



Board Report

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EXECUTIVE MANAGEMENT COMMITTEE OCTOBER 20, 2022

SUBJECT: LA METRO TREE POLICY

ACTION: APPROVE RECOMMENDATION

RECOMMENDATION

ADOPT Metro Tree Policy (Attachment A).

ISSUE

In April 2022, the Metro Board of Directors approved a motion (#2022-0259, *Creating a Metro Tree Policy Motion*) to develop an agencywide Tree Policy. The Tree Policy developed here is in direct response to the intent of the Motion.

This policy clarifies and standardizes LA Metro's practices for protecting the urban canopy throughout its construction program. It also indicates our commitment to a sustainable replacement strategy where tree removal is unavoidable.

The Tree Policy also recognizes the benefits that tree canopies provide to our customers- including shade and protection from extreme heat and improved air quality. Because of the value that a healthy urban canopy provides to our riders, Metro is committed to providing high quality care and maintenance of the trees on our own properties, and to pursuing partnerships with cities and local jurisdictions to install trees to provide long-term shade along transit corridors.

BACKGROUND

Since the early 2000s, Metro has been working to create a more environmentally sustainable, equitable and resilient public transportation system. Metro's commitment to climate action and resilience is included in several planning documents such as the 10-year Sustainability Strategic Plan *Moving Beyond Sustainability* (MBS), the *Climate Action and Adaptation Plan* (CAAP), the *Customer Experience Plan*, and the *Long-Range Transportation Plan* (LRTP). Protecting, planting, and maintaining trees is a component of these plans.

Trees are a critical part of our region's green infrastructure and provide multiple benefits for our communities including improved air quality, stormwater management, shade, reduction in urban heat,

carbon storage, bird and other pollinator habitat, and reductions in psychological distress. Trees are also valuable resources to provide in the long-term shade at transit transfer locations. Trees, vegetation, and natural surfaces typically absorb less heat and cool off more quickly than the built environment.

DISCUSSION

LA Metro has an important relationship to the urban canopy across many of its enterprises, but the most significant connection to tree issues is currently with our capital program where we have many large projects under construction across Los Angeles County. It is common that in the process of building large projects, LA Metro is faced with options for preserving or removing and replacing trees.

In recognizing the environmental benefits of trees, LA Metro commits to a consistent and sustainable approach to mitigating the impacts of our construction program. The attached Tree Policy (Attachment A) outlines the key elements of this approach:

1. Protecting trees through planning, design and construction, and maintenance.
2. Replacing any trees removed (when necessary) at a 2-1 ratio, or at a 4-1 ratio in the case of heritage trees. This replacement ratio is in line with the requirements of other local jurisdictions.
3. Adopting species, palette, and planting strategies that maximize opportunities for native species, carbon capture, mitigating urban heat effect, stormwater capture, and use of recycled water for irrigation.
4. Committing to a three-year establishment period for the new trees planted and encouraging creative approaches to tree replacement planting within the impacted area, including but not limited to first-last mile pathways, parkway strips, parks, or schools (however, Metro will not support planting trees in parkway locations that have the potential to damage our buses or impede their operation).

In addition to the overlap between our construction of capital projects and the urban forest, Metro has several other ways in which we touch on issues related to trees, including those that are planted at our maintenance and office facilities, and those trees located at or near our bus stops and train stations. In looking at opportunities to take a sustainable and resilient approach to trees at these facilities and our projects, the Tree Policy also requires the following:

- Adopting sustainable practices for maintaining and, where possible, planting new trees on Metro facilities.
- Partnering with local jurisdictions to plant and establish street trees along transit corridors in equity-focused communities.
- Exploring opportunities for community engagement around trees and green infrastructure.

The objectives of maintaining or planting trees on Metro properties or in conjunction with Metro funded projects are to:

- Provide a safe, pleasant, and high-quality experience for system users,
- Reduce transit rider exposure to high heat conditions,
- Improve air quality in alignment with the MBS targets,
- Mitigate tree loss that may occur from construction projects,
- Increase green spaces and expand the urban forest, and;
- Support climate action through carbon sequestration.

Commitment to Collaboration

A Guiding Principle of the Board adopted *Moving Beyond Sustainability* strategic plan commits to strengthen sustainability efforts through leadership and collaboration with regional partners and agencies. With support from this policy, Metro will continue coordinating closely with local jurisdictions in planning and design of capital projects on the protection of existing trees and the replacement or planting of new trees in the Los Angeles County.

