



USC Tree Renewal Plan

For the University Park and Health Science Campuses

January, 2026

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01

Introduction



Definitions

Afforestation - The process of establishing a forest in an area where trees have not recently, or historically been present.

Assisted migration - Human-assisted movement of species in response to climate change.

Acclimatization - A short-term, reversible physiological adjustment within an individual organism's lifetime to cope with environmental changes, such as adjusting to altitude or heat.

Adaptation - A long-term evolutionary process that occurs over generations through natural selection, leading to permanent, inheritable changes in a population that enhance survival.

Bioindicators - Biological processes, species, or communities used to assess environmental health by showing changes over time in their presence, behavior, or physiology due to pollutants or other stressors.

Epicormic sprouts - Water sprouts, or shoots that grow from dormant buds under a tree's bark and triggered by stress.

Integrated Pest Management - An ecosystem-based strategy that focuses on long-term prevention of pests or their damage through a combination of techniques such as biological control, habitat manipulation, modification of cultural practices, and use of resistant varieties.

Mechanical Control - The use of physical methods or techniques to manage or remove pests.

Nesting Season - The time of year when birds prepare for, build, and care for their eggs and young. It usually begins in the spring, around March to June, but can vary by region and species.

Nutrient Cycling - The process by which nutrients move through an ecosystem, from the environment into living organisms and back again. It's a vital part of the ecology of any region and is essential for the survival of the organisms that live there.

Pathogen - A microorganism or other biological agent that can cause disease.

Phenology - Timing of growth and flowering of cyclic and seasonal natural phenomena, especially in relation to climate and plant and animal life.

Root Ball - The mass of roots and growing media at the base of a plant such as trees, shrubs, and other perennials and annual plants.

Soil Aeration - The mechanism of improving the exchange of gases between the atmosphere and soil through either mechanical or chemical means and allowing for improved water drainage and root growth.

Transpiration - The process by which plants give off water vapor through the stomata in their leaves.

Goals & Objectives

The urban forest across both the University Park Campus (UPC) and Health Sciences Campus (HSC) includes approximately 7,451 trees. These trees provide shade, habitat for wildlife, and capture atmospheric carbon in their leaves, bark, roots, and surrounding soil. They also animate the campus landscape, enhancing both the beauty and the health of USC's campus life. Many of these trees are mature specimens dating back to the early 20th century.

However, the cooling shade and beauty offered by USC's urban forest contrasts with the natural plant communities of the Los Angeles coastal plain prior to settlement. Historically, coastal scrub and chaparral dominated the landscape, with trees largely limited to riparian areas, oak woodlands, and pine forests. To create a shady, evergreen tree canopy where it did not naturally exist has required afforestation. Tree selection has primarily been guided by aesthetic values.

Today, many campus trees face risks of decline and mortality, as they are poorly suited to existing and future conditions that include prolonged

drought, extreme flooding, and new insect and pathogen pressures associated with hotter and more variable climates. Increased heat, drought, compacted urban soils, pests and diseases require a more thoughtful selection process and tree care practices to ensure existing and newly planted trees will have a long and healthy life on the campus.

The primary goal of this Tree Renewal Plan is to extend the findings and recommendations of the 2022 USC Sustainable Urban Forest Masterplan and provide a framework for maintaining, enhancing, and restoring a healthy urban forest for USC and its surrounding community.

Healthy trees can live for decades or even centuries, but they require thoughtful, long-term planning. This plan seeks to test new approaches while continuing to strengthen community well-being through the resilience of the campus tree canopy.

GOALS

- Ensure the safety and resilience of USC's urban forest
- Enhance biodiversity to increase resistance against disease and environmental stressors
- Protect and improve the health of both new and existing trees
- Increase the environmental benefits of the urban forest, including drought tolerance
- Extend and enhance existing USC policies and documents including the following: Sustainable Urban Forest Masterplan, Landscape & Irrigation Standard Guidelines, Sustainable Design & Construction Guidelines, and the Native and Climate Adapted Plant Master Plan <https://fpm.usc.edu/standards-guidelines/#>

OBJECTIVES

- Assess the current health of USC's urban forest
- Identify opportunities to test and pilot new species and planting methods
- Evaluate species, soils, and growing conditions to ensure trees reach maturity and deliver long-term benefits
- Develop a tree palette capable of thriving in future climate scenarios

The History of Trees On Campus

To move forward with a plan for a resilient urban forest, it is essential to understand the historical, current, and future environmental conditions on and around campus and their inherent connection to climate. We must recognize what exists today and anticipate how it will change in the future. These considerations include past, present, and future growing conditions and site influences, supported by scientific research to ensure the enduring beauty and legacy of USC's trees.

The history of trees in the Los Angeles Basin has never been static. In the 19th century, horticulturists tested and introduced a wide range of tree species, many of which persist today and continue to shape the character of the campus. Eucalyptus, magnolia, and other nonnative species were established to bring greenery, flowers, and shade to an otherwise treeless Southern California landscape.

USC's fourth president, George Finley Bovard, led efforts to transform the campus from a sparse, semi-rural setting into a "university park." Influenced by the City Beautiful Movement—which emphasized grand landscaping and classical architecture—Bovard championed a more orderly, green, and visually impressive campus. He collaborated with architects and landscape designers to line walkways and new buildings with shade trees, palms, and ornamental species, laying the foundation for the campus identity we know today. Images on the following page illustrate this transformation.

Key Species and Developments in Tree Planting:

Moreton Bay Fig (*Ficus macrophylla*) – Large, iconic trees at the Ronald Tutor Campus Center, planted in the 1910s–1920s and now major campus landmarks.

Canary Island Date Palm (*Phoenix canariensis*) – Lining Trousdale Parkway, creating a grand, symmetrical entrance.

Coral Tree (*Erythrina* spp.) – Introduced in the 1920s–1930s for their vivid red flowers, prominently planted near Alumni Park and the Old College Building.

Jacaranda (*Jacaranda mimosifolia*) – Introduced in the 1920s–1930s; bloom with striking purple flowers in spring, especially near Alumni Park and the Old College Building.

Southern Magnolia (*Magnolia grandiflora*) – Found throughout both the UPC and HSC, valued for their glossy leaves and large white flowers.

Coast Live Oak (*Quercus agrifolia*) – Two Coasts Live Oak seedlings were planted in Associates Park donated by Olympic champions from the 1936 Olympics. One of the oaks died and was replaced in 2002.

California Sycamore (*Platanus racemosa*) – Large and graceful trees planted in and around Alumni Park in the 1930's -1950's and include recent replacement plantings.



Canary Island Date Palms and California Sycamore trees near Doheny Memorial Library, 1932.



Canary Island Date Palm near Bovard Hall, 1939.



California Sycamore trees near Bovard Hall, 1950.



Young Southern Magnolia trees planted on Trousdale Parkway, 1940.

Campus Trees Today

In the Los Angeles Basin, relatively few native tree species are found compared to higher-elevation mountain areas, where greater native diversity exists. Los Angeles has just 15 native species, seven of which are riparian trees with high water demands, and many are not widely distributed across the city. For example, the California Bay Laurel (*Umbellularia californica*) is limited to the outer edge of the city in the Santa Monica Mountains and does not naturally occur within the basin where most of Los Angeles’s urban environment lies.

Southern California’s urban forests are among the most diverse in the world, but this diversity is largely composed of non-native species, with a wide range of cultural requirements including regular irrigation, raising concerns about long-term resilience. Prioritizing trees with traits such as drought and heat tolerance—along with carefully selected native species—will be essential to sustaining a healthy and adaptable urban forest in a changing climate.



169
Unique Species



7,996
Total Trees



\$40,066,474
Replacement Value



167.8
tons per year
Carbon Sequestration



3.36
tons per year
Pollution Removal



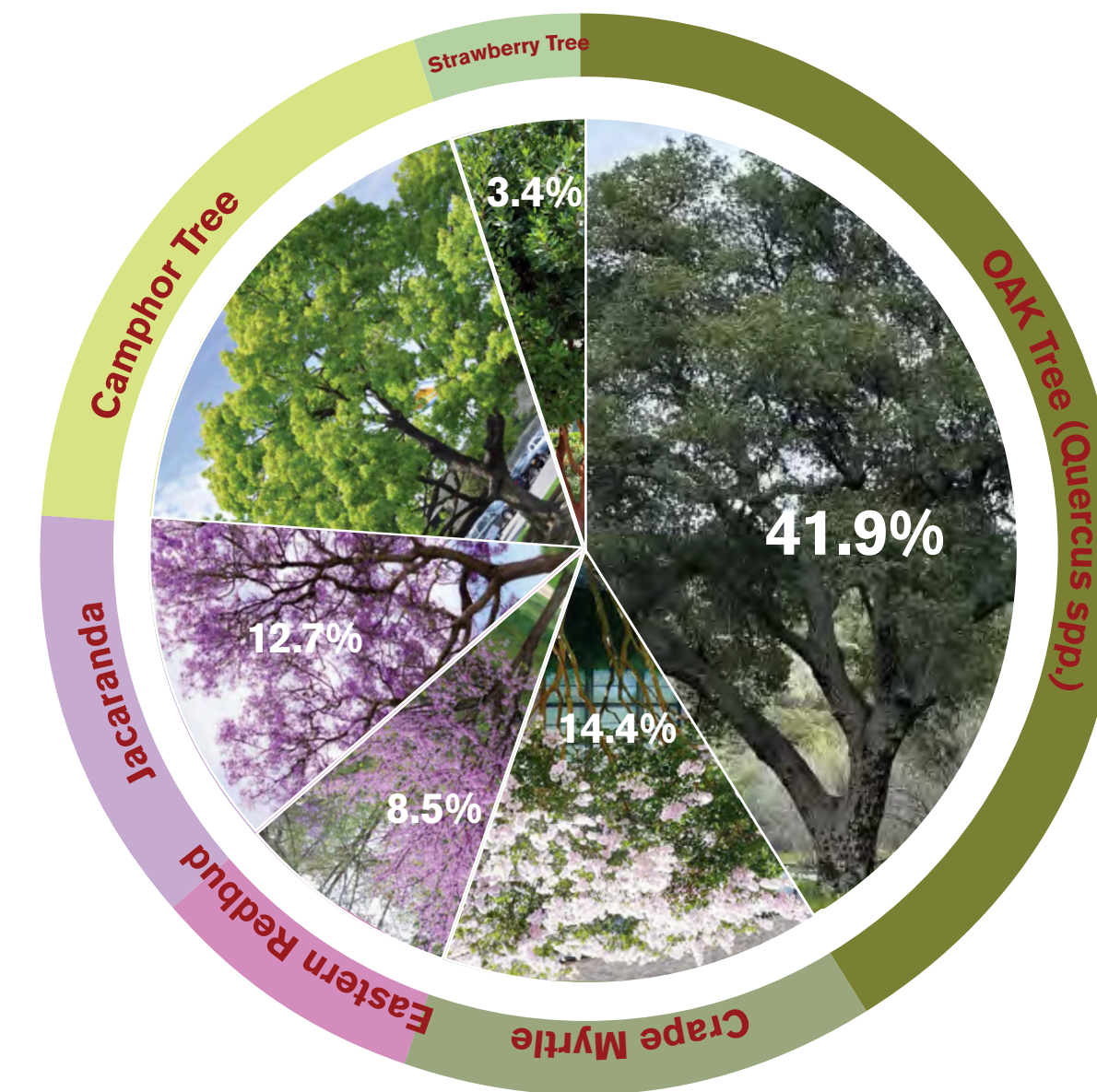
460,969
gallons per year
Avoided Runoff



\$ 72,956
per year
Total Annual Benefit

What tree do you want to see more of on the University Park Campus? (Select One)

From 236 Responses



1. Oak Tree (*Quercus spp.*)

2. Camphor Tree (*Camphora officinarum*)
3. Crape Myrtle (*Lagerstroemia indica*)
4. Jacaranda Tree (*Jacaranda mimosifolia*)
5. Eastern Redbud (*Cercis canadensis*)
6. Strawberry Tree (*Arbutus unedo*)

The USC University Park campus and HSC Campus have 7,996 trees that line streets and shade outdoor gathering spaces and buildings. This valuable inventory of trees contributes significantly to the campus character, outdoor thermal comfort, air quality improvements, and biodiversity benefits. These trees also contribute to a significant

amount of carbon capture and storage. Their continued health and survival is a top campus priority. Part of the transition includes increasing overall campus canopy coverage and replacing unhealthy trees or trees at end of life-cycle with native and climate-adapted species.

The graphic above summarizes responses by faculty, staff and students to USC 2025 Arbor Day questionnaire and includes both native and non-native species.

Climate Change Considerations

Trees are adapted to specific climatic conditions, but the rapid pace of climate change is outstripping many species' ability to adapt or migrate. Research shows that many tree species are already shifting their ranges, moving poleward, upslope, or in response to moisture changes. However, many species may be unable to keep pace, leading to widespread mortality.

Projected Climate Changes in the Los Angeles Region

- Rising temperatures: Average maximum temperatures are projected to increase 4–5°F by mid-century and 5–8°F by late century. The hottest day of the year may be up to 10°F warmer, and extreme heat days will increase significantly.
- Precipitation extremes: While mean precipitation changes remain uncertain, both wet and dry extremes are expected to intensify. The wettest day of the year could increase by 25–30% under high-emission scenarios, largely

from atmospheric river events, while the frequency of extremely dry years could double.

- Urban heat island effect: Los Angeles already experiences the state's strongest urban heat island, and rising heat combined with drought will further stress vegetation, reduce shade, and worsen air quality.

Impacts on Urban Forests

Urban trees, often shallow-rooted and dependent on surface irrigation, are especially vulnerable under water restrictions. Drought, pests, and disease pressures are expected to intensify. To maximize their cooling and shading benefits, trees must be carefully selected and maintained, with species chosen for heat and drought tolerance.

Phenology and Fire Risk

Plant phenology is shifting, especially in spring, making it one of the most visible bioindicators of climate change. Fire seasons are lengthening, with higher temperatures and precipitation extremes driving more frequent and intense fires. Increased fire frequency threatens chaparral ecosystems by favoring invasive grasses that perpetuate a cycle of fire and further displacement of native shrubs. Recent fires have already converted pine forests

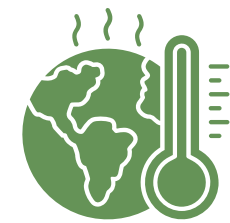
to chaparral, with little chance of recovery under drier conditions. Urban tree canopy can be further threatened with post-fire clean-up policies and procedures removing healthy, but fire damaged trees rather than promoting recovery.

Pests and Disease

Warmer temperatures accelerate reproduction in insects and mites, raising pest pressure. Climate change may also influence the spread of invasive disease vectors such as the polyphagous shot-hole borer, though future outcomes remain uncertain.

