, *Cinnamomum camphora*
Pine, *Pinus species*
Chinese Elm, *Ulmus parviflora*

**Character and Condition**

Norwood Cherrylee includes a mix of single-family homes and apartments Wide, manicured streets characterize the neighborhood. The area is distinguished by its equestrian and agricultural heritage. The neighborhood's forest is generally mature.

Table 3 - 13 2035 Vision: Norwood Cherrylee

**Forest Targets**

***3,055 trees (2,081 new)***

***15% canopy cover***

**Annual Planting Target**

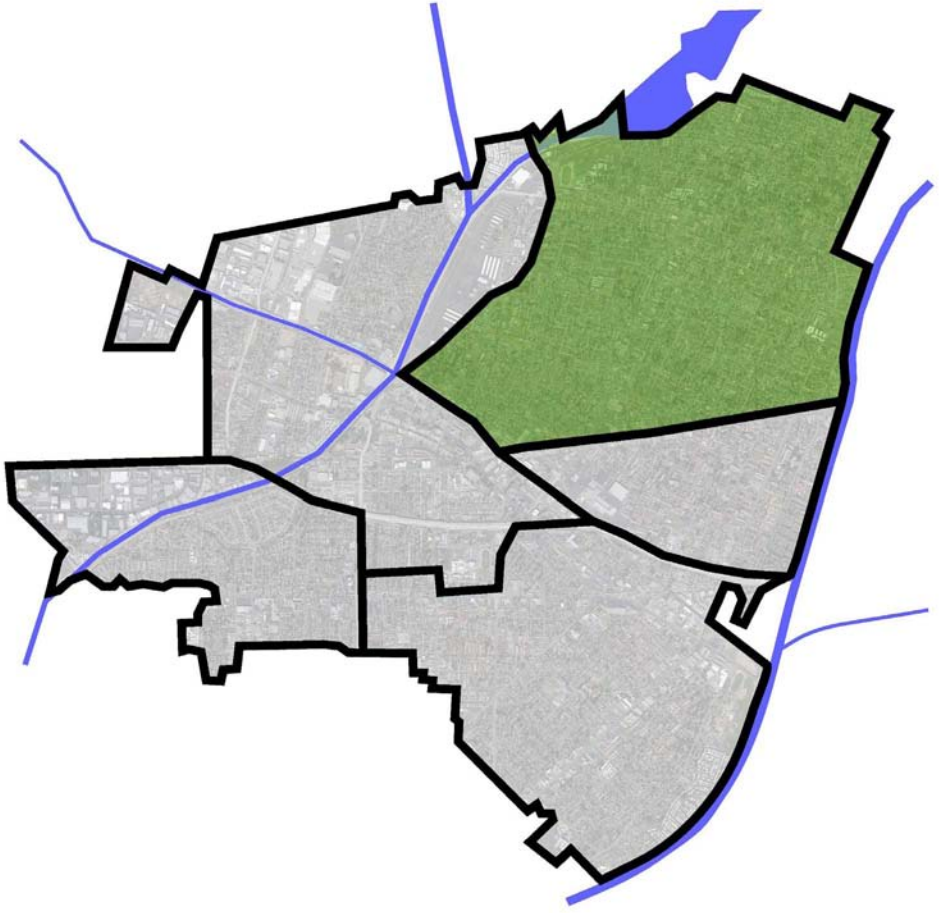
94 trees, including replacement of removed trees

**Planting Goals**

As Norwood Cherrylee has wide streets lined with sizeable mature trees, trees planted here should mesh seamlessly with the existing.

**Recommended Trees**

- Signature Tree: Oak trees, *Quercus species*
- Camphor Tree, *Cinnamomum camphora*
- Chinese Fringe Tree, *Chionanthus retusus*



NORTH

0 0.25 0.5 Miles

**NORWOOD CHERRYLEE**

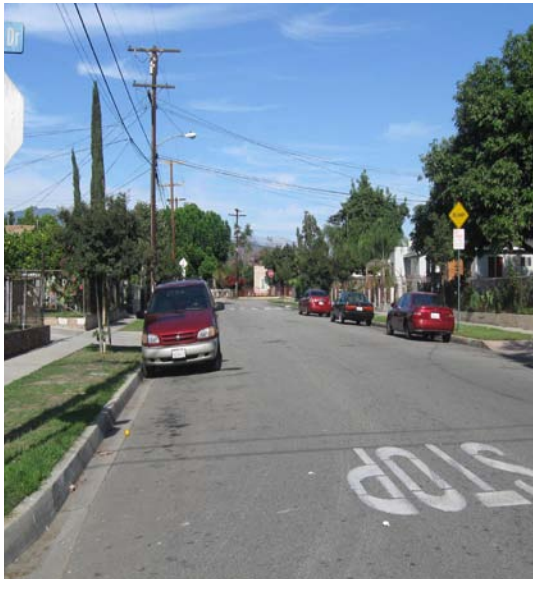
## RECOMMENDED TREES FOR RIVER EAST

Furrowed bark *Quercus suber*

Canopy *Tipuana tipu*

Colorful seasonal foliage, *Koereuteria bipinnata*

EXISTING CONDITION



Trees of River East generally have intact sidewalks and potential parkway planting.

Single family housing of River East is interspersed with these multi-family complexes.

Existing Chinese Flame Trees add seasonal color and interest.

Table 3 - 14 Existing Conditions: River East

**Inventoried Forest**

***195 trees***

***2.21% canopy cover***

**Dominant Species**

Sycamore, *Platanus racemosa*
Chinese Elm, *Ulmus parviflora*
Fig Tree, *Ficus species*

**Character and Condition**

The River East neighborhood is bordered by the San Gabriel to the east and Interstate 10 to the south. The area is primarily made up of multiple-family planned residential developments. The neighborhood is continuing to complete the transition to planned residential uses. The sidewalks are generally in good condition.

Table 3 - 15 2035 Vision: River East

**Forest Targets**

***898 trees (703 new)***

***13% canopy cover***

**Annual Planting Target**

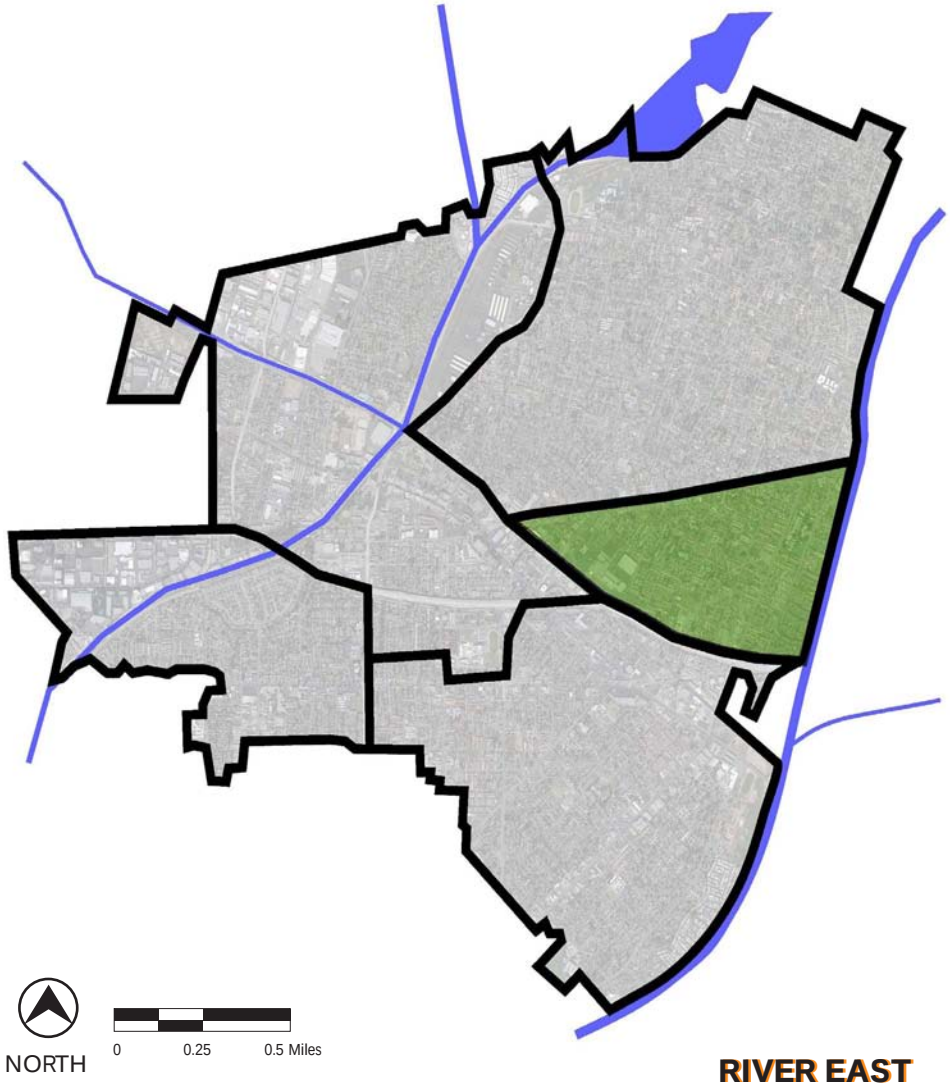
31 trees, including replacement of removed trees

**Planting Goals**

River East currently has very few trees, and includes a variety of housing types. Recommended trees to emphasize here are ones to soften the street.

**Recommended Trees**

- Signature Tree: Oak trees, *Quercus species*
- Chinese Flame Tree, *Koereuteria bipinnata*
- Tipu Tree, *Tipuana tipu*



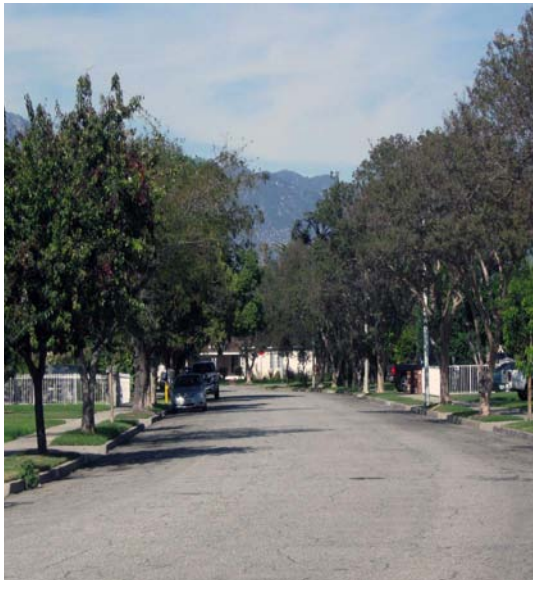
## RECOMMENDED TREES FOR MOUNTAIN VIEW

Foliage and seedpod *Platanus racemosa*

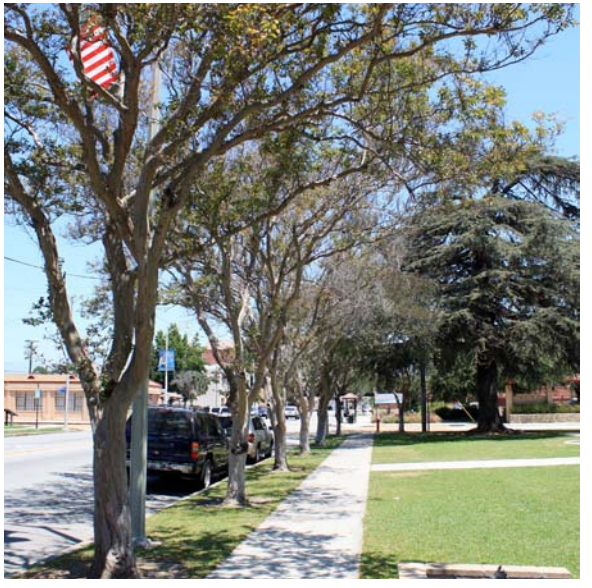
Canopy *Tabebuia impetignosa*

Canopy and mottled bark *Lagerstroemia indica*

EXISTING CONDITION



Fire blight is responsible for the persistent patches of brown leaves on El Monte's population of ornamental pear trees *(Pyrus calleryana).*



This Crepe Myrtle Allée is correctly climbed-up and pruned.

The dense canopies of these Crape Myrtle would benefit from structure pruning.

Table 3 - 16 Existing Conditions: Mountain View

**Inventoried Forest**

***589 trees***

***3.15% canopy cover***

**Dominant Species**

Crape Myrtle, *Lagerstroemia indica*
Carrotwood, *Cupaniopsis anacardiodes*
Fig Tree, *Ficus species*

**Character and Condition**

The Mountain View neighborhood, anchored by Mountain View Park and elementary school, is bordered by the San Babriel River. This neighborhood has one of the most diverse types and ranges of housing prices for single-family, multiple-family, mobile homes, and other housing. There are often small sidewalks or no sidewalk. Tree conditios are irregular.

Table 3 - 17 2035 Vision: Mountain View

**Forest Targets**

***2,925 trees (703 new)***

***15% canopy cover***

**Annual Planting Target**

102 trees, including replacement of removed trees

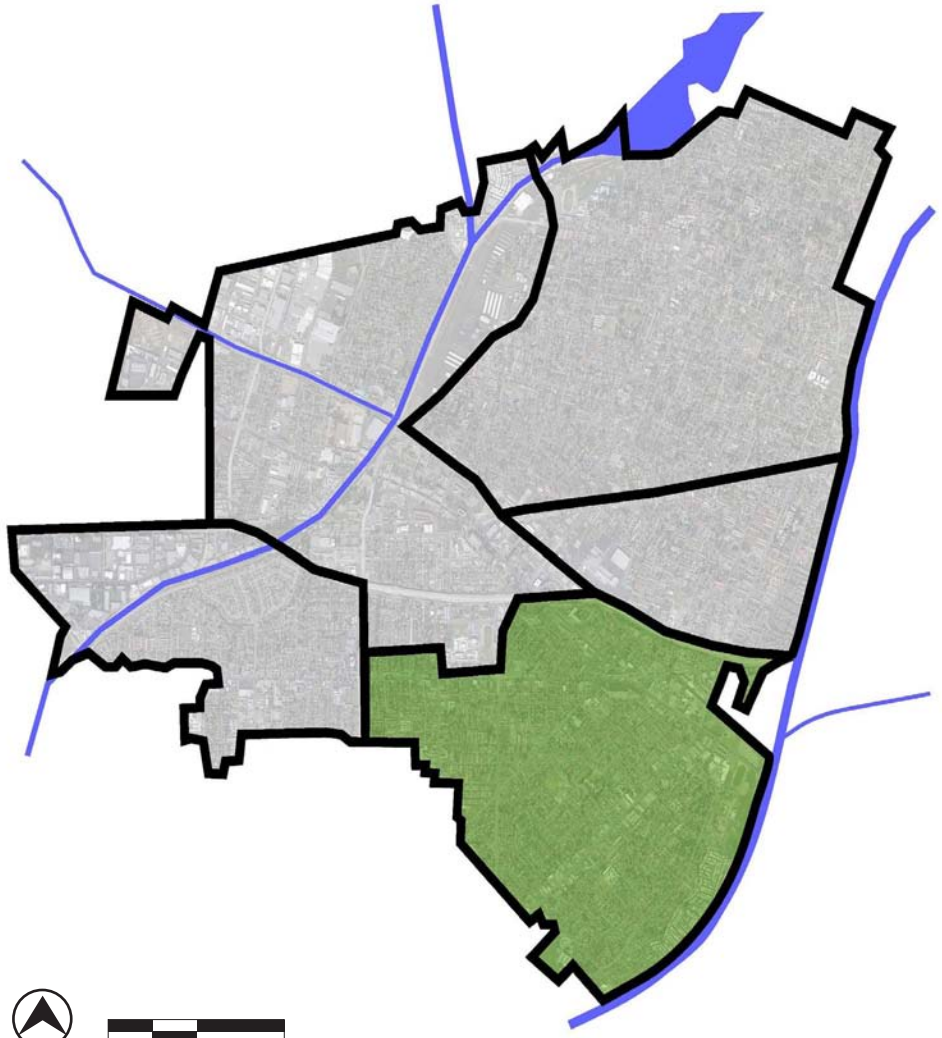
**Planting Goals**

Because this area already contains a wide range of species, care should be taken to simplfiy the palette.

**Recommended Trees**

Signature Tree: Oak trees, *Quercus species: agrifolia, engelmannii*

- California Sycamore, *Platanus racemosa*
- Pink Trumpet Tree, *Tabebuia impetiginosa*
- Crape Myrtle, *Lagerstroemia indica 'Natchez'*




**MOUNTAIN VIEW**

# RECOMMENDED TREES FOR PARK EL MONTE

Broad canopies *Quercus agrifolia*

Canopy *Cercis canadensis*

Autumn foliage *Gingko biloboa*

EXISTING CONDITION

The random-seeming tree palette of Park El Monte derives largely from private planting.

Only one side of this sidewalk-less street has trees.

Queen Palms provide little in the way of shade or carbon sequestration.

Table 3 - 18 Existing Conditions: Park El Monte

**Inventoried Forest**

***361 trees***

***3.41% canopy cover***

**Dominant Species**

Carrotwood, *Cupaniopsis anacardiodes*
Queen Palm, *Syagrus romanzoffiana*
Chinese Elm, *Ulmus parviflora*
Fig Tree, *Ficus species*

**Character and Condition**

Park El Monte, southeast of Flair Park and the Rio Hondo, is distinguished by wide curviliniear streets and single-family homes. The area is in need of housing rehabilitation and improvements. Sidewalks are inconsistent with some parkways and swaled curbs.

Table 3 - 19 2035 Vision: Park El Monte

**Forest Targets**

***1,386 trees (1,277 new)***

***16% canopy cover***

**Annual Planting Target**

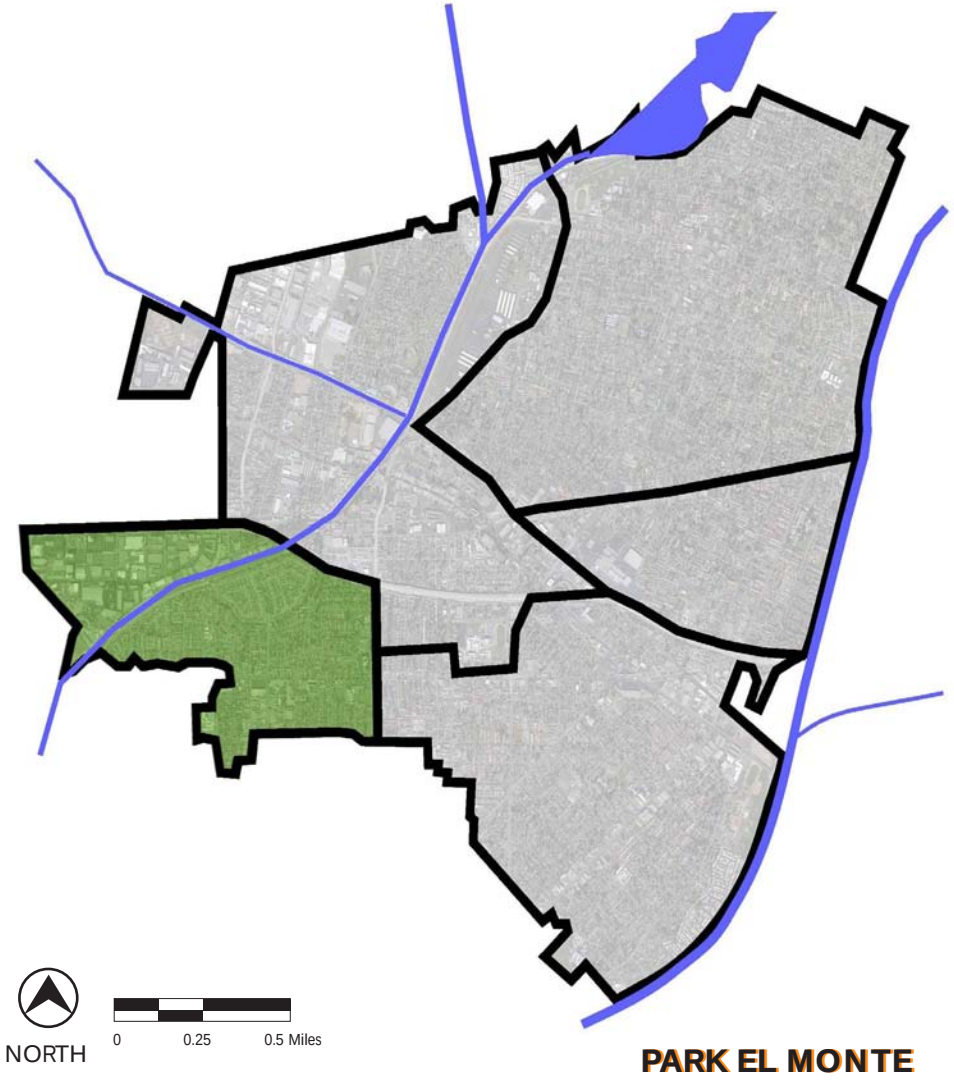
56 trees, including replacement of removed trees

**Planting Goals**

Street trees here historically have conflicted with underground infrastructure, e.g. water lines. Compatible trees are to be used in these challenging spaces.

**Recommended Trees**

- Signature Tree: Oak trees, *Quercus species*
- Maidenhair Tree, *Gingko biloba*
- Eastern Redbud, *Cercis occidentalis*




**PARK EL MONTE**

## RECOMMENDED TREES FOR MOUNTAIN VIEW

Groved grouping *Quercus lobata*

Canopy and bark *Arbutus marina*

Canopy *Gingko biloba*

EXISTING CONDITION

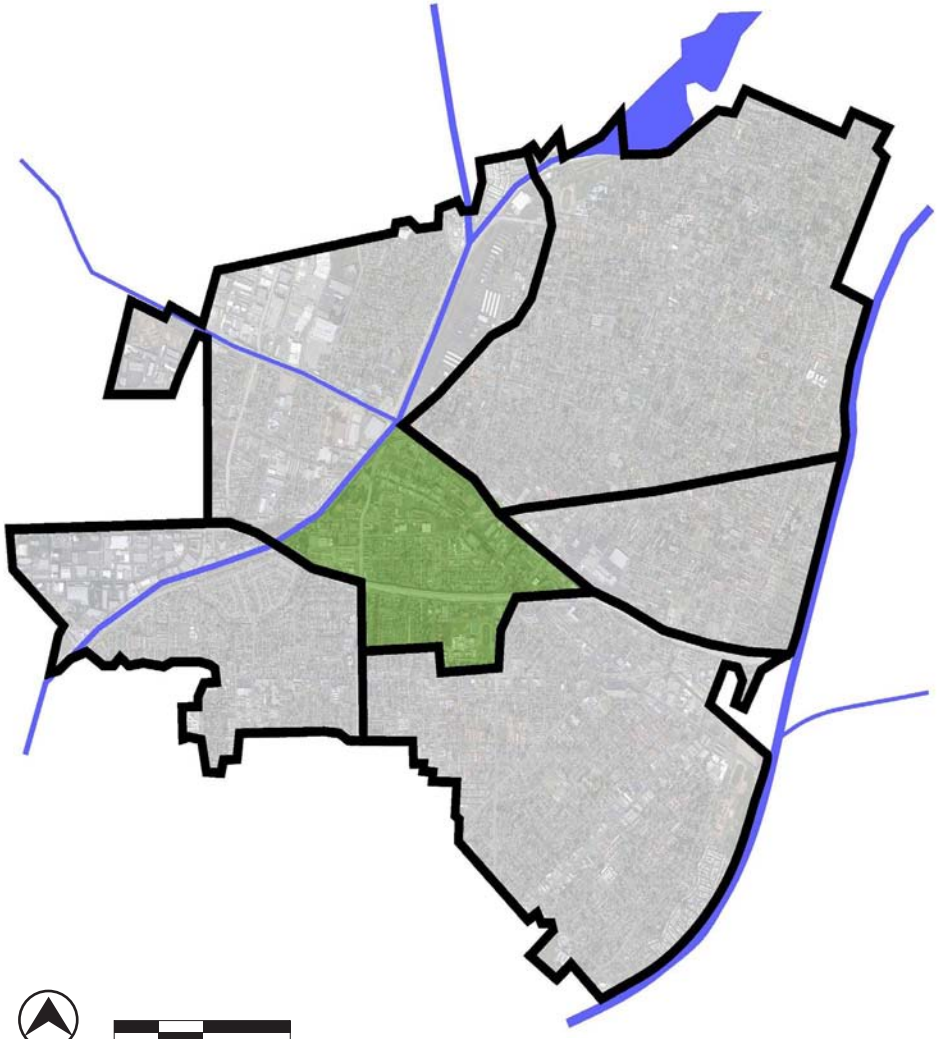
Overgrown Ficus and Canary Island Pines bear down on Valley Boulevard.

Significantly manicured planting along Valley Mall.

Sycamore and Ficus canopies colliding in front of City Hall.

| Table 3 - 20 Existing Conditions: Downtown El Monte |
|---|
| **Inventoried Forest**<br>***1,325 trees***<br>***10.89% canopy cover*** |
| **Dominant Species**<br>Sycamore, *Platanus racemosa*<br>Crape Myrtle, *Lagerstroemia indica*<br>Fig Tree, *Ficus species*<br>Pine Tree, *Pinus species*<br>Olive Tree, *Olea europaea* |
| **Character and Condition**<br>Downtown is a diverse area of single-family homes, high density residential and senior projects. Valley Mall, the centrally located retail shopping area is lined with olive trees whose health has been irreparably compromised by the topiary pruning they have received over the years. |

| Table 3 - 21 2035 Vision: Downtown El Monte |
|---|
| **Forest Targets**<br>***1,751 trees (1,277 new)***<br>***14% canopy cover*** |
| **Annual Planting Target**<br>25 trees, including replacement of removed trees |
| **Planting Goals**<br>The locus of El Monte should hearken to its native heritage as much as possible. Showcase indigenous trees like Englemann and Valley Oak. |
| **Recommended Trees**<br>• Signature Tree: Oak trees, *Quercus species*, *Sycamore species*<br>• Maidenhair Tree, *Gingko biloba*<br>• Tipu Tree, *Tipuana tipu*<br>• Arbutus Tree, *Arbutus marina* |




**DOWNTOWN EL MONTE**

# CHAPTER 4: COMMUNITY FOREST POLICIES

El Monte Speaks

*When appropriately managed, healthy watersheds equal ecological and social health. The Urban and Community Forest plays a role in all sort of that good. Ecological and social benefits are interlinked. There's value to having bird song and butterflies. The benefit of habitat is not exclusive to the critters that use the trees. We benefit too.*

*~Matt Anton, Staff Geologist,*
*LA San Gabriel Watershed Council*

The Urban and Community Forest policies of the City of El Monte should provide leadership and guidance for best practices for all other urban sites including retail business districts, corporate headquarters, mini-malls, big box stores and parking lots, homeowners associations, multi-family and single residential, utility companies and Caltrans.

A strong political framework is necessary to propel the Urban and Community Forest vision into action. This chapter provides proactive goals, objectives, and policies to guide management decisions and drive community forestry programming, as well as model ordinances which help to implement and enforce big-picture policies on a site-by-site and tree-by-tree level.

*Mature canopies enhance the nation's capitol.*


Parking lot with native Desert Willow and Palo Verde in Peer City Altadena

## GOALS, OBJECTIVES AND POLICIES

The goals, objectives and policies recommended in this section for the implementation of this Plan build upon the General Plan goals by providing specific guidance related to the Urban and Community Forest.

### Goal 1

*Establish and maintain an Urban and Community Forest will enhance social, economic, and environmental benefits throughout the city.*

### Objective

*Continue to develop a greater understanding of the community forest's benefit as a green infrastructure resource and as a means of building the identity and character of the City.*

### Policies

1.1 Draft and adopt a Climate Action Plan for the City of El Monte. Actively pursue the use of trees to comply with AB 32 (the Global Warming Solutions Act of 2006) and SB 375 (incentives for creating walkable and alternative transportation options.)

1.2 Actively encourage, through permit requirements and incentives, the use of trees as a primary means of stormwater management.

1.3 Build upon the existing tree inventory by adding data from school campuses, residential sites, business districts, and parking lots, Rio Hondo and San Gabriel River Trails, and utility and Caltrans right-of-ways.

1.4 Maintain a real-time database of tree information.

1.5 Provide proactive leadership to work in partnership with utility companies and other sectors to increase the Urban and Community Forest by planting species best suited to grow under utility lines.

1.6 Work towards obtaining Tree City USA status. To become a Tree City, the City must have a tree board or department, a tree ordinance, an arbor day observance, and a community forestry program with a budget of at least $2.00 per capita.

## Objective

*Establish requirements and priorities or new plantings.*

## Policies

1.7 Institute annual planting to build the age diversity of the Urban and Community Forest by planting a minimum of 100 trees in the public right-of-way annually.

1.8 Require tree planting in the public realm as a condition of new development.

1.9 Establish incentives and requirements in the private sector for new and retrofit development for tree planting on streets and in parking lots, including establishing setbacks on narrow sidewalks for tree wells.

1.10 Actively collaborate with Caltrans to maximize public health and environmental benefits provided by the Caltrans right-of-way through the planting of trees.

1.11 Encourage development of programs for utility companies to provide shade trees to home owners to increase community Forest canopy and reduce residential energy use (HR2454 appropriated funds from the DOE to local utility companies for strategic tree planting.)

1.12 Strategically plant trees to support the Active Community Transportation ACT HR4722 that funds the creation of biking and walking networks across America.

*Tree Power Project Siting Team in the field.*

## Objective

*Maintain Trees in healthy condition and remove unhealthy trees as necessary.*

## Policies

1.13 Model appropriate planting, pruning, mulching, and other maintenance practices within the public right-of-way.

1.14 Require the use of Recommended Tree Planting and Care Guidelines (see Chapter 6,) especially in collaborating with utility companies and other agencies.

1.15 Consider the development of a heritage and specimen tree program.

1.16 Establish pruning cycles that do not prevent tree care maintenance that may be required on individual trees due to hazard or emergency conditions.

1.17 Maintain a nutrient rich mulch layer around the base of trees, composed of on-site leaf litter, whenever possible, to retain moisture.

1.18 Salvage, distribute, and reuse wood and tree chip products created during maintenance and removal of trees for the mulch layer.

1.19 Establish a Weed Management policy to ensure the health of the Forest by controlling invasive species and noxious weeds.

1.20 Utilize this Management Plan and recommended model ordinances to facilitate resolution of tree-related conflicts such as hazard tree removals.

1.21 Require that trees planted in public right of way are from the Recommended Tree List, and planted according to standards presented in this Plan.

1.22 Prioritize General Plan designated "Community Forest" routes and "Greenways" for new plantings, as well as any other identified school access routes.

1.23 Extend the Forest into residential, commercial, industrial, institutional and open space areas using requirements and incentives.

*Tree Power Project Siting Team presents to El Monte City Council.*

## Objective

*Maximize Urban and Community Forest Benefits through design.*

## Policies

1.24 Maximize tree canopy coverage by planting shade trees, such as oak trees, wherever possible to improve the public health and environmental health and livability of El Monte.

1.25 Retrofit streets to include parkways and street trees where width permits.

1.26 Establish consistent sidewalks in residential neighborhoods. When adequate space exists, provide a parkway with street trees between the sidewalks and curb. Increase sidewalk width where necessary by establishing new setbacks on new and retrofit development sites where narrow sidewalks exist.


*Public right of way at Garvey Avenue and Lexington Avenue, that would benefit greatly from the shade provided by tree canopies.*

*These Queen Palms do not serve the basic community needs of shade, air filtering, and stormwater control.*

1.27 Explore opportunities to bury utility lines to increase street tree planting opportunities.

1.28 Integrate stormwater treatment into tree planting designs.

1.29 Create city-wide aesthetic unity for El Monte with capital improvement projects that use extensive, cohesive planting along major arterials.

1.30 Highlight cultural and ecological heritage through design.

## Goal 2

*Actively involve the community in forest stewardship.*

### Policies

2.1 Foster existing and new community participation and community forest stewardship.

2.2 Coordinate stewardship activities with established volunteer groups, such as school groups and environmental organizations.

2.3 Notify residents and property owners of any project involving the planting, tree removal or large-scale crown thinning near their home or business.

2.4 Build upon existing community service programs and education programs to establish opportunities for classroom and neighborhood based learning.

2.5 Work with property owners and community members to identify tree planting opportunities and constraints on private property.

2.6 Build on existing and establish new educational and other outreach programs directed at residents, students and property owners.

2.7 Support tree planting and stewardship efforts on privately-owned property.

2.8 Encourage the use of trees from the Recommended Tree List on private property. (Recommended Tree list included in Chapter 3.)

2.9 Encourage the use of Tree planting guidelines by private property owners. (Guidelines provided in Chapter 6.)


*Above: Walkable street Peer City, Claremont*
*Right: Sycamore seed pod detail*

## Goal 3

*Establish a sustainable management structure.*

### Objective

*Centralize management of the Urban and Community Forest.*

### Policies

3.1 Create and fill Urban and Community Forest Manager position to oversee all Urban and Community forest programs. The Urban and Community Forest manager shall be an ISA Certified Arborist.

3.2 Establish an Urban and Community Forest Management Team to facilitate decision-making and interdepartmental coordination that includes the Urban and Community Forest manager and head staff from the Public Works, Parks, Recreation, Community Services, Economic Development, Community Development, and Planning departments.

3.3 Expand the role of the Public Services Commission to include the Urban and Community Forest or create an Urban and Community Forest Commission.

3.4 Encourage holistic planning and management of the Urban and Community Forest through coordination and collaboration with the El Monte City School Districts, Caltrans, Southern California Edison, and local businesses.

3.5 Review and revise the Management Plan at the onset of the General Plan and as needed.

3.6 Use Urban and Community Forestry as a strategy for helping the City to meet legislative mandates such as AB 32 and SB 375.