Many organizations are already engaged in urban forestry efforts in Los Angeles County. Metro will support plans and projects undertaken by local jurisdictions to plant and establish street trees along transit corridors in equity-focused communities, and as part of LA Metro's Complete Streets Policy.

LA Metro will also collaborate with the Metro Sustainability Council, local agencies and nurseries to educate and promote the significance of the native trees, and to ensure that specified trees in the LA Metro Tree Palette are available for replacement of trees removed as part of the construction program.

Stakeholder Engagement

Staff conducted several internal and external stakeholder engagements to get feedback and recommendations on the viability and effectiveness of the Tree Policy. These stakeholders and the dates they were consulted included:

- LA Metro Tree Policy Working Group- including Countywide Planning & Development, Systemwide Design, Facilities Contracted Maintenance Services, Construction, Security, Transit Operations, Operations Liaison and Planning (06/03/2022, 06/16/2022, 09/13/2022);
- LA Metro Sustainability Council (05/13/2022);
- Tree Policy Workshop - with environmental and other stakeholders (08/24/2022), and;
- Los Angeles Conservation Corps (09/13/2022).
- Caltrans (10/6/2022)

Feedback from the stakeholders were incorporated in the final version of the policy as presented in Attachment A.

Implementation Plan

LA Metro will ensure the implementation of the Tree Policy through the following steps:

- Update internal plans, documents and specifications governing tree removal, replacement, species selection, establishment periods, and maintenance.
- Integrate the goals and objectives of the Tree Policy into planning efforts.
- Conduct internal training to ensure understanding and consistent application of this Policy.
- Collaborate with cities, local agencies and non-profits to identify and pursue opportunities to support the planting and maintenance of trees along high ridership, low canopy corridors in LA County.
- Collaborate with local agencies and nurseries to ensure availability of sufficient stock of the trees from the LA Metro Tree Palette.
- Identify and pursue Federal, State, and local funding opportunities aimed at maintaining current tree inventory and increasing tree canopy/coverage specifically along LA Metro transit corridors and properties.

FINANCIAL IMPACT

No immediate financial impact is associated with the adoption of the tree policy and its implementation strategies. Implementation of the Tree Policy will be incorporated into the budgeting of planning, execution of capital projects, and facility maintenance projects and programs. operations programs. Those funds will be controlled by the respective project and program managers at appropriate cost centers.

EQUITY PLATFORM

For Metro, equity is part of the foundation of the decision-making, planning and operations. Metro is committed to eliminating areas of inequity, discrimination or implicit bias within our policies, procedures, and practices.

The disparities in tree canopy coverage among different parts of LA County are stark: many affluent neighborhoods exhibit tree canopy coverage of up to 40%, while lower income areas in the Los Angeles County may have coverage of 10% or less, with a corresponding difference in the ambient air temperature of several degrees. The result is that people who rely on the transit and live in neighborhoods with low tree canopy coverage or other forms of shade experience more exposure to high heat while waiting at or walking to and from the transit stops.

LA Metro will prioritize projects using criteria for reducing heat and other impacts to Equity Focus

Communities (EFCs) and other disadvantageded communities. LA Metro will ensure that all mitigation efforts are maximized within EFCs, and that all replacement trees are planted back in the same areas that they are removed. Metro will also focus any proactive tree planting efforts within low canopy/high ridership corridors. In no case, shall invasive or trees that damage the sidewalks or may pose a hazard be considered acceptable.

LA Metro will engage with representatives of local jurisdictions and non-profits in the planning and design of capital projects to coordinate the protection of existing trees and the replacement or planting of new trees. Where the required replacement of trees on LA Metro property is not possible, LA Metro will assess to determine the support of the plans and projects undertaken by local jurisdictions to plant and establish street trees along transit corridors in Equity Focus Communities, and as part of LA Metro's Complete Streets Policy.

IMPLEMENTATION OF STRATEGIC PLAN GOALS

This policy supports Metro's second, third, and fourth Strategic Plan Goals. The actions implemented due to this policy will deliver outstanding trip experiences for all users of the transportation system (Goal #2). The strategies and actions outlined in this policy advocate for equitable access to opportunity in alignment with Metro's Equity Platform (Goal #3). This policy also aligns with the need to collaborate with regional agencies to protect, preserve, maintain and increase the tree canopy for Los Angeles County (Goal #4).