Adaptation Strategies

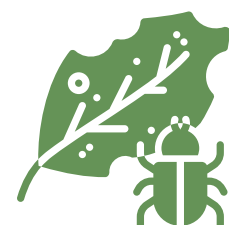
- Develop and expand efficient irrigation technologies.
- Adopt smart irrigation scheduling and management systems.
- Promote on-site water capture, including rainwater harvesting, bioretention, and groundwater recharge.
- Improve soil infiltration and water-holding capacity by increasing soil organic matter.



Climate Change & Drought Resilience



Aging & Declining Heritage Tree



Pests & Diseases



Biodiversity & Ecosystem Health



Urban Development Pressure



Equity & Shade Disparities



Community Engagement & Education

THE OAK WOODLAND



Quercus lobata
Valley oak



Quercus agrifolia
Coast live oak



Platanus racemosa
California sycamore



SYCAMORE ALLUVIAL WOODLAND



PINE FORESTS



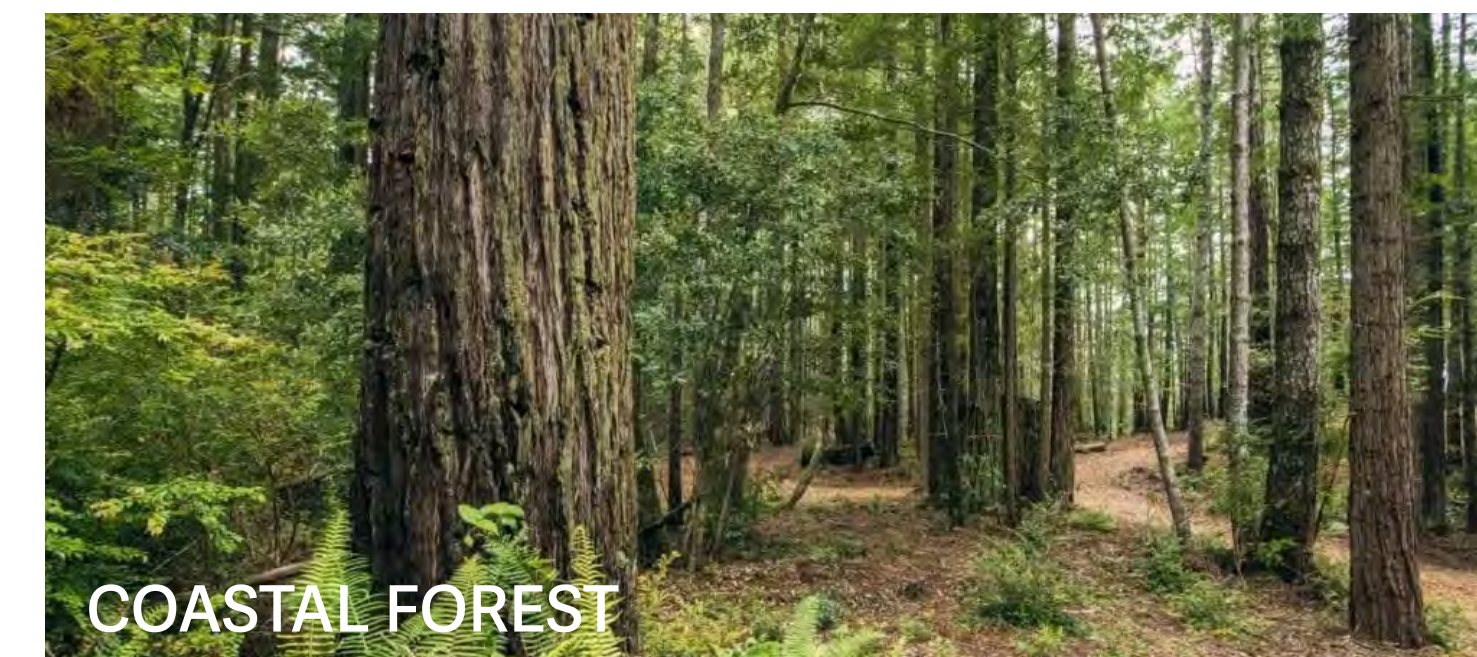
Pinus torreyana
Torrey pine



Lyonothamnus floribundus
Catalina ironwood

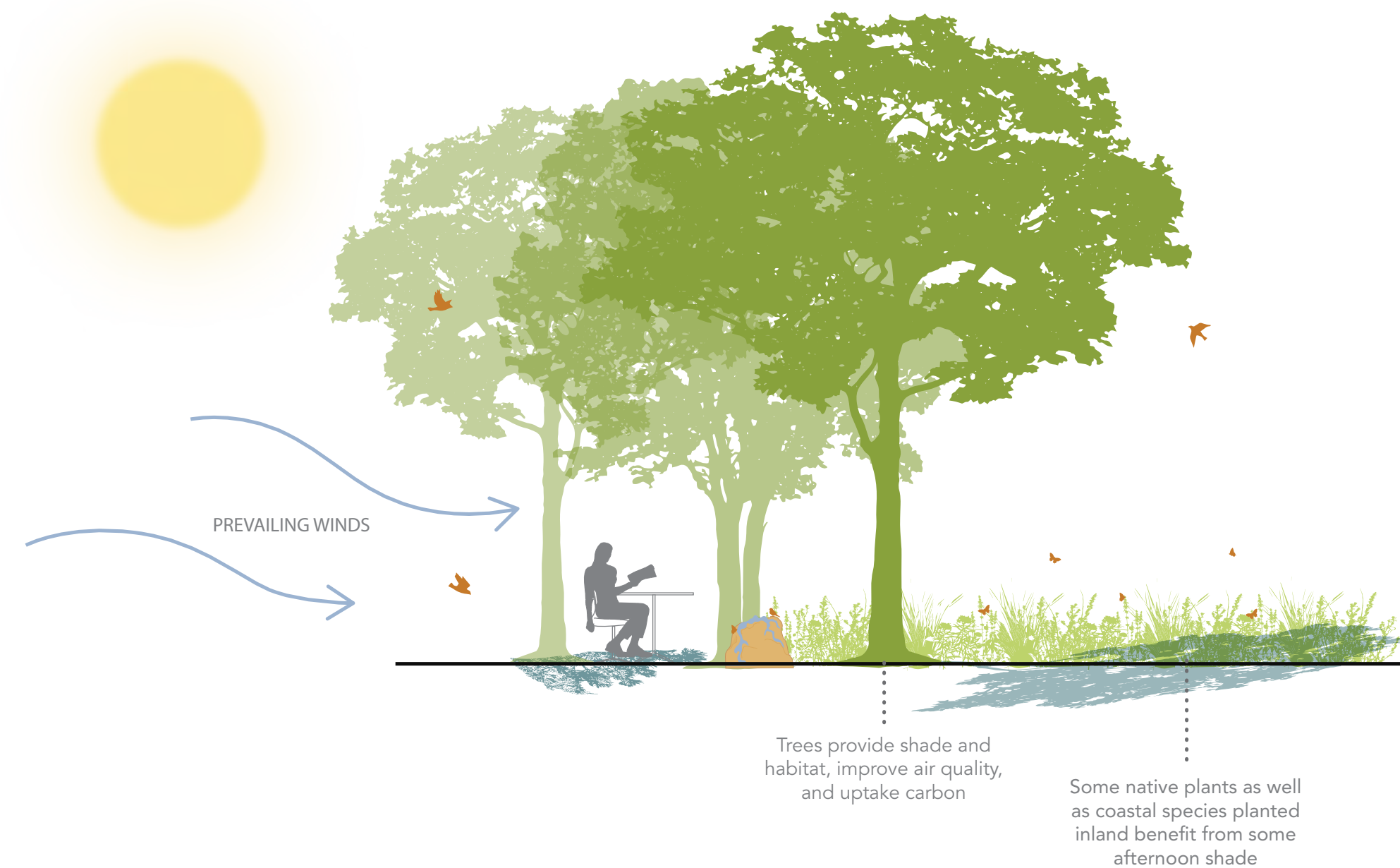


Umbellularia californica
California Bay Laurel



COASTAL FOREST

Benefits of Trees

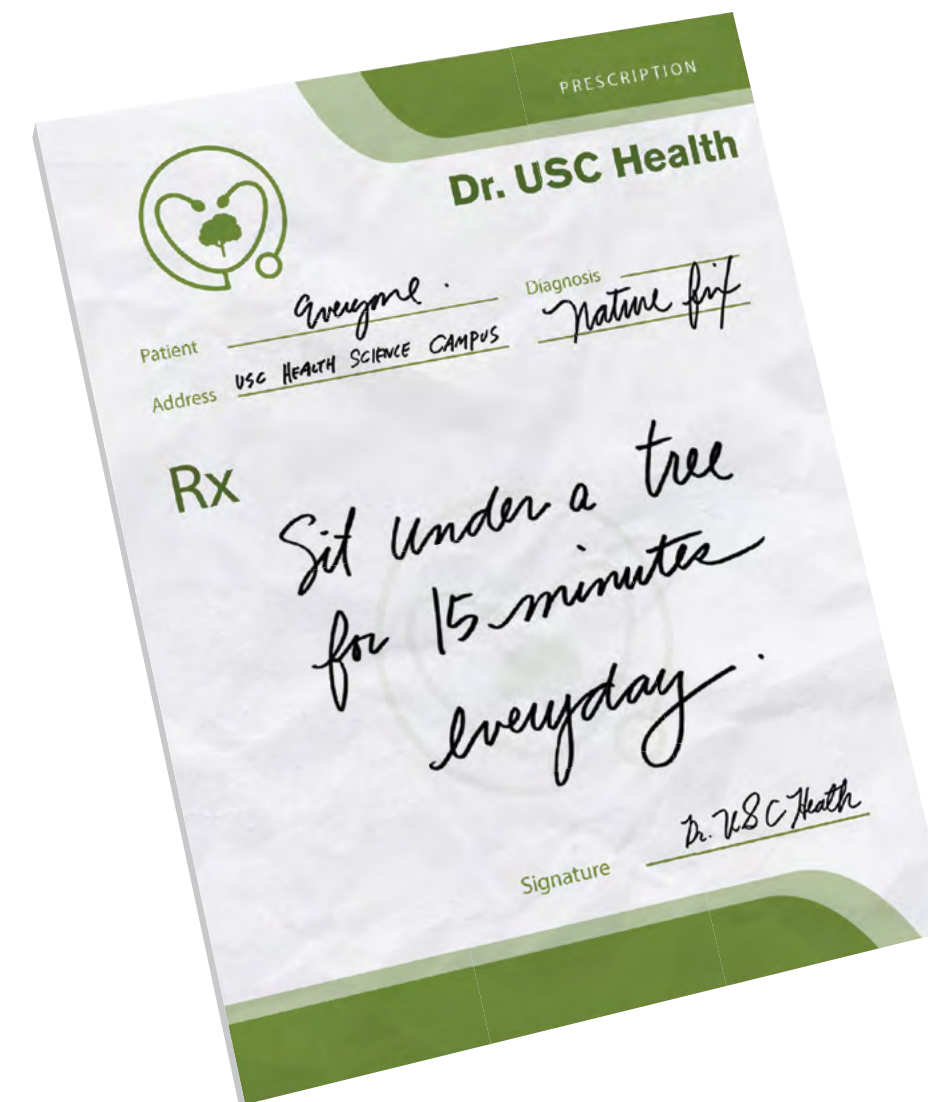


USC's urban forest provides a wide array of environmental, social, and economic benefits that are critical to urban life. In cities like Los Angeles, where the Urban Heat Island Effect makes urban areas on average 2.6°F warmer than surrounding rural areas, trees play a vital role in cooling the environment. Through shade and evaporative cooling, trees can reduce peak air temperatures by 2 to 9°F, lowering heat-related illness and death, reducing reliance on mechanical cooling, and mitigating greenhouse gas emissions.

Beyond temperature regulation, trees are essential for carbon capture and climate mitigation. California's urban forests store nearly 7.8 million tons of CO₂, with an annual net sequestration of approximately 375,700 tons, providing on-site carbon offsets valued at \$2.4 million per year. Larger and healthier trees capture even more carbon, making careful maintenance and species selection critical for long-term benefits.

Trees also improve air quality by filtering pollutants such as fine particulate matter, nitrogen oxides, sulfur dioxide, carbon monoxide, and ground-level ozone. Larger trees are particularly effective, removing 60–70 times more pollution annually than smaller trees, directly supporting public health.

Water and soil health are further enhanced by trees. Tree canopies and roots slow stormwater runoff, improve infiltration rates by up to 50%, and reduce nitrogen and phosphorus loading in downstream habitats. Trees stabilize soil, prevent erosion, and loosen compacted urban soils,

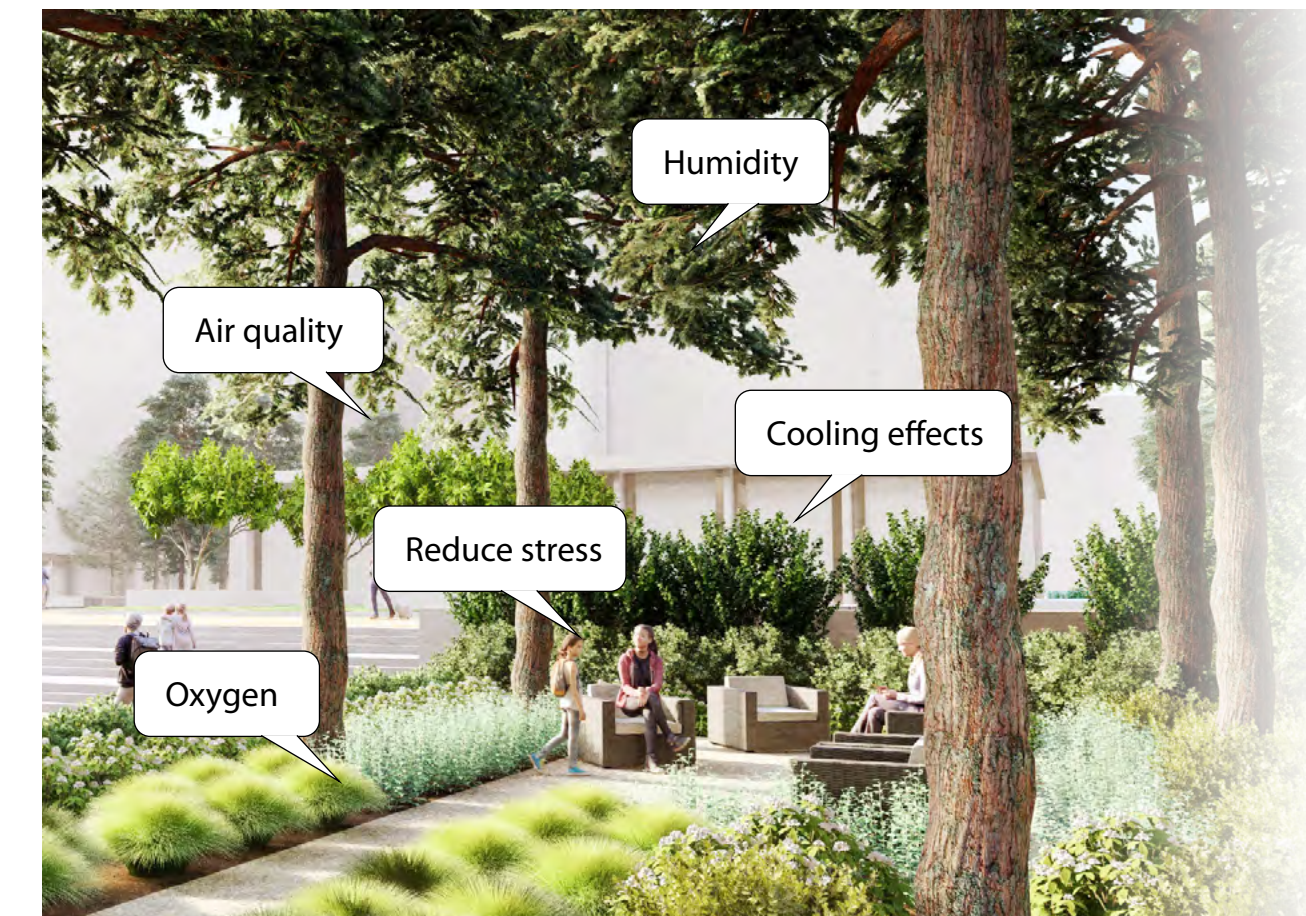


supporting the growth of understory plants and improving nutrient and water retention.