### Objective

*Secure Funding to sustain Urban and Community Forestry programs.*

### Policies

3.7 Assure sustained funding of Urban and Community Forestry programming by seeking funds from a variety of sources such as local and regional foundations, agencies, industry and corporations.

3.8 Track Urban and Community Forestry expenditures and budgetary needs on an annual basis and present findings to City council.

3.9 Consider ecological services and public health benefits provided by the Urban and Community forest as the basis for creative funding considerations.

3.10 Track costs associated with emergency room visits and asthma and obesity rates as the Urban and Community Forest grows and provides public health benefits as a financial offset.


*Welcoming tree canpies in Peer City Altadena.*

## RECOMMENDED ORDINANCES

It is recommended that the City of El Monte adopt a new landscape ordinance as well as a tree ordinance. Together, these ordinances will help to ensure successful implementation of this Plan. Model ordinances that should serve as the foundation for the City's new ordinances are described below and provided in Appendices C and D.

### Landscape Ordinance

Appendix C provides a Draft Water Efficient Landscape Ordinance for the City of El Monte. The Draft Ordinance is based on the State Model Water Efficient Landscape Ordinance (WELO) that went into effect January 1, 2010, and has been modified to include additional practices for increased sustainability modeled after StopWaste.org and the Bay-Friendly Landscaping programs requirements. The Bay-Friendly Landscaping program is one of the few sustainable landscape programs recognized by the United States Environmental Protection Agency. The Bay-Friendly Landscaping program provides tools and resources for elected officials and public agency staff including planners, capital project managers, landscape architects, engineers, and landscape maintenance to incorporate best practices specifically to conserve water and other valuable resources while reducing waste and preventing pollution and to foster soil health.

This draft Water Efficient Landscape Ordinance for the City of El Monte, or a simplified version of this document, should replace 17.10.040 Water Efficient Landscape Requirements in the City of El Monte Landscape Ordinance.

*The Amigos de los Rios Tree Power Team meets with representatives from El Monte.*

## Tree Ordinance

Many world class cities maintain tree ordinances and protection policies. The cities of Pasadena, Ojai, and Claremont are exemplary cities in this regard. Other California cities that have adopted strong ordinances include Diamond Bar, Los Angeles, Palo Alto, Pomona, San Marino, Santa Monica, and South Pasadena.

The City of El Monte does not currently have a tree ordinance. It is recommended that the City adopt a tree ordinance similar to those adopted by the cities of Claremont, Ojai, and Pasadena included in Appendix D. These ordinances were identified as appropriate models for the City of El Monte due to their content and clarity. The ordinance(s) adopted by the City of El Monte should be modified version of one or both of these ordinances that addresses particular needs of the City.

At a minimum, the tree ordinance(s) should address the following issues:

1. Tree protection and maintenance
2. Hazardous trees
3. Consequences for topping trees, as topping has caused significant damage to the health of the Urban and Community Forest
4. Green space requirements and requirements for protecting existing trees
5. Tree planting requirements for new construction that mandate a certain number of trees to be planted by developers as a condition of permit
6. Permeability of onsite infiltration requirements that mandate the specific landscape or permeable surfaces within a project that must capture rainwater where it falls
7. Water conservation requirements that mandate and regulate irrigation practices and water efficient systems for all landscaping
8. Native plant requirements that mandate that ecologically sound plants be selected for projects
9. Tree to parking lot ratios or parking canopy coverage requirements
10. Compliance with Federal Clean Water Act mandates including NPDES and Ms4 permits. The ordinance(s) may address permeable streets and green streets.
11. Compliance with air quality related legislation such as SB 375 and AB 32.

El Monte's tree ordinance must set precedents for tree maintenance undertaken by Caltrans, school districts, and private property owners. Compliance with climate change and water conservation legislation will necessitate that the City work directly with agencies, residents, and land owners to ensure optimum tree planting and maintenance.

# CHAPTER FIVE: DESIGN TOOLS

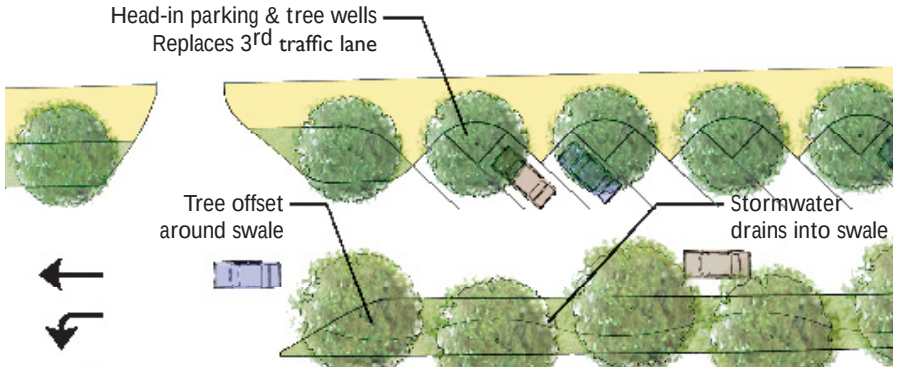
El Monte Speaks

*Anything that contributes to cleaner air is good. Trees also help the community aesthetically, giving people pride in their community, and reducing activities like graffiti and other negative behaviors… Trees have done a lot for Payne Elementary where children are taking ownership of their school.*

*~Angelica Sifuentes, Community Services Representative, Mountain View School District*

Design provides a framework for optimizing the benefits of the community forest. Given the limited nature of El Monte's existing community forest, significant opportunities exist to create a visually unified El Monte using landscape design that responds to the City's ecological and cultural history. Through the implementation of assertive, cohesive design strategies, the City's former identity as a "wooded place" between two rivers began to emerge.

The Recommended Plant List and vision for the future of the community forest described in Chapter 3 provide a foundation for design efforts within the City. Building upon the ideas captured in the Recommended Plant List, this chapter identifies key principles that should be considered for all projects. In this chapter, materials and standards for creating successful designs are described and the potential for integrating these tools is applied for ten demonstration sites throughout the city. The demonstration sites were selected to represent typical conditions throughout the city and therefore are conceptual in nature. The ideas embodied in the demonstration site designs can be applied in a variety of combinations throughout the city.




## DESIGN PRINCIPLES

The following design principles should be considered for all projects related to the community forest, from large scale planning projects such as corridor studies to small scale planting plans, daily maintenance and tree replacement.

### Balance Species Diversity

The use of visual patterns in an urban forest, and especially along streetscapes, contributes to the character of an area. A carefully selected grouping of two or three tree species, planted in a pattern along a street, brings a sense of order and identity to a neighborhood. Species diversity is also important to the longevity of the urban forest; planting the same type and age of tree in an area leaves an area vulnerable to disease and potential for all trees to die at the same time. When a forest includes a diversity of species, it is more resilient to potential pests and diseases and is able to provide a wider range of benefits than single-species forests. However, a forest that includes too many different types of trees will be challenging to maintain and will likely lack the visual pattern that creates cohesive urban form.

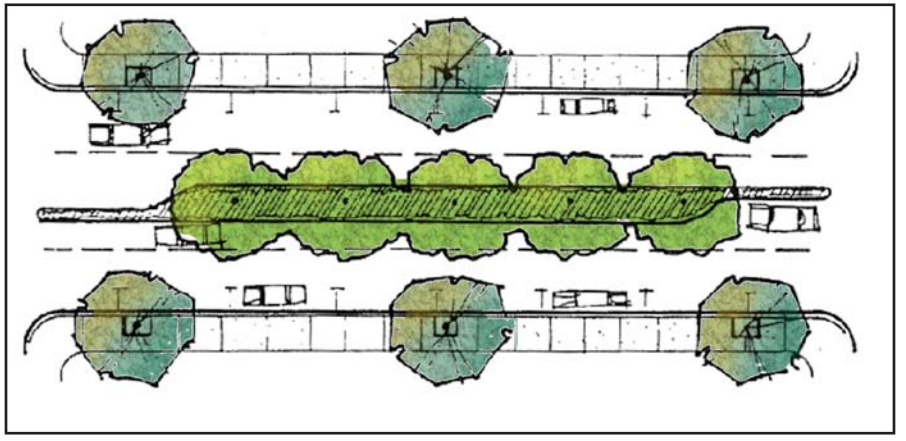


*Figure 5 - 1 Full medians: consistent tree cover; turns only at intersecions.*

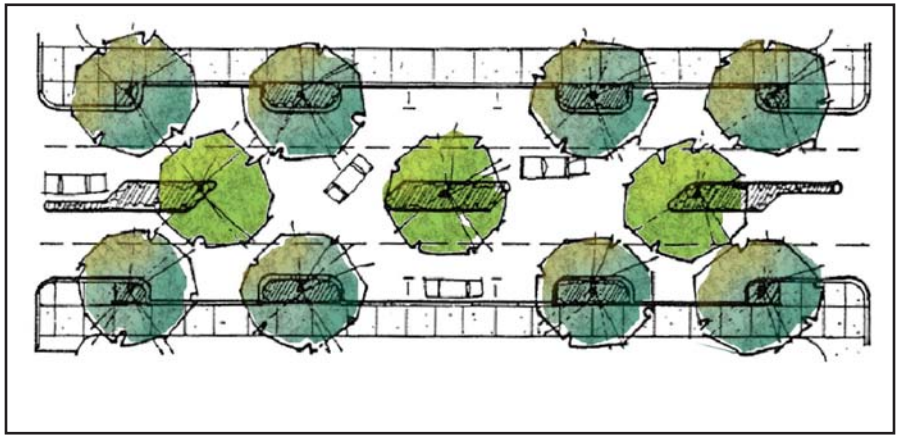


*Figure 5 - 2 Partial medians: consistent tree cover with addition of planting islands in parking lane; left turn into parking lots; right turns only out of parking lots.*

Diversity and uniformity can be balanced in street tree plantings through the use of the Recommended Tree List. This list is composed primarily of trees that represents the City's historic natural conditions, and is punctuated with trees from Asia and Latin America that are representative of the rich heritage and diversity of the citizens of El Monte. Balancing visual patterns with species diversity should be a key design goal at all planning scales, and especially when planning for large areas such as an entire neighborhood.

### Design for Multiple Benefits

The numerous benefits that trees offer an urban environment should be considered with each planting. It is important that opportunities for pollution reduction, stormwater management, shade production, habitat creation, and urban beautification be optimized through the proper selection of trees and appropriate retrofits of the urban area. The selection of habitat-building trees and the creation of multi-layered canopies are among the strategies that can be employed to enhance habitat.

### Respond Creatively to Site Constraints

Urban environments go hand-in-hand with design and planting constraints, such as limited planting space, above and below-ground utilities and infrastructure, compacted soils, and inconsistent planting areas along streets. On a site-by-site basis, these constraints should be approached as design cues to guide the selection of appropriate tree species and identify opportunities for improving air quality, stormwater management, urban form, and the character of the City.

## SITE DESIGN STANDARDS

Tree spacing must also allow for visibility at intersections and mid-block left-turn locations, as described in Figure 5-1 and 5-2.

a. Tree Spacing

Trees should be provided with enough space above and below ground to grow to their optimum size, considering urban conditions rather than natural conditions. Above ground spacing standards for trees that are planted in even patterns are listed below:

- Appropriate spacing depending on species, varieties, cultivars, and available planting space
- Trees should not be planted within 25 feet of an intersection, 10 feet from driveway approaches and 10 feet from City infrastructure such as, utility boxes, fire hydrants, light poles, traffic signage, bus shelters, etc.

b. Balancing Species Diversity

As discussed above, balancing the use of a wide variety of tree species with carefully selected groupings of two or three species in visual patterns should be a key design goal at all planning scales, and especially when planning for large areas such as an entire neighborhood. Following are strategies to achieve this balance:

- Limit the number of species used on a block to 2 to 3. Establish a regular pattern for alternating species.
- Highlight key intersections with different species than the rest of block.
- Use different species of the same type of tree., i.e., planting several types of oak will increase resistance to disease yet maintain a cohesive appearance.
- Alternate different species throughout a neighborhood using a block-by-block pattern.

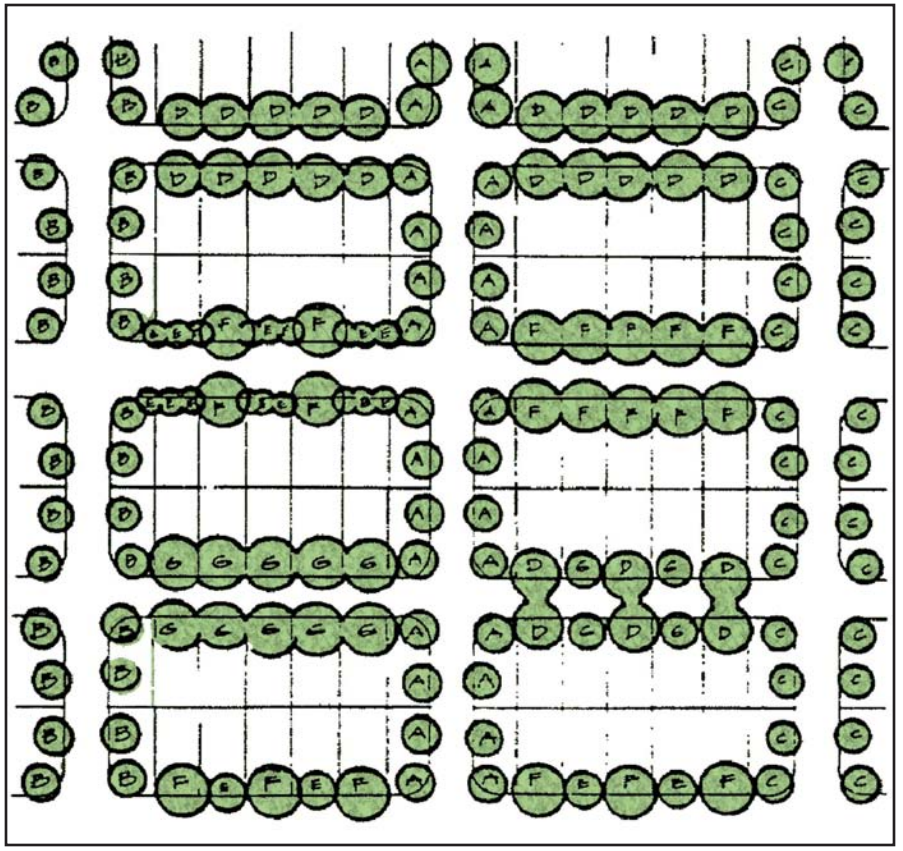


*Figure 5 - 3 Neighborhood plan for achieving uniformity and diversity. Each letter represents a different type.*


*Figure 5 - 4*

*Typical tree well sizing.*

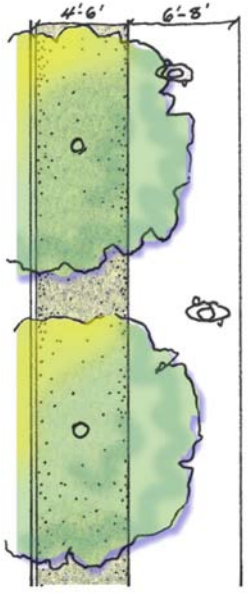


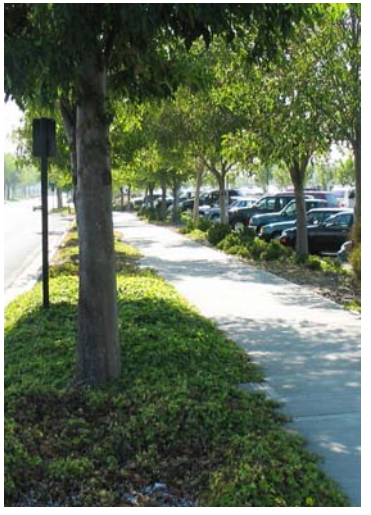

*Figure 5 - 5*

*Tree wells linked together to maximize root space.*

Table 5-1 **Appropriate Tree Well Size**

| Width of Pedestrian Right-of-Way | Minimum Sidewalk Width (Throughway) | Well Size (Range) |
|---|---|---|
| Less than 6 feet | 6 feet | No planting wells |
| 8 to 10 feet | 4 feet | 4 to 6 feet |
| 12 feet (El Monte standard) | 6 feet | 4 to 6 feet |
| >/= 20 feet | 8 feet | 4 to 12 feet |

*Note: Wells should be adjacent to curb; minimum well size 4' x 6' or 4' x 4' if structural soils; minimum sidewalk 4'.*



c. Tree Wells (Soil Area)

The size of tree wells, or the soil area in which trees are planted, is an important design consideration when planning for street trees since the well size will help to determine which species to plant and how it will affect sidewalk width. The volume of soil available for tree roots will also affect tree health, size and longevity. Current research on soil root volumes recommends 200 cubic feet of good quality soil for small trees under 14-foot canopy, 400 cubic feet for medium sized trees with a 26-foot canopy and 800 cubic feet for trees with a 32-foot canopy.[1] Connecting individual tree wells with linear planting strips or larger planting areas will increase the soil volumes and potential for a more robust urban forest. For example, an area 4' x 6' x 3' deep provides 72 cubic feet, while a 4' x 20' x 3' deep planter strip will provide 240 cubic feet. Figures 5-4 and 5-5 illustrate how to maximize tree well size.

*The following should be considered when determining tree well width:*

- *Plant Requirements.* The Recommended Plant List in Chapter 4 identifies the minimum tree well width for each species.
- *Utilities.* New utility lines should be 20 feet between the eventual root ball when possible. When overhead utilities exist, trees that are compatible with utility lines should be selected.
- *Minimum Tree Well Square Footage.* The minimum square foot-age of a tree well is 24 square feet (4' X 6"). Where space is extremely limited, the tree well could be reduced to 16 square feet (4' X 4') and planted with appropriately sized trees. The minimum width of a tree well is 4 feet for constrained urban spaces.
- *Relationship to Pedestrian Right-of-Way.* Determining the size of a tree well should correspond to the size of the pedestrian right-of-way (combined width of planting area and sidewalk). Appropriate widths for sidewalks and tree wells in relation to pedestrian right-of-way are identified in Table 5-1. The minimum width of a sidewalk is 4 feet.

d. Surface Treatment for Tree Well

While the ideal surface treatment for tree wells along streetscapes is tree mulch, tree grates are also appropriate especially in high traffic locations. Groundcover planting can also be considered in areas that receive more maintenance, such as areas near civic buildings. Further guidance regarding surface treatment is provided in Chapter 6, Standards and Guidelines.

[1] Urban, James. 2008. Up by the Roots: Healthy Soils and Trees in the Built Environment. Wichita, Kansas: International Society of Arboriculture. Table 2.4.1, page 205.

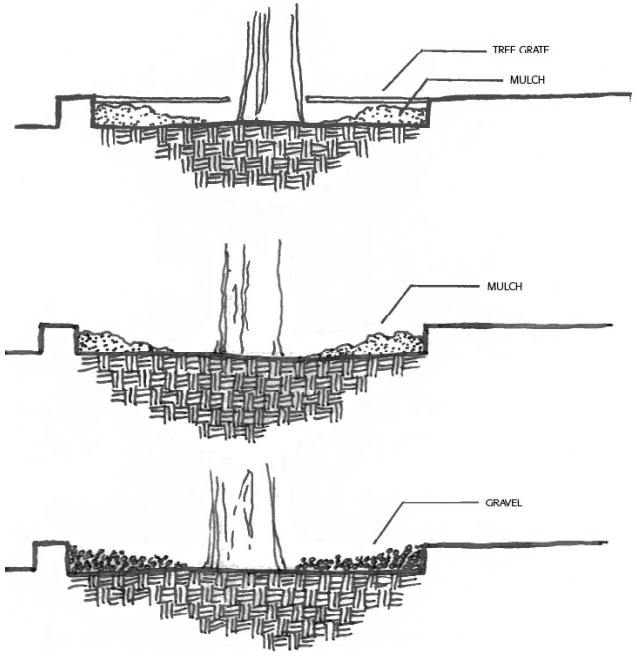



*Figure 5-6 A Tree Well Can Include a Layer of Mulch, or a Tree Grate with Mulch below.*

A 3-inch layer of mulch should be used whenever possible as a protective layer over the soil to help retain moisture, reduce erosion, and provide nutrients. The mulch layer must not directly touch the base of the tree. Tree grates, where appropriate, provide protection against soil compaction from traffic along the sidewalk, while still allowing storm water to flow to the soil below. Both options support a protected environment for the health, growth, and maintenance of the street tree. Figure 5-6 illustrates these surface treatment options.

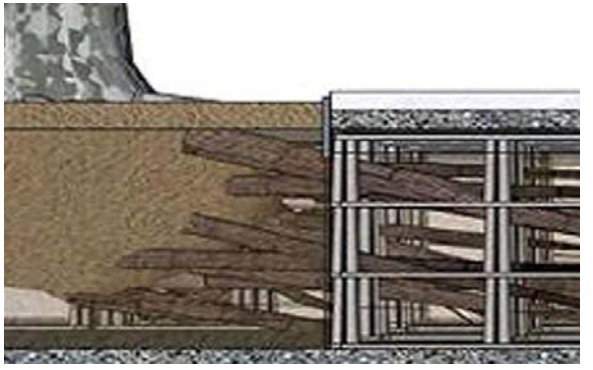
e. Stormwater Management

This section identifies tools that will help the City comply with the United States EPA Municipal Separate Storm Sewer Systems (MS4s), National Pollutant Discharge Elimination System (NPDES) permits, and the California Water Efficient Landscape Ordinance. The Clean Water Act authorized program controls water pollution by regulating municipal point sources that discharge pollutants into waters of the United States. The amount of pollutants that enter the storm drain can be significantly reduced by intercepting and infiltrating stormwater in planting spaces. It is recommended that the City employ the following de-sign tools for intercepting and infiltrating stormwater wherever feasible:

- *Porous Paving.* Porous asphalt and concrete paving use a coarse aggregate mix that eliminates finer particles, creating pockets in the finished surface. As mixing and placement requirements differ from standard concrete and asphalt it is important to use qualified vendors and certified contractors.
- *Open Grid Paving.* Paving systems using open-jointed block paving with permeable aggregates have proven to be a viable approach to stormwater management. The precast pavers are designed to lock for strength and stability, with openings in the joints where open-graded aggregates allow water to infiltrate. These paver units are available in a variety of patterns and color combinations while adding a rich urban texture to the roadway. Permeable paving significantly reduces the quantity of runoff entering the storm drain systems. Utilizing permeable paving within the street corridor will likely result in cost savings when the storm drain system is replaced, and should be considered for all street retrofit projects.
- *Structural Soil.* The use of a structural soil sub-base in combination with permeable pavers will provide additional stormwater benefits. Extensive research has demonstrated that structural soil can perform as a paving base while also providing optimum growth medium for trees. The material consists of gap-graded gravels which are made up of crushed stone, clay loam and a hydrogel stabilizing agent. This material can be compacted to meet pavement loading requirements while maintaining a lattice and void structure that allows for root development. Structural soils, when

*Porous pavement*

*Permeable pavers* *Source: ecofriends.org*



*Silva cells* *Source: landscapeonline.org*

directly designed and installed, will provide multiple benefits including:

- Growth medium that encourages and extends deeper root growth.
- Reservoir for stormwater retention.
- Source of water supply for tree roots.
- Solid, load bearing base course for a variety of paving materials.
- Protects underlying soils from compaction.

The final design of the structural soil sub-base, open jointed unit pavers and tree placement and selection will need to be carefully designed to ensure that the system will support auto traffic, capture sufficient runoff to meet stormwater management goals, and provide an optimum environment for tree growth.

◆ *Bio-Retention Cells.* Subsurface, interlocking geogrid system, such as DeepRoot's Silva Cell© system, are an alternative to structural soils. This grid system supports traffic loads and prevents soil compaction. The soil housed within the cells of the grid both helps support growing large trees and treating stormwater on-site.

◆ *Infiltration Trenches.* Infiltration trenches are shallow basins that serve as underground reservoirs for stormwater. The trenches, which are lined with filter fabric and filled with gravel, help slow stormwater runoff and remove pollutants from stormwater.

◆ *Tree Well Filters.* Pre-engineered and custom tree wells can pro-vide increased runoff storage and filtration utilizing custom de-signed growing media and plants to uptake water and pollutants. One advantage to the pre-engineered units is the availability to use in retrofits of existing parking lots with minimal disruption to the existing landscaping and infrastructure.

◆ *Vegetated Swales and Rain Gardens.* Vegetated swales are linear open channels planted with vegetation that filter out sediments as the runoff flows across the surface. Rain gardens are depressions that infiltrate and treat runoff through evaporation and transpiration. Side slopes for both features should not be more than 2:1, with 3:1 or flatter preferred. The soil within vegetated swales and rain gardens should have a percolation rate of five inches per hour. Often 18 to 24 inches of well draining soil must be

*Vegetated Swale with Pedestrian Crossing*

*Drainage Curb Cuts*

*Drainage Curb Cuts with Infiltration Trench*

five inches per hour. Often 18 to 24 inches of well draining soil must be imported to meet this requirement. Swales and rain gardens constructed over heavy clay soils and may also require an underdrain to prevent ponding. Plant material used in vegetated swales and rain gardens need to tolerate inundation and drying periods. Grasses and fine leave plants are preferred to trap sediments, however conventional mowed turf is discouraged due to the use of fertilizers and herbi-cides. Drought tolerant no-mow turf varieties are a better choice.

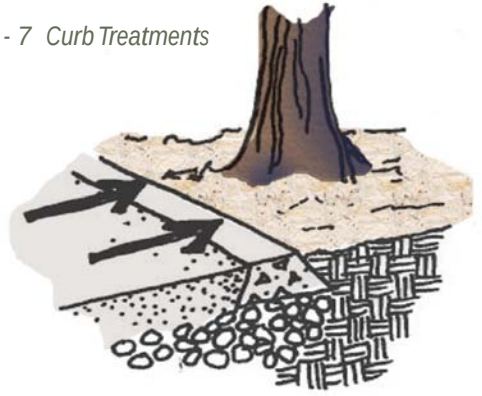
◆ *Stormwater Planters.* Stormwater planters allow sheet flow to enter the tree well from streets, enabling stormwater to irrigate trees and infiltrate into the soil and ground water.

◆ *Enhanced Tree Canopy.* Tree canopies catch and slow rain fall be-fore it hits the ground, thus slowing runoff rates and allowing more time for infiltration. The contribution of an urban forest to storm-water management increases as the overall canopy coverage grows.

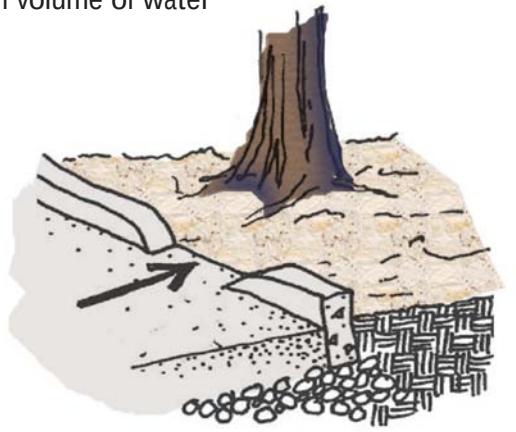
◆ *Water-wise Grading Practices.* The first flush or initial runoff from impermeable surfaces during a storm event carries a high volume of water pollutants and should be captured and treated us-ing landscape based treatment measures. Grading surfaces towards treatment areas located onsite allows stormwater to be captured and detained to the maximum extent possible on site before allowing water to enter the stormdrain system. Landscape based treatment measures such as rain gardens, vegetated swales, and tree well filters are encouraged as they are found to be the most effective way to treat stormwater runoff. Non-landscape based treatment measures such as media filters should be used when project conditions cannot support landscape measures.

◆ *Curb Treatments.* Traditional curbs prevent the flow of stormwater into planting areas. Improvements to existing planting areas or the establishment of new planting areas provide an opportunity to explore curb treatments that allow planting areas to capture some stormwater runoff. Figure 5-7 describes potential curb treatments that are appropriate for use in El Monte. It is important that drain-age within planting areas be considered before these strategies are employed.

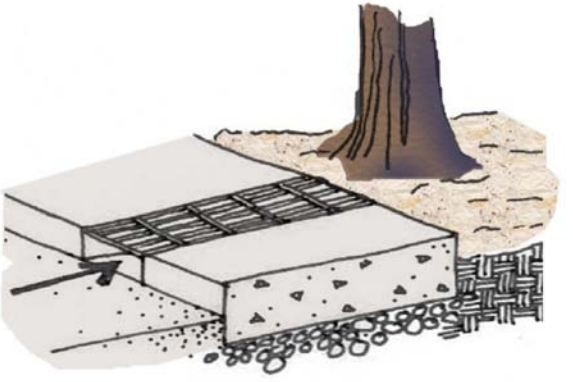
*Figure 5 - 7 Curb Treatments*



*Lowered curb to allow water to easily flow from the street into planting.*



*Broken curb to allow access points for water flow from the street to enter planting.*



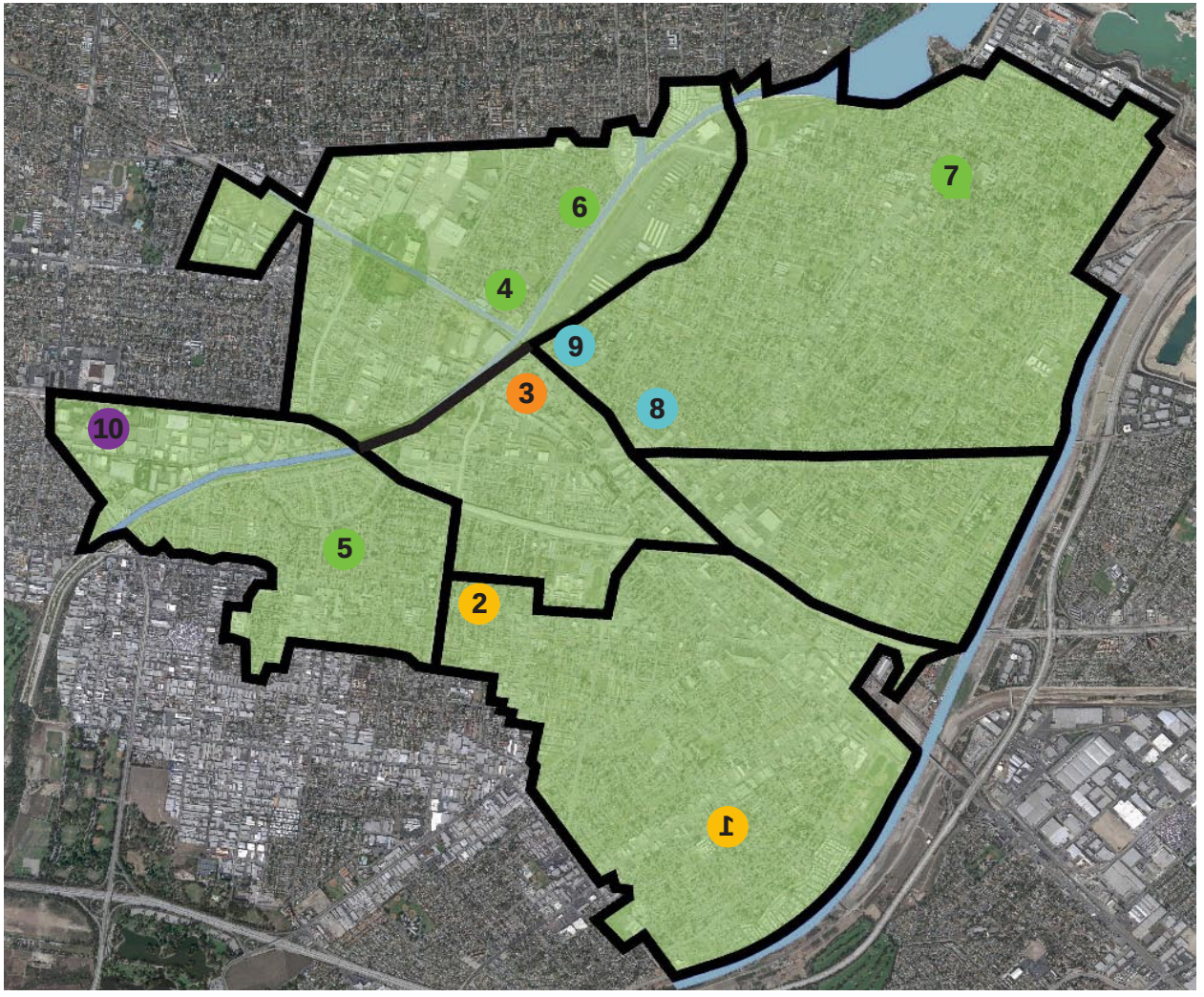
*Curb with walking space, broken by open grate to allow water from the street to enter planting.*

# DEMONSTRATING CONCEPTS FOR EL MONTE'S URBAN CONDITIONS

There are numerous ways in which El Monte's urban conditions can be enhanced through design. The following section illustrates a variety of possibilities for tree planting in El Monte. The design recommendations demonstrate what can be accomplished on a typical street in the City of El Monte. The ten sites were picked to represent the different street types and neighborhoods of the city. The conditions vary from busy, auto-oriented, commercial arterials to quiet residential streets. The following pages show the existing conditions of each site and the proposed tree planting design for each site, as well as existing site photographs and photographs that exemplify elements of the proposed design.

The tree planting designs consider neighborhood and street level character while addressing factors such as sidewalk sizing, planted medians, bike lanes and parking, storm water management, visibility, and shade. The approaches offer options ranging from a complete street retrofit to the addition of a tree planting strip inserted into an existing sidewalk. The illustrations are intended as part of the urban forest vision such that elements of the design recommendations can be taken to form feasible strategies for tree planting.