ALTERNATIVES CONSIDERED

In consultation with internal and external stakeholders, this Tree Policy was developed in direct response to Motion #2022-0259. Staff does not recommend rejection of this policy.

NEXT STEPS

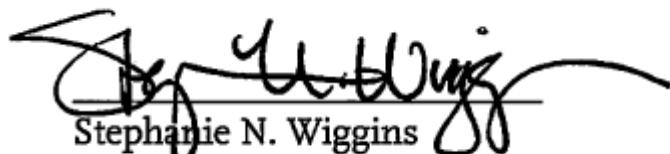
Upon Board adoption, the Office of Sustainability is committed to working across internal departments and with external partners and stakeholders to implement the actions under the Tree Policy. The Office of Sustainability will periodically report on the progress of implementation.

ATTACHMENTS

Attachment A. LA Metro Tree Policy

Prepared by: Heather Repenning, Executive Officer, Office of Sustainability (213) 922-4932
Cris B. Liban, Chief Sustainability Officer, (213) 922-2471

Reviewed by: Nicole Englund, Chief of Staff, (213) 922-7950



Stephanie N. Wiggins
Chief Executive Officer



LA METRO TREE POLICY

Policy Background and Goals

It is the policy of the Los Angeles County Metropolitan Transportation Authority (LA Metro) to protect the trees impacted by our construction activity, including a sustainable and robust tree replacement and establishment program for when tree removals are unable to be avoided.

Beyond mitigating the environmental impacts of our construction program, protecting, planting, and maintaining trees is a fundamental component of LA Metro's commitment to providing a high-quality customer experience, promoting equity, fostering sustainability, and increasing climate resilience.

Our Board adopted the 2020 10-year Metro Sustainability Strategic Plan, *Moving Beyond Sustainability (MBS)*, which includes the following relevant targets:

- Increasing runoff infiltration and capture capacity for stormwater by 15% from 2020 baseline levels.
- Prioritizing improvements to locations, facilities, infrastructure, equipment and operations to reduce [climate] risk.
- Reducing total nitrogen oxides (NOx) emissions by 54% from 2018 baseline.
- Reducing total particulate matter (PM) emissions by 62% from 2018 baseline.

LA Metro recognizes that opportunities for shade and canopy exist at rail stations, along rights of way, transit centers/hubs, and LA Metro maintenance and administrative facilities. LA Metro can also encourage and facilitate tree planting for bus stops, complete streets, active transportation, or the first/last mile projects that are funded by LA Metro.

Trees are a critical part of our region's green infrastructure and provide multiple benefits for our communities including improved air quality, stormwater



management, shade, reduction in urban heat, carbon storage, bird and other pollinator habitat¹, and reductions in psychological distress².

Trees are valuable resources in efforts to mitigate the impacts of increased heat on transit riders due to climate change. The LA County Climate Vulnerability Assessment³ found that by 2050, nearly 2.2 million people will be residing in areas of both high exposure and high social vulnerability to extreme heat, many of whom are transit riders. More than 40 additional days of extreme heat are projected to occur annually by 2050⁴. Exposure to heat exacerbates pre-existing health conditions and can also increase the risk of death⁵. During a shorter heat wave, the death rate can rise by 8 percent and after five days, the death rate can increase by 25 percent⁶.

Many affluent neighborhoods exhibit tree canopy coverage of up to 40%, while lower income areas in the County may have coverage of 10% or less⁷, with a corresponding difference in the ambient air temperature of several degrees. The result is that people who rely on the transit and live in neighborhoods with low tree canopy coverage or other forms of shade, experience more exposure to high heat while waiting at or walking to and from the transit stops (see Appendix A).

Trees, vegetation, and natural surfaces, typically absorb less heat and cool off more quickly than the built environment. LA Metro is committed to working with communities to identify opportunities to improve conditions for transit riders by increasing shade near transit stops and maintaining healthy trees on our properties.

Construction Mitigation

LA Metro understands that planning and preservation are the keys to success in protecting trees during any construction project.

