



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.



Metro

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.*

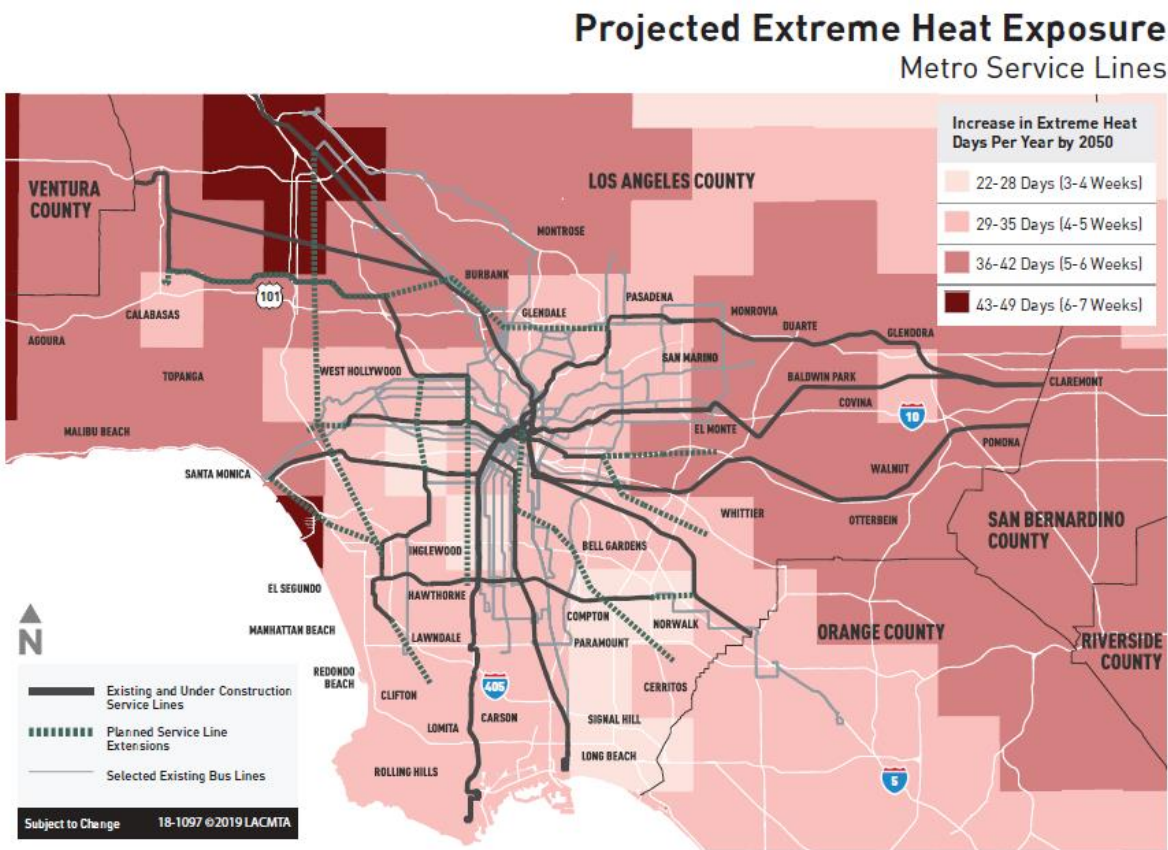
LA Metro Planning and the Office of Sustainability will identify and pursue Federal, State, and local funding opportunities aimed at maintaining current tree inventory and increasing tree canopy/coverage specifically along LA



Metro 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.

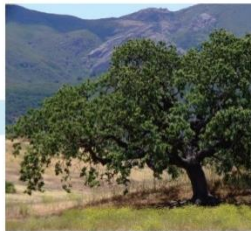
Appendix C: LA Metro Recommended Tree Palette



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 ilix
Holy 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 tiju
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 uhderi
Evergreen Ash



Lophostemon confertus
Brisbane Box



Quercus engelmannii
Engelmann Oak



Quercus virginiana
Southern Live Oak



Acer macrophyllum
Rigleaf Maple



Rhus lancea
African Sumac



Cercidium 'Desert Museum'
Desert Museum Palo Verde



Prosopis chilensis
Chilean Mesquite



Chilopsis linearis
Desert Willow



Dalbergia sissoo
Indian Rosewood



Geijoria paviifolia
Australian Willow



Fraxinus velutina 'Modesto'
Modesto Ash