Several of the design concepts include retrofits to existing roadways that would reduce the number of lanes or otherwise slow traffic. Narrowing roads is illustrated as a technique for increasing planting space to allow for expansion of the urban forest, as well as a way to increase walkability and beautify existing streets. The balance of vehicular circulation and community forest enhancement was considered during the development of each design concept, and will continue to be a key consideration as concepts are implemented.




| CATEGORY | STREET |
|---|---|
| *Arterials* | 1 Durfee Avenue |
| | 2 Garvey Avenue |
| *Neighborhood Commercial* | |
| | 3 Valley Mall |
| *Neighborhood Residential* | |
| | 4 Arden Drive |
| | 5 Merced Avenue |
| | 6 Whitney Drive |
| | 7 Hallwood Avenue |
| Civic / *Parking* | 8 *City Hall* |
| | 9 Retail |
| *Freeway* | 10 Flair Drive |

## LOCATION OF DEMONSTRATION SITES

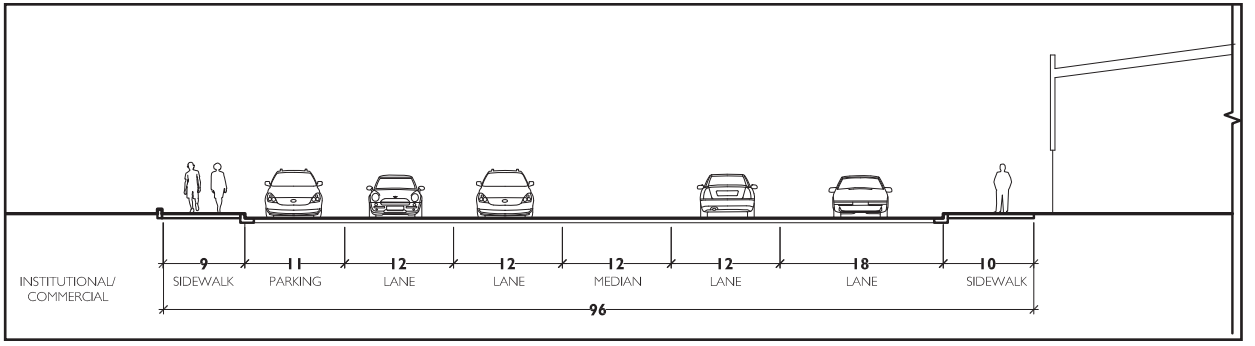
## 1. Durfee Avenue at Elliot Drive

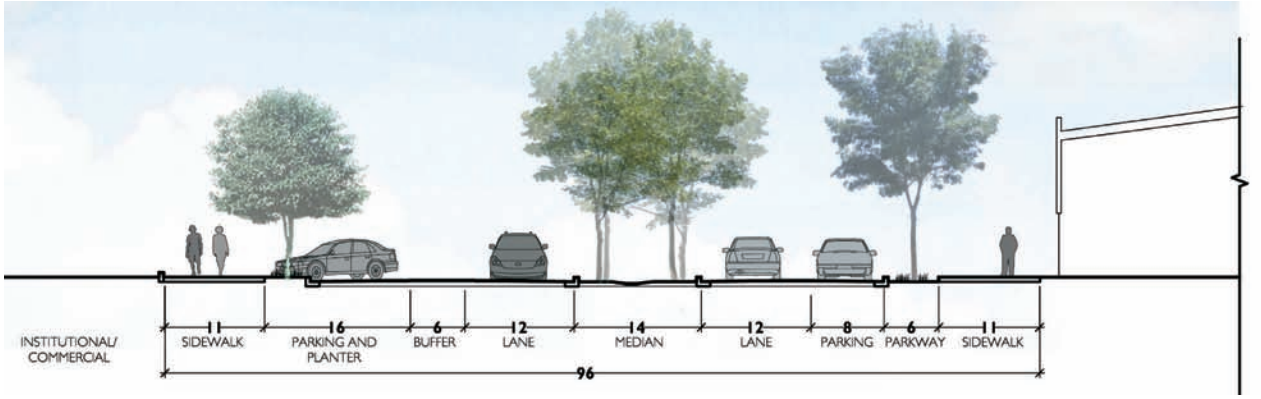
**Category:** Arterial

**Designated Land use:** Mixed/Multi Use

**Existing Conditions:** Commercial uses along a four lane avenue with an asphalt median and one side of parking. There are very few street trees along this long stretch of road. However, the expansive road frames mountain views.


*existing condition*




### STREET RETROFIT

**Design Intent:**

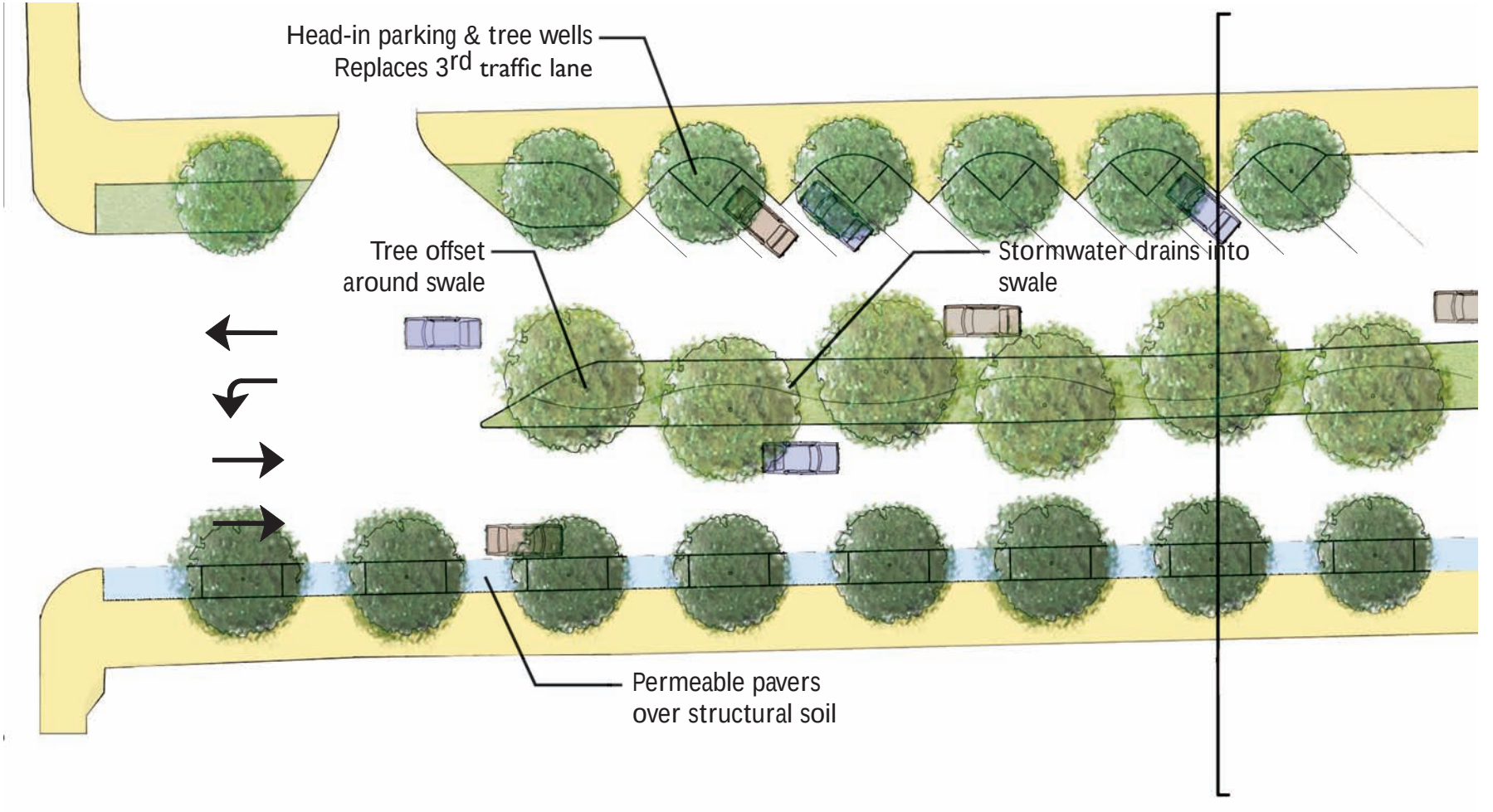
A significant retrofit that creates great potential for the mixed use development is identified for Durfee Avenue. The street retrofit emphasizes stormwater capture through median planting. Sidewalk tree planting narrows street to provide a more pedestrian friendly thoroughfare.

**Species recommendations** include:

Quercus agrifolia
Quercus engelmannii
Platanus racemosa
Cercis candensis

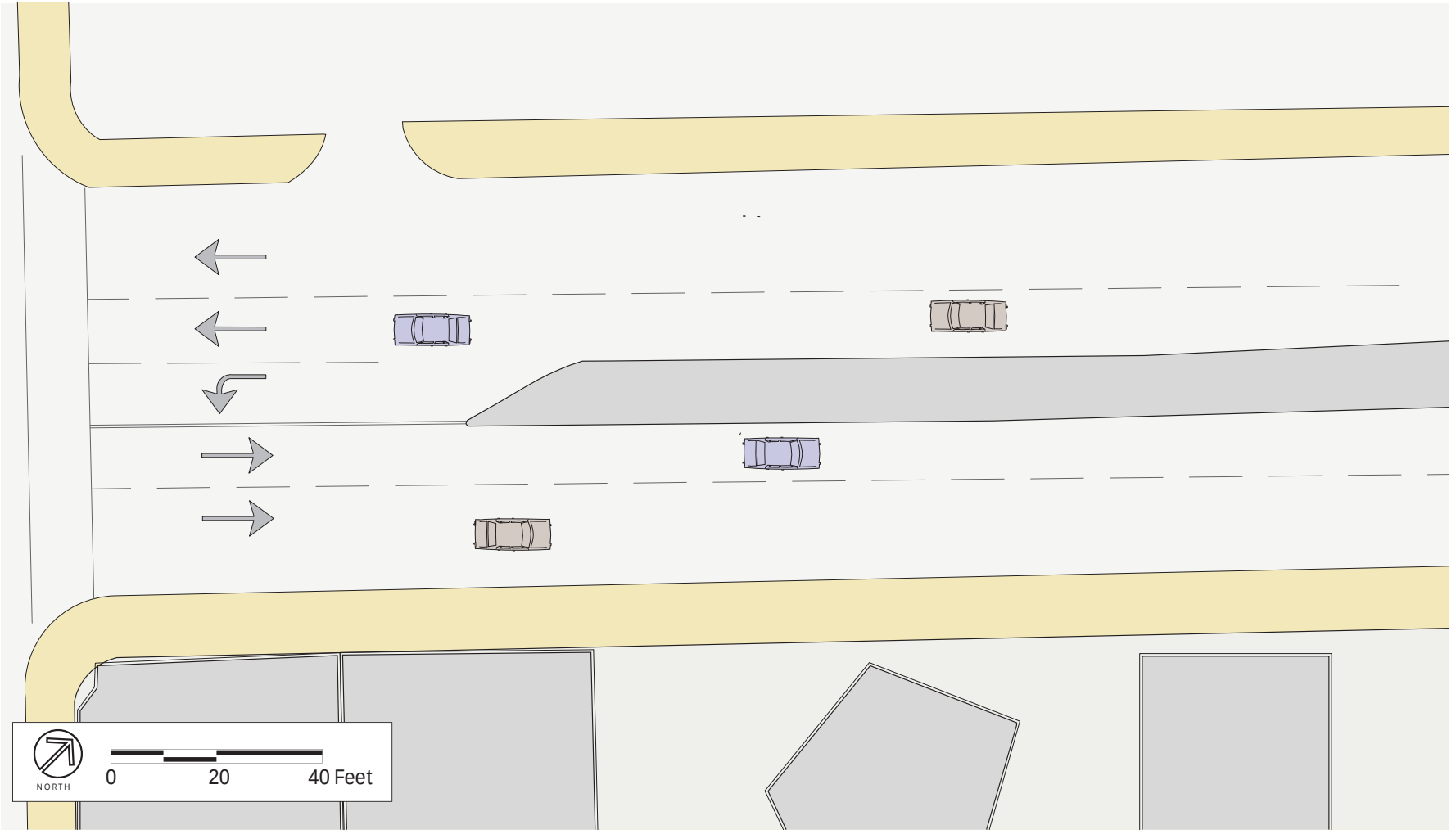
Please refer to the Recommended Tree List in chapt. 4 and Planting Details in chapt. 5.

*Permeable pavers*




## SITE 1: DURFEE AVENUE STREET RETROFIT

*Turn page to view*




Durfee Avenue

Existing Condition

Existing

This series of retouched photographs of Durfee Avenue illustrates the dramatic impact the Urban Forestry enhancements will bring to the streets of El Monte. It is a representative sample; the subsequent layouts demonstrate various design options specific to each street configuration.

Phase I Conceptualization: Initial Tree Planting

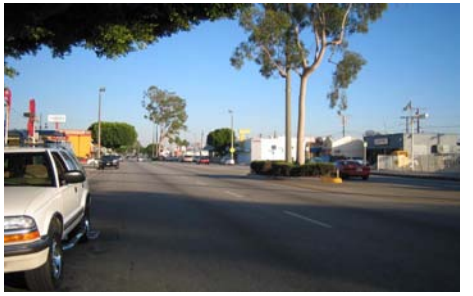

Phase II Conceptualization: Durfee Avenue further enhanced with median planting and expanded parkway planting

## 2. Garvey Avenue at Lexington and Washington

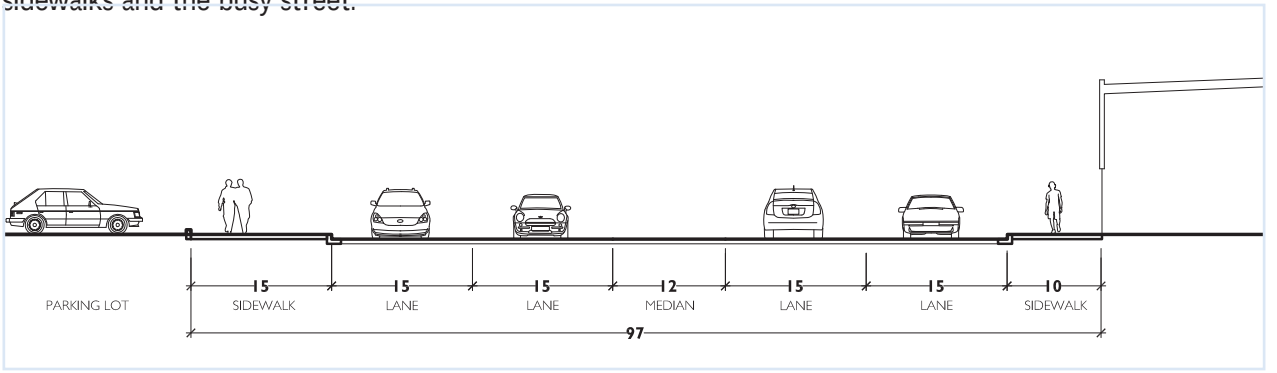
**Category:** Arterial

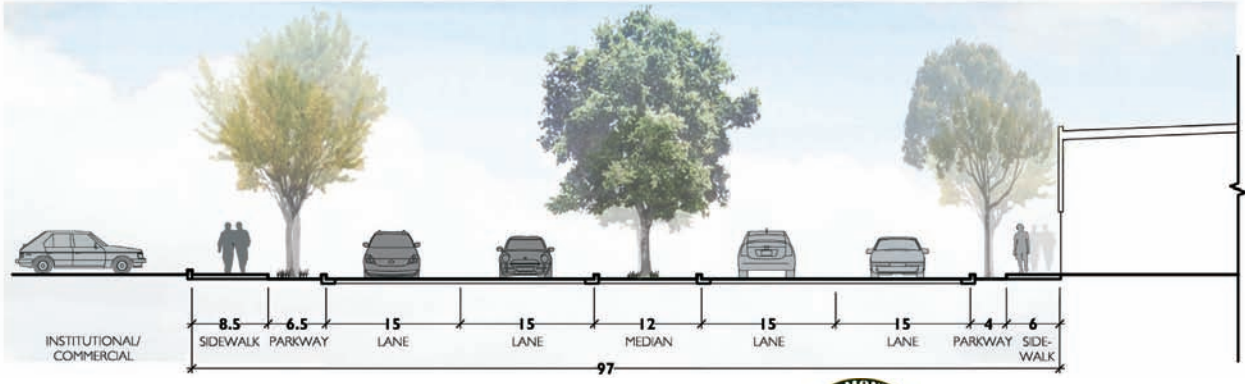
**Designated Land use:** Mixed/Multi Use

**Existing Conditions:** Commercial uses along a four lane avenue with scant median and few street trees. Existing canopies tend to be tall and narrow, like palms, pine and eucalyptus. Frequently spaced utility lines are the only buffer between sidewalks and the busy street.



*existing condition*




### STREET RETROFIT

**Design Intent:**

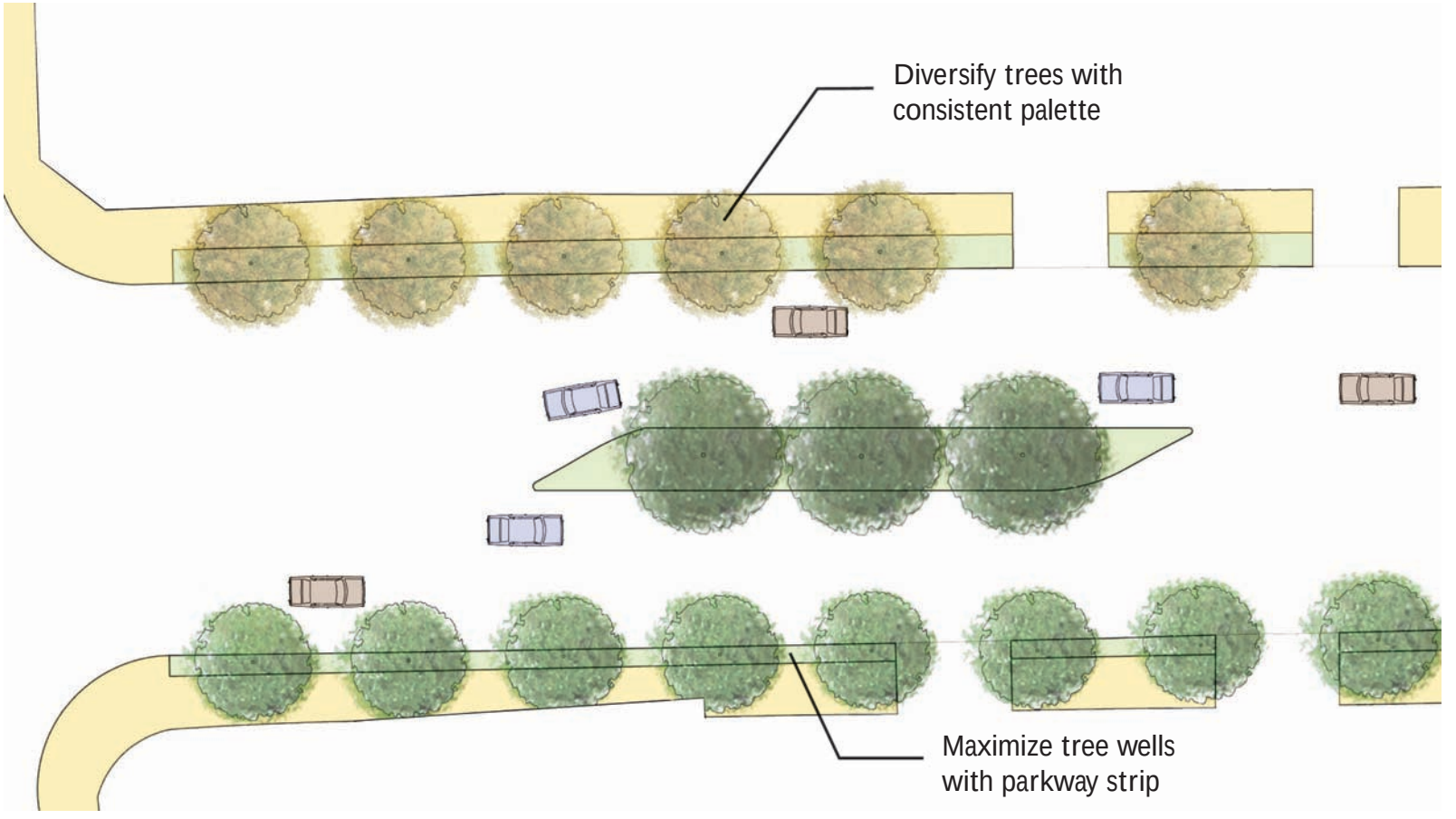
Garvey's 10-15' wide existing sidewalks are narrowed to make room for parkways with broad canopied trees. Shaded walkways create a nice walking environment along a vehicle dominated commercial strip. Median planting adds another layer to the existing street.

**Species recommendations** include:

Quercus agrifolia
Quercus engelmannii
Platanus racemosa
Cercis candensis

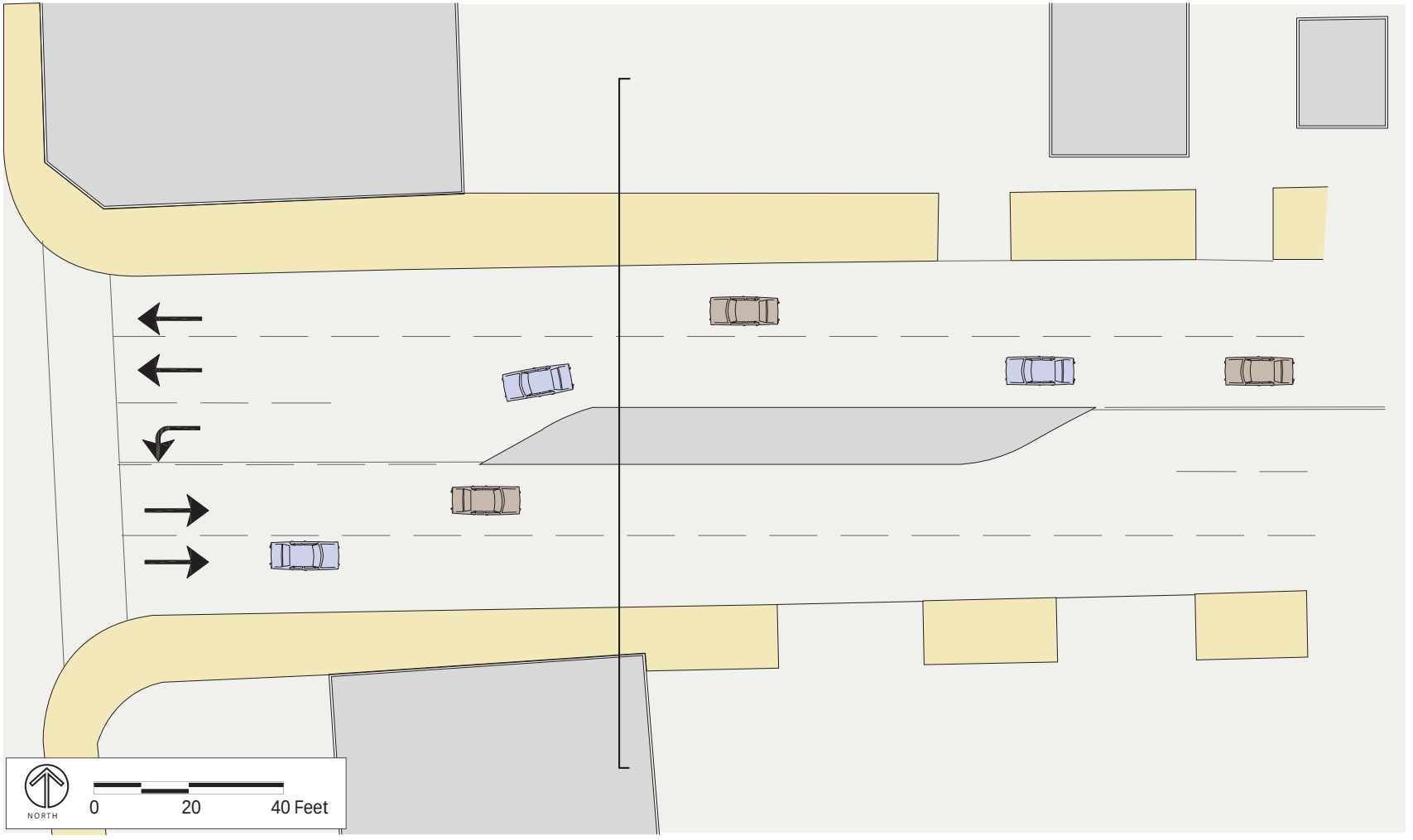
Please refer to the Recommended Tree List in chapt. 4 and Planting Details in chapt. 5.

*Tree well expansion*




## SITE 2: GARVEY AVENUE RETROFIT

*Turn page to view*




Garvey Avenue

Existing Condition

*Garvey Avenue, existing*

GARVEY AVENUE WITH PROPOSED DESIGN ELEMENTS
rendering, opposite page

Parkway and Median planting combined with narrowed sidewalks go a long way to reducing the heat island effect and transforming Garvey Avenue into a 'walkable' street.

Cities that have invested in their public realm are seeing improved property values and increased retail sales. Appropriately-placed pedestrian zones in city centers boosted foot traffic by 20-40% and retail sales by 10-25% in the U.K. A nationwide study in the U.S. reported a property value increase of 30% after new traffic calming measures were installed. In New York, apartment prices near community gardens are 7% higher than comparable apartments in the same neighborhood. Since the City of Mountain View, California enhanced its main downtown street by improving sidewalks, removing parking spaces, and planting trees, the street has drawn $150 million in private investment in residential and office units and has become a regional attraction.[1]

[1] www.planetizen.com

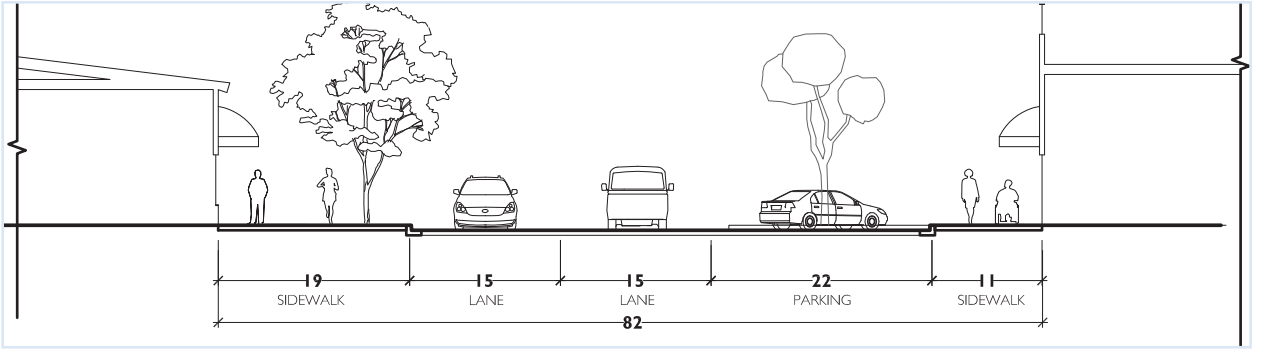
## 3. Valley Mall at Monterey Avenue

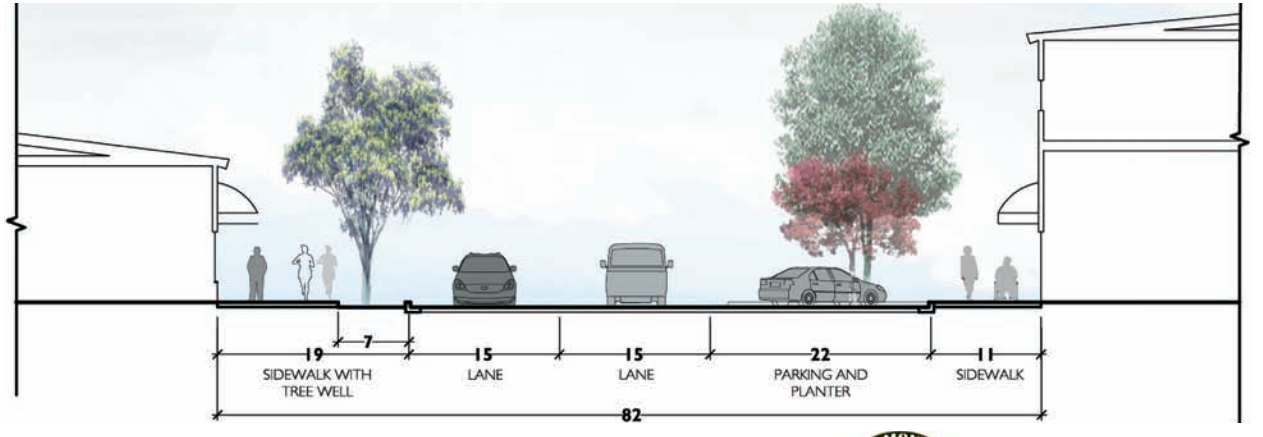
**Category:** Neighborhood Commercial

**Designated Land Use:** Downtown Core

**Existing Conditions:** The vibrant pedestrian-scaled downtown is a local attraction and busy shopping district. Stores flank the two-way road, and aggressively pruned olive trees line the street. During the summer, there is minimal shade to be found.

*existing condition*




## DOWNTOWN BEAUTIFICATION

**Design Intent:**

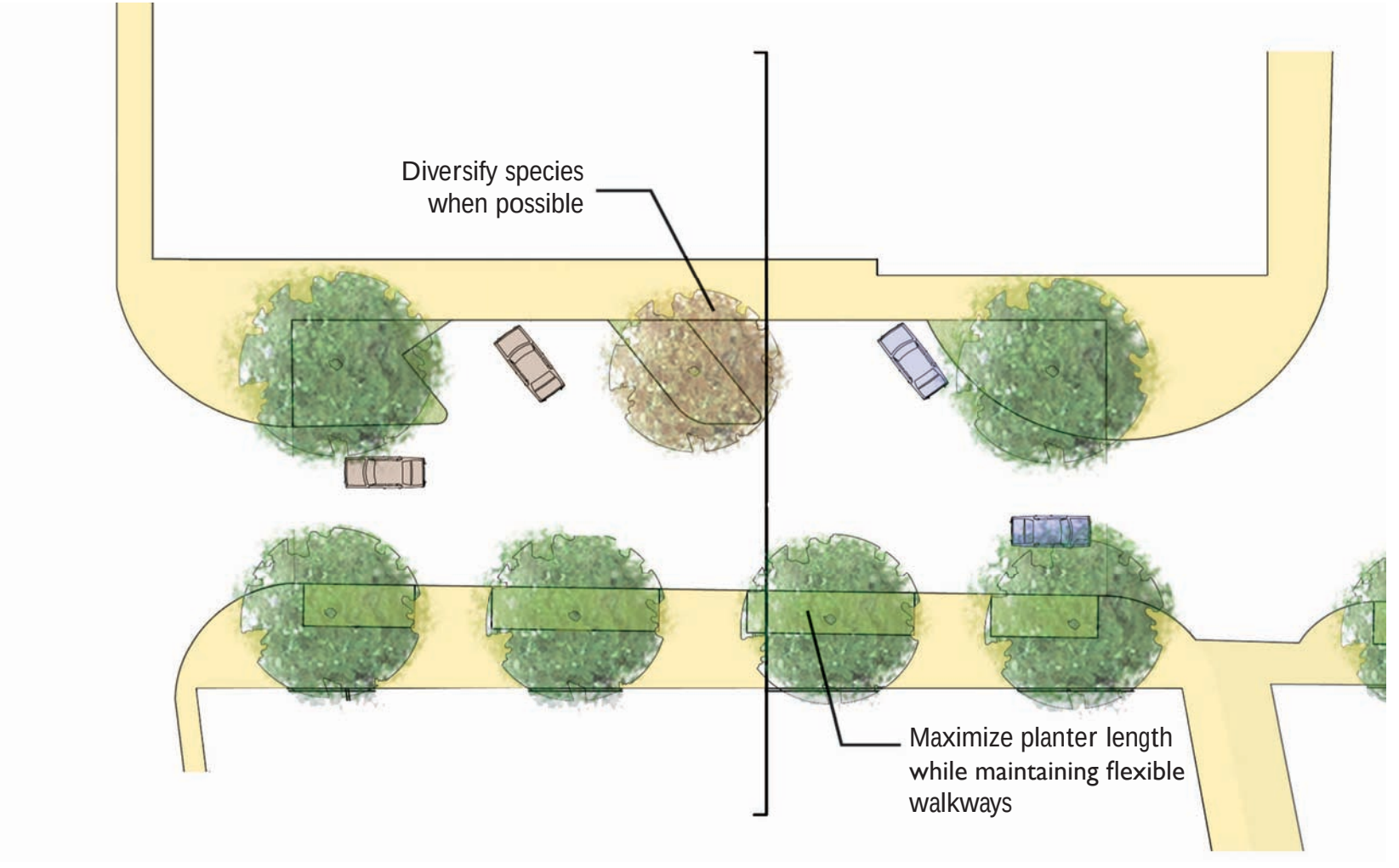
Tree planting along sidewalk enhances character of Valley Mall with signature trees at corners to complement street identity. Large tree wells allow room for tree root growth and stormwater management. Broad canopies with colorful blooms will provide shade while building upon the street's vibrant character.