Human health and well-being are closely linked to the presence of trees and green spaces. People living near trees and natural areas experience less mental distress, are more physically active, and have longer lifespans. Exposure to greenery, whether walking outdoors or viewing natural landscapes from healthcare or classroom settings, supports faster healing, better attention, and improved stress recovery. Trees provide microclimates that mitigate extreme heat, enhancing comfort and safety in urban environments. Additionally, tree shade that maintains outdoor thermal comfort is a health

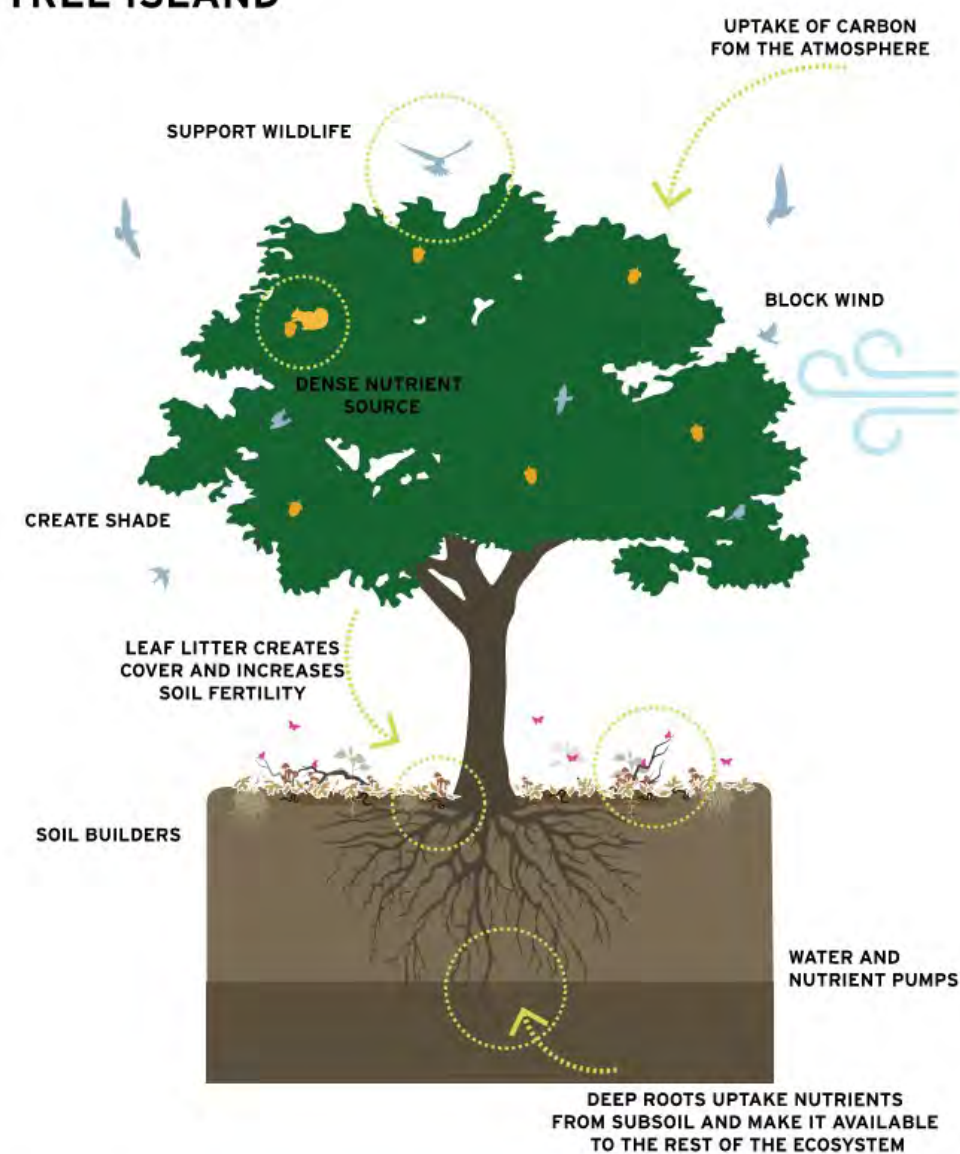
asset as it increases the likelihood of adoption of active forms of transportation providing the co-benefits of increased health and meeting campus decarbonization goals.

Trees also contribute to human comfort by moderating building temperatures, reducing heat gain in summer and heat loss in winter, and shading surfaces where people gather. Properly sited trees can lower surface temperatures by 20–45°F and reduce noise and wind by up to 10 decibels, improving the overall livability of outdoor spaces. Overall, the presence of healthy, well-maintained trees creates a more resilient, comfortable, and sustainable urban environment, benefiting both people and the ecosystem.



Guiding Design Principles

TREE ISLAND



Principles

- Campus forest is dynamic
- Create conditions for success
- Build diversity
- Extend legacy into the future

Individuals

- Formal
- Structural
- Predictable
- Chaperones
- Fertility builders
- Specimen

Groups

- Informal
- Whole system
- Mimic natural communities
- Expressive and seasonal
- Botanical variety
- Complex interactions

VEGETATION COMMUNITY



Designing for biodiversity:

1. Layered and diverse planting structures support a broad array of species by replicating the vertical complexity of natural habitats.
2. Plant species naturally occurring within the Los Angeles Basin, support locally native wildlife.
3. Trees provide places for birds to feed, rest, and raise their young.
4. Large, mature trees support the life cycle needs of a variety of species.
5. Understory planting provides protection, nesting material, and food resources for wildlife.
6. Leaf litter feeds soil biology as it decomposes, helping to create healthy, living soil.



Engagement Process

On November 1, 2024, MIG met with USC staff and stakeholders at the Health Science Campus to review the initial findings from the tree inventory and analysis and to discuss potential opportunities and constraints for tree renewal across the campus.

Key Discussion Points:

Respite and Garden Spaces: The garden between the CSC and CSA buildings serves as a respite area for nurses and doctors, with potential upcoming funding for remodeling. CHP Patio is intended for student use, and discussions are ongoing regarding a permanent shade structure and movable furniture to support events. Any interventions should prioritize low maintenance, year-round accessibility, and softened landscapes. Existing Ficus trees causing pavement damage were noted, with replacement by deciduous species recommended. Medicinal plants, herbs, and fruit trees were suggested for incorporation.

Pilot Sites: Pilot Site 9 (Rose Garden) is currently a lower priority, pending parking lot work. Pilot Site 2 (Health Forest) contains a chilled water line extending to the back of Keck Hospital.

Café Garden: Replacement of removed and sycamores in declining health was suggested, possibly with *Arbutus 'Marina'*, along with expanded tree planters.

Pappas Quad & Utility Considerations: USC will gather information on events and utilities in Pappas Quad and other pilot sites. Issues such as leakage in the parking garage and tree root management (trenches and reworking of pavers) were discussed.



Tree Selection and Planting Guidance:

- *Pinus torreyana* can be used if space allows; oaks (*Quercus virginiana* preferred) are acceptable for shade and slower growth.
- *Arbutus 'Marina'* and 'Unedo' should be included in planting lists.
- Catalina Ironwood is not recommended for HSC.
- Soil depth and conditions at sites such as the Norris basement footprint and lawn areas between CHP and ZNI buildings may affect tree growth.

Summary: The meeting highlighted the importance of balancing functional use of campus spaces with tree renewal and maintenance priorities. Key considerations include shade, accessibility, low-maintenance landscaping, tree species selection, and utility coordination. Follow-up actions focus on refining concept plans, confirming site conditions, and finalizing plant selection.





02

Inventory and Analysis



Existing Conditions

The trees across all USC campus locations have been inventoried to document their size, location, structural condition, and overall health, revealing an urban forest valued at more than \$34.6 million. This existing condition information for the University Park and Health Science campus locations was utilized to establish tree renewal and management priorities. These inventories support a consistent and objective tree health rating system that integrates physiological condition and structural integrity to guide maintenance, rehabilitation, replacement, and long-term resilience of the USC campus urban forest.

Trees rated **Good** exhibit good to excellent vigor, with normal to strong shoot growth, healthy leaf color and density, minimal crown dieback, and little to no evidence of pests, disease, or decay. Structural characteristics are appropriate for the species, with sound trunk and branch attachments, proper spacing and orientation,

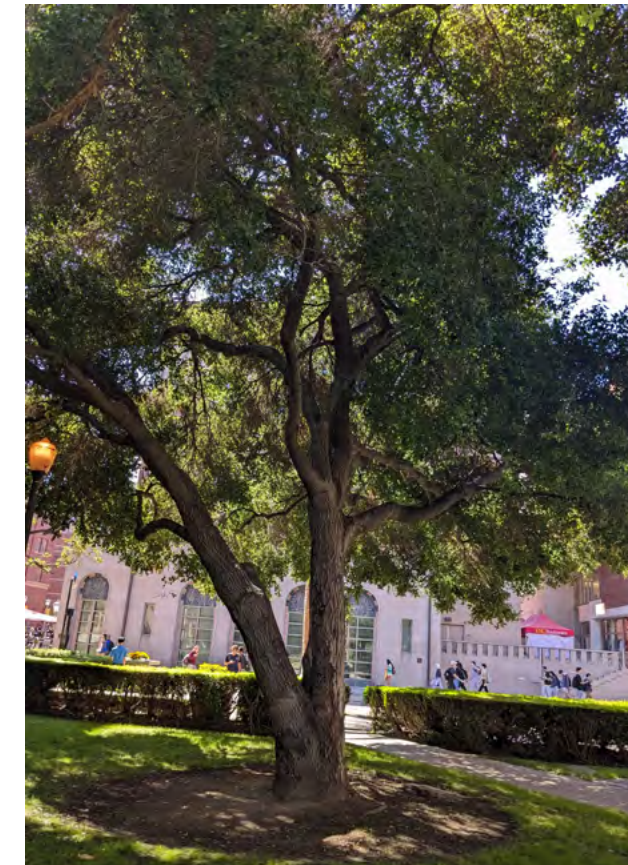
minimal defects, and a low likelihood of failure under normal conditions.

Trees rated **Fair** show moderate vigor, including reduced shoot growth or leaf density, crown thinning, or localized dieback. Minor to moderate pests, disease, or decay may be present, and early signs of decline may be evident. Structurally, these trees have moderate defects such as decay, mechanical damage, or poor branch architecture; portions of the canopy may be crowded or shaded, resulting in a moderate risk of failure.

Trees rated **Poor** are in severe decline, characterized by extensive crown dieback, little to no new growth, and significant decay, disease, fire damage, or pest infestation; trees in this category may be dead or near death. Structural conditions include major defects, advanced decay, excessive lean, root damage, or a history of failures, with a high likelihood of partial or full failure.



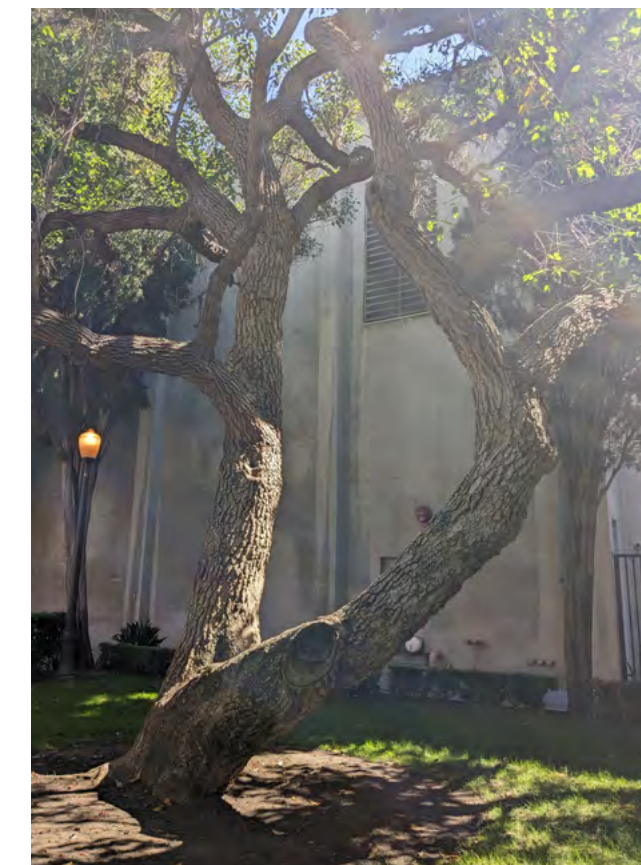
Tulip Trees on Trousdale Parkway.



Quercus agrifolia in good condition.



Magnolia grandiflora in good condition.



Quercus agrifolia in fair condition.



Magnolia grandiflora in fair condition



Quercus virginiana in good condition.



Magnolia grandiflora in fair condition

02

Inventory and Analysis



Grevillea robusta In Poor Condition.