¹ Tree People website, June 2022

² *Nature experience reduces rumination and subgenual prefrontal cortex activation*, Proceedings of the National Academy of Sciences, Bratman, Hamilton, Hahn, Gross, 2015

³ Los Angeles County Climate Vulnerability Assessment, 2021

⁴ Los Angeles County Climate Vulnerability Assessment, 2021

⁵ American Public Health Association, Climate Change, Health, and Equity, 2017

⁶ Too hot to live, National Geographic, June 2021

⁷ LA Urban Forest Equity Assessment Report, CAPA Strategies, 2021



LA Metro will plan and design new construction or additions so that large trees and other significant site features, such as vistas and views are preserved. Before construction, LA Metro will prepare a tree protection plan identifying tree protection zones (TPZs) for all trees designated for retention. During construction, LA Metro will protect large trees and other significant site features from immediate damage during construction and from delayed damage due to construction activities, such as loss of root area or compaction of the soil by equipment.

With the implementation of our extensive capital program, LA Metro will take steps to avoid removing any healthy trees, as determined by a certified arborist. LA Metro will prepare a mitigation plan for damaged trees and removed trees in consultation with the Certified Arborist and include with construction plans and contract documents. Street trees removed by LA Metro will be replaced at a minimum 2:1 ratio, with 36-inch box trees (i.e., young trees with a large root ball) at or near the removal location. In the case of heritage or protected trees, all options will be exhausted before such trees are removed. When necessary, designated heritage trees (by local ordinance) will be replaced at a four-to-one ratio by the trees of the same variety.

LA Metro understands that selecting tree species within the context of site design and climate suitability is important to minimize the likelihood of tree failures, while managing diversity through species selection will also build resilience to climate change impacts. Therefore, LA Metro will plant **California-native** or similar species with a low water demand, ability to provide shade, and compatibility with regional efforts to mitigate exposure to high heat (see Appendix B). Additionally, the trees specified will produce minimal seedling, or fruitlike droppings, in order to minimize the need for routine cleanliness as a result of stained hardscape and potential slip hazard. LA Metro shall also select trees that maintain canopy leaves year-around (non-deciduous) and do not shed large quantities of leaves in the fall or winter seasons. LA Metro will seek regionally specific guidance on species selection and management techniques to help reduce the risk of significant urban forest mortality and maximize the benefits urban forests provide.

LA Metro commits to a 3-year establishment period for the replacement trees. During the establishment period, LA Metro will provide, as necessary, protective barriers to avoid against any site disturbance that may impact retained trees, such as grading,



building construction and maintenance, infrastructure and utility installation and maintenance, and other landscape changes that may affect the structural integrity and stability of retained trees. For any trees planted on Metro property, permanent hardwired irrigation will be provided. Non-potable or recycled water irrigation is a priority, where feasible.

Where the required replacement of trees on the same site is not possible due to space constraints, emphasis will be placed on encouraging creative, collaborative approaches, including but not limited to first-last mile pathways, parkway strips, parklets, or pocket parks, where permeable surfaces are increased and planted for greater visual, cooling, and air and water quality impact. However, Metro will not support planting trees in parkway locations that have the potential to damage our buses or impede their operation.

Commitment to Collaboration

LA Metro is committed to strengthening sustainability efforts through leadership and collaboration with regional partners and agencies. LA Metro will engage with representatives of local jurisdictions and communities in planning and design of capital projects to coordinate the protection of existing trees and the replacement or planting of new trees.

Secondarily, LA Metro will also support efforts by local jurisdictions and community-based organizations to improve and expand the urban tree canopy of Los Angeles County.

IMPLEMENTATION PLAN

1. *Update internal plans, design and construction specifications, and operations and maintenance documents.*

The LA Metro Program Management, Planning, and Operations, in collaboration with the LA Metro Office of Sustainability, will update all internal plans, design and maintenance standards and specifications to comply with the Tree Policy and continue to review and update policy implementation measures to ensure a healthy tree canopy is maintained.



2. *Integrate into planning efforts.*

LA Metro Planning will integrate the goals and objectives set in this Tree Policy into current and future transportation and urban planning efforts and as part of future Long Range Transportation Plan and Environmental Impact Reports (EIR).

LA Metro Office of Sustainability will use the data measuring existing tree canopy to prioritize locations for new bus shelters in partnership with the localities that manage street furniture contracts.