**Species recommendations** include:

Quercus agrifolia
Parkinsonia aculeata
Chilopsis linearis

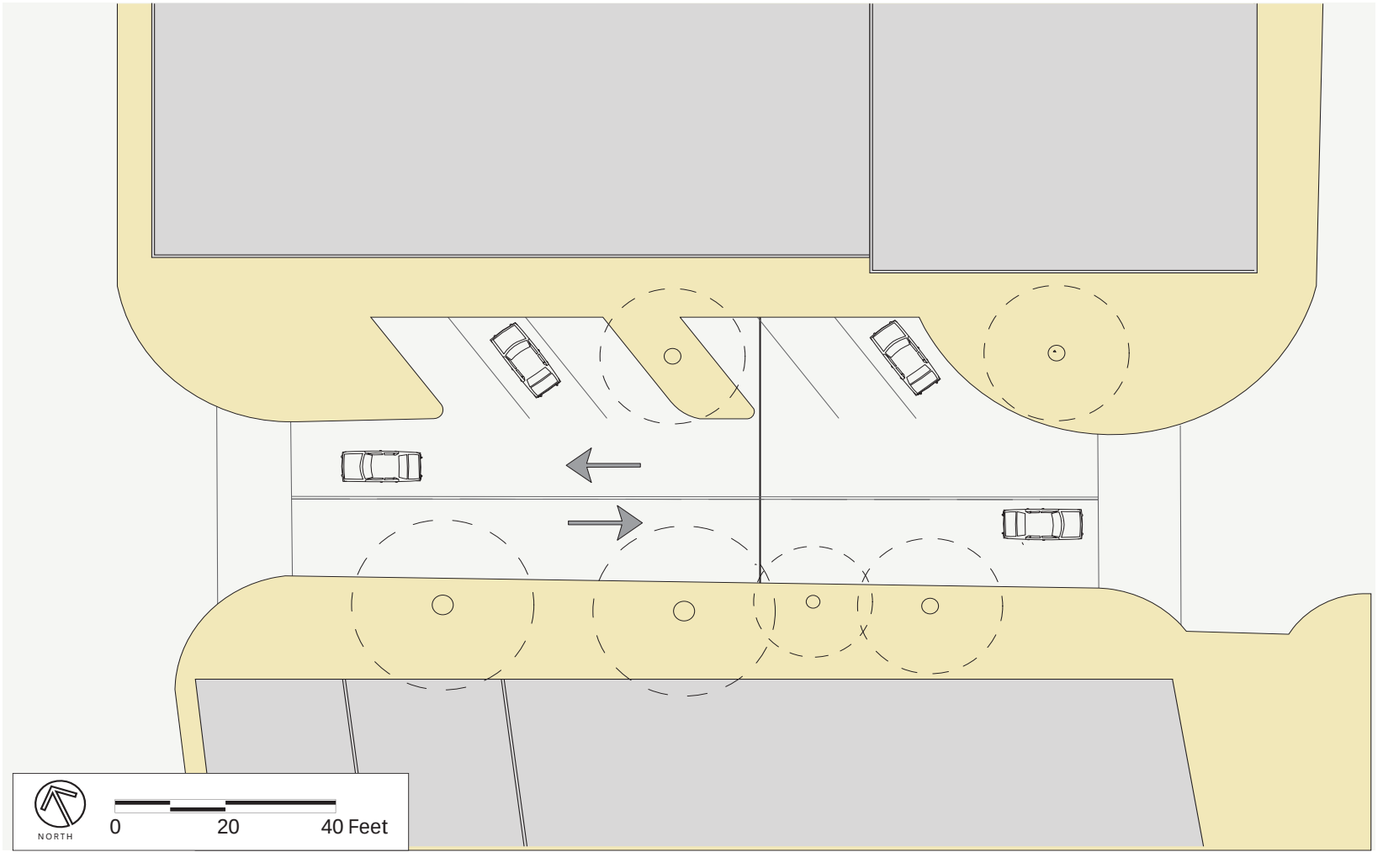
Please refer to the "Recommended Tree List" in chapter 4 and Planting Details in chapter 5.

*Signature Trees at Street Corner*




## SITE 3: VALLEY MALL RETROFIT

*Turn page to view*




Existing Condition

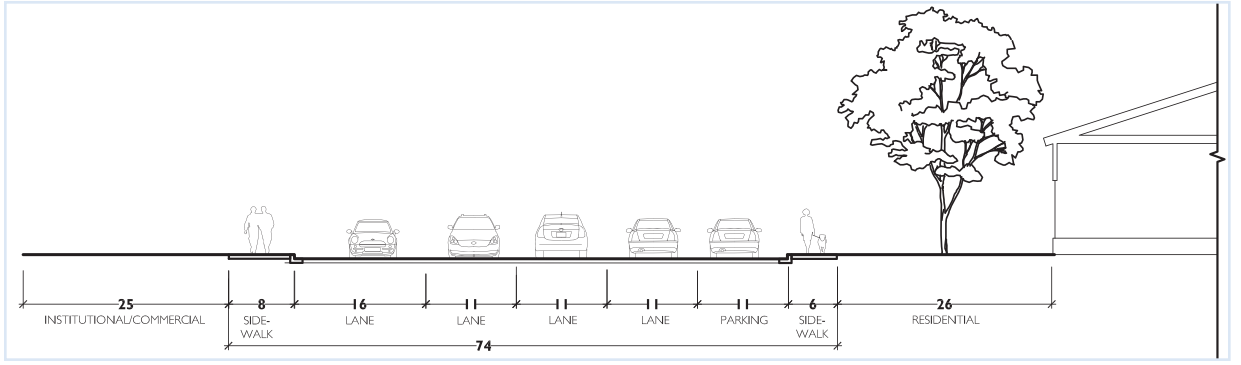
## 4. Arden Drive

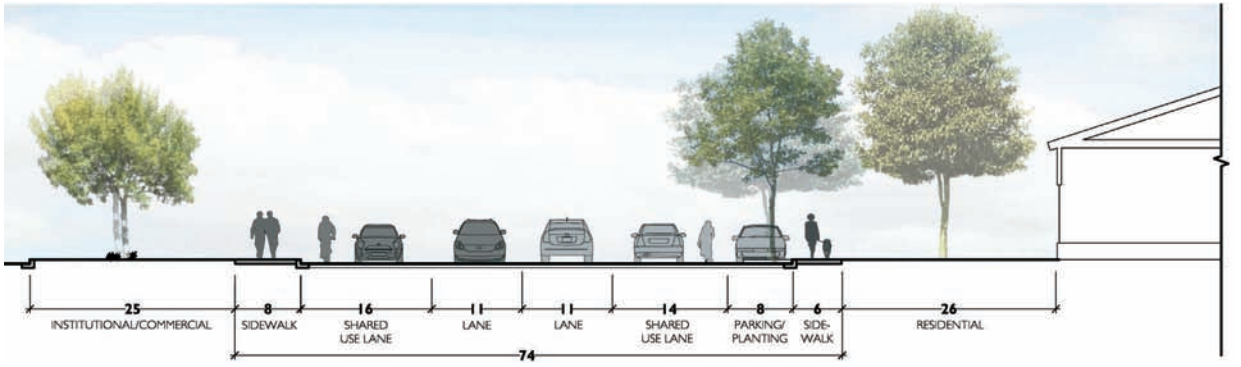
**Category:** Neighborhood Residential

**Designated Land Use:** Low Density Residential adjacent to Industrial/Business Park

**Existing Conditions:** Single family homes across from school. Residential uses across from institutional uses are common in El Monte. Arden is a four-lane road with parallel parking and sidewalks on both sides. There are minimal street trees.

*existing condition*




### SIDEWALK BULBOUT

**Design Intent:**

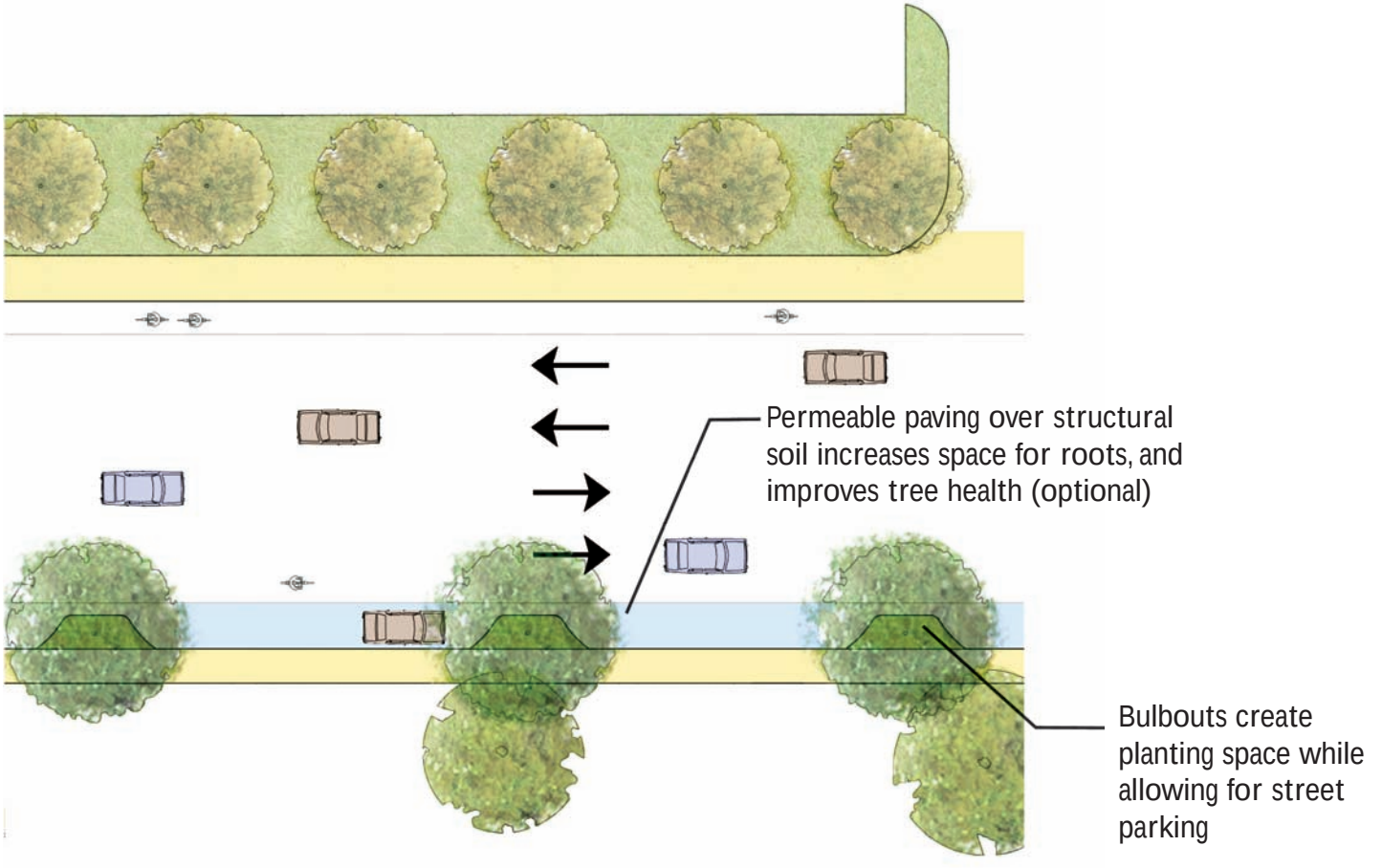
The sidewalk bulbout divides a wide street with tree planting, giving more shade to the sidewalk. A permeable paved parking lane runs along these bulbouts. A uniform line of trees visually buffer the pedestrian from an adjacent parking lot.

**Species recommendations** include:

Platanus racemosa
Cercis canadensis
Tipuana tipu

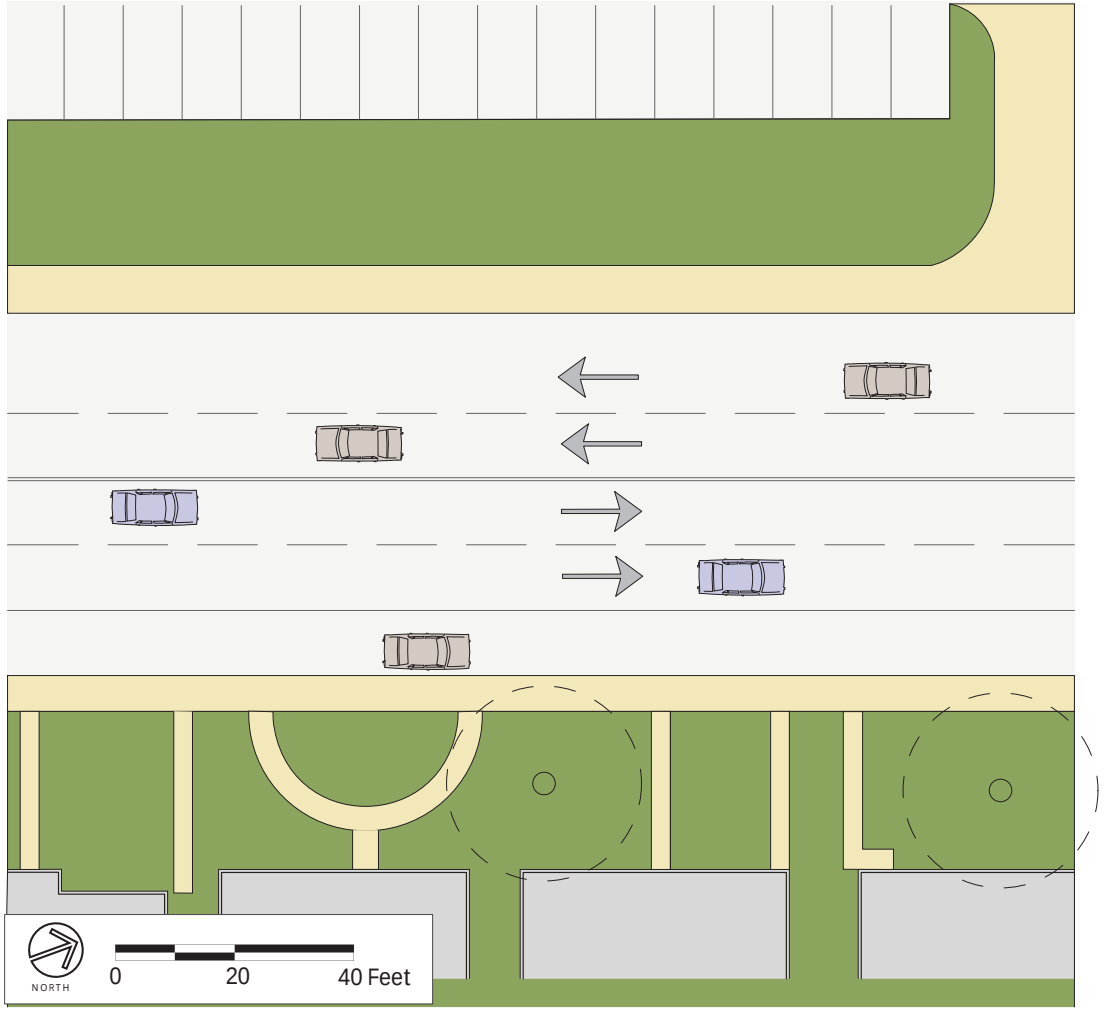
Please refer to the "Recommended Tree List" in chapter 4 and Planting Details in chapter 5.

*Tree well in bulbout*




## SITE 4: ARDEN DRIVE RETROFIT

*Turn page to view*




Existing Condition

*Arden Drive, existing*

ARDEN DRIVE WITH PROPOSED DESIGN ELEMENTS
rendering, opposite page

Studies have shown that a tree-lined street, like proposed Arden Drive, can affect mental well being in a positive way. Planting bulb-outs can also reduce area temperatures, absorb storm water, combat air pollution.

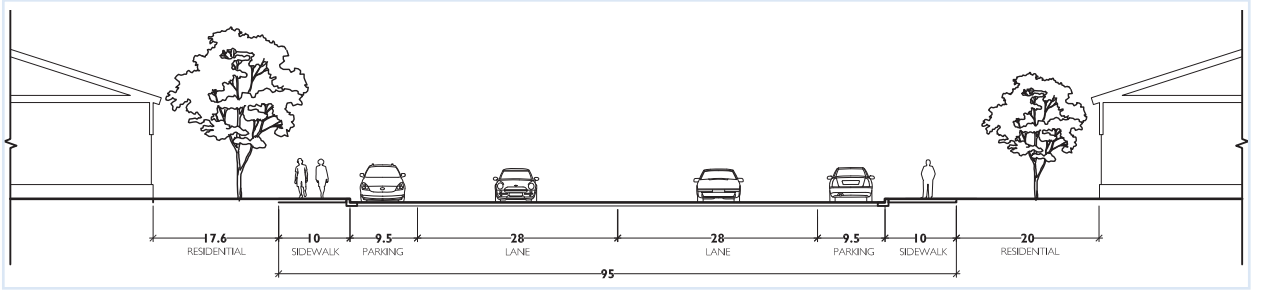
## 5. Merced Avenue at Rio Hondo Parkway

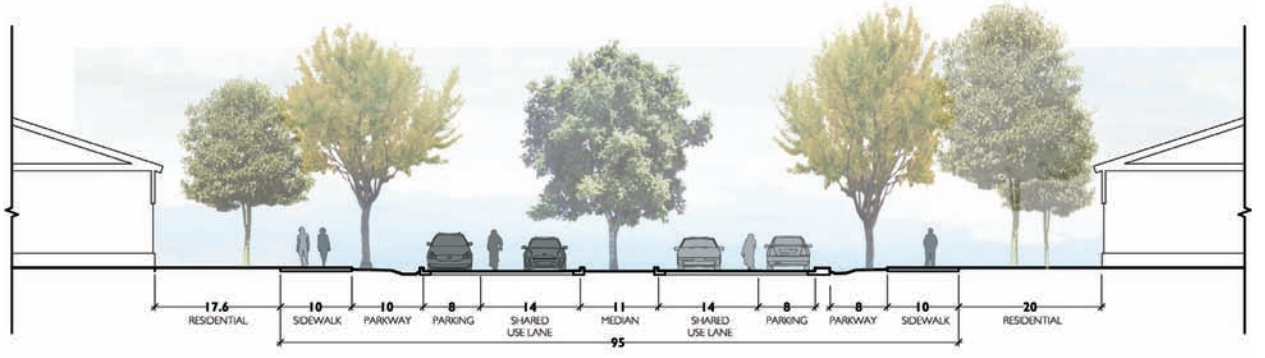
**Category:** Neighborhood Residential

**Designated Land Use:** Low Density Residential

**Existing Conditions:** Merced is a very wide street, once intended to connect through the City as a major arterial. Today, the street ends immediately north of the demonstration site. There are numerous wide streets without medians or street trees in El Monte.

*existing condition*




### NEIGHBORHOOD BOULEVARD

**Design Intent:**

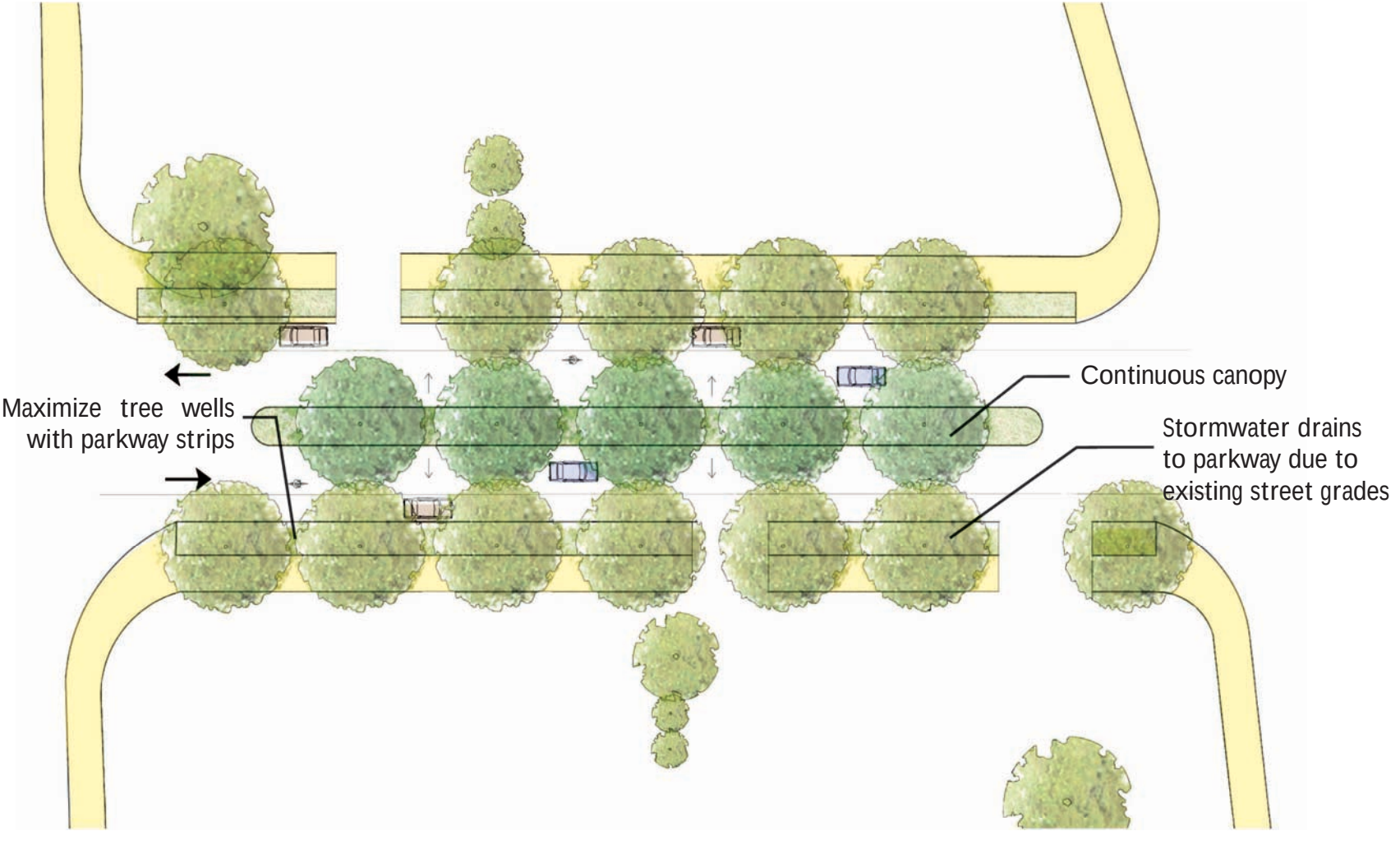
The addition of a planted median supports traffic calming for residential street. A continuous sidewalk on both sides provides a more pedestrian friendly environment. Both median and sidewalk planting address stormwater runoff.

**Species recommendations** include:

Quercus agrifolia
Ginkgo biloba
Tabebuia impetiginosa

Please refer to the "Recommended Tree List" in chapter 4 and Planting Details in chapter 5.

*Tree well with curb cuts*




## SITE 5: MERCED AVENUE RETROFIT

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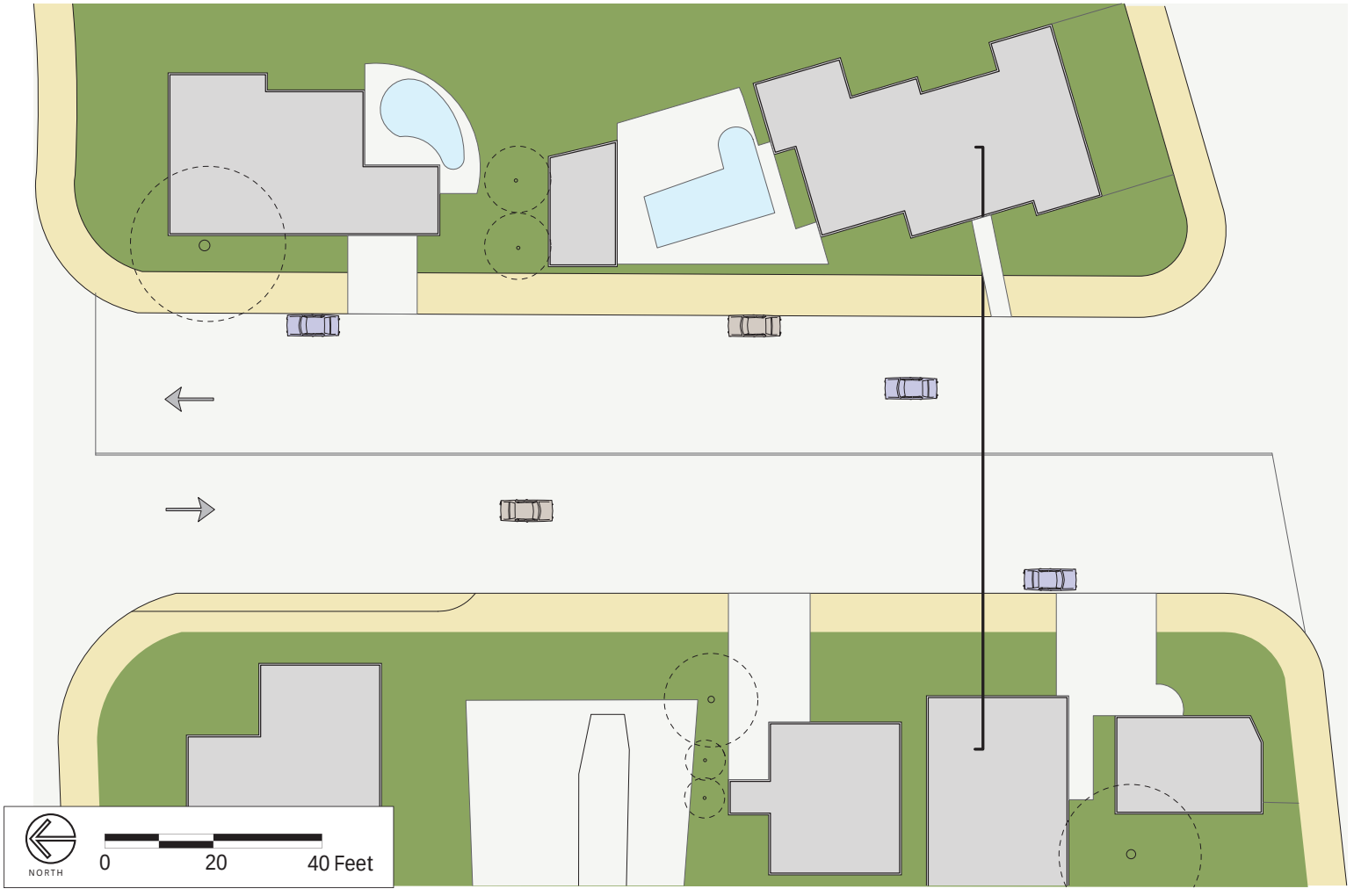



Existing Condition

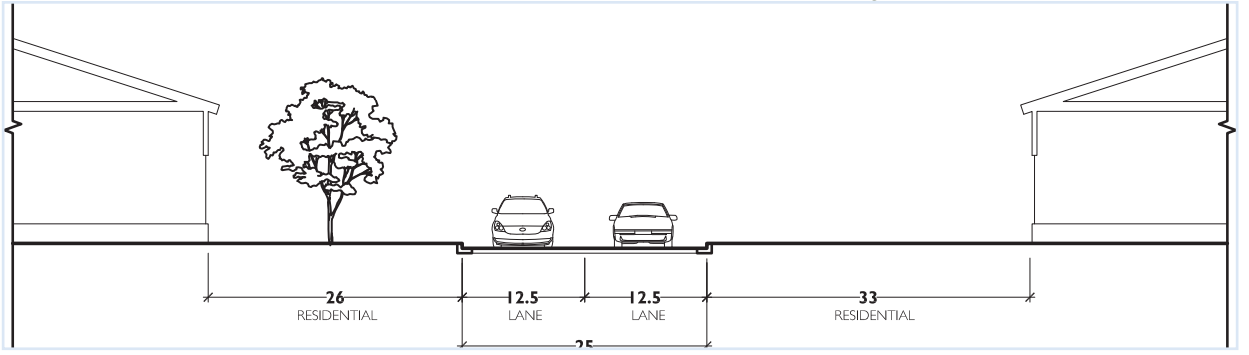
## 6. Whitney Drive at Haverly Street

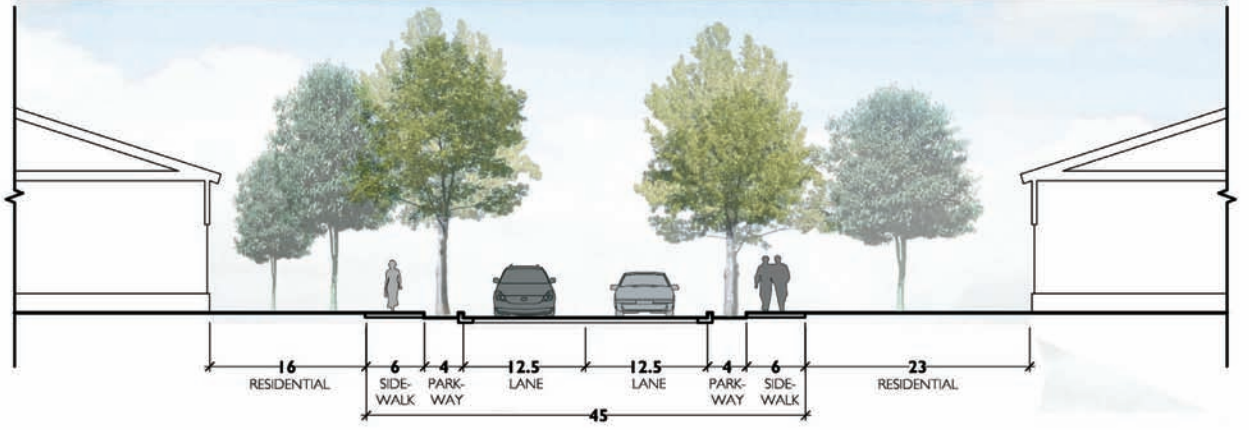
**Category:** Neighborhood Residential

**Designated Land Use:** Low Density Residential

**Existing Conditions:** Whitney is a typical two-lane residential street that receives minimal traffi c.There are no existing sidewalks and few street trees on Whitney Drive.

*existing condition*




### NEIGHBORHOOD WALKABILITY

**Design Intent:**

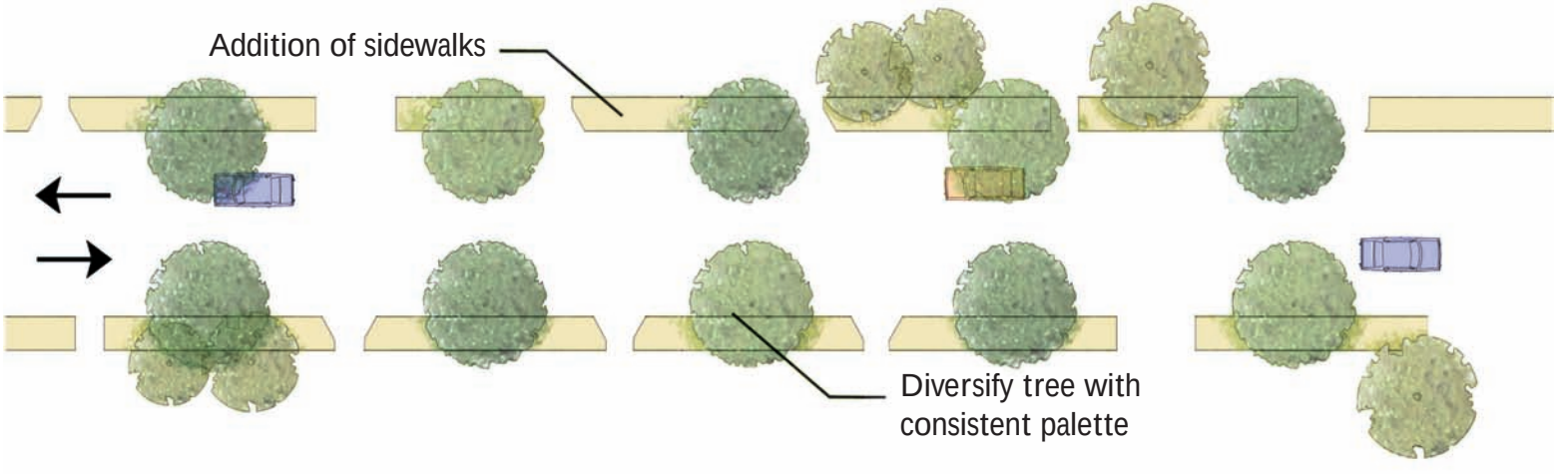
Walkability is enhanced on Whitney Drive through the addition of a sidewalk on both sides of the street that is shaded by a row of trees buffering the pedestrian and houses from the street.