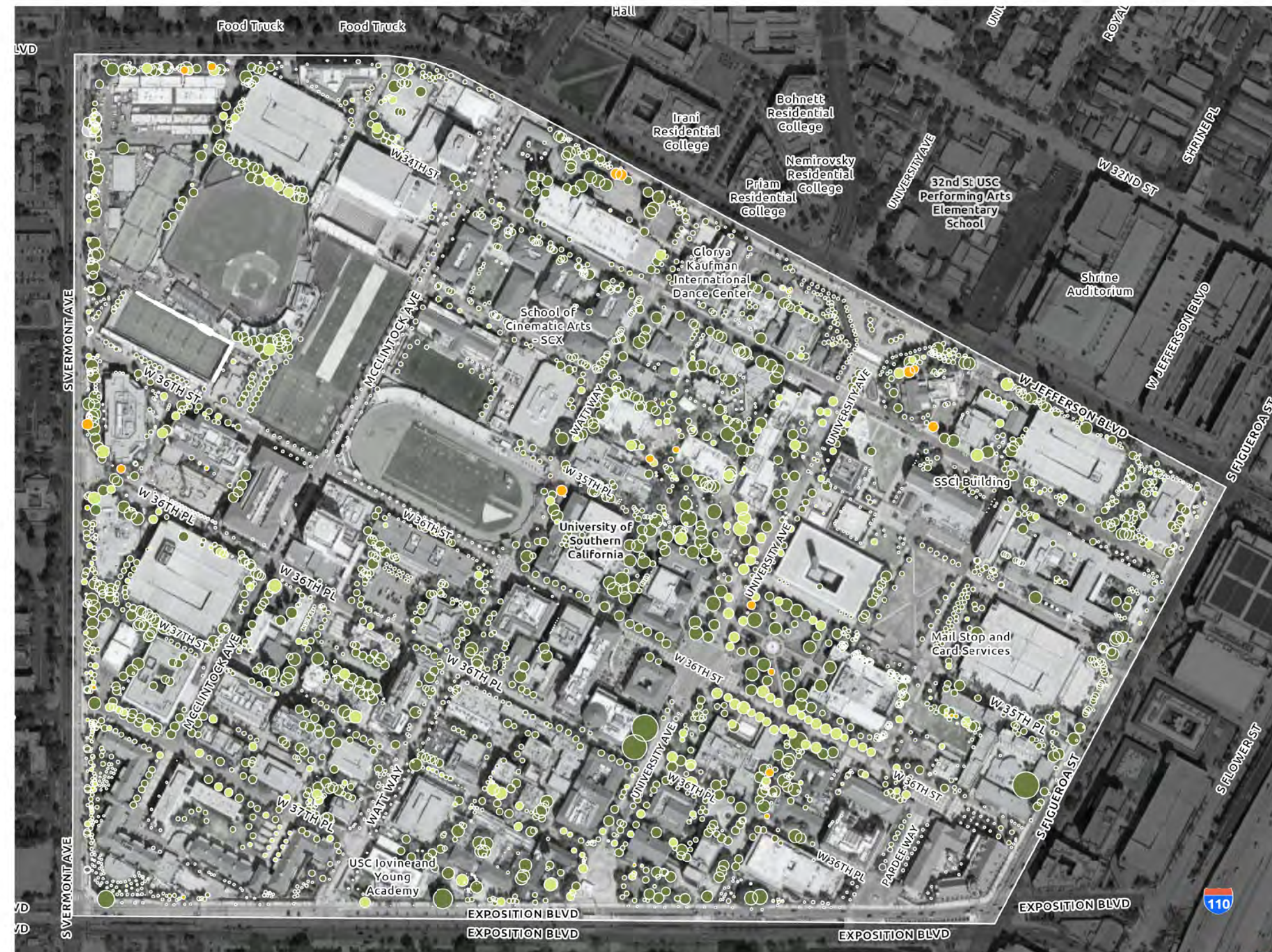
Magnolia grandiflora In Poor Condition.



Magnolia grandiflora In Poor Condition.



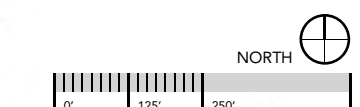
Compacted soil and constrained roots.



INDIVIDUAL TREE HEALTH

LEGEND

- Good
- Fair
- Poor
- Dead
- Undetermined





INDIVIDUAL TREE HEALTH

LEGEND

- Good (469)
- Fair (86)
- Poor (5)



INDIVIDUAL TREE HEALTH

LEGEND

- Good (1,179)
- Fair (67)
- Poor (10)
- Dead (4)
- Undetermined (20)

Safety

Safety is the highest priority in all tree maintenance practices. As outlined in the USC Sustainable Urban Forest Master Plan, all campus trees are to be maintained in a healthy, structurally sound, and non-hazardous condition. The following lists identify trees that have been evaluated as part of the campus-wide strategy to renew unsafe, declining, or inappropriate species and individual trees. This approach reflects a proactive, long-term commitment to tree renewal, risk reduction, and the sustained health and safety of the campus urban forest.

1. Rusty-leaf Fig (*Ficus rubiginosa*)

Considerations:

- Massive surface roots – Potential damage to sidewalks/pavement
- Heavy branches – Moderate risk of limb drop (especially during Santa Ana winds)
- Invasive roots – Can damage underground utilities

Mitigation:

- Regular structural pruning to reduce weight

- Root barriers near infrastructure
- Signage to warn of uneven terrain

2. Canary Island Date Palm (*Phoenix canariensis*)

Considerations:

- Falling fronds – Heavy palm fronds can drop unexpectedly
- Fire risk – Dead fronds are highly flammable
- Thorny leaf bases – Injury risk during maintenance

Mitigation:

- Regular “skirting” (removing dead fronds)
- Fire-resistant landscaping around palms

3. Coral Trees (*Erythrina spp.*)

Considerations:

- Brittle wood – Prone to sudden branch breaks
- Thorns – Can cause injuries near walkways

Mitigation:

- Aggressive deadwood pruning
- Avoid planting near high-traffic areas

4. Eucalyptus (*Eucalyptus spp.*)

Considerations:

- Sudden branch drop
- Flammable oil – High fire risk

Mitigation:

- Progressive removal (replacing with safer species)
- Avoid planting near buildings and walkways

5. Southern Magnolia (*Magnolia grandiflora*)

Considerations:

- Branch drop due to historic root damage, disease, or decay, which can be unseen
- Heavy evergreen leaves can be slippery when wet
- Once tree shows history of a problem, likelihood of problem happening again increases

Mitigation:

- Regular inspections and assessments
- Regular leaf cleanup

6. Mexican Fan Palm (*Washingtonia robusta*)

Considerations:

- Falling fronds/debris
- Invasive species – Seedlings spread from dispersed seeds
- Dead fronds can create a fire hazard

Mitigation:

- Regularly remove all dead fronds
- Only dead frond sheaths shall be removed along the entire length of the tree

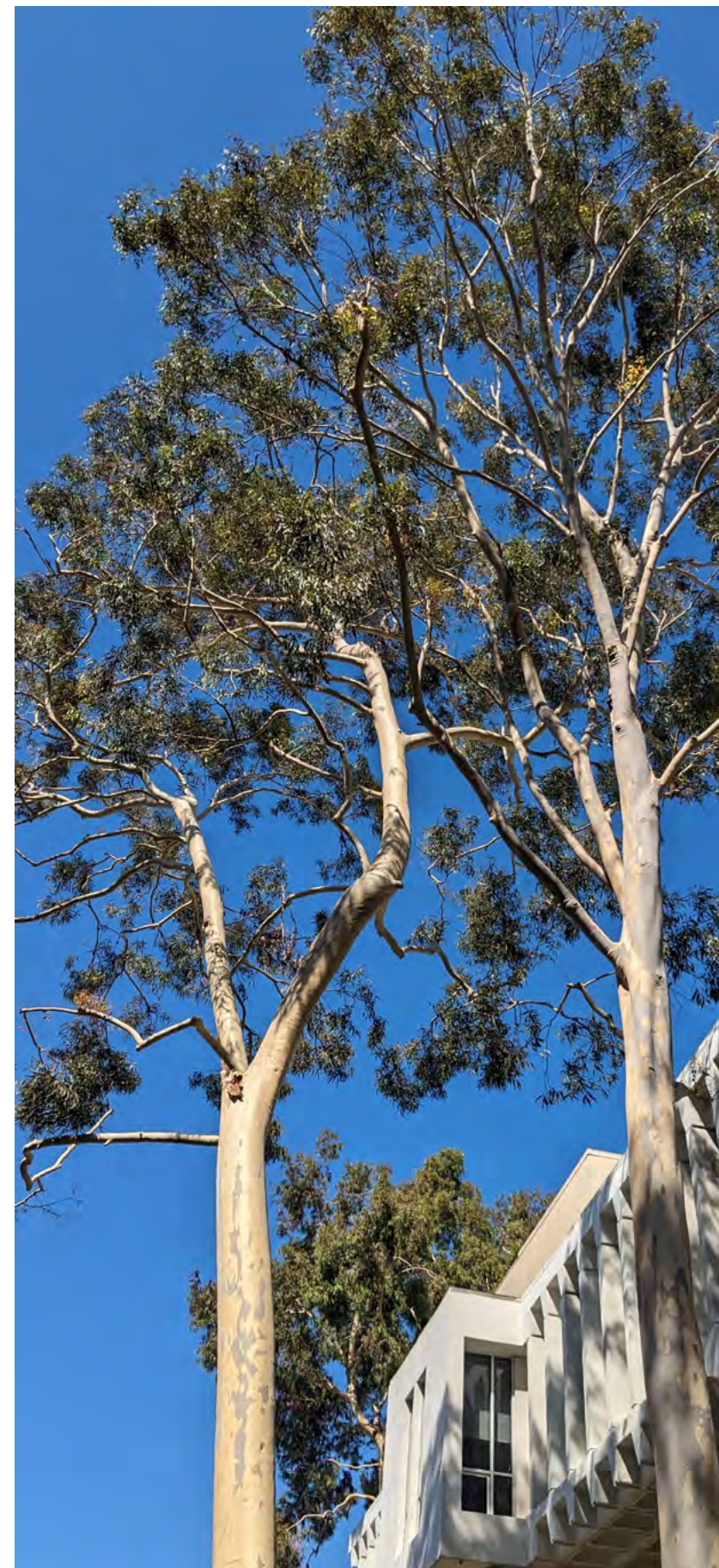
8. Jacaranda (*Jacaranda mimosifolia*)

Considerations:

- Slippery flowers can create slick surfaces when wet

Mitigation:

- Prompt cleanup during bloom season
- Plant within large planter areas



Trees In Decline

1. Moreton Bay Figs (*Ficus macrophylla*)

Locations: Doheny Library, Widney Alumni House

Age: 100–120+ years

Decay Signs:

Hollow trunks (internal rot from Polyphagous Shot Hole Borer (PSHB) pathogens)

Surface roots lifting pavement (trip hazards)

2. Coral Trees (*Erythrina spp.*)

Locations: Alumni Park, Mudd Hall

Age: 80–100 years

Decay Signs:

Hollow or splitting trunks (brittle wood structure)

Die back from coral tree borers

3. Deodar Cedars (*Cedrus deodara*)

Locations: Bovard Administration Building

Age: 90–110 years

Decay Signs:

Conks/fungal growth (indicates internal rot)

Top dieback from Beetle Borers

4. Canary Island Date Palms (*Phoenix canariensis*)

Locations: Trousdale Parkway

Age: 100+ years

Decay Signs:

Hollow crowns (palm weevil damage)

Yellowing and dead fronds (Fusarium wilt)

5. Southern Magnolias (*Magnolia grandiflora*)

Locations: Alumni Park and Child’s Way/Trousdale

Age: 80+ years

Decay Signs:

Root rot (yellowing leaves, thinning canopy)

Limb cracks from weight and mechanical damage

6. Grevillea robusta (*Silk Oak*)

Locations: Founder’s Park

Age: 70+ years

Decay Signs:

Branch dieback

Canopy thinning

7. Historic Coast Live Oak (*Founders Oak*)

Location: Widney Alumni House

Age: 150+ years

Decay Signs:

Cavities in main trunk (wildlife habitat but structural risk)

Slow growth decline



Pest / Disease Resilience

USC's campus trees are exposed to a range of stressors, including construction activities, compacted soils, limited root space, removal of leaf litter, inadequate irrigation practices, and competition from aggressive groundcover plantings. These conditions weaken tree health and increase susceptibility to pests and diseases. Proactive identification of emerging issues and regular monitoring of tree health and growing conditions are essential to reducing the risk and severity of pest and disease outbreaks. Long-term resilience will be strengthened by replacing diseased or declining trees with species that demonstrate disease resistance, increasing overall species diversity, and establishing a diverse planting palette that supports a stable and sustainable campus urban forest across all life stages.

1. Moreton Bay Fig (*Ficus macrophylla*)

Pest/Disease Risks:

Polyphagous Shot Hole Borer (PSHB): Beetle tunnels introduce fungal pathogens, causing

branch dieback. Root rot (*Phytophthora*): Thrives in poorly drained soils

Alternative:

Brisbane Box (*Lophostemon confertus*)

White Floss Silk Tree (*Ceiba insignis*)

2. Coral Tree (*Erythrina* spp.)

Pest/Disease Risks:

Coral Tree Borer: Larvae tunnel into trunks, weakening structure

Erythrina Gall Wasp: Causes premature leaf drop

Alternative:

Flame Bottle Tree (*Brachychiton acerifolius*)

African Tulip Tree (*Spathodea campanulata*)

New Zealand Christmas Tree (*Metrosideros excelsus*)

3. Deodar Cedar (*Cedrus deodara*)

Pest/Disease Risks:

Cedar Bark Beetles: Attack stressed trees, introducing blue stain fungus. Root rot (*Armillaria*)

Alternative:

Montezuma Cypress (*Taxodium mucronatum*)

Torrey Pine (*Pinus torreyana*)

4. Southern Magnolia (*Magnolia grandiflora*)

Pest/Disease Risks:

Scale insects & Sooty Mold: Honeydew secretions blacken leaves

Verticillium wilt: Soil-borne fungus blocks water transport

Alternative:

Marina Strawberry Tree (*Arbutus 'Marina'*) – Immune to verticillium, evergreen, low-water

Southern Live Oak (*Quercus virginiana* - in lawn)

Coast Live Oak (*Quercus agrifolia*)

Cork Oak (*Quercus subur*)

5. Mexican Fan Palm (*Washingtonia robusta*)

Pest/Disease Risks:

Palm Weevils: Larvae decimate crowns

Fusarium Wilt: Fungal disease with no cure

Alternative:

California Fan Palm (*Washingtonia filifera*) – Native, more disease-resistant

6. Jacaranda (*Jacaranda mimosifolia*)

Pest/Disease Risks:

Xylella fastidiosa: Causes leaf scorch and decline

Wood borers: Target stressed trees

Alternative:

Western Redbud (*Cercis occidentalis*) – Native, pest-free, drought-hardy

7. Canary Island Date Palm (*Phoenix canariensis*)

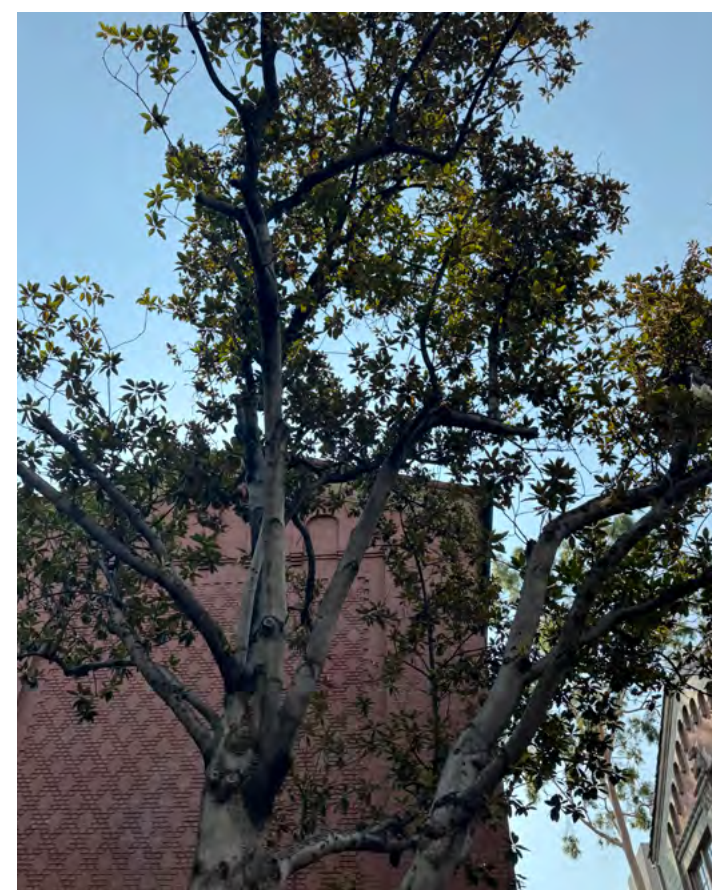
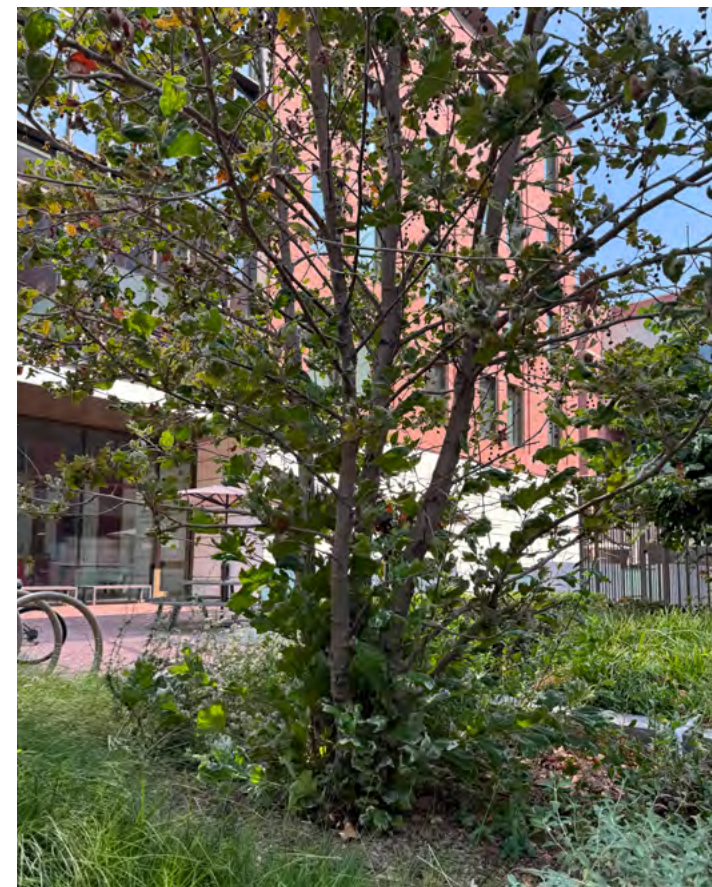
Pest/Disease Risks:

Fusarium Wilt: Spread via pruning tools (no cure)

Pink Rot (*Gliocladium*): Thrives in overwatered palms

Alternative:

Jelly Palm (*Butia capitata*) – Resistant to Fusarium, edible fruit



Climate Change & Adaptation

Moreton Bay Fig (*Ficus macrophylla*)

Why At Risk:

High water demand (vulnerable to drought stress)

Shallow roots damage infrastructure

Susceptible to Polyphagous Shot Hole Borer (PSHB) beetle

Climate-Resilient Alternatives:

Tipu Tree (*Tipuana tipu*) – Large shade canopy, drought-tolerant, can tolerate a variety of soil conditions

Coast Live Oak (*Quercus agrifolia*) – Native, drought tolerant, large shade canopy, long lived, however, susceptible to PSHB and Sudden Oak Death

Southern Live Oak (*Quercus fusiformis*) – Large shade canopy, long lived, resistant to PSHB, but requires moderate amounts of supplemental water

2. Canary Island Date Palm (*Phoenix canariensis*)

Why At Risk:

Low ecological value (potentially invasive, minimal shade, limited habitat benefits)

Prone to Red Palm Weevil and Fusarium wilt

Alternatives:

Jelly Palm (*Butia capitata*) – Resistant to Fusarium, edible fruit

California Fan Palm (*Washingtonia filifera*) – Native, lower water needs

3. Coral Tree (*Erythrina caffra/coralloides*)

Why At Risk:

Drought-sensitive (requires regular watering)
Brittle wood (storm/high wind damage)

Alternatives:

Desert Willow (*Chilopsis linearis*) – Drought-tolerant, flowering tree

Golden Trumpet Tree (*Handroanthus chrysotrichus*) - Attracts pollinators, disease resistant

4. Deodar Cedar (*Cedrus deodara*)

Why At Risk:

Native to Himalayas (unsuited to hotter/drier climates) Susceptible to cedar bark beetles.

Alternatives:

Incense Cedar (*Calocedrus decurrens*) – Native, excellent habitat for wildlife

Torrey Pine (*Pinus torreyana*) - Drought-tolerant, native and adaptable to a variety of soil types

5. Jacaranda (*Jacaranda mimosifolia*)

Why At Risk:

Water-intensive (declining health in droughts)
Messy flowers/fruit (maintenance burden)

Alternatives:

Western Redbud (*Cercis occidentalis*) – Native, pink spring blooms

Chitalpa (*Chitalpa tashkentensis*) – Heat/drought tolerant hybrid

6. Southern Magnolia (*Magnolia grandiflora*)

Why At Risk:

High water needs (leaf scorch in heatwaves)

Shallow roots compete with turf

Susceptible to Tulip Scale and PSHB

Alternatives:

Marina Strawberry Tree (*Arbutus 'Marina'*) – Drought-tolerant, evergreen

Netleaf Oak (*Quercus rugosa*) known for its resilience and sturdiness

7. Mexican Fan Palm (*Washingtonia robusta*)

Why At Risk:

Invasive species (crowds out natives)

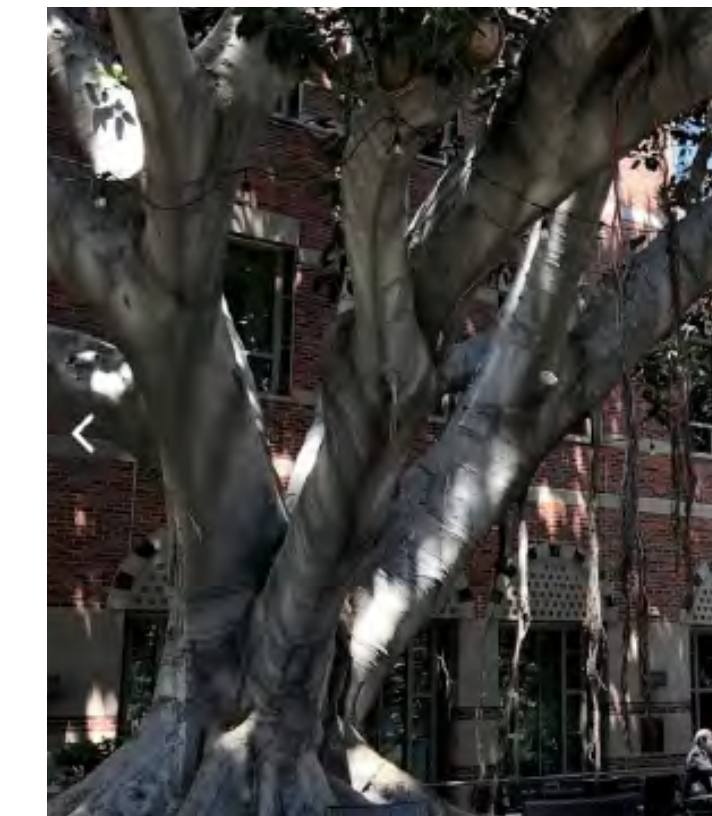
Fire risk

Minimal shade/ecological benefit

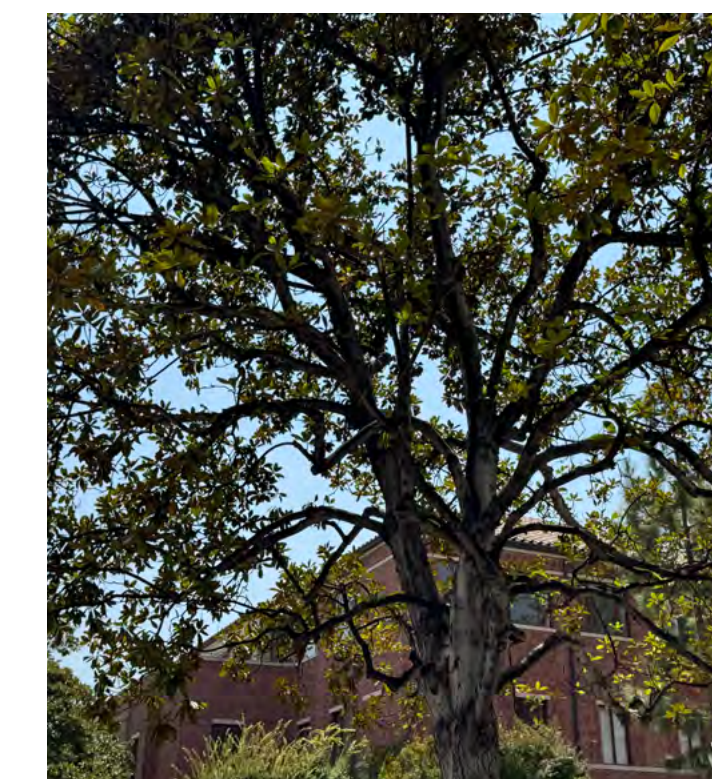
Alternatives:

Jelly Palm (*Butia capitata*) – Drought-hardy, edible fruit

Blue Hesper Palm (*Brahea armata*) – Low-water, striking form



The Moreton Bay Fig on Campus Around is more than 100 years old



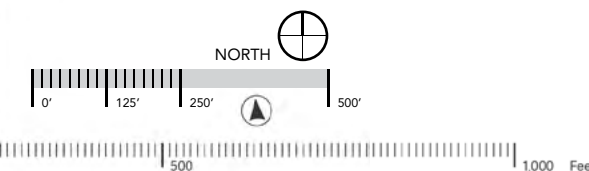
Southern Magnolia (*Magnolia grandiflora*)



PRIORITY REPLACEMENT SPECIES

LEGEND

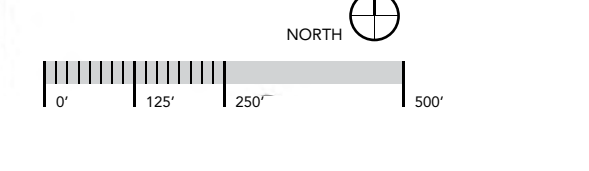
- Erythrina; Erythrina caffra;
Erythrina crista-galli;
Erythrina lysistemon (14)
- Grevillea robusta (31)
- Magnolia grandiflora (454)



PRIORITY REPLACEMENT SPECIES

LEGEND

- Erythrina; Erythrina caffra;
Erythrina crista-galli;
Erythrina lysistemon (2)
- Magnolia grandiflora (262)



02

Inventory and Analysis

Cooling & Shade

Maps on this and facing page show how shade will be cast from buildings and tree canopy. The darker areas are cooler, and light areas are hotter, indicating zones where additional shade trees could be provided to increase outdoor thermal comfort.



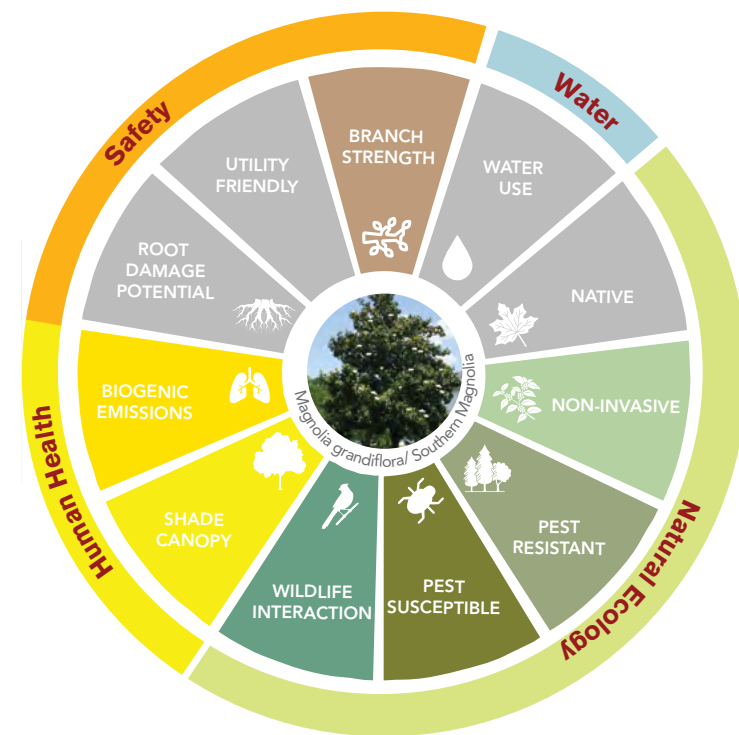
Tree Canopy at UPC Campus * Tree & Building Shadow at 2:00 pm March 15, Per <https://usc-urbanforest.wca.app/>



Tree Canopy at UPC Campus * Tree & Building Shadow at 2:00 pm March 15, Per <https://usc-urbanforest.wca.app/>

Priority Matrix

The priority matrix combines several considerations for tree species selection based on the following factors: Safety, Water Use, Natural Ecology and Human Health. While tree species selection is based on many factors, this matrix is a tool for determining appropriateness of future tree planting. For example, tree species with a combination of high branch strength, low water use, attractive to wildlife and have low levels of biogenic emissions would be a top priority to plant to increase the urban forest canopy cover.