3. *Conduct internal training.*

LA Metro, through the Environmental Training Institute (ETI), will update the existing training and awareness programs to ensure that LA Metro staff and contractors can implement the Tree Policy. This training would be focused on the appropriate steps to be taken before and after a decision on tree removal is implemented, as well as highlight the importance of the tree canopy coverage protection and maintenance efforts of LA Metro.

4. *Community outreach.*

LA Metro will conduct a comprehensive and inclusive community outreach through its community engagement module. The module will provide an opportunity for stakeholders and the public on the Tree Policy and receive updates on the steps taken by LA Metro towards the Tree Policy implementation. The outreach process will help LA Metro to determine and assess community attitudes and concerns regarding the neighborhood trees, and to discuss the benefits of an urban tree canopy.

LA Metro will also conduct outreach to local agencies and nurseries to educate and promote the significance of the native trees, and to ensure that specified trees in the LA Metro Tree Palette are available for replacement of trees removed as part of the construction program.

5. *Identify and pursue funding opportunities.*

LA Metro Planning and the Office of Sustainability will identify and pursue Federal, State, and local funding opportunities aimed at maintaining current tree inventory and increasing tree canopy/coverage specifically along LA

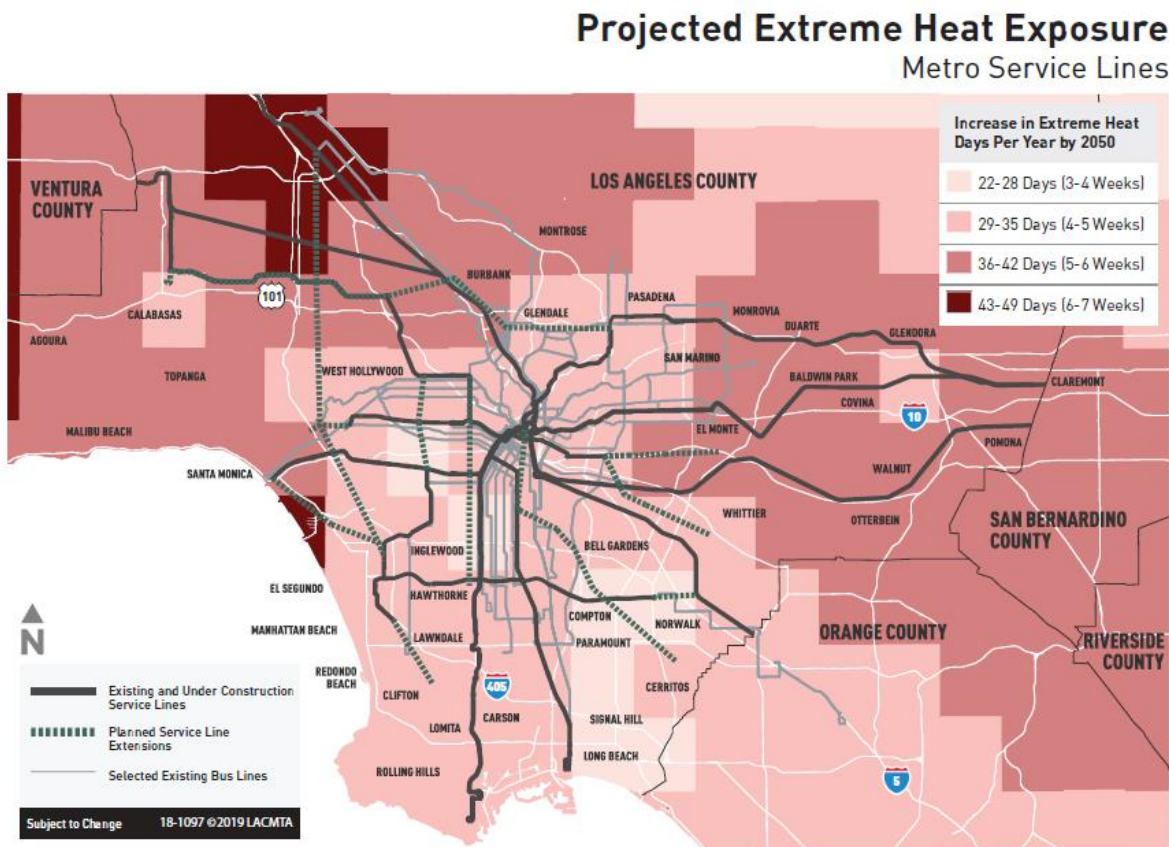


Metro

Metro transit corridors and properties. Metro will prioritize projects using criteria for reducing heat and other impacts on equity focused and disadvantaged communities.