**Species recommendations** include:

Platanus racemosa
Chilopsis linearis

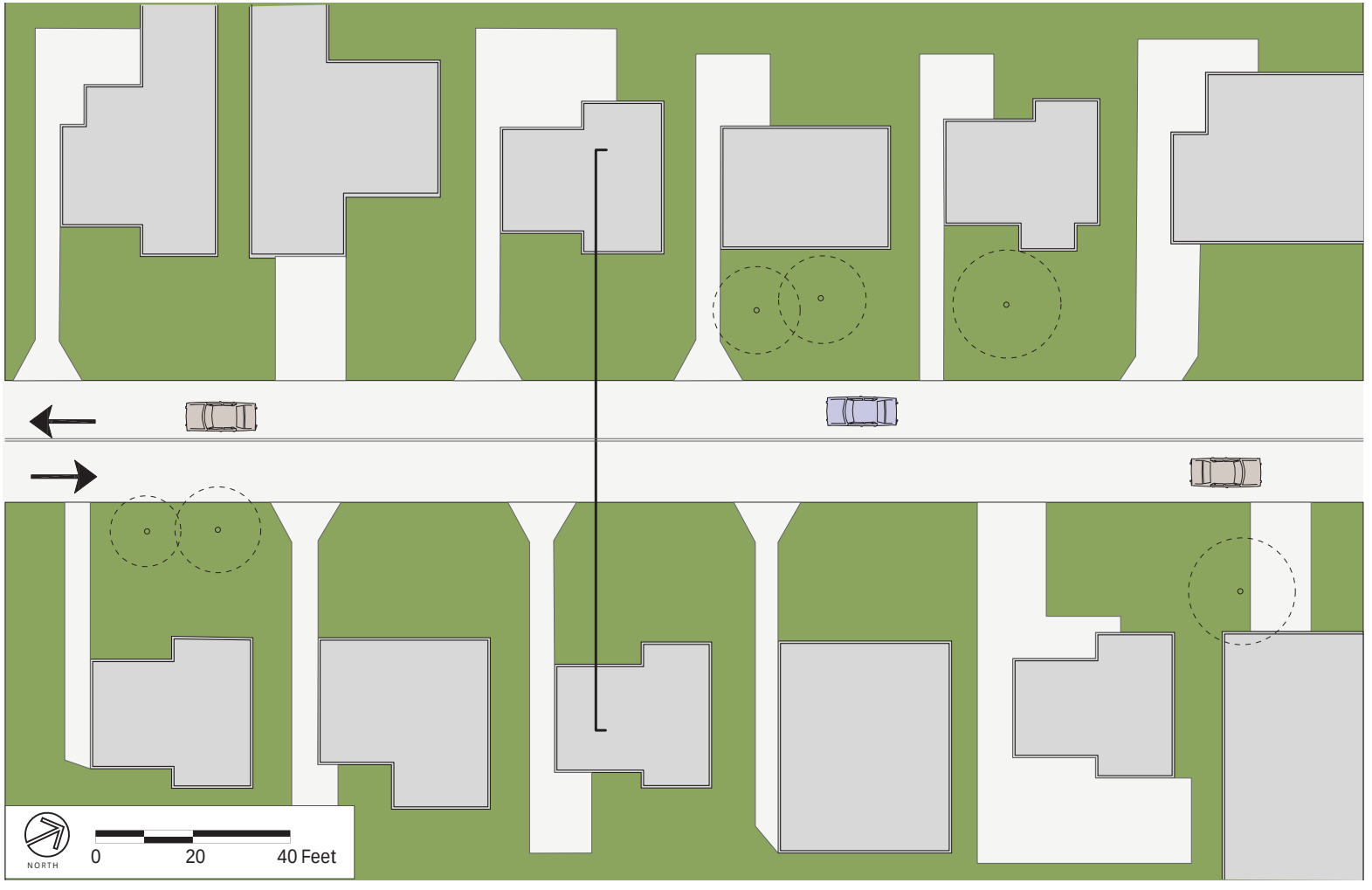
Please refer to the “Recommended Tree List” in chapter 4 and Planting Details in chapter 5.

*Tree parkway buffer*




## SITE 6: WHITNEY DRIVE RETROFIT

*Turn page to view*




Existing Condition

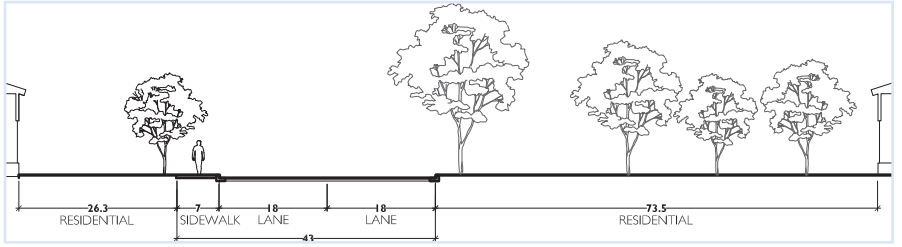
## 7. Hallwood Avenue at North Peck Road

**Category:** Neighborhood Residential

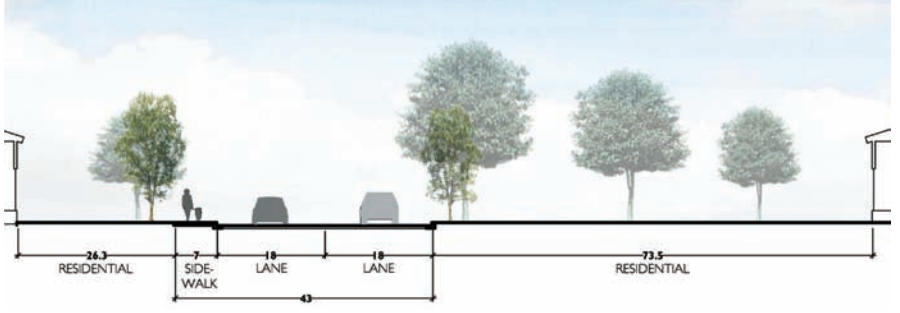
**Designated Land Use:** Low Density Residential

**Existing Conditions:** Whitney Drive is a typical two-lane residential street with no existing sidewalks and few street trees, which receives minimal traffic.

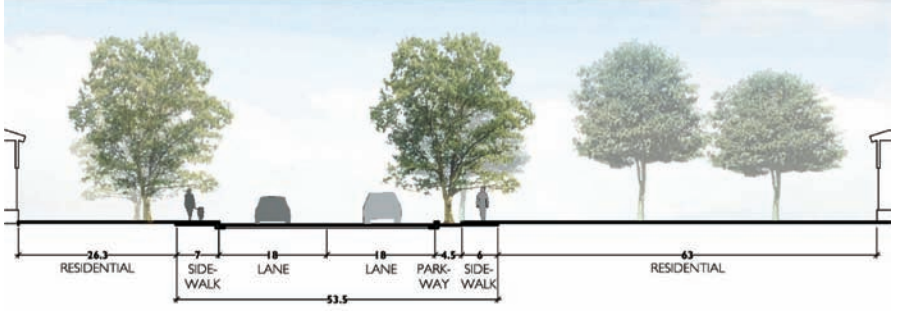
*existing condition*




*existing conditon*




*phase I upgrades*




*phase II upgrades*

### NEIGHBORHOOD WALKABILITY

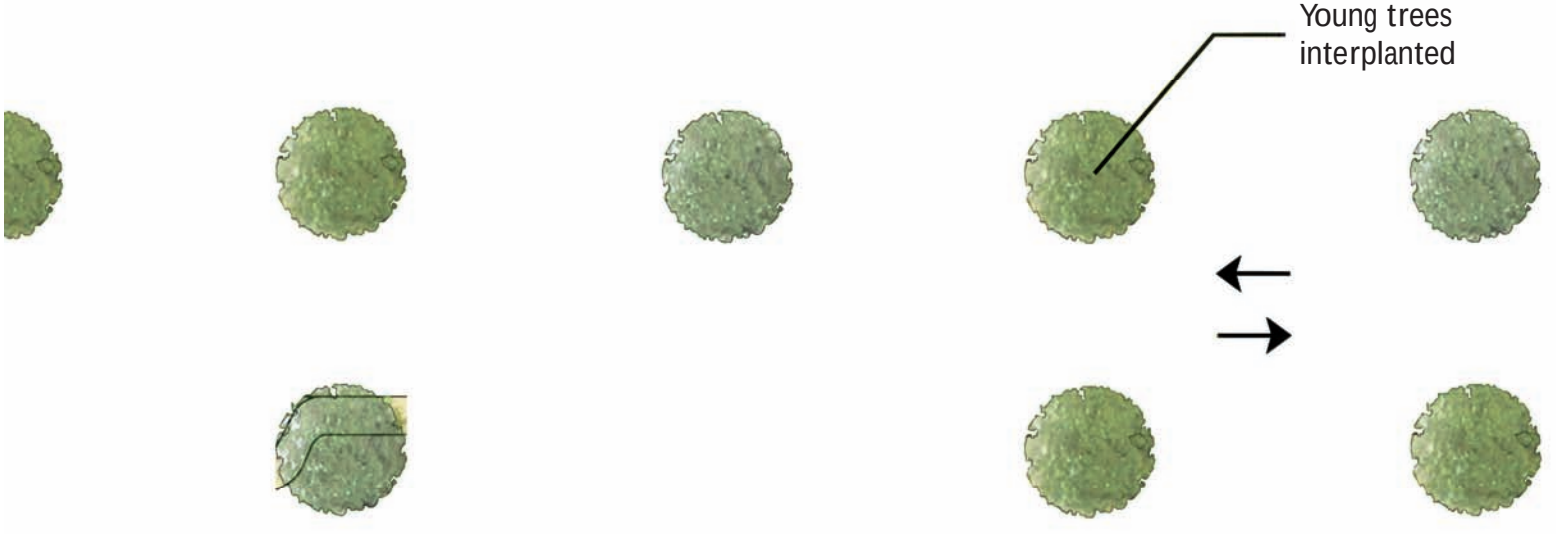
**Design Intent:**

Through interplanting, a consistent street tree canopy is phased along an existing and new sidewalk, contributing to a shaded, walkable residential street.

**Species recommendations** include:

Quercus agrifolia
Quercus engelmannii
Cercis canadensis

Please refer to the "Recommended Tree List" in chapter 4 and Planting Details in chapter 5.




PHASE I

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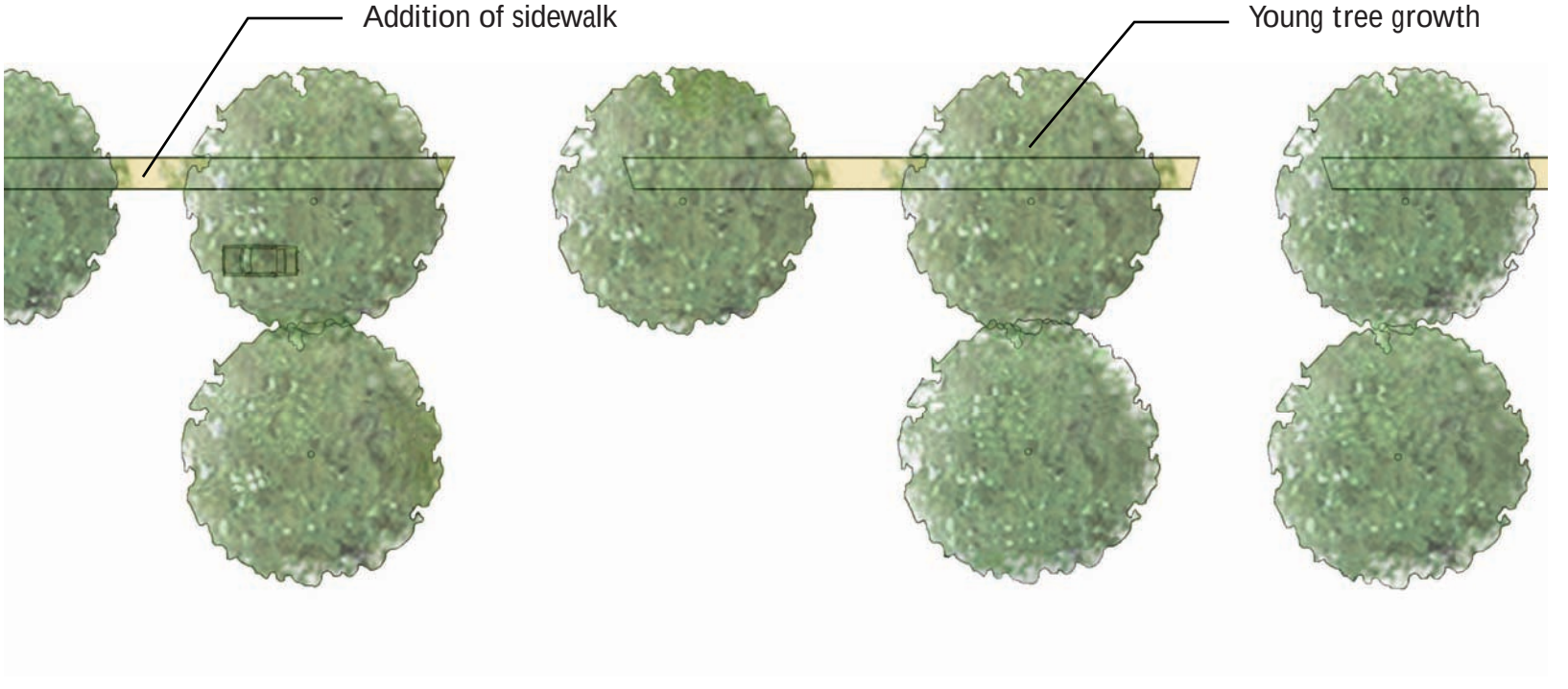


## SITE 7: HALLWOOD AVENUE RETROFIT PHASE II

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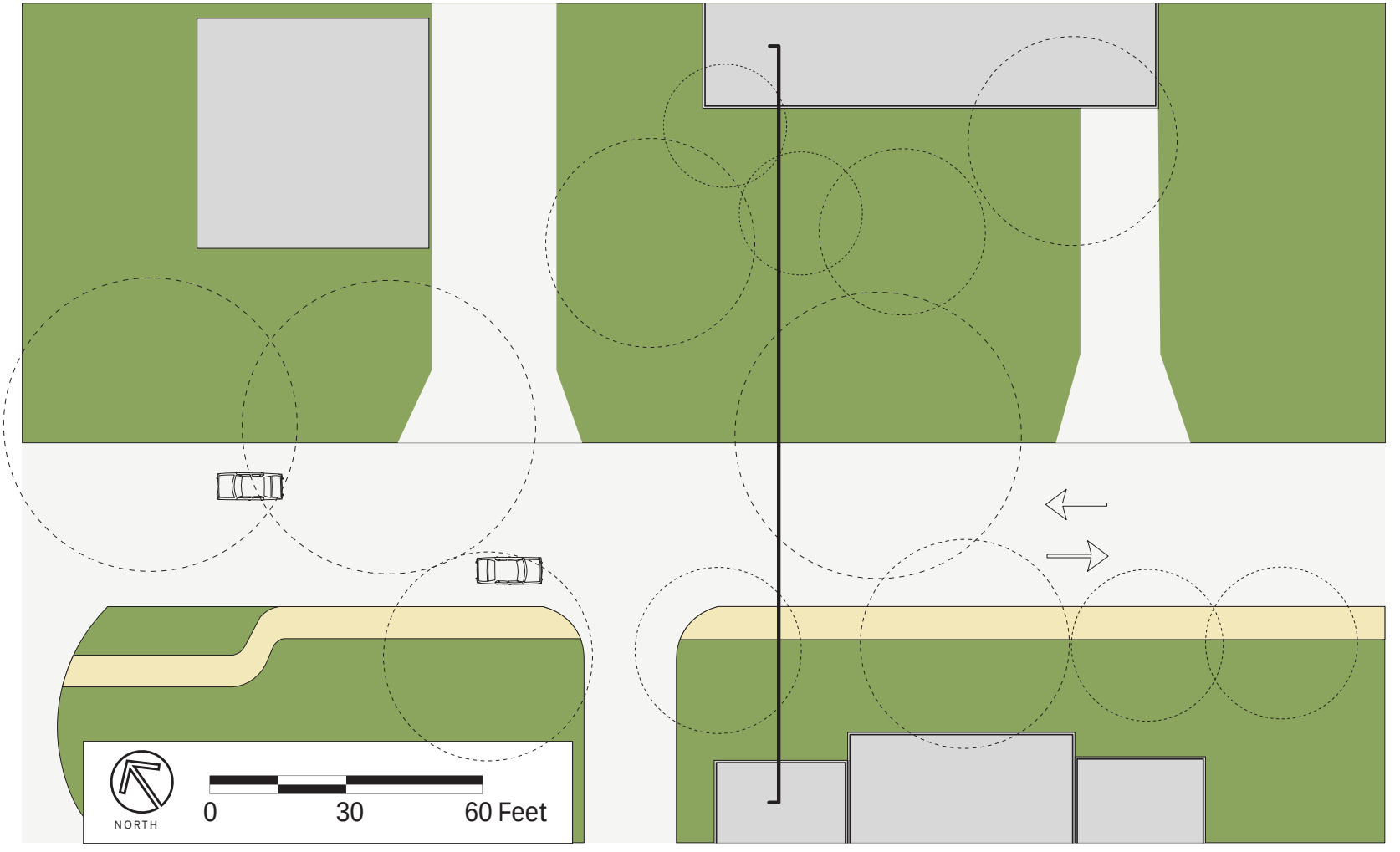



Existing Condition

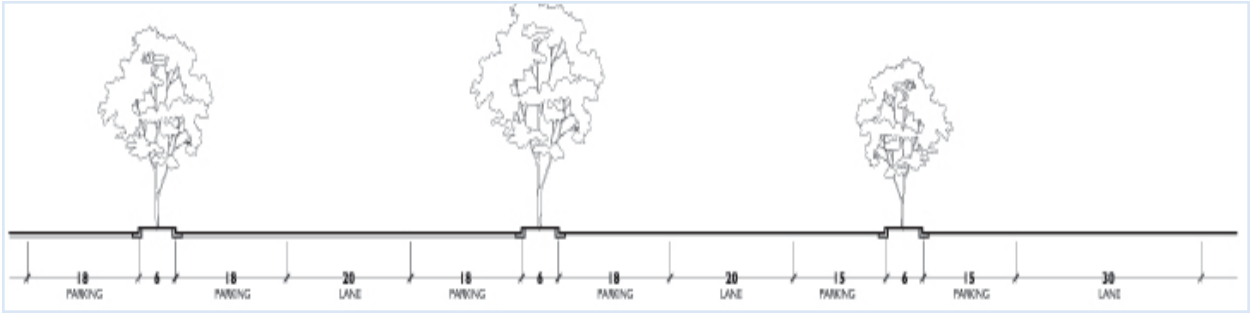
## 8. El Monte City Hall

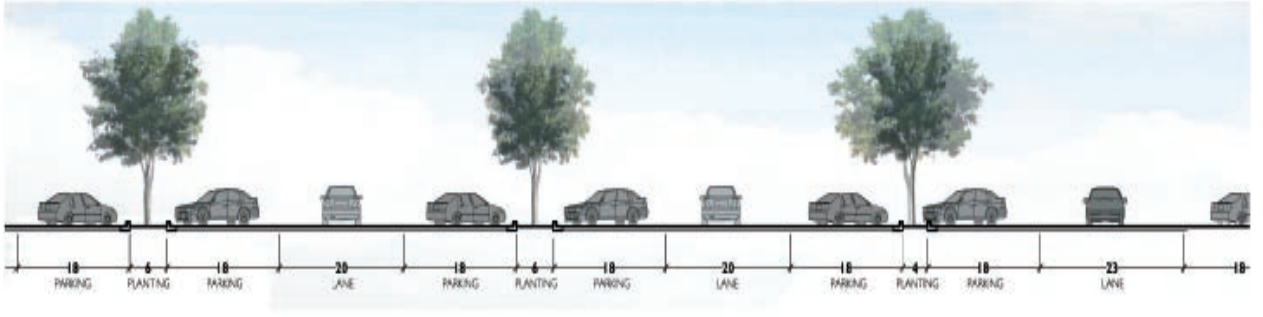
**Category:** Civic/ Parking Lot

**Designated Land Use:** Public Facilities

**Existing Conditions:** Diagonal parking spaces with long planting strips surrounded by curbs.

*existingv condition*




### PARKING LOT RETROFIT

**Design Intent:**

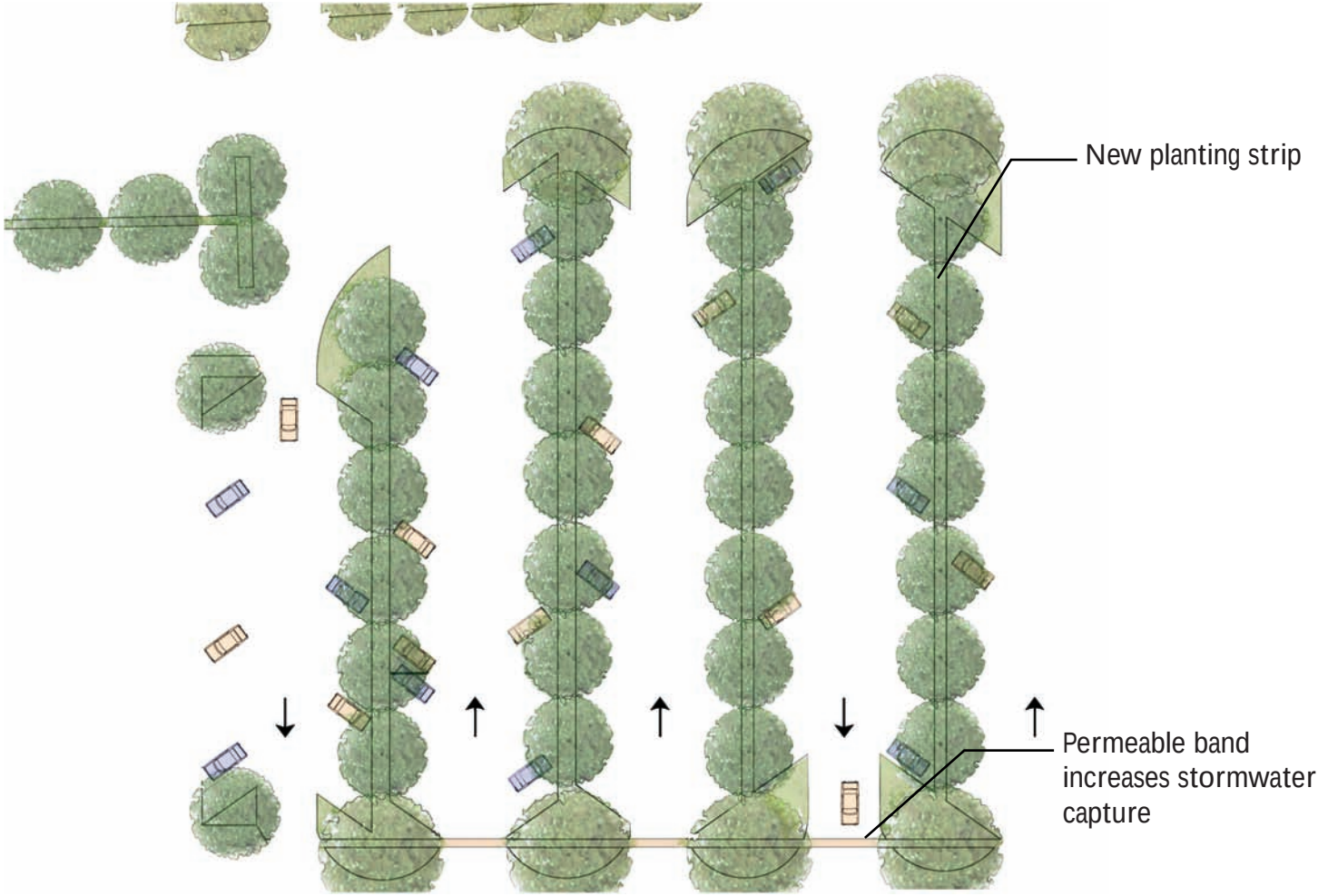
The retrofit creates more stormwater capture through vegetated swales added in between parking space rows, as well as larger planting areas at each end of the swales. The added consistent canopy also shades the largely paved parking area.

**Species recommendations** include:

Platanus racemosa
Quercus engelmannii
Tipuana tipu

Please refer to the “Recommended Tree List” in chapter 4 and Planting Details in chapter 5.

*Stormwater capturing planting strips*




## SITE 8: CITY HALL PARKING RETROFIT

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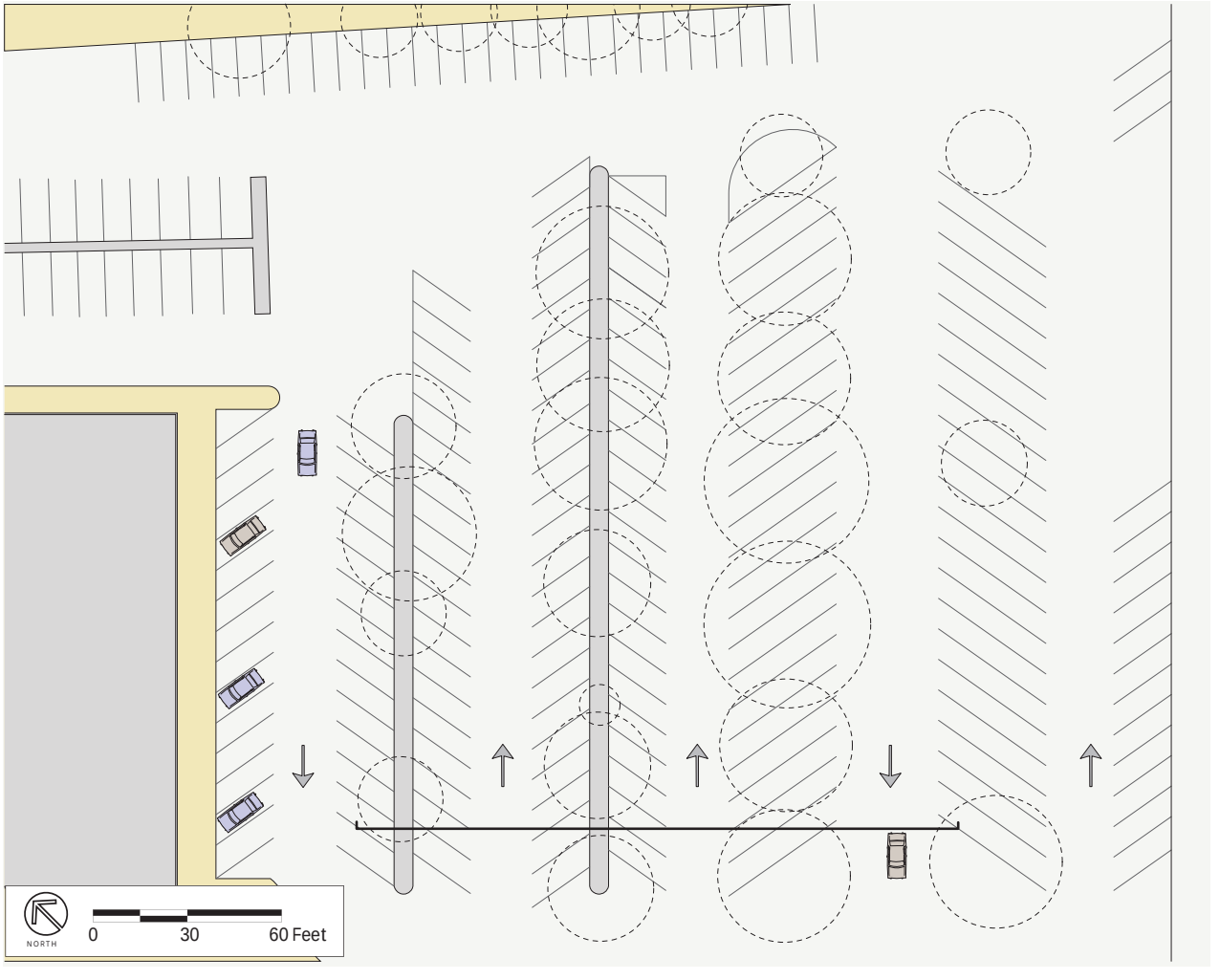



Existing Condition

## 9. Retail Parking Lot


### NEW GREEN PARKING LOT

**Category:** Parking Lot  This parking lot is not specific.

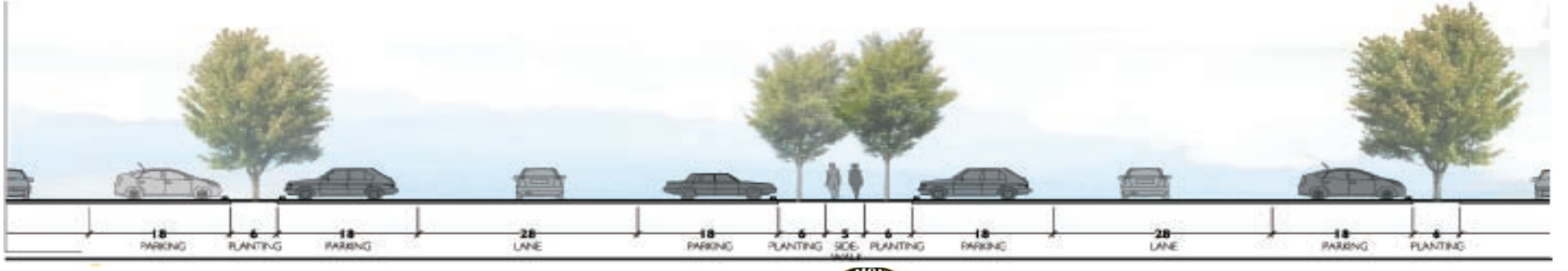
**Design Intent:**

The new green parking lot addresses stormwater runoff through long planting strips. A walkway along the center planting strip as well as perpendicular walkway accommodate pedestrian safety.

**Species recommendations** include:

Platanus racemosa
Quercus virginiana
Tipuana tipu

Please refer to the "Recommended Tree List" in chapter 4 and Planting Details in chapter 5.



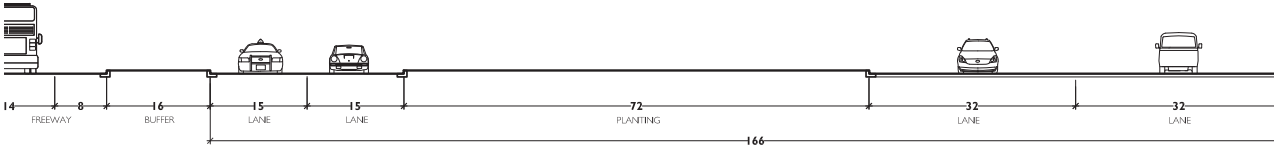
## 10. Flair Drive

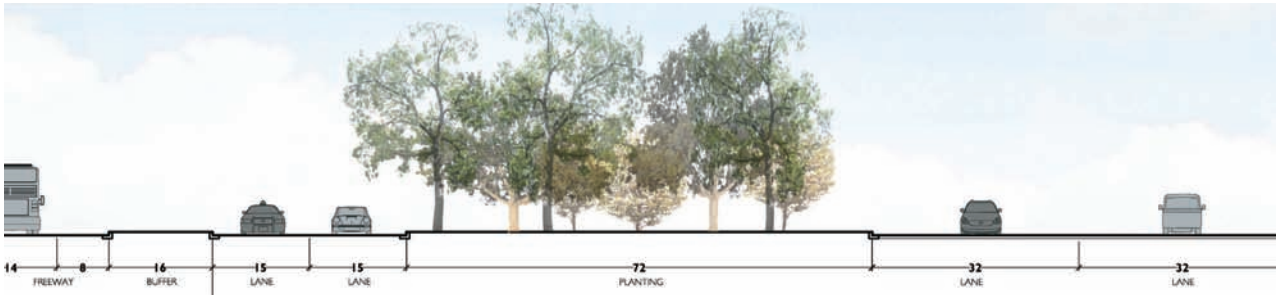
**Category:** Freeway

**Designated Land Use:** Office, commercial

**Existing Conditions:** Flair Drive separates interstate 10 from commercial uses near Aerojet Avenue. At other locations in El Monte, similar frontage roads and narrow, sloped planting areas separate residential from the highway. In general, there is little to buffer El Monte's commercial neighborhoods from highway.

*existing conditon*




### COMMUNITY BUFFER

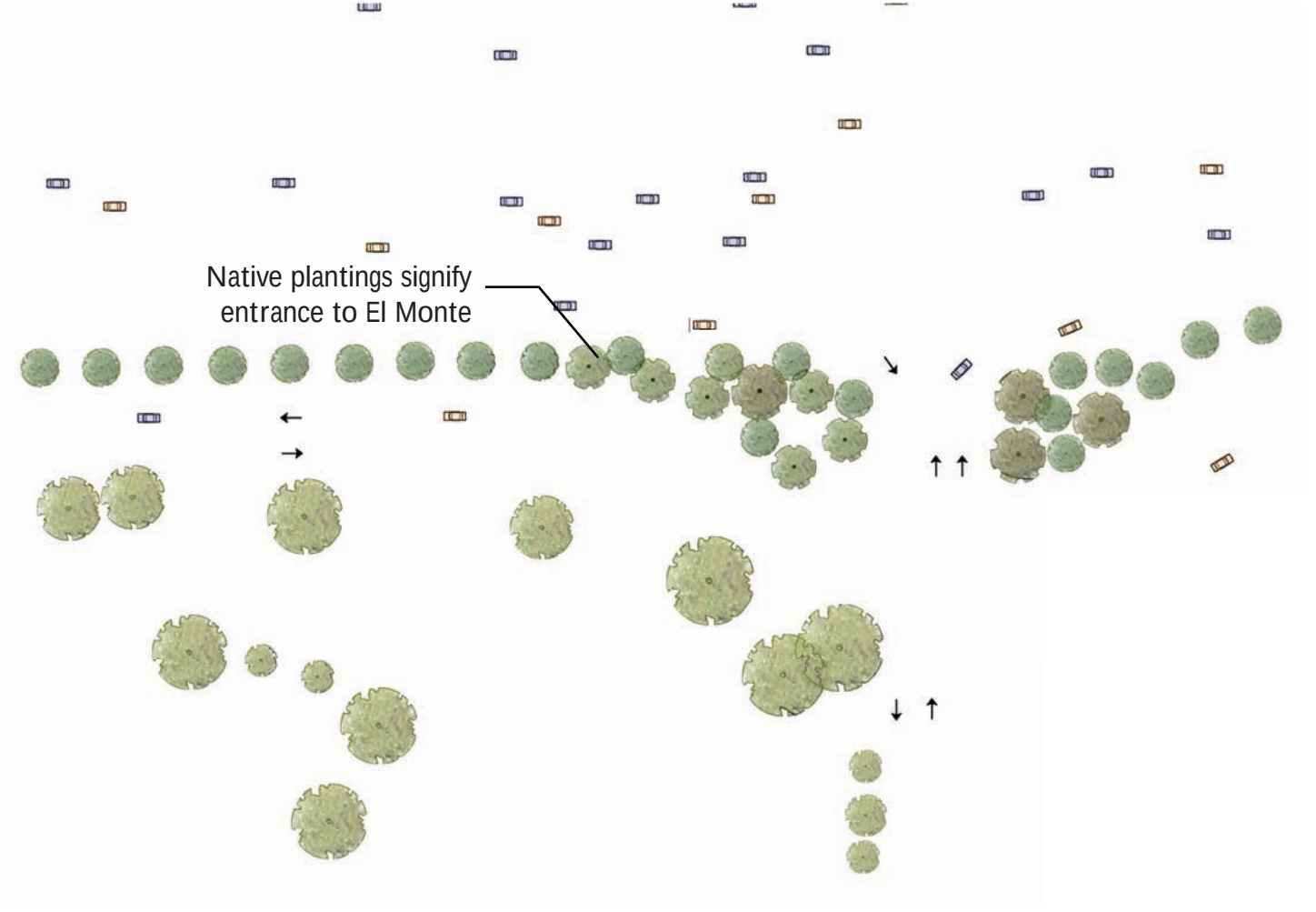
**Design Intent:**

Establishing a multi-layered native forest as a buffer between the highway and other uses will provide a visual screen through varied height and texture, help to define El Monte's character and boundaries, and help to reduce air pollutants concentrated by auto traffic. The denser planting suports pollution reduction, as do the species selected for this area.