Tree Species		USC Tree Species Inventory					Safety			Human Health	Biodiversity	Tree Health	
Species Name	Common Name	Invasiveness Yes/No?	Native	Climate Adaptive		Water Use (WUCOLS)	Branch Strength	Underground Utility Friendly?	Sidewalk / Root Damage	Biogenic Emissions	Does The Tree Attract Wildlife?	Diseases & Pests Susceptible?	Disease & Pest Resistant?
				UPC - 22	HSC - 23								
Acacia baileyana	Bailey Acacia	Yes	No	Yes	Yes	Low	Weak	No	Moderate	Moderate	Yes	Yes	Yes
Acca sellowiana	Pinneapple Guava	No	No	Yes	Yes	Low	Medium / Medium Strong	Yes	Low		Yes		
Acer palmatum	Japanese Maple	No	No	Yes	Yes	Moderate	Medium / Medium Strong	Yes	Low			Yes	
Acer Rubrum x saccharinum	Maple Red x Silver	No	No	No	No	High	Medium / Medium Strong	No	Moderate	Moderate		Yes	Yes
Afrocarpus gracilior	Fern Pine	No	No	Yes	Yes	Moderate	Medium	No	Low	Low			
Afrocarpus macrophyllus	Yew Pine	No	No	Yes	Yes	Moderate	Medium	No	Low	Low		Yes	
Agonis flexuosa 'Jervis Bay Afterdark'	After Dark Peppermint	No	No	Yes	Yes	Low	Strong	No	Moderate	High	Yes	Yes	
Ailanthus altissima	Tree of Heaven	Yes	No	Yes	Yes	Not Appropriate For this region	Weak	No	Moderate			Yes	
Albizia julibrissin	Silk Tree	No	No	Yes	Yes	Low	Medium Weak	No	Moderate	High	Yes	Yes	Yes
Araucaria araucana	Monkey Puzzle	No	No	Yes	Yes	Not Appropriate For this region	Medium	No	Moderate			Yes	
Araucaria columnaris	Cook Pine	No	No	Yes	Yes	Moderate		No					
Arbutus 'Marina'	Marina Strawberry Tree	No	Yes	Yes	Yes	Low	Strong	No	Low		Yes	Yes	Yes
Arbutus unedo	Strawberry Tree	No	No	Yes	Yes	Moderate	Strong	No	Low	Low	Yes	Yes	Yes
Archontophoenix cunninghamiana	King Palm	No	No	Yes	Yes	Moderate		No	Moderate		Yes	Yes	Yes
Bauhinia blakeana	Hong Kong Orchid Tree	No	No	Yes	Yes	Moderate	Medium Weak	No	Low		Yes	Yes	
Betula pendula	European White Birch	No	No	Yes	Yes	High	Medium	Low	Moderate		Yes	Yes	Yes
Brachychiton acerifolius	Australian Flame Tree	No	No	Yes	Yes	Low							
Caesalpinia spinosa	Bird of Paradise	Yes	No	Yes	Yes			No				Yes	
Calodendrum capense	Cape Chestnut	No	No	Yes	Yes	Moderate	Medium	No	Low	Moderate	Yes	Yes	
Cassia leptophylla	Gold Medallion Tree	No	No	Yes	Yes	Moderate	Medium Weak	Yes	Low				
Casuarina cunninghamiana	River She Oak	No	No	Yes	Yes	Low	Medium	No	Low		Yes	Yes	
Cedrus atlantica	Atlas Cedar	No	No	Yes	Yes	Moderate	Medium	No	Moderate	Low	Yes	Yes	Yes
Cedrus deodara	Deodar Cedar	No	No	Yes	Yes	Low	Medium	No	Moderate	Low	Yes	Yes	Yes
Ceiba insignis	White Floss Silk Tree	No	No	Yes	Yes	Low		No	Moderate		Yes		
Ceiba speciosa	Silk-Floss Tree	No	No	Yes	Yes	Low		No	Moderate				
Celtis sinensis	Chinese Hackberry	No	No	No	No	Not Appropriate For this Region	Medium	No	Moderate	Low	Yes		

USC Tree Species Inventory													
Tree Species		Invasiveness	Climate Adaptive				Safety			Human Health	Biodiversity	Tree Health	
Species Name	Common Name	Yes/No?	Native	Sunset Zone		Water Use (WUCOLS)	Branch Strength	Underground Utility Friendly?	Sidewalk / Root Damage	Biogenic Emissions	Does The Tree Attract Wildlife?	Diseases & Pests Susceptible?	Disease & Pest Resistant?
				UPC - 22	HSC - 23								
Cercidium spp.	Palo Verde		No	No	No	Very Low							
Cercis canadensis	Eastern Redbud	No	No	Yes	Yes	Moderate	Medium	No	Low	Low	Yes	Yes	Yes
Cercis canadensis 'Forest Pansy'	Forest Pansy Redbud	No	No	Yes	Yes	Moderate	Medium	No	Low		Yes	Yes	Yes
Chionanthus retusus	Chinese Fringe Tree	No	No	Yes	Yes	Moderate	Medium	No	Low		Yes		
Chitalpa tashkentensis	Chitalpa	No	Yes	Yes	Yes	Low	Medium Weak	No	Low			Yes	
Cinnamomum camphora	Camphor Tree	No	No	Yes	Yes	Low	Strong	No	High	Low	Yes	Yes	
Citrus aurantifolia	Lime Tree	No	No	Yes	Yes	Moderate	Medium	Yes	Low		Yes	Yes	
Citrus limon	Lemon	No	No	Yes	Yes	Moderate	Medium	Yes	Low	Moderate	Yes	Yes	Yes
Citrus reticulata	Tangerine	No	No	Yes	Yes	Moderate	Medium	No	Low		Yes	Yes	Yes
Citrus sinensis	Orange	No	No	Yes	Yes	Moderate	Medium	No	Low	Moderate	Yes	Yes	Yes
Cocculus laurifolius	Laurel-Leaved Snailseed	No	No	Yes	Yes	Moderate	Me	Yes	Low		Yes		
Corymbia citriodora	Lemon Scented Gum	No	No	Yes	Yes	Low	Medium	No	Moderate	High	Yes	Yes	Yes
Cotinus coggygria	Smoke Tree	No	No	Yes	Yes	Low	Medium Weak	Yes	Low		Yes	Yes	Yes
Cupaniopsis anacardioides	Carrotwood	No	No	Yes	Yes	Moderate	Medium Weak	No	Moderate	High		Yes	Yes
Cupressus sempervirens	Italian Cypress	No	No	Yes	Yes	Low	Medium	No	Moderate	Low	Yes		
Cycas revoluta	Sago Palm	No	No	Yes	Yes	Moderate		No	Low	High	Yes		
Dodonaea viscosa	Hopseed	No	No	Yes	Yes	Low	Medium	Yes	Low		Yes	Yes	
Dodonaea viscosa 'Purpurea'	Hopseed Bush Purple		Yes	Yes	Yes	Very Low	Medium	Yes	Low		Yes	Yes	
Dracaena draco	Dragon Tree	No	No	Yes	Yes	Moderate	Medium	Low	Low		Yes	Yes	Yes
Eriobotrya japonica	Edible Loquat	No	No	Yes	Yes	Moderate	Medium	No	Low	Low	Yes	Yes	Yes
Erythrina caffra	Kaffirboom Coral Tree	No	No	Yes	Yes	Low	Medium Weak	No	Moderate	Moderate	Yes	Yes	Yes
Erythrina crista-galli	Cockspur Coral Tree	No	No	Yes	Yes	Low	Medium Weak	Yes	Low		Yes	Yes	Yes
Erythrina latissima	Broad-Leaved Coral Tree	No	No	Yes	Yes	Low	Medium Weak	No	Low		Yes	Yes	Yes
Erythrina lysistemon	Lysistemon Coral Tree	No	No	Yes	Yes	Low	Medium Weak	No	Low		Yes	Yes	Yes
Eucalyptus camaldulensis	Red Gum	Yes	No	Yes	Yes	Low	Medium	No	Moderate	High	Yes	Yes	Yes

USC Tree Species Inventory													
Tree Species		Invasiveness	Climate Adaptive				Safety			Human Health	Biodiversity	Tree Health	
Species Name	Common Name	Yes/No?	Native	Sunset Zone		Water Use (WUCOLS)	Branch Strength	Underground Utility Friendly?	Sidewalk / Root Damage	Biogenic Emissions	Does The Tree Attract Wildlife?	Diseases & Pests Susceptible?	Disease & Pest Resistant?
				UPC - 22	HSC - 23								
Eucalyptus deglupta	Mindanao Gum	No	No	Yes	Yes	High	Medium	No	Moderate		Yes	Yes	Yes
Eucalyptus globulus	Blue Gum	Yes	No	Yes	Yes	Low	Medium Weak	No	Moderate	High	Yes	Yes	Yes
Eucalyptus leucoxylon	White Ironbark	No	No	Yes	Yes	Low	Medium	No	Moderate		Yes	Yes	Yes
Eucalyptus nicholii	Nichols Willow Leaf Peppermint	No	No	Yes	Yes	Low	Medium	No	Moderate		Yes	Yes	Yes
Eucalyptus polyanthemos	Silver Dollar Gum	No	No	Yes	Yes	Low	Medium	No	Moderate	High	Yes	Yes	Yes
Eucalyptus sideroxylon	Red Ironbark		No	Yes	Yes	Low	Medium	No	High	High	Yes	Yes	Yes
Eucalyptus torquata	Coral Gum	No	No	Yes	Yes	Low	Medium	No	Low		Yes	Yes	Yes
Eucalyptus viminalis	Manna Gum	No	No	Yes	Yes	Moderate	Medium	No	Moderate	Moderate	Yes	Yes	Yes
Ficus benjamina	Weeping Fig	No	No	Yes	Yes	Moderate	Medium	No	Moderate	High	Yes	Yes	Yes
Ficus macrophylla	Moreton Bay Fig	No	No	Yes	Yes	Moderate	Medium Weak	No	High	High	Yes	Yes	Yes
Ficus microcarpa 'Nitida'	Indian Laurel Fig	No	No	Yes	Yes	Moderate	Medium Weak	No	High	High	Yes	Yes	Yes
Ficus rubiginosa	Rusty Leaf Fig	No	No	Yes	Yes	Moderate	Medium Weak	No	High	High	Yes	Yes	Yes
Fraxinus angustifolia oxycarpa	Raywood Ash	No	No	Yes	Yes	Moderate	Medium	No	Moderate		Yes	Yes	Yes
Fraxinus uhdei	Shamel Ash	No	No	Yes	Yes	Moderate	Medium Weak	No	High	Low	Yes	Yes	Yes
Fraxinus velutina	Arizona Ash	No	Yes	Yes	Yes	Moderate	Medium Weak	No	High	Low	Yes	Yes	
Fraxinus velutina 'Modesto'	Modesto Ash	No	Yes	Yes	Yes	Moderate	Medium Weak	No	High	Low	Yes	Yes	
Geijera parviflora	Australian Willow	No	Yes	Yes	Yes	Low	Medium	No	Low	Moderate	Yes		Yes
Ginkgo biloba	Maidenhair Tree	No	No	Yes	Yes	Moderate	Strong	No	Moderate	Moderate	Yes	Yes	Yes
Grevillea robusta	Silk Oak	No	No	Yes	Yes	Low	Weak	No	Moderate		Yes	Yes	Yes
Handroanthus chrysotrichus	Golden Trumpet Tree	No	No	Yes	Yes	Moderate	Medium Weak	No	Moderate	Moderate	Yes		
Handroanthus impetiginosus	Pink Trumpet Tree	No	No	Yes	Yes	Moderate	Medium Weak	No	Moderate	Moderate	Yes		
Howea forsteriana	Paradise Palm	No	No	Yes	Yes	Moderate		No	Low	Low	Yes	Yes	
Hymenosporum flavum	Sweetshade	No	No	Yes	Yes	Moderate	Weak	No	Low		Yes		
Jacaranda mimosifolia	Jacaranda	No	No	Yes	Yes	Moderate		No		Low	Yes	Yes	Yes
Juniperus chinensis 'Torulosa'	Hollywood Junipe	No	No	Yes	Yes		Medium Strong	No	Low		Yes	Yes	Yes

USC Tree Species Inventory														
Tree Species		Invasiveness	Climate Adaptive				Safety			Human Health	Biodiversity	Tree Health		
Species Name	Common Name	Yes/No?	Native	Sunset Zone		Water Use (WUCOLS)	Branch Strength	Underground Utility Friendly?	Sidewalk / Root Damage	Biogenic Emissions	Does The Tree Attract Wildlife?	Diseases & Pests Susceptible?	Disease & Pest Resistant?	
				UPC - 22	HSC - 23									
Koelreuteria bipinnata	Chinese Flame Tree	No	No	Yes	Yes	Moderate	Medium	No	Low	High	Yes	Yes		
Lagerstroemia indica	Crape Myrtle	No	No	No	No	Low	Medium	Yes	Low	Low	Yes	Yes	Yes	
Lagerstroemia indica 'Dynamite'	Dynamite Crape Myrtle			No	No	Low		No	Low		Yes	Yes		
Lagerstroemia indica x fauriei 'Arapaho'	Arapaho Crape Myrtle	No	No	No	No	Low					Yes	Yes		
Laurus nobilis	Sweet Bay	No	No	Yes	Yes	Low	Medium	No	Moderate	Low	Yes	Yes	Yes	
Ligustrum japonicum	Japanese Privet	No	No	Yes	Yes	Moderate	Strong	Yes	Low		Yes	Yes		
Liquidambar styraciflua	American Sweetgum	No	No	Yes	Yes	Moderate	Medium	No	High	High	Yes	Yes	Yes	
Liquidambar styraciflua 'Rotundiloba'	Round Leaf Sweetgum	No	No	Yes	Yes	Moderate		No	High	High	Yes	Yes	Yes	
Liriodendron tulipifera	Tulip Tree	No	No	Yes	Yes	Moderate	Medium Strong	No	Moderate	Moderate	Yes	Yes	Yes	
Lophostemon confertus	Brisbane Box	No	No	Yes	Yes	Moderate	Medium	No	Moderate	High	Yes	Yes		
Lyonothamnus floribundus	Fern Leaf Catalina													
Lyonothamnus floribundus	Ironwood	No	Yes	Yes	Yes	Low	Strong	No	Moderate	Low	Yes	Yes		
Magnolia grandiflora	Southern Magnolia	No	No	Yes	Yes	Moderate		No	No		Yes	Yes		
Melaleuca citrina	Lemon Bottlebrush	No	No	Yes	Yes	Low	Medium	Yes	Low	High	Yes	Yes	Yes	
Melaleuca linariifolia	Flaxleaf Paperbarck	No	No	Yes	Yes	Low	Medium	No	Low	High	Yes	Yes		
Melaleuca nesophila	Pink Melaleuca	No	No	Yes	Yes	Low	Medium	No	Low		Yes	Yes		
Melaleuca quinquenervia	Cajeput Tree	No	No	Yes	Yes	Low	Medium	No	Low	High	Yes	Yes		
Melaleuca viminalis	Weeping Bottlebrush	No	No	Yes	Yes	Low	Medium	Yes	Low	High	Yes	Yes	Yes	
Metrosideros excelsus	New Zealand Christmas Tree	No	No	Yes	Yes		Medium	No	Moderate	High	Yes	Yes		
Morus alba	White Mulberry	No	No	Yes	Yes	Moderate	Weak	No	High		Yes	Yes	Yes	
Nerium oleander	Oleander	No	No	Yes	Yes	Low	Medium	No	Low	Low	Yes	Yes	Yes	
Olea europaea	Olive	No	No	Yes	Yes	Low	Strong	No	Moderate	Low	Yes	Yes	Yes	
Olmediella betschlerana	Guatemalan Holly	No	No	Yes	Yes	Moderate	Strong	No	Low		Yes	Yes		
Parkinsonia aculeata	Jerusalem Thorn	No	No	Yes	Yes	Verly Low	Medium	No	Low	Moderate	Yes	Yes	Yes	
Parkinsonia X 'Desert Museum'	Desert Museum Palo Verde	No	No	Yes	Yes	Very Low	Medium	Yes	Low	Moderate	Yes	Yes	Yes	
Persea americana	Avocado	No	No	Yes	Yes		Strong	No	Low	Low	Yes	Yes		