APPENDICES

Appendix A: Extreme Heat Exposure Map for LA Region (LA Metro 2019 CAAP)



Appendix B: LA Metro Tree Planting, Tree Maintenance, Protection of Urban Forest During Construction



LA Metro prioritizes tree planting strategies that best serve our County residents, but most especially transit-dependent, disadvantaged communities, with limited open spaces and a low tree canopy coverage. LA Metro will undertake precautionary measures to protect trees during the entirety of the construction period, including but not limited to potential damage from collisions, excavation, and dewatering. LA Metro also encourages creative approaches to expand the existing tree canopies by evaluating opportunities in first-last mile pathways, parkway strips, residual rights-of-way, parking lots and in locations where permeable surfaces can be increased for both cooling and water quality benefits.

Planning and Design

LA Metro follows a specific plant palette and design standards, as well as construction specifications for tree selection and installation, as provided in the Metro Rail Design Criteria (MRDC), Architectural Standard and Directive Drawings, Integrated Station Design Solutions Landscaping White Paper, and Facility Maintenance Tree Maintenance specifications. LA Metro has and will continue to update all its internal plans, documents and specifications, and operations and maintenance documents to comply with the goals laid out in the Tree Policy. Departments responsible for these updates will maintain a periodic review cycle to ensure a healthy tree canopy is maintained.

Tree Installation and Removal

LA Metro is responsible for trees within LA Metro property lines, as well as for planting replacement trees. If a tree removal is required on LA Metro's capital project sites, the project design will need to include an approach that either replaces removed trees at a ratio of 2:1 or replaces in-kind with trees that are a minimum size of 36-inch standard box (i.e., young trees with a large root ball). LA Metro will inspect all newly planted trees regularly to evaluate condition and maintenance needs.

Replacement Tree Location

LA Metro shall consult with appropriate municipality or locality, in addition to community stakeholders, prior to selecting the appropriate location for planting replacement trees. The preference is for trees to be replaced and relocated within the same project areas. LA Metro prioritizes tree planting locations that provide shade for riders transferring to/from Metro services, and on exposed dark-colored paved surfaces. When sufficient project right-of-way or property is not available, replacement trees will be planted off-site with preference to locations with low urban



tree canopy coverage and where proper irrigation coverage could be installed and maintained for the tree to survive.

Tree Removal Timeframe

LA Metro will identify ownership of the tree before authorizing a removal. A certified arborist should evaluate tree health and risk of failure before removing a tree. Trees shall not be removed during the nesting season of protected bird species, which generally occurs between March and August. If tree removal must occur during the bird nesting season, a qualified biologist will need to conduct a pre-construction survey to ensure that no active nests are present. A pest control expert will be involved for trees with a beehive before the tree removal.

Species Selection

Replacement of trees will be consistent with LA Metro's recommended tree palette (see Appendix C) at a ratio determined by the City. California native, climate adapted, and low water demand shade trees will be utilized whenever possible. In no case, shall invasive or trees that damage the sidewalks or may pose a hazard be considered acceptable.

Heritage Trees and Protected Trees

Removal of Heritage Trees shall be avoided to the greatest extent feasible due to their historical or other significance. When necessary, designated heritage trees (by local ordinance) will be replaced at a four-to-one ratio by the trees of the same variety. Protected trees must be protected and removed in compliance with the local ordinance identifying a Protected Tree. The identification and protection of Heritage Trees and Protected Trees are to be addressed in the Construction Contractor's Tree Protection Plan.

Establishment Period

LA Metro is responsible for the care of trees through the 3-year establishment period for all trees planted directly within LA Metro property lines. LA Metro is also responsible for the maintenance of replacement trees associated with LA Metro capital projects during the establishment period specified in the project contract documents, including trees installed outside of LA Metro property lines and right of ways. All LA Metro project contract documents must specify replacement tree warranties and include maintenance during the 3-year establishment period by the installing contractor. The contractor certified arborist shall assist in basic tree maintenance with regular inspections to determine a tree's needs, which may include pruning, mulching, fertilization, irrigation, and pest management. The arborist can



make specific recommendations to retain or recover a tree's health and safety during the construction process.