**Species recommendations** include:

Juglans californica
Quercus agrifolia
Quercus lobata
Quercus engelmannii
Pinus coulteri

Please refer to the "Recommended Tree List" in chapter 4 and Planting Details in chapter 5.




## SITE 10: FLAIR DRIVE RETROFIT

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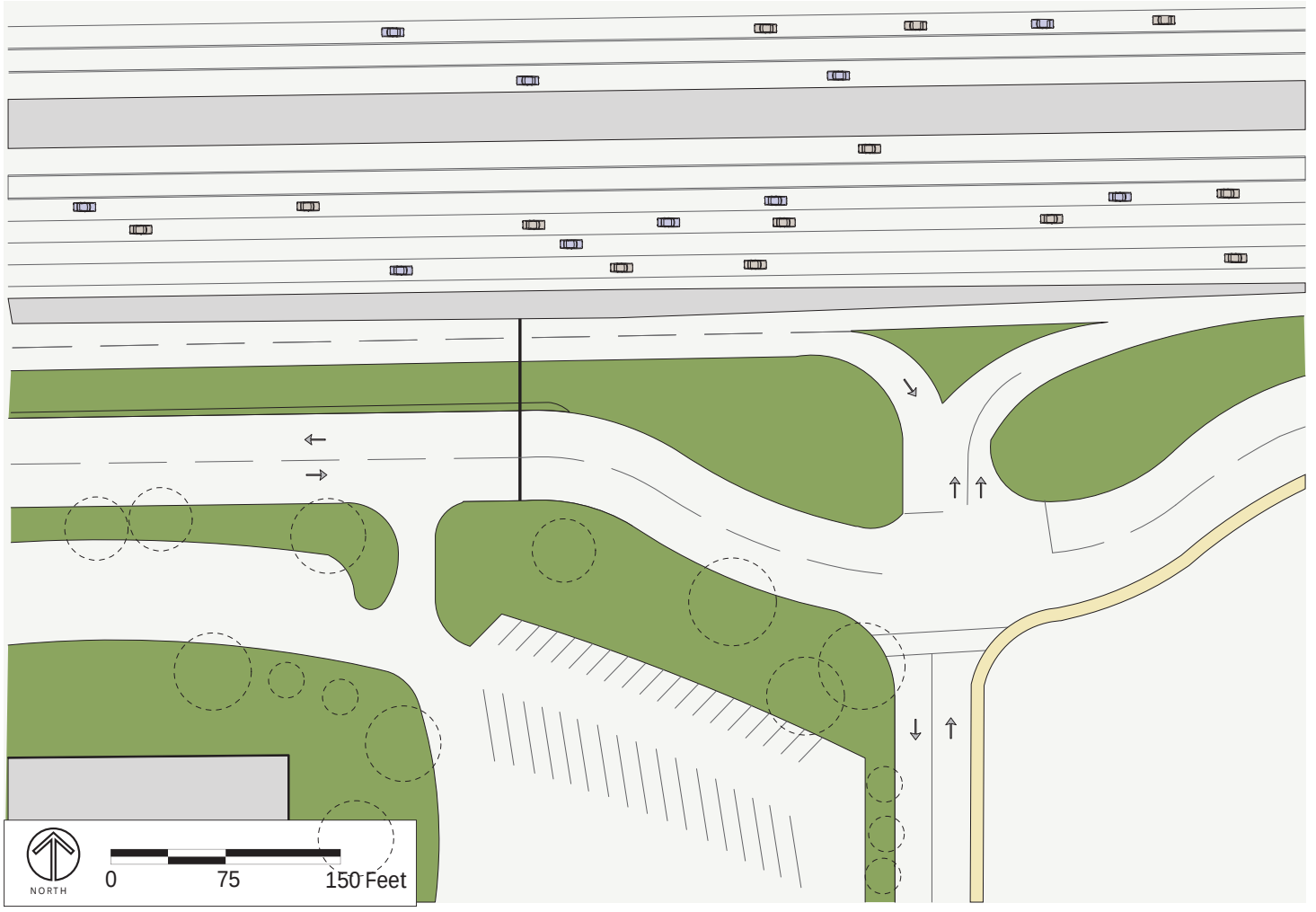



Existing Condition

# CHAPTER 6: TREE PLANTING AND CARE GUIDELINES

El Monte Speaks

*What we are doing is for the good of the community and nature. We need to plant more trees to make the air better for the children.*

~Victoria Perez, El Monte Resident

A healthy Urban and Community Forest depends on proper planting practices and ongoing care. Providing proper care requires an understanding of the biological needs of trees and training in appropriate pruning techniques.

This chapter outlines how to select and plant a healthy tree and provide ongoing care including pruning, root maintenance, mulching, fertilizing, pest management, and criteria for determining how and when to remove hazardous trees.

## PLANTING

This section provides a comprehensive overview of techniques for planting new trees, from choosing quality nursery stock and soil preparation to placement. Successful implementation sets the stage for healthy growth throughout the tree's life.

### Select Quality Nursery Stock

Choosing a healthy, vigorous tree specimen is the first critical step in the planting process. Trees should be healthy, vigorous, and typical for the species in regards to its crown form, leaves, branches, trunk, tree height, trunk diameter, and roots. Per the Urban Tree Foundation, the 'Guideline Specifications for Nursery Tree Quality' shall serve as specifications used for all City tree planting operations. (See Appendix E)

Container-grown plants in nurseries often produce poor root stock. Combined with improper pruning practices, it can lead to costly structural health problems in the future.

Currently, nurseries nationwide are making a conscious effort at producing higher quality stock. They are undergoing major changes in regards to their tree stewardship techniques. The Urban Tree Foundation, California ReLEAF, and the California Department of Forestry and Fire Protection developed the following guidelines to produce higher quality trees in California.

### When to Plant

Ideally, new trees are planted during the dormant season: in the fall after the leaves drop or in early spring before new buds break *(in the height of summer, when temperatures soar it is the most stressful time)*. Trees can be planted throughout the year under the following conditions:

- Proper nursery growth conditions and practices as described in the Urban Forest Tree Foundation specifications
- Proper care in transportation and handling
- Proper handling during planting
- Sufficient water availability with a maintenance agreement in place

*Planting day at Lashbrook Park, El Monte, California*

## Avoiding Transplant Shock & Determining Plant Size

Transplanting trees places them at risk of transplant shock. Container plants are less susceptible to transplant shock compared to balled and bare root transport methods. Generally speaking, the smaller the container size the less chance of shock. During a transplant, the root system of the balled and bare root trees have been reduced to 90 to 95 percent of their original size, often resulting in a higher rate of shock per number planted. For this reason, balled and bare root trees shall not be specified unless approved by the Urban and Urban and Community Forest manager for the specific situation and conditions.

## Size Recommendations

The following should also consider budget constraints:

*Plant 24-inch box trees* in tough urban conditions where vandalism and environmental conditions are less than favorable to the survivability of the tree.

*Plant 15-gallon trees* in locations where vandalism and vehicular conflict is not considered a problem. 15-gallon trees, having smaller root systems than 24-inch box, may adapt to the environment faster and have been proven by tree research to catch up in height within the first five years.

## Soil Preparation and Amendments

Healthy soils, rich in minerals, organic matter, microorganisms, water and air are literally the foundation of a healthy urban forest. In a forest setting, plants naturally shed leaves and debris creating layers upon layers on the ground where it slowly decomposes, providing the soil creatures with a food source, which in turn make nutrients available to the plants and protects them from pests and diseases. This healthy soil food web naturally feeds and protects plant health- no maintenance is required!

In a typical urban environment, however, leaves and plant debris are swept up and hauled away to maintain a neat and tidy appearance. This process leaves the soil unprotected, deprived of this natural nutrition. In addition, urban soils are often heavily compacted, eliminating all air pockets and devoid of soil biology due to synthetic fertilizers herbicides, pesticides and lack of organic material on the soil surface.

To create a healthy urban forest, the soil must build and maintain a robust soil food web. This can be accomplished by:

- Avoiding soil compaction.
- Incorporating organic amendments into the soil at planting.
- Applying mulch on the soil surface at time of planting and once a year following planting, being careful not to bury trunk flare.
- Using only non-synthetic, natural amendments and fertilizers, such as quality compost or compost tea.
- Introducing mycorrhizal fungi to the tree roots at time of planting.

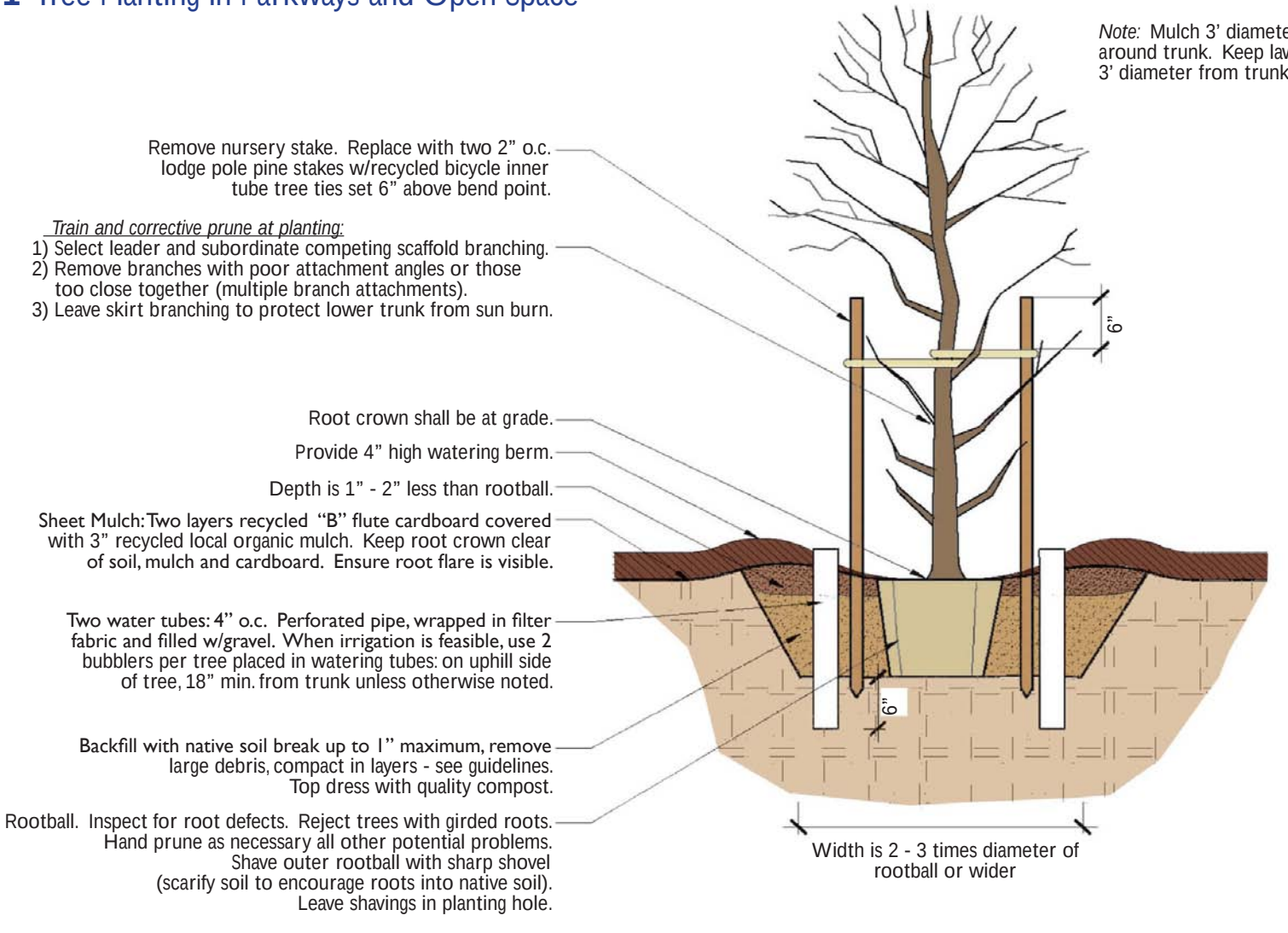
These fungi help provide food to the roots and protect them from soil borne pathogens. The texture of the soil, meaning the percent of sand, silt and clay, can't be modified. The soil structure, however, can be improved by supplying organic amendments that are specifically tailored to the soil's needs. Soil characteristics will vary considerably between sites, depending upon degree of compaction, microbiology and structure (arrangement of soil particles into aggregates). It is important to obtain site specific soils tests and recommendations for organic, non-synthetic amendments to include with planting and ongoing care. Recommendations for compost and amendments should include bringing the soil organic content up to 5 percent. This soil test will also provide important information regarding the drainage characteristics of the soil, based upon its texture, which will also influence plant selection.

## How to Plant

Proper planting techniques can greatly help a new tree adapt and thrive in its new environment. The simple procedures described in this section can be readily taught to local volunteers and participants in the Citizen Forestry Team, described in Chapter 7. The information presented has been developed from several sources including the ISA New Tree Planting,[1] the City of Claremont Tree Policy Manual [2] and the Model Bay-Friendly Maintenance Specifications.[3] The following steps outline how to plant a tree in a landscaped area, illustrated in Figure 6-1. These steps will need to be modified slightly for planting in paved tree wells or at tree grates, which are shown in Figures 6-2 and 6-3.

1 *www.treesaregood.com/treecare/tree_planting.aspx.*
2 City of Claremont, *Tree Policy Manual*, June 2007.
3 Stopwaste.org, *Model Bay-Friendly Maintenance Specifications*, March 2006 .

## **Figure 6-1** Tree Planting in Parkways and Open Space



### a. Identify the Trunk Flare and Save the Skirt Branches

- Locate the trunk flare (where the roots spread at the base of the tree) prior to digging the hole in order to determine hole depth. This point should be visible after the tree has been planted.
- Do NOT remove the temporary (skirt) branches growing between the trunk flare and the bend point of the tree. Temporary branches protect the trunk from sun scald and assist in the development of trunk caliper in the early stages of growth.

### b. Dig a Hole and Check Drainage

- Dig the hole only deep enough to position the root collar even with the existing soil surface. A firm, flat-bottomed hole wll prevent trees from sinking.
- The hole shall be two to three times the diameter of the root ball and 1 to 2 inches shallower than the rootball.
- Set soil aside of the hole for reuse.
- Scarify the edges of the plant pit with a shovel if the soil is compacted from construction or clay soil to provide newly emerging roots room to expand to hasten root growth.
- Check for soil drainage problems by filling planting hole with water. If water does not drain at least 1 inch per hour, core drill tree drain hole(s) 12 inches deeper than the root ball and backfill with drain rock, or relocate tree to a location with better drainage.

### c. Install Watering Tube

When planting in paved areas, install one 4-inch diameter watering tube per street/parkway tree, wrapped in filter fabric and backfilled with drain rock. Watering tubes direct water deeper in the soil encouraging roots to grow downward.

### d. Remove Tree Container

- Carefully cut down the sides of the container or remove by gently pulling from the trunk base.
- Inspect root ball for circling roots and cut or remove them.
- Expose trunk flare (gently remove soil at the trunk base if covered).
- Cut any roots that circle or mat along the sides and bottom of the root ball (figure 6 - 2).

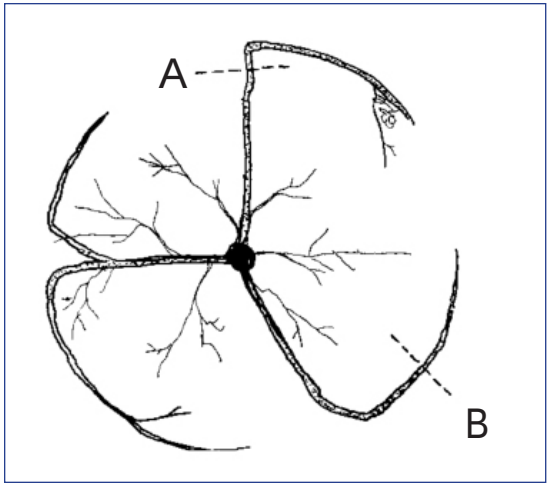



*Figure 6 - 2 Cut roots at (A) to form new roots that grow away from the trunk. Do not cut roots at (B), since the root defects wll regrow.*

### e. Place the tree at the proper height.

- Check the depth of the hole to ensure the root flare is 2 to 3 inches above finish grade of the backfill soil to allow for settling.
- Lift the tree into the hole by the root ball, not the trunk.
- Straighten the tree prior to backfilling.
- Remove the nursery stake.
- It is recommended that commercially available mycorrhizal fungi be applied to the tree roots prior to backfilling. The fungi requires con-tact with the root surfaces to be activated.

## **Figure 6-3** Tree Planting in Paved Areas

*Train and corrective prune at planting:*
1) Select leader and subordinate competing scaffold branching.
2) Remove branches with poor attachment angles or those too close together (multiple branch attachments).
3) Leave skirt branching to protect lower trunk from sun burn.

Rootbarrier 60" each way from trunk (10 linear feet). See specs.

Rootball - set root crown 1 1/2' to 2" above grade.

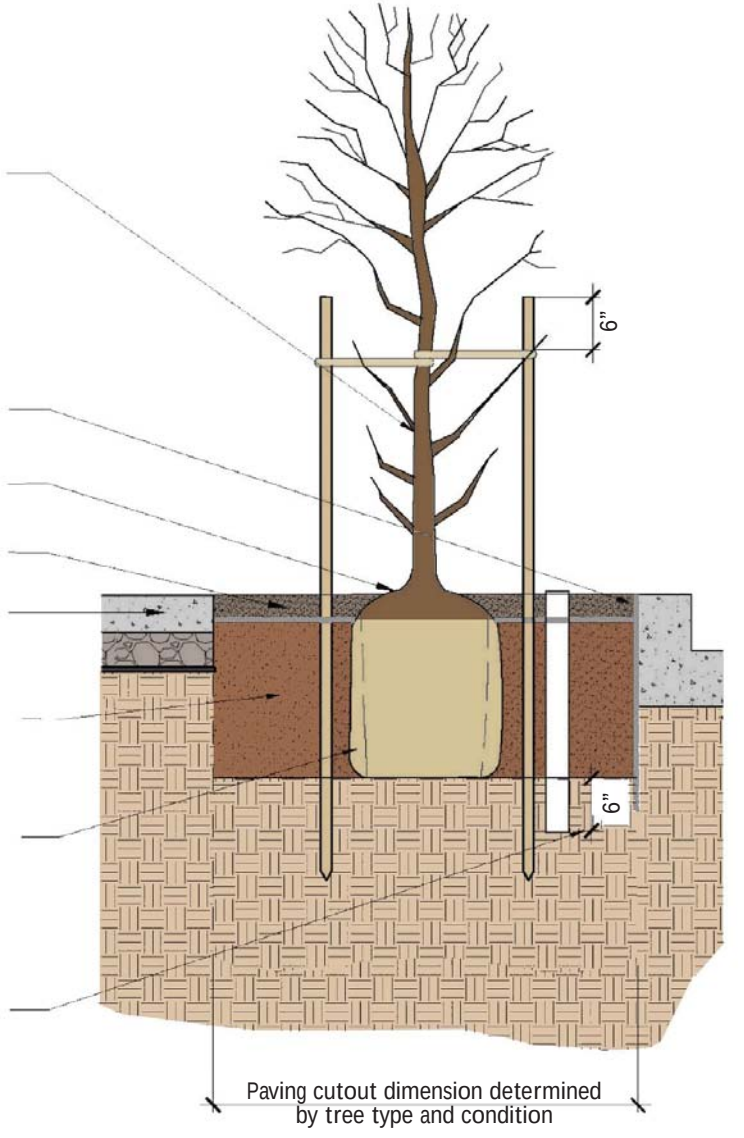
3" Decomposed Granite or Mulch.

Concrete paving

Backfill with native soil. Break up to 1" maximum particles, remove large debris, compact in layers - see guidelines. Top dress with quality compost.

Rootball. Inspect for root defects. Reject trees with girded roots. Hand prune as necessary all other potential problems. Shave outer rootball with sharp shovel (scarify soil to encourage roots into native soil). Leave shavings in planting hole.

Water tube, 4" o.c. Perforated pipe, wrapped in filter fabric and filled with gravel when irrigation is feasible, use (2) bubblers per tree placed in watering tubes.



### f. Backfill the Tree Hole

- The backfill soil shall be broken up into 1-inch particle size.
- Remove all rocks, debris and other material greater than 1 inch.
- Fill the hole about one-third and gently but firmly pack the soil around the base of the root ball. Remove any fabric, plastic, string, and wire from around the trunk and root ball at this time without damaging the roots.
- Fill the remainder of the hole, taking care to firmly pack soil to eliminate air pockets that may cause roots to dry out. If necessary, use water to help settle the soil.
- Build a 4-inch high watering berm around the edge of the rootball.
- Topdress with 1-inch quality compost.
- Fertilizer tablets or other forms of fertilizer shall not be used at time of planting.

### g. Add Tree Protection

- Install two stakes outside of the root ball, 12 inches deeper than the root ball, and above the natural bend point of the tree when not staked, but not in danger of rubbing on any limbs.
- Use two opposing, flexible ties at the bend point of the tree.
- If a cross bar is used, ensure it is not placed so that the tree trunk will make contact with it.
- Tree protection should typically be removed after one year. The community forest manager shall determine whether the tree is stable enough or in a site condition suitable for removal at this time.

*Proper staking promotes a straight, strong trunk and even branch patterns.*

### h. Compost and Mulch

- Where feasible, incorporate local, organic compost, approved US certified for no weed seed, amount to be determined depending on soil condition.
- When specified, apply sheet mulching (cardboard) on top of the compost prior to mulching to reduce weed growth.
- For planting areas up to 3 feet in diameter or greater, apply 2-inch min. to 4-inch max. of mulch. If sheet mulching, use 4 inches.
- Keep mulch 2 to 4 inches away from the trunk. Placing mulch against the trunk promotes decay of the living bark at the base of the tree.
- Do NOT place lawn within 3 feet of the tree trunk under any situation. Lawn maintenance tools such as mowers and weed whips can damage trunk bases.

### i. Train Prune

- The first train prune cuts shall be made on the day of planting.
- Refer to the Guideline Specifications for Nursery Tree Quality on the Urban Tree Foundation website[4] for preferable and unacceptable early tree forms and how to prune for correction.
- The process of train pruning may take 3 to 5 years depending on the quality of the nursery stock, type of tree, and desired structure for the mature growth of the tree in the site condition it is planted in.

### j. Schedule Watering

Newly planted trees, including drought tolerant species, require supplemental irrigation until established, typically for two years. If a native tree is specified that is naturally found near water sources such as riverbanks, the tree will require supplemental water throughout its life cycle unless the tree finds a subterranean water source.

The amount of water delivered is dependent upon the species, soil conditions and seasonal weather conditions at the time of planting.

Tree species should be checked for their watering needs (low, medium or high) using WUCOLS: Water Use Classifications of Landscape Plants, A Guide to the Water Needs of Landscape Plants.

***Note that when a watering berm is used it will be removed when the establishment period irrigation ends.***

The Peer City of Pasadena has a historical Reference Evapotranspiration of 7.1 inches per year. Trees with medium water needs range from 2.8-4.2 inches per month. (Appendix E Table 1, pg 87).

Establishment period watering:

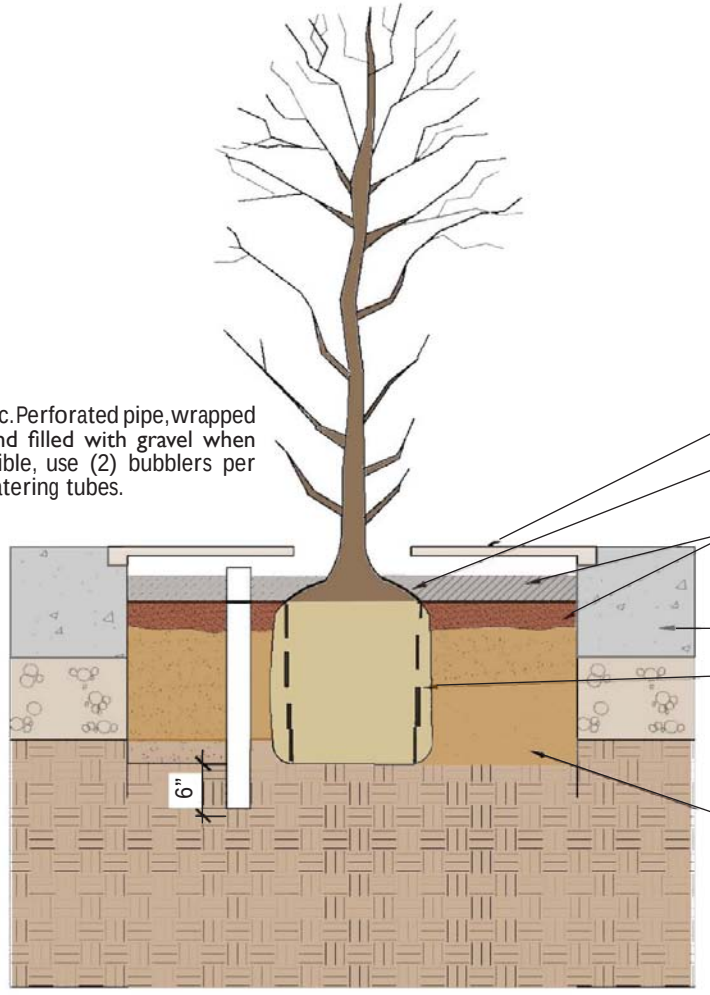
- 1 to 3 months in the ground: 4 times per month or as necessary
- 4 to 6 months in the ground: 2 times per month or as necessary
- 7 to 12 months in the ground: 1 times per month or as necessary

### k. Ensure Site Clean Up

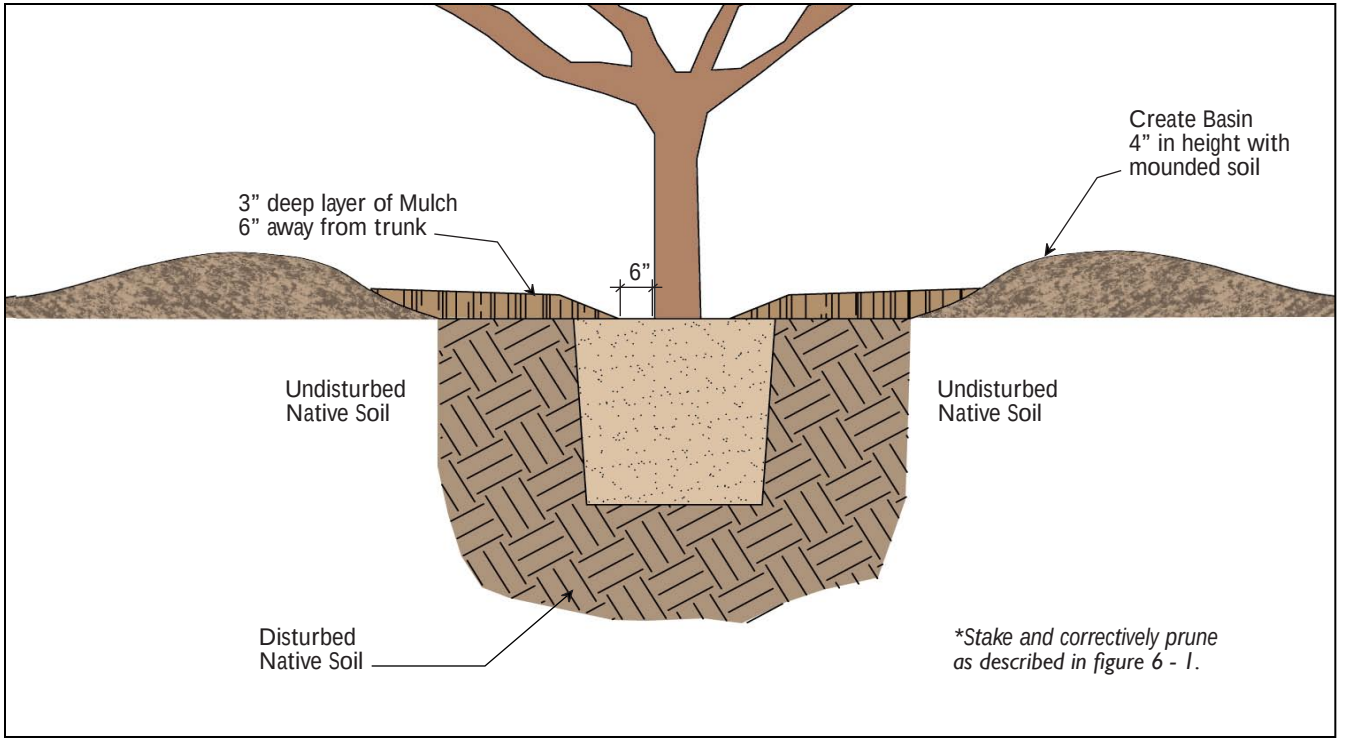
Following tree planting, all surrounding areas shall be returned to its prior condition. Debris, brush, branches and soil shall be cleaned up each day, leaving the streets and sidewalks clean.

[4] Urban Tree Foundation; StopWaste.org. Bay-Friendly Landscape Guidelines; Sustainable Practices for the Landscape Professional.

## **Figure 6-4** Tree Planting with Tree Grate



## **Figure 6-5** California Native Oak Tree Planting Guidelines



## PLANTING COAST LIVE OAKS

Coast Live Oak (Quercus agrifolia) is the Keystone Species of our ecosystem. They are the hub of our regional ecological wheel. They were introduced to our landscape 25,000 years ago: a Wooly Mammoth with Oak acorns was excavated along Wilshire Blvd.

Coast Live Oaks live a very long time- commonly 100 years or more, even in urban conditions. Results of an injury may not become apparent for 40-50 years, e.g., changing the grade around one in a detrimental fashion.

### Benefits of Coast Live Oak Trees in the urban environment:

- Sequester 9 lbs of carbon per year / per tree
- Break fall of rain and assist in percolation process
- Stabilize soil by their roots
- Contribute to biodiversity
- Reduce urban heat island effect with their expansive evergreen canopy

Southern California Edison supports using Coast Live Oaks as street trees because they work best in concert with overhead utility lines due to their slow, spreading growth habit.

### Planting Oak Trees in the Public Right-of-Way

1. Excavate planting holes with rough vertical sides. *Do not disturb soil at bottom of planting holes.* Make excavations twice as wide as the root ball diameter and less deep than the root ball by 2". The root collar should rest higher than the existing grade and should sit on solid ground because in a year it will settle.

2. Remove all wood, plastic, or gro-bags from the root ball. Set plants in center of holes with the top-most root in the root ball at the same height or slightly (2 inches) higher than finished landscape grades and plumb the tree so the trunk is vertical. Inoculate soil with a handful of Oak leaf mulch in the planting hole and backfill field soil around sides of root mass and work each layer to settle and eliminate voids and air pockets. Material must be watered in as planted. Provide approximately 5 gallons of water per inch of trunk caliper to the root ball once all backfill is filled in around the root ball. *Do not use soil amendment.*

3. Provide a 2-3" high soil berm around the edge of root ball to form a shallow saucer to collect water. The watering saucer, regardless of hole size, is to be at edge of root ball.

4. Apply a three 3" layer of mulch to soil in the tree pit. Do not apply mulch to the soil around the inner half of the root ball surface and never allow mulch to touch the tree trunk. A note on mulch: In a test done at Valley Circle, Calabasas on a summer day the soil surface temperature was recorded at 115 degrees. The soil surface temperature after the application of 3" of mulch was measured at 75 degrees.

5. Pruning: If there is a double leader in the top half of the tree, shorten one, by about one-half, back to a live branch that point away from the tree and is at least one-third the diameter of the cut leader. Remove broken portions of damaged branches back to a live lateral branch.

6. Stakes – 2 – must be wooden and go into the soil outside the root ball in the back fill hole and must go deeper than the hole. Tie as low and loose as possible. No wire to be used. *Maintenance Clause: remove in 1 year.*

## MAINTENANCE OF OAK TREES

1. Maintain soil berm for up to a year or until established.
2. Maintain mulch layer to 3" and restore as necessary.
3. Keep the tree well surface weed and debris-free.
4. Tighten and repair stakes and ties as necessary. Remove in 1 year or when warranted (when roots have stabilized in native soil).
5. Irrigation: The contractor is entirely responsible for the irrigation through final acceptance and twelve- (12) month warranty period. Plant material shall receive water in accordance with the following water schedule:

### Irrigation Schedule

| Size of Nursery Stock | Irrigation Schedule for Vigor | Irrigation Schedule for Survival |
|---|---|---|
| ***< 2 inch caliper*** | Daily, or as need for 2 weeks; every other day for 2 months; weekly until established. | Twice weekly for 2 - 3 months. |
| ***2 - 4 inch caliper*** | Daily, or as needed for 1 month; every other day for 3 months; weekly until established. | Twice weekly for 3 - 4 months. |
| ***> 4 inch caliper*** | Daily, or as needed, for 6 weeks; every other day for 5 months; weekly until established. | Twice weekly for 4 - 5 months. |

### Irrigation Notes:

1. Delete daily irrigation when planting in winter. Irrigation frequency can be reduced slightly (e.g. 2 - 3 times each week instead of every other day) when planting hardened-off, field-grown trees that were root-pruned during production). Establishment takes 3 (hardiness zones 10-11) to 4 (hardiness zones 8-9) months per inch trunk caliper.
2. Irrigation frequency can be reduced slightly (e.g. to once or twice weekly) when planting hardened-off, field-grown trees.
3. At each irrigation, apply 2-3 gallons per inch trunk caliper to the root ball. Apply it in a manner so all water soaks into the root ball. Do not water if root ball is wet/saturated on the irrigation day.
4. Trees take much longer to establish than 3-4 months per inch trunk caliper. Irrigate in drought the following summer during the maximum 2-year establishment period.