USC Tree Species Inventory														
Tree Species		Invasiveness	Climate Adaptive				Safety			Human Health	Biodiversity	Tree Health		
Species Name	Common Name	Yes/No?	Native	Sunset Zone		Water Use (WUCOLS)	Branch Strength	Underground Utility Friendly?	Sidewalk / Root Damage	Biogenic Emissions	Does The Tree Attract Wildlife?	Diseases & Pests Susceptible?	Disease & Pest Resistant?	
				UPC - 22	HSC - 23									
Phoenix canariensis	Canary Island Date Palm	Yes	No	Yes	Yes	Low	Moderate	No	Moderate	High	Yes	Yes	Yes	
Phoenix reclinata	Senegal Palm	No	No	Yes	Yes	Moderate		No	Low	High	Yes	Yes		
Pinus canariensis	Canary Island Pine	No	No	Yes	Yes	Low	Medium	No	Moderate	Moderate	Yes	Yes	Yes	
Pinus eldarica	Afghan Pine	No	No	Yes	Yes	Low	Medium Strong	No	Moderate	Low	Yes	Yes	Yes	
Pinus halepensis	Aleppo Pine	No	No	Yes	Yes	Low	Strong	No	Moderate	Low	Yes	Yes	Yes	
Pinus pinea	Italian Stone Pine	No	No	Yes	Yes	Low	Weak to Medium Weak	No	Moderate		Yes	Yes	Yes	
Pinus thunbergiana	Japanese Black Pine	No	No	No	No	Moderate	Medium Strong	No	Moderate	Moderate	Yes	Yes	Yes	
Pinus torreyana	Torrey Pine	No	Yes	Yes	Yes	Low	Medium	No	Moderate	Moderate	Yes	Yes	Yes	
Pistacia chinensis	Chinese Pistache	No	No	Yes	Yes	Moderate	Strong	No	Low	Moderate	Yes	Yes	Yes	
Pittosporum crassifolium	Karo	No	No	Yes	Yes	Moderate	Medium	No	Low		Yes	Yes	Yes	
Pittosporum undulatum	Victorian Box	Yes	No	Yes	Yes	Moderate	Medium	No	Low	Low	Yes	Yes	Yes	
Pittosporum viridiflorum	Cape Pittosporum	No	No	Yes	Yes		Medium	No	Low		Yes	Yes	Yes	
Platanus racemosa	California Sycamore	No	Yes	Yes	Yes	Moderate	Medium	No	Moderate	High	Yes	Yes	Yes	
Platanus X hispanica	London Plane Tree	No	No	Yes	Yes		Strong	No	High	High	Yes	Yes	Yes	
Platyclusus orientalis	Oriental Arbor Vitae	No	No	Yes	Yes	Moderate	Medium	No	Moderate	Low	Yes	Yes		
Populus nigra 'Italica'	Lombardy Poplar	No	No	Yes	Yes	Moderate	Weak	No	High		Yes	Yes		
Prunus armeniaca	Apricot	No	No	Yes	Yes	Moderate	Medium	No	Low	Low	Yes	Yes		
Prunus caroliniana	Carolina Laurel Cherry	No	No	Yes	Yes	Moderate	Medium	No	Low	Low	Yes	Yes		
Prunus cerasifera	Purple Leaf Plum	Yes	No	Yes	No	Moderate	Medium	No	Low		Yes	Yes		
Prunus domestica	Plum	No	No	Yes	Yes	Moderate	Medium Weak	Yes	Low	Low	Yes	Yes		
Prunus ilicifolia ssp lyonii	Catalina Cherry	No	Yes	Yes	Yes	Low		Yes	Moderate	Low	Yes		Yes	
Prunus persica	Peach	No	No	Yes	Yes	Moderate	Medium Weak	Yes	Low	Low	Yes	Yes		
Prunus persica 'Nucipersica'	Nectarine	No	No	Yes	Yes	Moderate	Medium Weak	Yes	Low	Low	Yes	Yes		
Pyrus calleryana	Ornamental Pear	No	No	No	No	Moderate	Medium	No	Low		Yes	Yes	Yes	
Pyrus calleryana 'Danicer'	Danicer Pear	No	No	No	No	Moderate	Medium	No	Moderate		Yes	Yes	Yes	

USC Tree Species Inventory

Tree Species		Invasiveness	Climate Adaptive				Safety			Human Health	Biodiversity	Tree Health	
Species Name	Common Name	Yes/No?	Native	Sunset Zone		Water Use (WUCOLS)	Branch Strength	Underground Utility Friendly?	Sidewalk / Root Damage	Biogenic Emissions	Does The Tree Attract Wildlife?	Diseases & Pests Susceptible?	Disease & Pest Resistant?
				UPC - 22	HSC - 23								
Pyrus kawakamii	Evergreen Pear	No	No	Yes	Yes	Moderate	Medium	No	Low	Low	Yes	Yes	Yes
Quercus agrifolia	Coast Live Oak	No	Yes	Yes	Yes	Very Low	Strong	No	Moderate	High	Yes	Yes	Yes
Quercus lobata	Valley Oak	No	Yes	Yes	Yes	Moderate	Strong	No	Moderate	Moderate	Yes	Yes	Yes
Quercus rubra	Red Oak	No	No	Yes	Yes	Moderate	Strong	No	Moderate	High	Yes	Yes	Yes
Quercus shumardii	Shumard Red Oak	No	No	No	No		Strong	No	Moderate		Yes	Yes	Yes
Quercus suber	Cork Oak	No	No	Yes	Yes	Low	Strong	No	Moderate	High	Yes	Yes	Yes
Quercus virginiana	Southern Live Oak	No	No	Yes	Yes	Moderate	Strong	No	High	Moderate	Yes	Yes	Yes
Robinia pseudoacacia	Black Locust	Yes	No	Yes	Yes	Low	Medium Weak to Medium	No	High	High	Yes	Yes	Yes
Robinia pseudoacacia 'Purple Robe'	Purple Robe Locust	No	No	Yes	Yes	Moderate	Medium Weak		High		Yes	Yes	
Salix babylonica	Weeping Willow	No	No	Yes	Yes	High	Weak	No	High	High	Yes	Yes	Yes
Schefflera actinophylla	Queensland Umbrella Tree	No	No	Yes	Yes	Moderate	Weak	No	Low		Yes	Yes	
Schinus molle	California Pepper	Yes	No	Yes	Yes	Very Low	Medium Weak	No	High	Moderate	Yes	Yes	
Schinus terebinthifolius	Brazilian Peper	Yes	No	Yes	Yes	Moderate	Medium Weak	No	Moderate	Moderate	Yes	Yes	
Sequoia sempervirens	Coast Redwood	No	Yes	Yes	Yes	Not Appropriate For This Region	Strong	No	Low	Moderate	Yes	Yes	Yes
Spathodea campanulata	African Tulip Tree	No	No	Yes	Yes	Moderate	Medium Weak	No	Moderate		Yes	Yes	
Strelitzia nicolai	Giant Bird of Paradise	No	No	Yes	Yes	Moderate	Medium	No	Low		Yes	Yes	Yes
Syagrus romanzoffianum	Queen Palm	No	No	Yes	Yes	Moderate		No			Yes	Yes	Yes
Syzygium paniculatum	Brush Cherry	No	No	Yes	Yes	Moderate	Medium	No	Moderate		Yes	Yes	
Taxus baccata	English Yew	No	No	Yes	Yes	Moderate	Strong	No	Moderate		Yes	Yes	Yes
Tipuana tipu	Tipu Tree	No	No	Yes	Yes	Low	Medium	No	Low	Moderate	Yes	Yes	
Trachycarpus fortunei	Windmill Palm	No	No	Yes	Yes	Moderate		No	Low		Yes	Yes	
Triadica sebifera	Chinese Tallow Tree	No	No	No	No	Moderate	Medium	No	Moderate		Yes	Yes	
Tristaniopsis laurina	Water Gum	No	No	Yes	Yes	Moderate	Medium Weak	No	Low		Yes	Yes	
Tupidanthus calyptratus	Tupidanthus	No	No	Yes	Yes	Moderate	Weak	No	Low		Yes		
Ulmus parvifolia	Chinese Elm	No	No	Yes	Yes	Moderate	Medium Weak / Medium	No	Moderate	Low	Yes	Yes	
Ulmus pumila	Siberian Elm	Yes	No	No	No	Not Appropriate For This Region	Weak	No	High		Yes	Yes	
Washingtonia filifera	California Fan Palm	No	Yes	Yes	Yes	Moderate		No	Moderate	Moderate	Yes	Yes	Yes
Washingtonia robusta	Mexican Fan Palm	Yes	No	Yes	Yes	Low	Medium	No	Moderate	Moderate	Yes	Yes	Yes
Yucca gloriosa	Spanish Dagger	No	No	Yes	Yes	Very Low	Medium	No	Low		Yes	Yes	Yes
Zelkova serrata	Sawtooth Zelkova	No	No	No	No	Low	Medium	No	Moderate	Low	Yes	Yes	Yes

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03

Opportunities



03

Opportunities

Opportunities & Constraints

The USC campus urban forest is a vital asset, providing environmental, social, and economic benefits while shaping the character and identity of the campus. As climate change accelerates, careful planning is needed to ensure that the urban forest remains resilient, sustainable, and functional for decades to come. This plan identifies both the challenges and opportunities associated with managing campus trees and outlines a strategic approach for active landscape succession, species selection, and long-term stewardship.

Opportunities for tree replacement occur when existing trees pose an unacceptable risk to public safety, campus infrastructure, or long-term urban forest health. This includes trees that are hazardous due to structural defects or frequent failure, dead or severely declining trees, and trees affected by serious pests or diseases that threaten surrounding canopy. Replacement

may also be warranted in emergency situations, where trees conflict with critical infrastructure repairs, or where visibility and safety hazards cannot be resolved through pruning or reasonable maintenance.

Additional replacement opportunities arise when aging or incompatible trees cause irreparable damage to buildings or hardscape and cannot be retained without compromising stability or safety. These conditions provide strategic opportunities to renew the canopy with healthier, climate-adapted, and pest-resistant species, improve soil and root conditions, and increase overall diversity and resilience of the campus urban forest.

Key Constraints:

- Ongoing building and utility construction projects.
- Heavy vehicular and pedestrian traffic compacting soils.
- Limited soil volume for proper root development.
- New and unanticipated pests or diseases.
- Limited commercial availability of some native species restricts planting options.

Key Opportunities:

- Establish and maintain the optimum amount of trees on campus.
- Establish and maintain appropriate diversity in tree specie and their life cycles to provide a stable and sustainable urban forest.
- Properly planned and maintained campus trees can live for hundreds of years, often outlasting buildings
- Conserving valuable and legacy trees, such as sycamores and oaks.
- Management practices and planting environments can be adapted to help trees recover from climate shocks.
- Transitioning the canopy to greater genetic and species diversity through replacement of declining trees supports resilience in a changing climate.
- Intentionally managing tree and understory plant communities over time—ensures the campus landscape adapts to future conditions while maintaining it's character and quality.



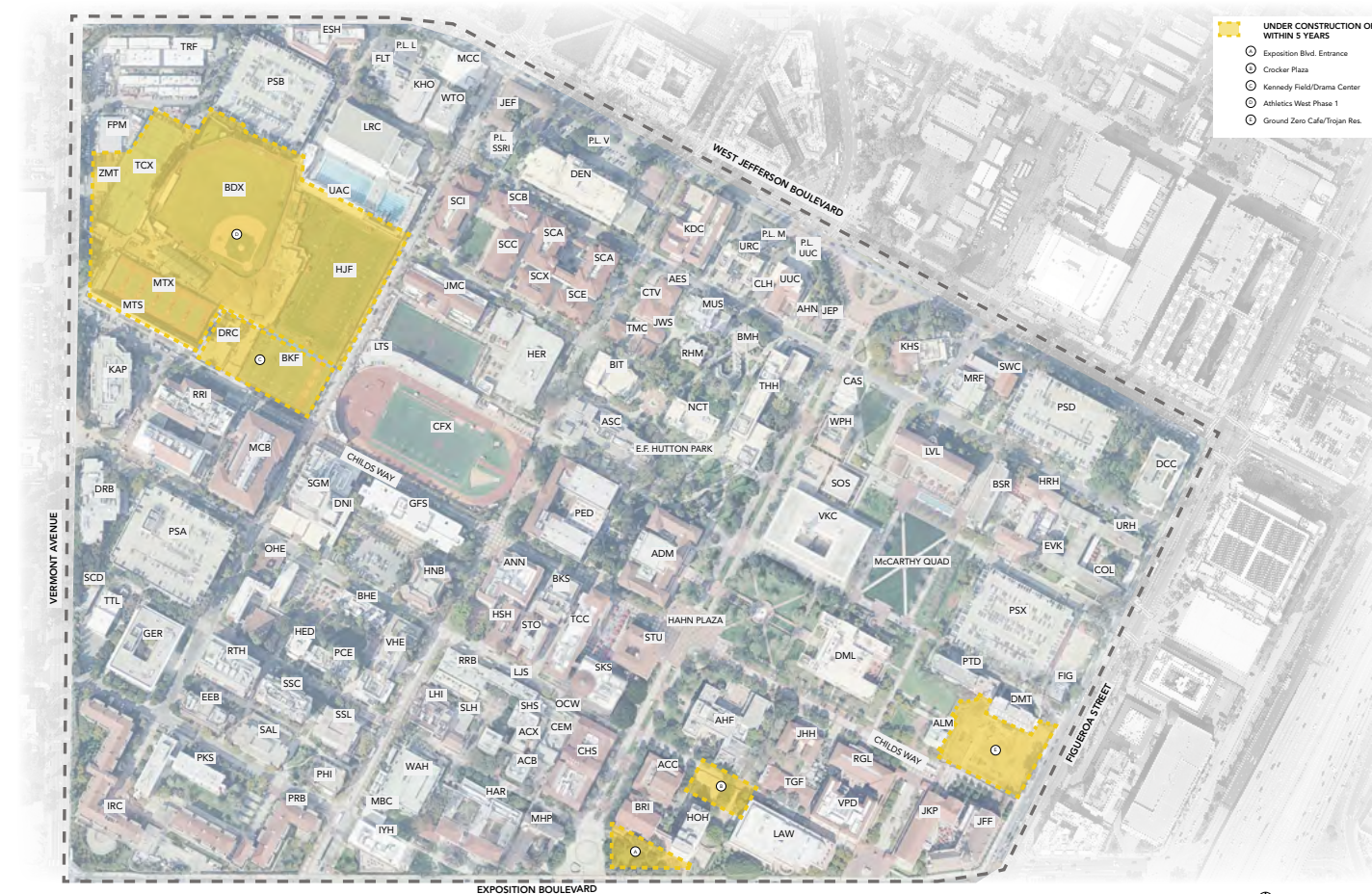
Under Construction & Future Projects

Several USC Facilities Planning and Management guideline documents govern construction projects on campus related to tree care, removal, replacement, and installation including the following: USC Landscape & Irrigation Standard Guidelines, USC Sustainable Urban Forest Masterplan, Sustainable Design & Construction Guidelines and the USC Native and Climate Adapted Plant Master Plan. These documents are available through the USC FPM Standards & Guidelines website at <https://fpm.usc.edu/standards-guidelines/>.