Long-Term Maintenance

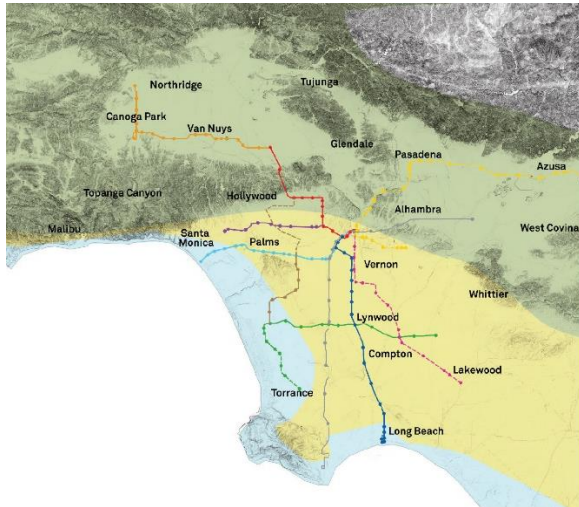
LA Metro is responsible for long-term maintenance of only the trees located or relocated within LA Metro property lines or rights-of-way. LA Metro will strive to achieve an asset management approach to maintenance that is measurable in costs as well as sustainability benefits, such as Water Quality (improvements) and Conservation, Energy Resource Management, Emissions and Pollution Controls, Resilience and Climate Adaption, as well as Economic and Workforce Development (particularly where partnership with private and non-governmental organizations and community engagement assists with tree maintenance).

Exemptions: The requirements for any tree located on the project site for which a variance, conditional use permit, design review, or tentative map approval was obtained from the local jurisdiction will supersede LA Metro's Tree Policy.

Certified Arborist

LA Metro Contractors are required to provide an ISA Certified Arborist or American Society of Consulting Arborists (ASCA) Registered Consulting Arborist as part of their project staff. The certified arborist assists in developing a Tree Report, Tree Protection Plan, and maintenance /care plan. Tree protection measures recommended by the Certified Arborist are to be referenced in the Tree Protection Plan and project construction documents. The certified arborist must also assist in monitoring and follow up maintenance during and after the construction process.

Appendix C: LA Metro Recommended Tree Palette



Microclimate Zones

-  Coastal: Sunset Zone 24
-  Basin: Sunset Zones 22, 23
-  Inland: Sunset Zones 18, 19, 20, 21

Tree Palette



Quercus agrifolia
Coast Live Oak



Quercus illex
Holly Oak



Quercus suber
Cork Oak



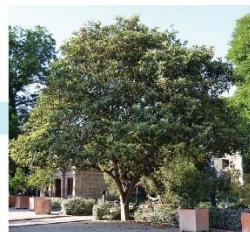
Quercus tomentella
Channel Island Oak



Pinus torreyana
Torrey Pine



Spathodea campanulata
African Tulip Tree



Eriobotrya japonica
Japanese Loquat



Agonis flexuosa
Peppermint Tree



Metro®



Tipuana tipu
Tipu Tree



Flaeocarpus decipiens
Japanese Blueberry Tree



Koelreuteria bipinnata
Chinese Flame Tree



Arbutus 'Marina'
Marina Strawberry Tree



Arbutus unedo
Strawberry Tree



Platanus racemosa
Western Sycamore



Platanus acerifolia 'Colombia'
London Plane Tree



Fraxinus oxycarpa 'Raywood'
Raywood Ash



Fraxinus uhdei
Evergreen Ash



Lophostemon confertus
Brisbane Box



Quercus engelmannii
Engelmann Oak



Quercus virginiana
Southern Live Oak



Acer macrophyllum
Bigleaf Maple



Rhus lancea
African Sumac



Cercidium 'Desert Museum'
Desert Museum Palo Verde



Prosopis chilensis
Chilean Mesquite



Chilopsis linearis
Desert Willow



Dalbergia sissoo
Indian Rosewood



Geijeria parvifolia
Australian Willow



Fraxinus velutina 'Modesto'
Modesto Ash