## PRUNING NATIVE OAK TREES

Oaks planted in the urban environment must function differently than those growing in nature because in most instances pedestrian and vehicular use demand canopy management that over time ensures that clearance is preserved. Overhead power wires likewise require management to preserve structure and access (for power company maintenance). If performed correctly, this type of 'limbing up' does not compromise the quality of the tree's structure, but all too often limbs are hastily and arbitrarily lopped in a reactive fashion, compromising both the long-term form and health of the tree. Proactive oak management prevents this. With planned care there exists also the opportunity to positively influence the type of shade an oak canopy provides, through judicious and consistent lacing.

It is less expensive and far less harmful to the tree to prune early. Foreseeing and proactively addressing potential issues, for example future path clearance or new construction by removing branches *before* they grow large and heavy and bend closer to the ground conserves both the tree's energy and city maintenance resources.

Whereas it is beneficial to predict where young branches will grow and remove them preemptively, excessive pruning (of larger limbs) is harmful to oaks. Removal or reduction of major structural limbs should be done only as required, in extreme cases where building clearance and/ or public safety is an issue. If limbs must be removed, cuts should be made perpendicular to the branch to limit the size of the cut face. Do not either cut into the branch bark collar (i.e. no "flush cuts") or leave too much stub (which creates a pathway to disease) so the 'wound' can heal cleanly. Exercise care to make cuts that do not tear bark from the tree. This is accomplished by cutting the bulk of the limb off first to lessen the overall weight, which will prevent the bark from stripping down the trunk as the limb is released. Refer to Figure 6 - 6.

**It is recommended that extreme pruning or the removal of large branches be evaluated by and/ or performed under the supervision of a qualified arborist.*

Prune in summer months while trees are dormant, Dead wood may be removed at any time. Removed materials, limbs and leaves are ideally recycled and used to fortify the mulch layer around the tree's perimeter. *Nothing is more beneficial to an oak than its own leaf litter!*

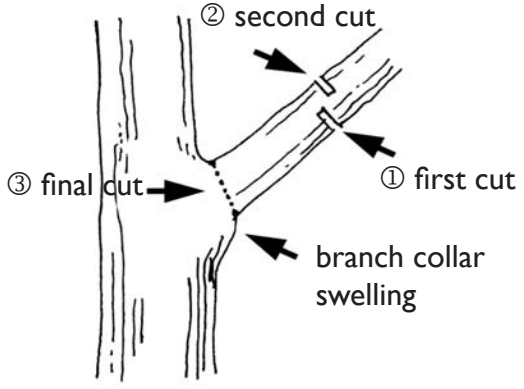
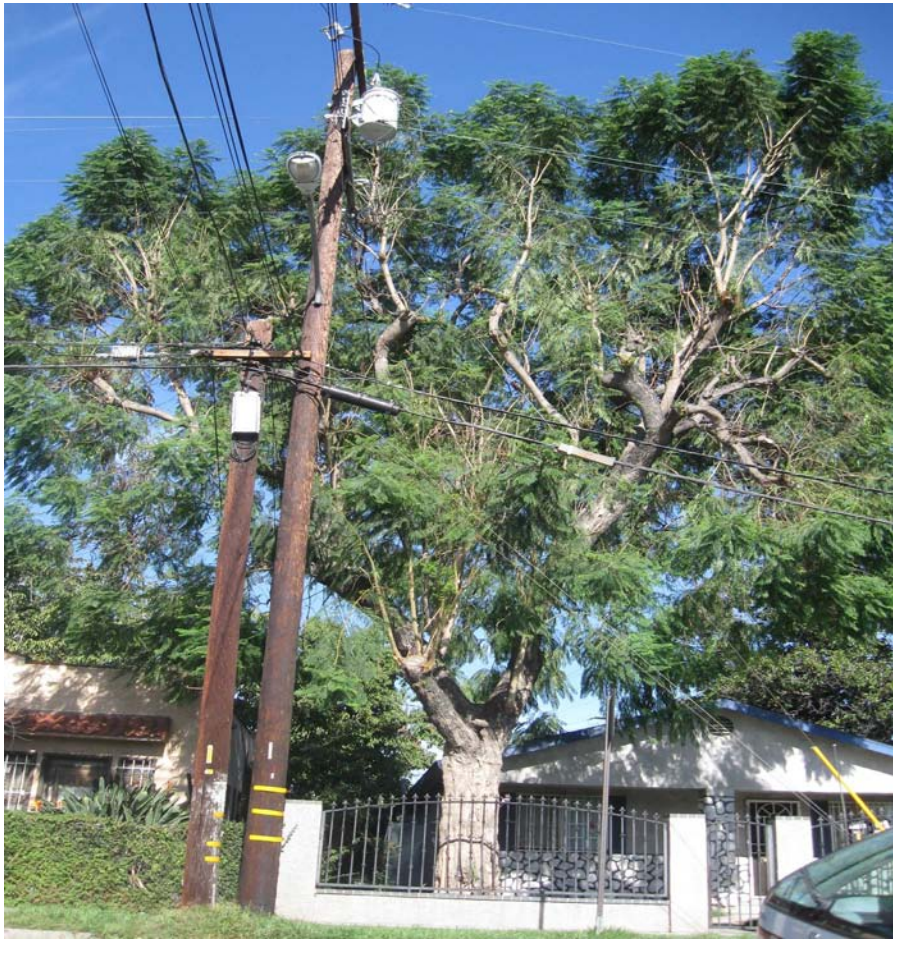



*Figure 6 - 6* Use the 3-cut method to avoid tearing the bark of the trunk. First, cut the underside of branch 1-2 feet out from trunk and about half-way through the wood. Make the second cut on top of branch about 3 inches further out from the first. The weight of the branch will cause it to break between two cuts. If there is danger of damaging other limbs below or objects on ground, support and carefully lower the branch to the ground. Cut the resulting stub at the branch collar.

*This Jacaranda Tree in Mountain View has been incorrectly pruned away from the power lines.**



*From this angle it is obvious how much the canopy appearance and health of the tree has been compromised.*

**Note this is a residential tree and not a tree in the City of El Monte Right of Way. This is a photo to demonstrate side pruning technique.*

## GENERAL PRUNING AND TREE CARE

All pruning of City trees shall be the responsibility of the community forest manager. The community forest manager should assist in the bidding and supervision of third party tree pruning specialists to en-sure that the work performed complies with City and ISA standards. He/she will also coordinate with utility company maintenance staff and provide site supervision of proper pruning techniques near utility lines. Avoid Topping Trees

Topping is the most harmful tree pruning practice known. Topping, also referred to as heading, tipping, or rounding over, creates a hazardous and expensive pruning condition by removing 50 to 100 percent of the leaf-bearing crown of the tree. This temporarily starves the tree, subsequently activating latent buds and forcing the rapid growth of multiple shoots below each cut in order to put out new leaves as soon as possible.

### When to Prune

The optimal pruning time depends upon the tree species. For most tree species the best time to prune is prior to new spring growth so that cuts or wounds on the tree can form closure at the fastest rate. Some trees may 'bleed' early in the spring, such as birch or maple, but this is not detrimental to the tree. Routine pruning of weak, diseased, or dead limbs can be done at any time of the year. Heavy pruning should not occur after spring growth due to the high-energy production state of the tree. An exception to the rule are the evergreen oak species. The optimal pruning time for evergreen oaks is summer, during their dormancy. Pruning evergreen oaks in the spring encourages disease and mildew.

Trees that are susceptible to diseases should not be pruned. Prior to pruning cycles, identify the trees to prune and related diseases. The City may determine that an outside arborist is necessary for this area to confirm diagnosis and provide a third-party evaluation.

### Structural Pruning (Pruning Young Trees)

Structural Pruning is the most critical and rewarding of pruning practices. Recent research has found that annual train pruning for the first 3-5 years can greatly reduce future pruning costs.[5] Most trees from the nursery have less than optimal root development and stock and need corrective pruning. Failure to do so will result in long term problems that can jeopardize the health and safety of the trees. Here are some of the common problems:

- Cracks in trunks and scaffold branching due to weight imbalance.
- Poor branch attachment resulting in limb breakage.
- Utility line interference, resulting in excessive and unattractive pruning.
- Multiple heading cuts with weak attachments.
- Pests and diseases due to tree stress from large cuts, excessive cuts, etc.
- Tree failure due to improper root to canopy ratios; trees that lack corrective pruning have underdeveloped root systems and dense canopies.

Therefore, it is beneficial to train all staff in train pruning during the early stages of tree development. Early corrective pruning assists in the development of a strong tree structure for the future, reducing long term maintenance costs. In addition, trimmed branches and leaves can be chipped into on-site mulch for immediate use.

*For examples of desired and unacceptable tree forms, please refer to the Guideline Specifications for Nursery Tree Quality on the Urban Tree Foundation website.*

[5] Urban Tree Foundation, et.al., Guideline Specifications for Nursery Tree Quality.

## Pruning Mature Trees

Existing trees in the El Monte urban forest present numerous pruning challenges. A high percentage of these trees have either been poorly pruned or neglected. Mature trees shall be addressed on a case-by-case basis to determine the most cost effective solution: restore it through corrective pruning or remove and replace with another tree whether they can be saved through corrective pruning or if the cost-benefit of corrective pruning dictates removal and replacement.

As newly planted trees mature past the train pruning phase, their need for structural pruning should decrease. Pruning for these trees shall follow general pruning procedures and techniques. The first step should be a formal inspection and evaluation. The inspection can be conducted by a community forest manager, or an ISA certified arborist. If the community forest manager determines that a single or multiple group of trees would benefit from an independent report compiled by an ISA certified arborist, he/she shall present this to the Urban Forestry Management Team.

## Pruning Cycles

The frequency of pruning following the train pruning phase should be based on the species' growth pattern, rate, limb breakage risk, and other environmental factors.

City street and parkway trees shall be placed on one of three pruning cycles based on their growth pattern:

- Every 2 years for fast growing trees
- Every 3 to 4 years for medium growing trees
- Every 5 to 7 years for slow growing trees

## Inspections

Prior to a pruning cycle the appointed community forest manager shall inspect the tree and site conditions to determine the scope of work needed. The tree manager shall record the suggested pruning (or removal) actions and coordinate all work items with designated City divisions. New tree pruning that is beyond the train pruning cycle shall be determined by the Urban Forestry Management Team.

## Pruning Techniques

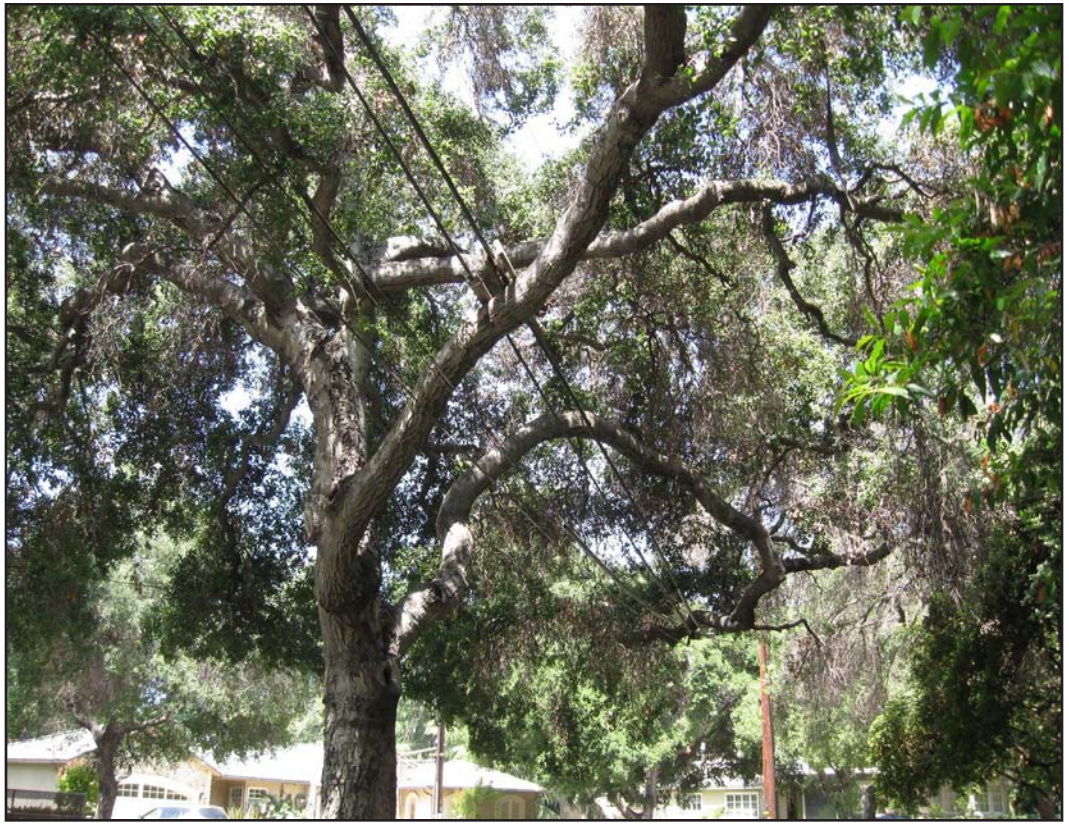
All pruning techniques shall be conducted in accordance with the International Society of Arboriculture standards. Information is provided by the ISA-arbor.org website and is universally accepted as the primary source.

a. Pruning Techniques

Pruning is the process of selecting the best structure for a tree species given its specific site condition it is placed in. New research has found that for the majority of trees selected for street tree planting, developing a strong central leader is critical to structural stability.

In order to develop a strong central leader, select a structure that is most in line with the main trunk that has the greatest potential. Make subordination cuts to competing branches in order to slow their growth. Some competing leaders may be equal or greater in trunk attachment diameter than the selected leader and/or more dominant in height. The objective is to not have any branches be of equal or greater in diameter than the leader.

Selectively remove branches along the leader to create even spacing, and ensure appropriate branch attachment angles of remaining branches. Cut branches flush with the leader, taking care not to leave stubs that could encourage unhealthy suckering growth.



Accommodating oak canopies around power lines was skillfully done using a combination ofV-pruning and through pruning techniques in Peer City South Pasadena.


This tree on Bisby Street in El Monte was pruned properly through pruning technique to allow the utility lines to pass through, and preserve the natural shade benefits of the tree.

Skirt branches (located along the base of the trunk to the desired first scaffold branch) shall remain until they reach no more than 1-inch in diameter. One or two skirt branches are removed at a time over a 3-5 year pruning period. Skirt branching helps develop trunk caliper (strength of the tree) and provides shade to the trunk while young.

b. Other Pruning Techniques

- Cleaning is the removal of dead, dying, diseased, crowded, weak, cross-branching and low-vigor branches from the crown of a tree.
- Thinning is the selective removal of branches to increase light penetration and air movement through the crown. It reduces weight on heavy limbs, and helps retain the tree's natural shape.
- Raising/Raise Prune removes the lower branches from a tree, often for clearance for utility lines and City Service vehicles. Reducing the height or spread of a tree is best accomplished by subordinating (pruning back) the leaders.
- Reduction reduces the size of a tree, often for clearance for utility lines. Reducing the height or spread of a tree is best accomplished by pruning back the leaders and branch terminals to lateral branches that are large enough to assume terminal roles (at least one-third the diameter of the cut stem). Compared to topping, reduction helps maintain the form and structural integrity of the tree.

c. How Much to Prune?

- Younger trees tolerate the removal of a higher percentage of living tissue better than mature trees. In principle, a tree can recover from several small pruning wounds faster than from a large wound. (See 'Train Prune')
- Mature tree pruning shall not remove more than one-quarter of a tree's leaf-bearing crown. The older the tree, the less energy it has in reserve to close wounds and defend against decay or insect at-tack.
- The pruning goal for mature trees shall be limited to removal of dead or potentially hazardous limbs.

d. Pruning for Street and Sidewalk Clearance

Street and Sidewalk Clearance standards shall be made using Raise Pruning techniques. Newly planted trees shall be raise pruned evenly with the intent of balancing the form and aesthetics of the tree while it is young. Mid-age existing trees shall be raise pruned only on the side requiring clearance.

Mature trees shall be raise pruned only for affected branches and with care due to the likely size of the limbs. Refer to 'Pruning Mature Trees' and 'Inspections' as pruning in some cases may not be appropriate due to the health and condition of the mature tree.

All City trees shall be maintained to the following height clearance specifications established below: [6]

- Arterial Streets. A 14-foot clearance should be maintained be-tween the bottom of curb and limbs. Limbs may need to be raised higher on major arterials.
- Residential and Collector Streets. Limbs above residential and collector streets should be raised gradually, with an 8-foot clearance between the bottom of curb and limbs, and a 14-foot clearance over traffic lanes, creating an arch over the street.
- Sidewalks and Park Paths. On sidewalks and park paths that are not affected by vehicular traffic, limbs should be between 7 and 8 feet above grade. A lower clearance may be appropriate in areas without sidewalks and areas where limbs do not interfere with pedestrian or bicycle traffic.

[6] Height clearance specifications based upon those established by the City of Claremont Tree Policies and Guidelines Manual, 2007.

*This allée of Coast Live Oak Trees in Peer City Sierra Madre has been pruned by raising canopies to accommodate both pedestrian and vehicular traffic.*

*Camphor Tree canopies in Peer City Altadena have been maintained to provide vehicular clearance without compromising their natural form.*


The quality of these Sycamore canopies in Mountain View has been irreparably compromised.


This tree is dying to have been drastically topped.

*This tree has been severely headed or topped, causing it to send out thousands of new growth spurts. This creates a bush effect, which is very unhealthy for the tree and provides no shade or other benefits.*

Here is an example where extreme topping disfigured a once-stately native oak tree.

e. Pruning for Utility Line Clearance

Line clearance work involving City trees shall meet the standards of the United States Occupational Safety and Health Act (OSHA) and the American National Standards Institute (ANSI) for minimum distances to be maintained by tree workers from electrical conductors. Line clearance work shall also meet the utility pruning standards established by the International Society of Arboriculture (ISA) and the Utility Arborist Association (UAA).

The California Public Utilities Commission (CPUC) General Order 95, Rule 35 mandates that trees must maintain an 18-inch clearance from high voltage transmission lines. The following guidelines are designed to maintain the required clearance of City trees from high voltage transmission lines with a minimum of resprouting and fewer pruning cycles. These guidelines are based upon known tree responses to various pruning techniques; however they should not take precedence over safe work practices.

- Thinning cuts are the most cost effective practice at managing lateral or directional pruning. Directional pruning removes a branch to the trunk or a significant lateral branch growing away from the conductor.
- Topping, Heading cuts, and Roundovers (shaping cuts to create an artificial uniform crown) are prohibited on City-owned trees.
- Maintain normal growth height for all trees where possible. Train younger trees to mature away from high voltage conductors.
- Limit cuts to what is deemed necessary to achieve the required clearances. The placement of pruning cuts shall be determined by anatomy, structure and branching habit. Limbs should not be arbitrarily cut off based on a pre-established clearing limit.
- Pruning shall be restricted to removal of branches at crotches within the tree's crown. Final drop-crotch cuts should be made outside the branch bark ridge on the main stem or lateral branch. The remaining branch shall be no smaller than one-third the diameter of the portion being removed. The removed portion should be pruned out to direct the remaining growth away from conductors.
- When the pruning of a branch results in the loss greater than one-half of the foliage, remove the branch to the parent stem.

## TREE ROOT MAINTENANCE

Tree root maintenance is a crucial component of a healthy forest. As stated in the City of Claremont's Tree Policies and Guidelines: "The root system of a tree is one of its most important physiological components. Roots are the main source of water and mineral absorption for the tree, they provide anchorage and stability, and they act as one of the principal storage areas for food. The proper pruning of a tree's roots is as important as the proper pruning of a tree's crown."[7]

Because the complex nature of a tree's root system is unseen, the decision to root prune shall not be addressed as a single, isolated solution since this practice could create hazardous conditions for the City. Each situation is unique and requires careful analysis of the overall condition and location of the tree. The approach of investing resources on train pruning new trees to reduce the need for expensive tree care in the future can also be used for tree roots and shall consider three types of strategies for use in preventive and remedial problem solving:

### Tree-Based Strategies

Select the right species for the right location.

7 City of Claremont Tree Policies and Guidelines Manual, 2007.

### Infrastructure-Based Strategies

Infrastructure that is more accommodating for tree roots includes large planting space, curving sidewalks, increased right-of-way and tree is-lands. Materials to consider include reinforced slab, thicker slab, expansion joints, pervious concrete, asphalt, decomposed granite, compacted gravel, pavers, and rubber sidewalks.

### Root Zone-Based Strategies

Root zone strategies include the use of root barriers, continuous trenches, root paths, steel plates, foam underlay, structural soils, and soil modification.

The Community forest manager shall be responsible for developing the strategy for root issues and presents them to the Urban Forestry Management Team. Alternatives to cutting roots greater than 2 inches in diameter should be considered before root pruning.

The Urban Forestry Management Team shall arrange for sidewalk re-pairs including tree root pruning to occur before active root growth (temperatures between 68 and 84 degrees F), which may range from late summer to late fall. Avoid root pruning before bud break.

### Root Pruning

Root Pruning is used as a remedial treatment intended to reduce or eliminate further damage but it is very harmful to a tree. The structural strength and health are affected by this technique. Therefore, root pruning shall only occur when the community forest manager approves this strategy as safe for the tree.

- Trenching shall occur along one side with the distance from the trunk 6 inches for each inch of Diameter at Breast Height (DBH). The community forest manager shall determine if trenching re-quires tunneling under roots for the health and safety of the tree.
- No more than one-third of a tree's roots system shall be removed.
- Roots shall be cut back at least 4 inches away from new hardscape to the nearest node.
- Pruning cuts should be clean and smooth with no crushing or tearing of the remaining root.

### Root Shaving

Root shaving is the practice of reducing the thickness of an offending root without severing it completely when retention of the root may be necessary for the structural integrity and general health of the tree. Root decay is greater with root shaving and callous growth may also grow to lift paving. Therefore, this practice should be considered care-fully and the following practices should be followed:

- Select buttress root that is 4 inches in diameter or greater.
- Shave roots down to allow for at least 2 inches of clearance between the root and the new hardscape.
- No more than one-third of a root's diameter shall be shaved off.
- Pruning cuts should be made clean and smooth with no crushing or tearing of the remaining root, typically using a root cutting machine and/or a chainsaw.

## TREE REMOVAL

The Urban Forestry Division shall be responsible for all tree removals of City trees. The Division has the authority to remove a City tree based upon the following conditions:

### Hazardous Tree Removal

The community forest manager and the Urban Forestry Management Team shall recognize that hazardous trees are the highest priority of care. Trees identified as hazardous shall be removed immediately.

A large percentage of existing street trees in the city should be evaluated for hazard conditions due to topping or lack of proper care resulting in poor structure and potentially hazardous conditions. Existing trees under these conditions should undergo a tree evaluation to determine the degree of hazard or whether or not the cost/benefit ratio of corrective pruning can improve the health, safety and appearance of the tree versus removal and replacement of the tree.

The Community forest manager shall identify hazardous trees based on the following criteria:

- Large, dead branches in the tree.
- Detached branches hanging in the tree.
- Cavities or rotten wood along the trunk or in major branches.
- Mushrooms present at the base of the tree.
- Cracks or splits in the trunk or where branches are attached.
- Adjacent trees have fallen over or died.
- Strong lean at the trunk
- Many major branches arise from one point on the trunk
- Damaged, broken or injured roots
- Changes in the soil level

### Dead Tree Removal

Parkway and open space trees that are dead or are determined by an ISA Certified Arborist to be in severe decline shall be removed immediately.

In parks and open space where the dead trees do not pose a health and safety hazard, nor affect the aesthetic value of the area, the trees or portions of removed trunks shall remain on-site to decompose.

### Emergency Removals

Healthy trees shall be removed if the Urban Forestry Division decides an emergency condition exists and it is the only option available.

### Disease and/or Insect Infested Tree Removals

Trees that are evaluated for a disease and/or insect infestation shall be removed if:

- The disease and/or insect is a threat to other nearby trees or the greater Urban Forest, and
- The treatment for the disease and/or pest is determined to be a costly or non-beneficial solution to regaining the health of the tree.

### Infrastructure Damage Tree Removals

When it is determined by the Arborist that there is no other strategy for a tree that is in conflict with City urban infrastructure or that it is dam-aging the structure of an adjoining property (under or above ground), the tree shall be removed.

### Invalid Reasons for Tree Removal

The following are not considered valid reasons for tree removal:

- Leaves getting into gutters or are a nuisance to remove.
- Fruit drop is messy.
- Roots invading the sewer system as a result of deteriorating infrastructure (if roots are causing deterioration, have a certified arborist evaluate situation).
- Hardscape damage when viable strategies are available.

# MULCH AND FERTILIZER

## Organic Mulch

Organic mulch provides multiple benefits to the urban forest. Mulch from tree chips, compost, or other organic matter is the urban equivalent of the natural organic matter shed from plants in a natural or forest environment. The use of mulch is in the best interest of the City be-cause it accomplishes the following:

- Saves time and money by reducing weeds as much as 90 percent, thereby reducing labor costs.
- Reduces the cost of buying and applying herbicides.
- Conserves water and reduces the cost of irrigation.
- Protects plant roots from temperature extremes and keeps soils cool.
- Organic matter feeds benefit soil organisms, which promote healthy plant growth.
- Prevents soil compaction and improves its structure.
- Reduces runoff.
- Builds and retains essential nutrients in the soil.
- Reduces fertilization costs.

All newly planted trees shall use the mulch as directed per the planting detail. Mulch and beneficial organic matter shall NOT be removed from City parkways or open space planting beds. Organic mulch shall be used as a top layer (2 in min to 4 in max). The City shall develop a mulch recycling program that utilizes chips from removed trees for immediate placement on public or private property.

*INCORRECT: Avoid deep mulching, which can lead to excess moisture in the root zone, which can stress the plant and cause root rot.*

*CORRECT: Properly mulched tree with mulch layer 6" away from the trunk.*

### Fertilizing

The city recognizes that fertilization is an important aspect of mature tree care. Urban soils are typically depleted of essential nutrients due to the lack of organic mulch. Nutrient deficient soils reduce plant vigor and increase its susceptibility to pests and infectious diseases.

The city shall promote healthy tree care by using organic fertilizers, such as compost and compost tea, where they are needed per the recommendation of the community forest manager. Natural fertilizers will release nutrients slowly, and encourage healthy soil biology. The type and timing of fertilizing shall be based on the species, evaluation of the site and health condition of the tree. However, as a rule of thumb, applying compost or fertilizer before rain facilitates the transfer of nutrients into the soil.

Mature trees often require specialized fertilization specific to the assessed ailment of that species. For a mature tree that is desirable to retain, a third party diagnosis and treatment should be performed when the staff arborist is not able to prescribe a treatment. The consultant shall be an ISA certified arborist who specializes in mature tree care and fertilization.

At a minimum, trees should receive a 1-inch topdressing of quality compost annually, as certified by the US Composting Council's Seal of Testing Assurance (STA) program, followed by 2 to 3 inches of mulch. This organic layer will slowly break down, adding nutrients to the soil, conserving water and minimizing weed growth.

Fertilizers that are not approved or are restricted from use by the Organic Materials Research Institute (OMRI) shall not be used.

[8] StopWaste.org. Bay-Friendly Landscape Guidelines; Sustainable Practices for the Landscape Professional.

## PEST AND DISEASE MANAGEMENT

The following recommendations for managing pests and diseases are based upon an Integrated Pest Management (IPM) approach, adapted from the Model Bay Friendly Landscaping Maintenance Specifications, by Stopwaste.org.[8] The practices described in this chapter for selecting, planting, pruning, watering, and ongoing care will also go a long way to minimize problems in the first place.

Pest management shall rely first on cultural, mechanical, physical, and biological control methods. Chemical controls may be applied only when monitoring indicates that preventative and non-chemical methods are not keeping pests below acceptable levels. When pesticides are required, the least toxic and the least persistent pesticide that will pro-vide adequate pest control will be applied. Pesticides shall not applied on a prescheduled basis.

The Urban Forestry Division is responsible for monitoring trees to identify and assess pest problems, and to take actions to control pests that affect tree health and appearance. When considering the use of pesticides on city property, preference shall be given to readily available nonpesticide alternatives. The City shall employ integrated pest management procedures, including those described below:

### Monitoring

Regular monitoring of the urban forest on a routine basis is the best way to identify the presence of beneficial and detrimental insects and pests, as well as determining the extent of damage to plants. It is common for pest infestations to appear during a specific season, cause limited damage to the vegetation, and leave. In such cases invasive treatments are not needed. Therefore, it is important to maintain

ongoing records to better understand natural cycles and occurances.

## Pest Control

If controlling pests is deemed necessary, an IPM approach should be used that focuses first on cultural, mechanical, and physical methods first, and then on biological methods. Pesticides are to be utilized as a last resort.

a. Cultural, Mechanical, and Physical Methods

Many maintenance practices can reduce and/or limit the ability for pests to survive and reproduce. Proper timing and application of fertilizers, watering, pruning and maintaining a mulch layer can greatly reduce a trees susceptibility to infestations. For example, pruning of infested or infected branches should be scheduled for when pests are inactive, fallen leaves and branches that contain disease inoculum should be removed, and insects should be trapped with sticky traps. Maintaining and nurturing healthy soil by using compost as a top dressing and avoiding compaction and synthetic chemical applications will encourage a diverse soil food web that can naturally protect the trees roots from soil borne pathogens and predators.

b. Biological Methods

There are many biologically based pesticides that have little or no negative impact on the environment. Using biological controls requires proper assessment, application, and timing for best success. Including a diverse plant palette of native species can attract beneficial predatory insects called insectory plants.

c. Pesticides

Pesticides include insecticides, fungicides, and other chemicals that control unwanted pests. When pesticides are deemed necessary, IPM recommends that the least-toxic control be utilized.

*i. Least Toxic Pesticides*

The following pesticides are the least toxic to the environment and should be used only as a last resort. Least-toxic pesticides are defined as having have a high LD-50, low residual, and narrow range of toxicity. As with biological controls, these approaches are only effective when applied at the appropriate life-stage of the target pest. Insecticidal soaps, horticultural oils, herbicidal soaps, neem, and Pyriproxyfen in-sect growth regulator (e.g. Distance IGR) are all examples of the least toxic pesticide.

*ii. Restricted Chemicals*

It is highly recommended that the following chemicals be restricted from use in the landscape. These organophosphate-containing pesticides can persist in the environment and have been found in many impaired creeks, streams, and arroyos in California. Diazinon (trade names Spectracide®, Knox-out®), chlorpyrifos (trade names Durs-ban®, Pageant®) and malathion and carbaryl (trade name Sevin®) are included in this category.

Many water quality agencies also recommend against using pyrethroids and pyrethrins containing piperonyl butoxide (PBO) in the landscape. Pyrethrins have been identified as toxic to birds, fish, and beneficial insects and should be used only as a last resort, and carefully applied to avoid runoff and contact with non-target plants.

At no time shall the following substances be utilized in the landscape: Toxicity Category I or II Pesticide Products, any pesticide containing a chemical identified by the State of California as a chemical known to the State to cause cancer or reproductive toxicity pursuant to the California Safe Drinking Water and Toxic Enforcement Act of 1986, and any pesticide classified as a human carcinogen, probable human carcinogen or possible human carcinogen by the United States Environmental Protection Agency, Office of Prevention, Pesticides and Toxic Substances.


EL MONTE

# CHAPTER SEVEN: COMMUNITY STEWARDSHIP

El Monte Speaks

*Kids are so proud of the trees that were planted a couple of years ago. It inspires them to be… caretakers of the earth. Trees bring the whole idea of the future to the students..."*

~Dr. Aileen La Corte, Principal of La Primeria Elementary School

Every citizen of El Monte is a potential steward of the Urban and Community Forest, just as we are all stewards of this planet. We live in symbiosis with trees, and must protect and care for them accordingly. Trees are the lungs of the earth, and profoundly enhance our daily life in air, water and soil quality, and in quality of life of our streets and in our homes and businesses. We all must commit to protecting trees in order to continue to enjoy the shaded walkways, blossoms and the bird song they make possible. As advocates and protectors, stewards play a critical role in growing and maintaining a vibrant Urban and Community Forest.

Stewardship means awareness, followed by action. We learn the value of the Urban and Community Forest and become inspired to protect and nurture it. Understanding paves the way for community investment. In El Monte, where there has not been a recent history of Urban Forest for the citizenry to connect with, outreach and education on its benefits will play a critical role in developing sufficient stewardship. Once understanding is well seeded, El Monte residents will quickly come to appreciate the quality of life benefits and want to take part in the process.

Teachers, students, business owners, families, banks, and public transportation groups are all steward groups. Environmental organizations like the Sierra Club and the Audubon Society, watershed Councils and local Chambers of Commerce all benefit directly from the Urban Forest and can serve as powerful stewards. Utilities such as Southern California Edison and the Los Angeles Department of Water and Power advocate trees as energy savers and can promote stewardship and active expansion of the Urban and Community Forest.

*Columbia School Gym and Joint-Use trail ribbon cutting ceremony, Summer 2010*

## WHO ARE THE FOREST STEWARDS?

◆**Students.** Students can be an energetic and inspired group of individuals that have a great deal to gain from improving the health of the forest. In addition to working towards a healthy city that will be desirable for them to live in as they enter the work force and later stages of life, involvement in community forestry projects can provide students with unique training, leadership and educational activities. Youth participation is essential for the future of successful urban forest growth and health.

◆**Residents and Property Owners.** In terms of sheer numbers, this most significant potential stewardship group can make a significant contribution to stewardship activities. From supporting initiatives and programs that will enhance the Urban and Community Forest to helping to tend to and celebrate the forest, these individuals can, and many already do, serve as forest stewards. In addition, residents and property owners have the opportunity to complement the Urban and Community Forest by planting trees on their land and maintaining privately-owned trees in healthy condition.

◆**Business Owners.** Business owners benefit directly from attractive streetscapes that draw potential customers and make spending time in commercial districts pleasant experiences. Business owners can contribute to the health of the Urban and Community Forest through offerings of time, funding, or other essential resources.

◆**Utility Agencies.** Utility companies like Southern California Edison (SCE) play an important role in forest stewardship. During the development of this Plan, Patrick Emmert of SCE explained that "SCE recognizes that the urban forest creates shade and cooler temperatures, which can lessen the dependence upon electrical use for cooling systems. Additionally, proper vegetative plantings under power lines lessen the maintenance required to keep proper power line clearances."

Many potential forest stewards shared their thoughts and ideas during the development of this Plan. The Outreach & Stewardship Chart provided in Appendix F identifies individuals and organizations that were contacted by Amigos de los Rios and summarizes the feedback they provided.

*Newly constructed joint-use trail at Columbia School*


*Durfee-Thompson School Joint-Use Trail, El Monte, CA*

# CITIZEN FORESTRY TEAM

City of El Monte is fortunate to have a strong liaison with Amigos de los Rios and other nonprofits that have the potential to assist in the development of a multi-faceted citizen forestry program. It is recommended that all Urban and Community Forest stewardship programs be connected under the umbrella of a Citizen Forestry Team in order to ensure clear communication, minimize duplication of efforts, and ensure consistency between all education, training, and participatory activities. The Community Forest Management Team (see Chapter 8) would oversee the Citizen Forestry Team, but would not be responsible for implementing the programs with the exception of specific outreach efforts conducted by City staff. The Citizen Forestry Team could be formed as a non-profit affiliated with the City and/or Amigos de los Rios. Programs that should be offered as part of the Citizen Forestry Team are described in the upcoming sections.

Given limited budgets and other logistical constraints, the programs described below should be implemented as resources become available for implementation. However, it is important that some educational programs be institutionalized as a part of day-to-day City practices in order to maintain and build the momentum for enhancing the Urban and Community Forest.

## Education and Outreach

As discussed above, building awareness and understanding of the Urban and Community forest is essential to building community support and encouraging stewardship. Educational programming may include dissemination of literature, class offerings and other direct educational programs. However, educational programming should also be incorporated into all other Citizen Forestry programs.

*Local Cubs Scouts attend a Volunteer Day at Peck Park.*

## Business Owner Education

Educating business owners plays a large role in all streets that have business signage. Trees can significantly change in form throughout their life. For the business owner, who may not have visual perception and visionary skills to understand this change, education may require additional tools. One effective tool in educating business owners is to draw a proposed tree at planting and at various stages of growth on a photo of the business to describe the impact of the tree.

## Literature

At a minimum, Urban and Community Forest literature, including this Management Plan, should be made available to the public on the City's website and through the Planning desk at City Hall. Information provided should address Urban and Community Forest value, tree care and maintenance guidelines, and stewardship opportunities.

## Workshops and Classes

Urban and Community Forest classes and workshops should also be explored as an opportunity to engage and educate community members. Local professionals may be solicited to provide informational resources and support to community members interested in contributing to the Urban and Community Forest or to the privately-maintained forest comprised of front yards, backyards, schoolyards, and other similar properties. Classes and workshops may also be used as a forum for educating the public on Urban and Community Forest policies.

## Special Events and Celebrations

Arbor Day and Earth Day celebrations, tree planting festivals, tree dedications and other one-day events are a fantastic opportunity to build enthusiasm and support for the community forest. Celebrations can include live music, educational materials, games and activities. School groups, local businesses, local community groups, and non-profits may all contribute to celebrations. Volunteers and organizers of the Citizen Forestry Team can oversee and coordinate these events. However, it can be anticipated that some City staff time will be required.

Urban and Community Forest outreach activities can also be incorporated into existing community celebrations and events, such as summer concerts at Memorial Park as well as other events.

## Hands-On Participation

Participatory activities should include a variety of opportunities to accommodate participants with different time commitments, interest levels, skill sets, and physical abilities. This section provides an overview of components for a successful community participation program. All of the components described under this section would be organized by the Citizen Forestry Team.

*Left: Children's Water Education Day Event. Right: Rock Corps Planting Event at Durfee-Thompson Joint Use.*

*Opening day at Lashbrook Park, El Monte.*

## Workdays

Tree planting and workdays could be implemented for repeat as well as one-time volunteers, fostering increased community stewardship through direct contribution. Workdays and volunteer roles should allow for a variety of time commitments and interest levels. For instance, individuals interested in regular participation should be provided with training opportunities and the opportunity to help lead workdays and organize events, while tasks for individuals with less availability and training can offer assistance at workdays and events.

## Compensation and Community Service Credits

Participants are referred to as "Volunteers" in this document. However, when funding for work training and similar programs are available, participating individuals may be compensated for their time. It is anticipated that these individuals would receive more intensive training, carry specific responsibilities, and commit to the program for a established period of time.

Volunteers may also receive community service credits for participating in the Citizen Forestry Team. Many high schools require that students earn community service credits to graduate, and some colleges require that applicants have completed a set number of community service hours.

## Training

Community forestry training can be provided through workshops and classes, and be included as a part of each workday. The training program should offer opportunities for participants to receive urban forestry certifications, designating them as having completed set requirements and as being eligible to complete more complex tasks and take on more substantial leadership roles. Topics covered by the training should provide essential knowledge required for participation, as well as introduce participants to career opportunities related to urban forestry. Participants who complete

training programs should feel confident in their understanding of urban forestry, and able to discuss pertinent topics with other community members and City representatives. Key program areas include tree planting, tree care, community involvement and youth education. Topics used in the training may include:

- Principles and importance of urban forestry
- Tree identification
- Assessment of tree health
- Tree planting techniques
- Tree maintenance techniques (pruning techniques offered as advanced course)
- Outreach training
- Community event organization
- Introduction to urban design, landscape architecture and arboriculture

## Adopt-a-Tree

The "Adopt-a-Tree" program is another opportunity aimed at promoting long-term tree care and expanding the community's existing tree canopy coverage. Individuals and established community groups or businesses can adopt trees by providing resources for planting and long-term maintenance. Resources include materials and labor or financial support. Trees can also be adopted to commemorate events, such as a graduating high school class, to memorialize individuals or a community event recognition. In order to ensure sustainability of individual adoption efforts, the logistics for this program would need to be coordinated by the Citizen Forestry Team and the Community Forest Management Team.

*Opening day at Lashbrook Park, El Monte.*

*Top: Outreach Event. Bottom: Opening day at Rio Vista Park, El Monte..*

## Volunteer Roles

It is important that volunteer efforts be guided by a certified arborist or Citizen Forestry Team member with proper training. Hands-on roles appropriate for community volunteers are identified below:

**Planting.** Planting new trees is an important and highly rewarding job for volunteer.s.

**Watering.** New plantings will generally require irrigation for three years. Depending upon the location of the tree, volunteers may be able to efficiently assist with watering activities.

**Mulching.** Mulching builds and maintains rich, moist soil, an important element both at the time of planting and throughout the course of a tree's life.

**Follow-up tree stake removals.** Tree stakes that are left on too long can be damaging. Volunteers can help loosen and remove stakes at appropriate times.

**Eyes and Ears of the Community Forest.** Volunteers can monitor tree health and the condition, alerting the Citizen Forestry Team organizers of any concerns. When necessary, trained volunteers may also assist in tree surveys and inventory projects.

**Education and outreach.** Individuals and groups can assist in educating other community members about the Community Forest. There are a range of opportunities for participation in education and outreach activities, from staffing booths at events to organizing special events.


*El Monte citizens and California Conservation Crew make a difference for residential landowners, schools and parks.*


*Tree Power Team Members oranize, collect data, perform outreach and present to El Monte City Council Members.*

## MODEL PROGRAMS

There are numerous models of successful community stewardship programs that the Citizen Forestry Team can use as guides. The most well known program is the Sacramento Tree Foundation. Their LEAF program (Leading Education and Awareness in Urban Forestry) offers a comprehensive course to train their volunteers. LEAF Stewards then spearhead Green print initiative efforts. The program is modeled after the University of California Master Gardeners program and contains 32 hours of training. LEAF Stewards volunteer and support the Sacramento Tree Foundation's outreach programs. Another stewardship program through Sacramento Tree Foundation is their Neighborhoods, which facilitates tree education and planting, and creates a legacy of parks and green school campuses. Neighborhoods work with teachers and students and teaches them how to be stewards in their own school communities. Several more programs are described below:

**Friends of the Urban Forest, San Francisco.** Friends of the Urban Forest (FUF) is a non-profit that offers financial, technical, and practical tree planting and care assistance to neighborhood groups. Key program areas include tree planting, tree care, community involvement and youth education.

**Los Angeles Tree People's Citizen Forestry Program.** The Los Angeles Tree People's Citizen Forestry Program offers training, site consultants, planting support, and tree care events. The Tree People also offer custom stewardship programs for park plantings (Park Forestry), street plantings (Urban Forestry), school plantings (Campus Forestry), and programs in Spanish.

**Tree Musketeers, El Segundo.** Tree Musketeers is a by kids for kids tree planting campaign established in 1987. Their mission is to empower young people to be leaders of environmental change in local communities.

*Tree Power Team Members performed outreach throughout the data-collecting project.*

**The Urban Forester, Los Angeles Area.** The Urban Forester, through Tree People, is a model program of community empowerment through leadership training, resource allocation, and mentorship. Participants attend free training workshops to learn about tree site selection, permits, grants, and other topics. The urban forester receives a manual and recruits others to form a "green team," established for long term care of the tree plantings. A site visit is conducted with a Tree People staff member to assist in planting and project scope. Throughout the following months, Tree People assists with the tree planting process from helping to secure grants to providing tools for planting day. As part of this program, Tree People offers tree care events to encourage successful long-term care and maintenance of the urban forest.

# CHAPTER 8: FINANCING AND IMPLEMENTATION

El Monte Speaks

> *You can tell by the streetscape the health of the community. We correlate the way a community looks with attitude and empowerment of the community. If you can motivate the community to maintain the streetscape you can increase the vibrancy of the area.*
>
> ~Steve Harris, California Council of Land Trusts

In order for El Monte's community forest to reach its full potential as a citywide asset, leaders need to take a proactive approach at managing the forest efficiently. While visionary managers and hard-working staff members are essential elements for success, its longevity requires a well-organized management structure and access to implementation tools.

This chapter recommends management structure, identifies financing options, and provides short, medium, and long-term action items to guide the implementation of the Plan.

## RECOMMENDED MANAGEMENT STRUCTURE

Management of the community forest is currently undertaken by several divisions of the Public Works Department. In order to reduce redundancy, track community forest costs, and implement the citywide vision established by this plan, it is recommended that a Community Forestry division be established within the Public Works Department. The new division would be responsible for planning and implementing community forestry projects, and ensuring that all tree planting, maintenance and removal within the public right-of-way is carried out according to the standards described by this Plan. The recommended structure for the Community Forestry division is described below and shown in Figure 8-1.

### Community Forestry Management Team

A Tree Management Team including representatives from the Public Works, Planning and Community Development Departments, and the Community Forest Manager (described below) should be established to ensure interdepartmental communication regarding community forestry issues. Since the community forest can affect many aspects of City planning and operations, it is important that opportunities for collaboration and the potential for conflicts be identified early on in planning processes.

## KEY STAFF

### Community Forest Manager

The Community Forestry division should be headed by an ISA Certified Arborist with significant experience in city-scale forest management. Arborists are required to obtain continuing education units to retain their certifications. In doing so they remain current with new research and information on planting, pruning, pests and disease, and urban forest management. This valuable information will assist the City in staying current with new laws, health and safety issues, and management strategies and provide the community with the most up-to-date information during trainings. The in-house arborist would be responsible for observing tree pruning within the public right-of-way, and would offer on-going training to staff through weekly or monthly in-house training. Community training could also be scheduled.

### Tree Care Staff

Tree care staff shall be encouraged to work towards certification in arboriculture or related tree care certification. They shall support the community forest manager in all aspects of urban forestry, from tree maintenance to community relations when necessary. While it is not necessary to have a certified tree climber on staff, it may be helpful for staff to have some experience so that they can make the appropriate observations during annual contracted tree pruning on behalf of the City.

## CONTRACTED WORK

It is often beneficial for a City to contract out certain maintenance tasks as well as tasks that require specialized skill and are not required on a regular basis. Two types of contracted work that would be beneficial to the City are described below:

- **Tree Maintenance.** It is recommended that the City contract a portion of regular pruning to a local maintenance company. The balance between City maintenance and contracted maintenance is discussed under "Funding Options" below.

- **Consulting ISA Certified Arborist.** The City may want to find and retain a local arborist to consult on an as-needed basis. Developing a relationship with an independent arborist allows the City to develop a budget for peer review in cases such as hazard trees and replacement trees, and to have an additional resource for staff and community training.

- **Citizen Forestry Team**. The Citizen Forestry Team would be a community-based stewardship organization that would coordinate with the Community Forest Management Team. The team's role and responsibilities is further described in Chapter 7.

### Database

A detailed base including information on each tree in the community forest is an important management tool and will help to ensure the long-term health of the community forest as staff changes, trees mature, and priorities shift. An up-to-date database allows management to assess the overall health of the forest and identify priority maintenance tasks and address problems before they become unmanageable. The inventory conducted during the development of the Plan can serve as the starting point for this database.

The database may be developed and maintained by the City or by a contracted maintenance company. Advantages of having the database managed by City staff is that the database will stay with the City regardless of changes in maintenance contracts and that management will be able to update and utilize the database on a regular basis. However, contracting this service out to a company with an established system can be cost effective. Companies such as West Coast Arborists, Inc. offer developed maintenance of a web-based, interactive database of a city's tree data as part of an inventory and maintenance contract. Such a database is maintained by the company and accessible to City tree care staff.

## FINANCING

This section provides an overview of current financing, discusses financing necessary to meet the 2035 forest vision, and identifies funding options and funding sources.

### Financing Background

As discussed in Chapter 2, the City does not currently track spending on the community forest independently of other costs undertaken by the Building Maintenance and Parks and Recreation divisions of the Public Works Department. The Public Works Department, and therefore both the Building Maintenance

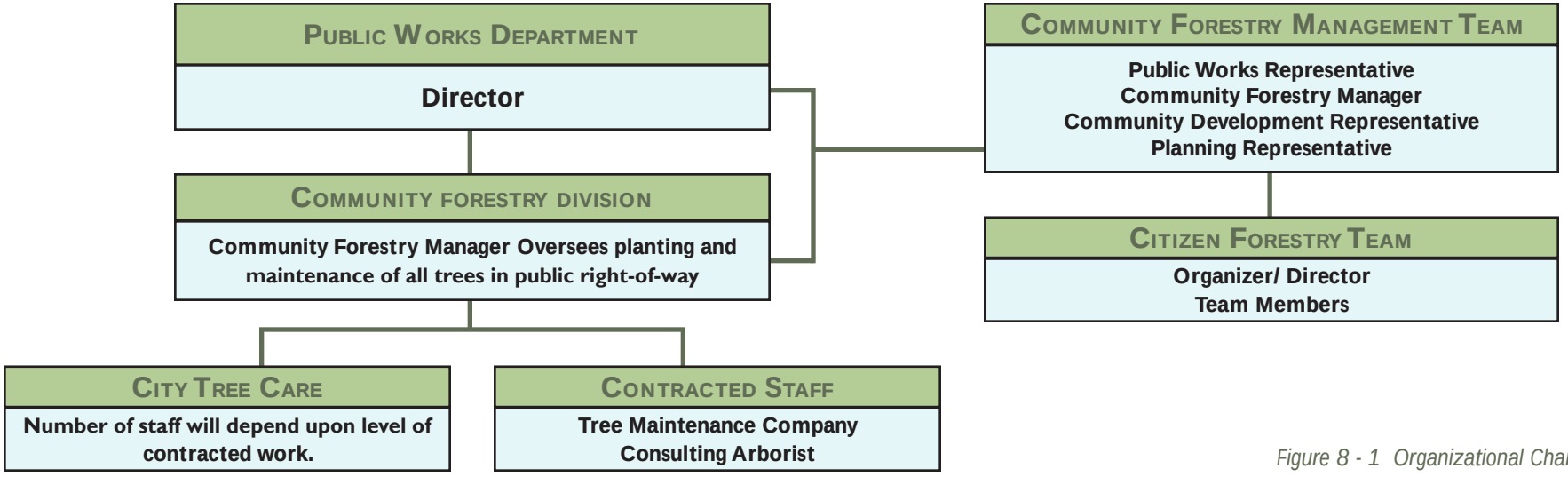



*Figure 8 - 1 Organizational Chart*

and Parks and Recreation divisions, are funded by the General Fund. The General Fund is funded primarily by property and sales taxes. Since funding is not specified for tree care and maintenance, tight budgets result in limited ability of the Department to provide proper care for all trees.

## Budget Required to Meet Forest Targets

15-percent canopy coverage was established as a feasible target with consideration to existing and future financing opportunities and constraints. It is estimated that the cost of implementing this plan over the next 25 years would be approximately $12,806,593 in 2010 dollars. The annual cost of maintaining the forest will vary depending upon size and health of the forest, but is anticipated to generally increase over time as the forest grows. Table 8-1 shows the estimated cost for the first year of implementation.

These assumptions were used to develop the cost estimates in Table 8-1:

- Education, Outreach and Other Costs: 15 percent of planting, maintenance and removal costs.
- Curb Cut/Sidewalk Cuts: $200 each for 50 percent of new trees.
- Pruning cycles are three years long for small-medium trees and six years for medium- large trees.

By 2035, the annual budget required to maintain the forest would be more than double the City's estimated current budget for maintaining the forest. Estimated annual budgets required to meet this target are compared with budgets required to meet 10- and 20-percent goals in Table 8-2. While it would be ideal for the City to achieve 20% coverage, budget constraints will likely require this to be a longer-term goal. On the other hand, a 10-percent target should be considered as a minimum target for implementation. The medium length (six yrs) trimming cycles assumed in these estimates may also be modified in order to meet budgetary constraints.

*Table 8-1 Estimated Year 1 Budget*

| Item | Annual Cost Per Tree | Number of Trees | Estimated Cost |
|---|---|---|---|
| Planting | $200 | 362 | $ 72,322.42 |
| Curb cut/Sidewalk Cut | $200 | 90 | $ 18,080.60 |
| Irrigation- Establishment (0-3 Yr) | $15 | 362 | $ 5,424.18 |
| Pruning-Young Establishment (0-3 Yr) | $14 | 362 | $ 5,062.57 |
| Pruning- Small Tree (3-20 Yr) | $10 | 1,091 | $ 10,910.00 |
| Pruning- Medium (20+ Yr) | $40 | 2,860 | $114,400.00 |
| Pest and Disease Control | $0.25 | 4,313 | $ 1,078.15 |
| Leaf litter Cleanup | $5 | 4,313 | $ 21,563.06 |
| Litigation | $2.50 | 4,313 | $ 10,781.53 |
| Infrastructure Damage | $6 | 4,313 | $ 25,875.67 |
| Removal | $500 | 41 | $ 20,500.00 |
| Education and Other (15% of above items) | | | $ 45,899.73 |

*Table 8-2 Estimated Annual Budgets*

| Year | 10% Coverage | 15% Coverage | 20% Coverage |
|---|---|---|---|
| 2010 | $ 290,544 | $ 351,897 | $ 412,693 |
| 2015 | $ 327,049 | $ 416,446 | $ 506,094 |
| 2020 | $ 360,002 | $ 476,638 | $ 594,255 |
| 2025 | $ 397,560 | $ 574,032 | $ 698,236 |
| 2030 | $ 438,521 | $ 624,962 | $ 813,900 |
| 2034 | $ 473,132 | $ 691,288 | $ 912,761 |

However, given the relatively low number of existing trees, and the current trimming demand in El Monte, a six-year cycle would appear feasible.

## FUNDING SOURCES

In addition to the General Fund, several other sources could be explored to help fund the planting and management of the community forest.

## GRANT FUNDING

### California Department of Forestry and Fire Protection (CALFIRE)

The City has received a number of grants from CALFIRE for urban forestry projects in recent years, including an Urban Forestry Management Plan Grant for the preparation of this Plan. Other grants from CALFIRE have included an *Urban Forest for Every City - Innovative Urban Forestry Projects Grant* to develop an urban forestry signage and

tv education along a 3.5 mile stretch of the City, as well as an *Environmental Enhancement and Mitigation Program Grant* to plant up to 500 trees throughout the City.

## Proposition 84 Urban Greening Grants

Funding for urban forestry projects and urban greening are available through Proposition 84, the Safe Drinking Water, Water Quality and Supply, Flood Control, River and Coastal Protection Bond Act of 2006. These funds are under the Urban Greening Grant program administered by the Strategic Growth Council.

**Other potential sources include:**

- California Urban Forestry Grant Program (funded by CAL FIRE): *californiareleaf.org*
- Sustainable Forestry Initiative: sfiprogram.org
- USDA Urban and Community Forestry Program: fs.fed.us/ucf
- Coastal Conservancy
- California Resources Agency
- State of California Department of Parks and Recreation (State Parks)
- Metropolitan Transportation Authority
- Los Angeles County Department of Public Works
- Upper San Gabriel Valley Water District
- California Wellness Foundation
- California Community Foundation
- Other Private Foundations

*Correctly threading power lines through this Cottonwood preserves a framed view of the San Gabriel mountains.*

*Table 8-3 Urban Forest Planting and Maintenance Cost Scenarios*

**Current: City with Minimal Contracted Maintenance**

| | |
|---|---|
| Number of Trees | 4,000 |
| New Tree Planting | 0 |
| City Community Forest Manager | N/A |
| Street Trees Salaries - Pruning, Removals and Emergencies | $274,100 |
| Parks Salaries - Pruning, Removals and Emergencies | $47,726 |
| General Supplies | $70,000 |
| Sewer Enterprise Fund | $100,000 |
| **Total** | **$491,826** |

### Assessment Districts for Neighborhood-Specific Projects

The City responds to demands for community-wide improvements, such as those for parks, major arterials and civic spaces, as well as those for neighborhood-specific improvements. In responding to neighborhood-specific improvements, it is important that the City prioritize emergency situations while maintaining regular pruning schedules, and that it provide equal care to each neighborhood. Should a neighborhood have a strong interest in seeking additional financing for landscaping, one possible option is to form special financing districts with restricted boundaries and limited taxing authority.

### Development Fees

A Tree Maintenance Fund could be established and an associated fee charged as part of new development fees in the city.

### Tree Planting Requirements

The City could require tree planting as part of all new residential and commercial development. Many cities require a minimum of one new tree per single-family home, as well as one or more new street trees per non-residential development.

## FUNDING OPTIONS

This section summarizes funding scenarios for the planting and maintenance of the community forest. The first scenario is a summary of the current budget for street and park tree planting and maintenance. Option 1 illustrates a combined approach which includes the addition of a half-time Community Forest Manager and the use of a contractor for 50 percent of the tree planting and maintenance work. This scenario assumes the planting of 362 new trees, which is consistent with the community forest vision target discussed in Chapter 2. Option 2 illustrates an approach that relies on contractor-provided planting and maintenance. This scenario also includes a full-time Community Forest Manager. As shown in Table 8-3, considerable cost savings could be achieved through the implementation of Option 1 or Option 2 over the current conditions.

*Table 8-3 Urban Forest Planting and Maintenance Cost Scenarios*

**Option 1: Shared City and Contractor Maintenance**

| | |
|---|---|
| Number of Trees | 4,000 |
| City Half-Time Community Forest Manager | $45,000 |
| Complete Tree Inventory | $6,000 |
| New Tree Planting (362 new trees @ $200/tree) | $72,400 |
| Street Trees Salaries - 50% of Pruning, Removals, and Emergencies | $137,050 |
| Parks Salaries - 50% of Pruning, Removals and Emergencies | $23,863 |
| Contracted Maintenance - 50% of pruning, 6-yr cycle | $28,333 |
| Contracted Maintenance - 50% of Emergencies (20 hours per year) | $4,000 |
| Contracted Maintenance - 50% of Removals (16 trees per year) | $8,000 |
| **Total** | **$328,646** |

**Option 2: Contractor Planting and Maintenance**

| | |
|---|---|
| Number of Trees | 4,000 |
| City Full Time Community Forest Manager | $90,000 |
| Complete Tree Inventory | $6,000 |
| New Tree Planting (362 new trees @ $200/tree) | $72,400 |
| Contracted Maintenance - All Pruning, 6-yr cycle | $56,667 |
| Contracted Maintenance - All Emergencies (40 hours per year) | $8,000 |
| Contracted Maintenance - All Removals (31 trees per year) | $15,500 |
| **Total** | **$252,567** |

The estimates presented in this table assume that the City currently maintains approximately 4,000 trees, consistent with the community survey. Based on this assumption, the City is currently spending approximately $107 per tree each year. It is assumed that the community survey captured at least 80 percent of the City's trees. However, if there are significantly more trees than were surveyed, the average cost of maintaining the forest per tree would decrease.

If the current number of trees is actually 8,000, the cost for Option 1 would be $466,979 and the Cost for Option 2 would be $419,233. If the current number of trees is actually 12,000, Option 1 and 2 would require a budget of $505,313 and $485,900, respectively. These estimates apply to the first year of implementation only and assume that 362 trees are still planted each year, allowing the City to reach higher canopy coverage targets. The calculations and assumptions that these estimates are based on are provided in Appendix G.

*Garvey Avenue, El Monte*


*This Carrotwood Tree on the corner of Garvey in El Monte is a candidate for removal.*

## IMPLEMENTATION PROGRAMS

Community-based programs that would be coordinated by the Citizen Forestry Team are addressed in Chapter 7. Programs that would be implemented by the City include but are not limited to the programs described below.

## OUTREACH PROGRAM

The Citizen Forestry Team will oversee most of the outreach. However, the City will need to make sure that tree planting and care standards and guidelines are easily accessible to all community members. At a minimum, Chapter 6 (Standards and Guidelines) should be available online and at the City Planning Department.

### Donations

A tree donation program would create a mechanism for individual and corporate donors to contribute to the urban forest. A commemorative plaque could be included to recognize these donors for their contribution. Donors may include residents, business owners, and local nurseries.

### Heritage Tree Program

El Monte has many mature and beautiful trees that could be formally recognized as heritage trees. Heritage trees would be designated based on historical, cultural or other values by City Council and would receive special protection under the Heritage Tree Program. This program would build awareness and pride amongst City Council members, City staff, and the community regarding existing tree resources.

### Memorial Tree Program

A memorial tree program would provide an opportunity for community members to dedicate trees in honor of a loved ones life or for special occasions, including births, quincenaneras, marriages, retirement, graduations and even local championship games. This type of gift lasts a lifetime or longer, and truly is a gift to the entire community. The best place to plant memorial

trees is in parks and civic spaces where the tree is highly accessible and can be enjoyed by the community as it grows. To initiate such a program, the City would need to prepare marketing materials and develop program logistics, such as the recommended donation and a system for siting new plantings. The Citizen Forestry Team may help to implement and advertise this program.

## Tree City USA

Recognition as a Tree City USA is another way to build public awareness and community forestry stewardship. The Arbor Day Foundation, the USDA Forest Service, and the National Association of State Foresters together sponsor the Tree City USA® program, which recognizes communities for their tree programs on a national scale. Requirements for becoming a Tree City USA include the presence of a tree board or department, a community forestry program with a minimum budget of $2 per capita, an adopted tree care ordinance and an arbor day observance. Meeting these requirements is well within reach for El Monte. Currently the City is spending as much as $4.24 per capita on tree care and maintenance. Implementation of this Plan will also result in the fulfillment of other requirements, including the establishment of tree department (the Community Forestry Division is described in Chapters 4 and 8) and the adoption of a tree ordinance.

Tree City USA communities benefit both from achieving the necessary requirements to become a Tree City USA, which requires a certain level of commitment and organization on the part of the City and also involves community education, and from the status itself. Once designated as a Tree City USA, a community can benefit from increased community pride and stewardship and improved public image, In addition, the status can be helpful in obtaining grant funding for community forestry projects.

## Mulching Program

Tree removals and maintenance generate a large volume of wood chips within the City. These wood chips should be used as mulch in City planting areas in order to build soil health, enable the soil to retain more rainwater, and enhance the appearance of planters. A mulching program would include identifying all planters that can be mulched, and establishing a system for providing mulch to these areas as a regular cycle. In the event that the City generates more mulch than can be utilized, mulch should be offered to community members and property owners.

## Neighborhood Street Tree Planting

A neighborhood street tree planting program for El Monte's neighborhood streets would help to ensure that new plantings are focused in areas that need them most, and that plantings are distributed amongst all neighborhoods. This Plan identifies priority planting areas consistent with the General Plan, many of which are on arterial streets. The next step is to identify priority planting areas within residential areas and secure funding to implement these plantings. Right-of-way and existing sidewalk and community forest conditions should be key considerations in determining priority areas.

## Inventory and Program Monitoring

It is important that the City monitor efforts to enhance the community forest and assess the effectiveness of programming on an annual basis. Programs should include tree inventory (including health observation) as well as fiscal analysis. The inventory should be updated on a regular basis by the City or a contracted company. Community forestry spending for outreach, maintenance, removal, and planting should be separately tracked in order to develop a clear understanding of the budget and facilitate the identification of cost saving opportunities.

Action Items

Table 8 - 4 illustrates a series of action items to be taken over the short, medium and long term. These actions present a realistic road map for the next 25 years, and will assure that the Vision and Goals discussed in earlier chapters of this document are supported and achieved.

*Well maintained canopy in River East*

*Table 8-4 Action Items*

| Community Forest Goal* | Short-Term (2010- 2013) | Mid-Range (2013- 2025) | Long-Term (2025- 2035) |
|---|---|---|---|
| *Goal 1: Establish and Maintain a Community Forest with Optimal Ecological, Environmental and Public Health Benefits* | Develop a system for maintaining trees on more regular pruning cycles using neighborhoods as management zones and an electronic database.<br>Determine tree pruning cycles for each neighborhood.<br>Identify trees to be prioritized for removal.<br>Initiate tree planting efforts in priority areas (General Plan designated community forest and greenways); planting a minimum of 100 trees in public right-of-way per year.<br>Initiate efforts towards receiving Tree City USA status. | Initiate projects with universities and research institutions to build greater understanding of community forestry.<br>Establish a mulching program that utilizes wood chips from tree removals.<br>Develop a system for planting new trees in neighborhoods.<br>Conduct an inventory of trees that complement the community forest, including trees within the Emerald Necklace and within the jurisdiction of the El Monte City School District. | Update the inventory and quantify the value of the community forest using the most recent research and tools.<br>Bury utility lines as funding allows. |

| Community Forest Goal* | Short-Term (2010- 2013) | Mid-Range (2013- 2025) | Long-Term (2025- 2035) |
|---|---|---|---|
| *Goal 2: Involve the Community in Forest Stewardship* | Create a Citizen Forestry Team to guide the development and implementation of community forest stewardship programs.<br>Provide all property owners and residents access to Recommended Tree Care and Maintenance Standards.<br>Provide opportunities for high school students to earn community service credits through community forestry activities. | Engage the public in stewardship events organized by the Citizen Forestry Team.<br>Expand the role of the Community Services Commission to include serving in an advisory capacity on community service issues. Solicit tree expert commissioners to serve on committee.<br>Consider the development of a Heritage Tree Program to publicly recognize special trees.<br>Consider the development of a Heritage or Memorial Tree Program that enables community members to donate trees and/or tree care in honor of loved ones.<br>Encourage tree planting on private land.<br>Develop community forest curriculum for K-12 schools. | Expand programs to encourage tree<br>planting and proper tree maintenance on private property<br>Continue to expand stewardship opportunities through the Citizen Forestry Team. |

| Community Forest Goal* | Short-Term (2010- 2013) | Mid-Range (2013- 2025) | Long-Term (2025- 2035) |
|---|---|---|---|
| *Goal 3: Centralize Management of the Community Forest* | Coordinate with all tree maintenance crews to ensure appropriate pruning practices (such as no topping).<br>Adopt new landscape and tree ordinances<br>Initiate use of neighborhoods as organization for management.<br>Assess cost effectiveness of management practices and management structure. Refine programs to increase effectiveness.<br>Coordinate an approach to funding acquisition that involves non-profit, business, and other partners. | Form Community Forest Management Team.<br>Establish a Community Forestry Division and hire a qualified Community Forest Manager.<br>Initiate annual presentations to City Council on status of community forest, including forest value.<br>Track the cost of community forest maintenance and management programs. | Continue to evaluate management effectiveness.<br>Continue to seek funding.<br>Measure expansion of forest and begin development of new canopy coverage targets. Long term targets should be to reach and maintain 18-percent coverage in the public right-of-way. Also, targets should be set for Citywide (public and private).<br>Update the Urban and Community Forestry Management Plan. |

** Policies for each management goal are located in Chapter 4.*

# CHAPTER 9: REFERENCES AND RESOURCES

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