While construction planning and implementation projects can change over time and in accordance with campus priorities and budgets, avoiding known sites of future capital improvements should be considered when planning new tree planting. The maps on the far right identify projects that are currently under construction or are expected to be under construction within five years for both the University Park and Health Sciences Campus locations.

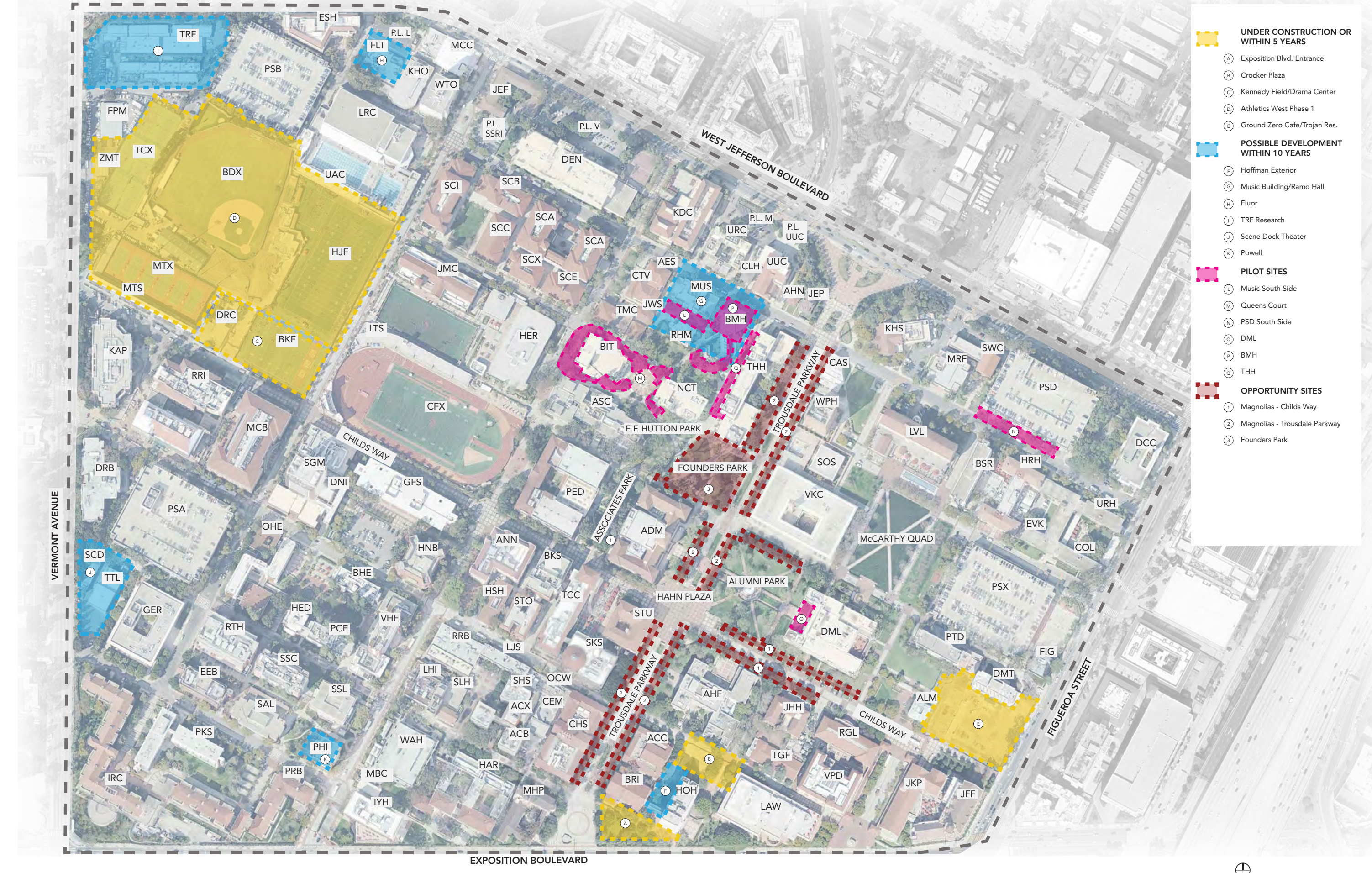
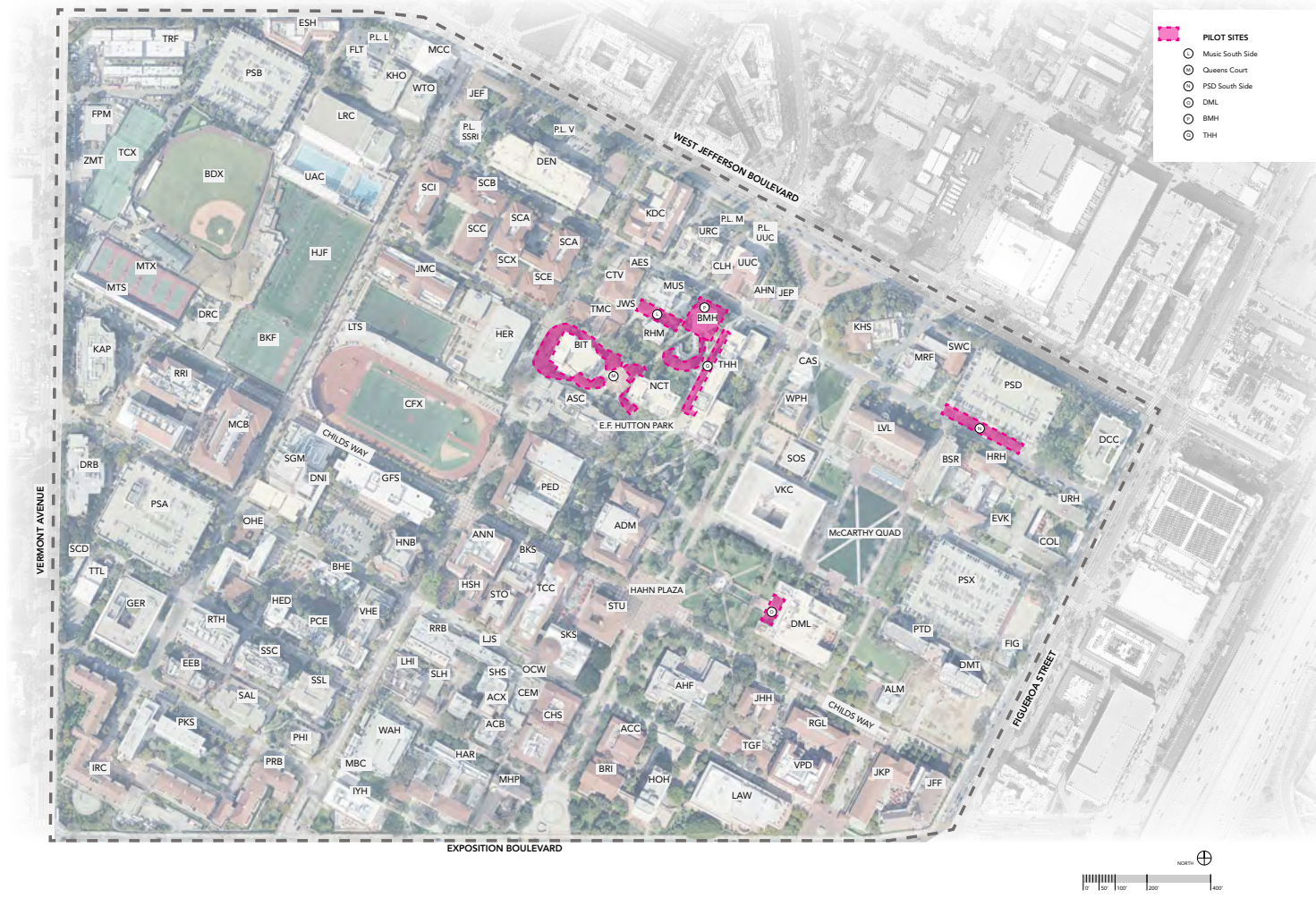


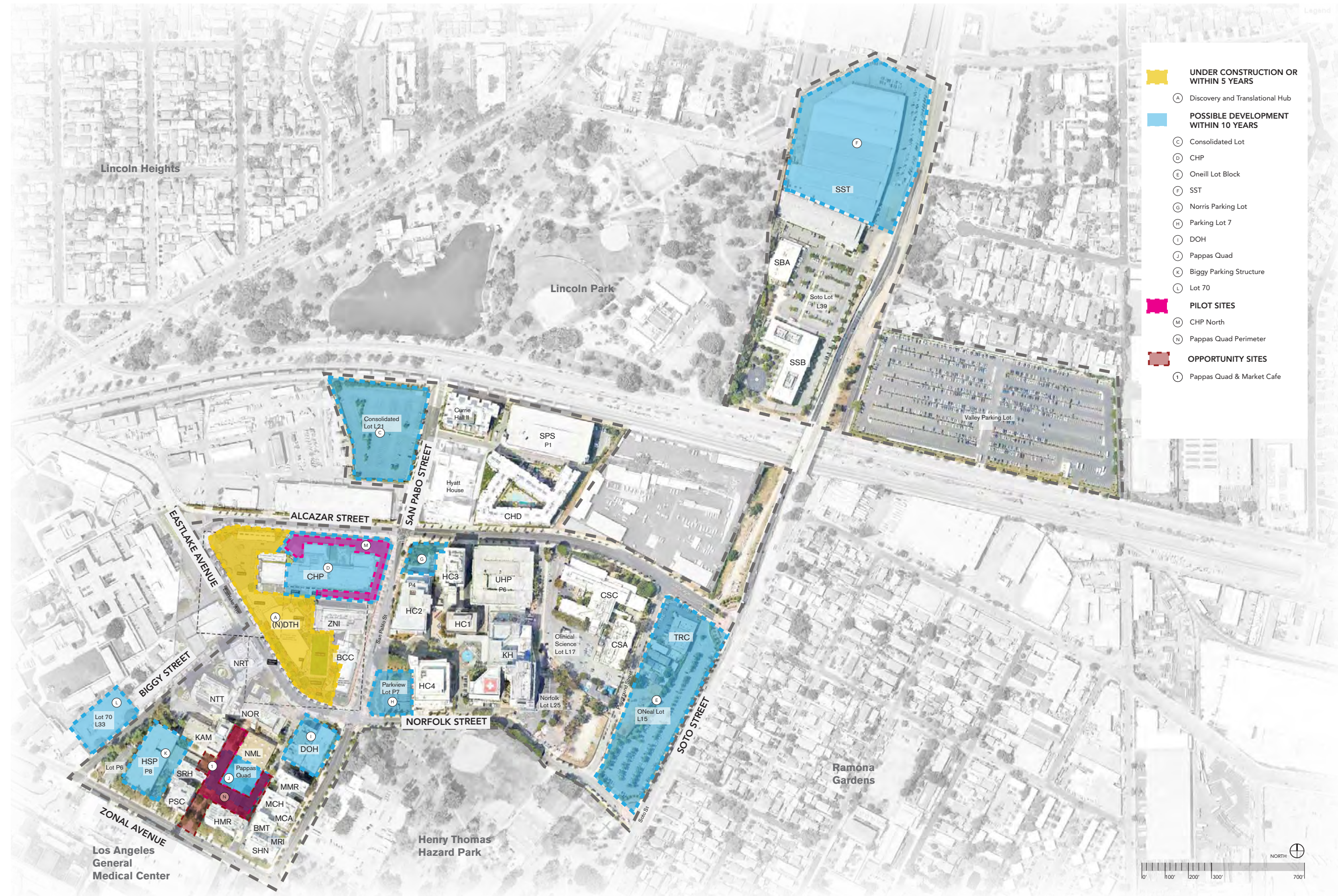
Bloom Football Performance Center Under Construction



03 Opportunities

Native and Climate Adapted Plant Pilot Projects



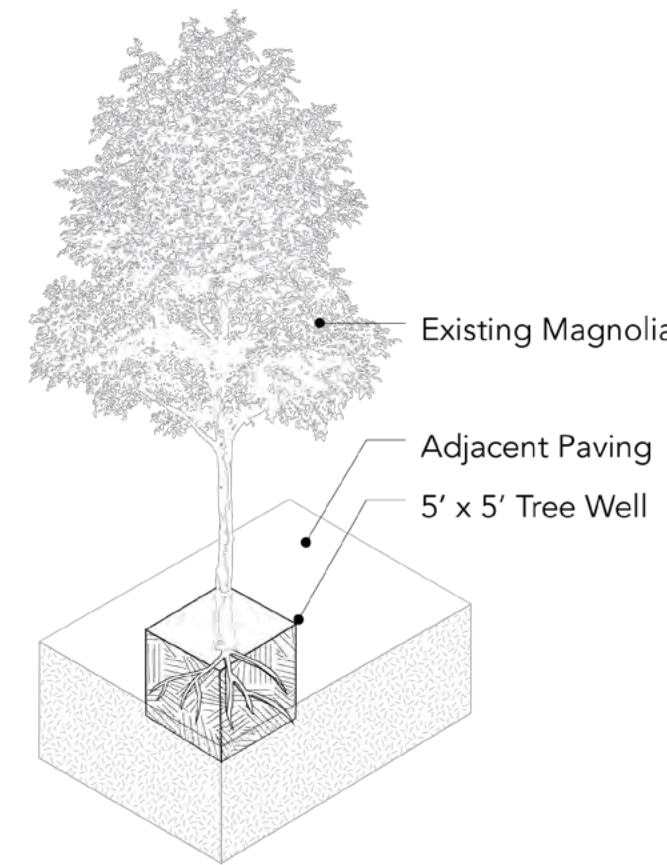


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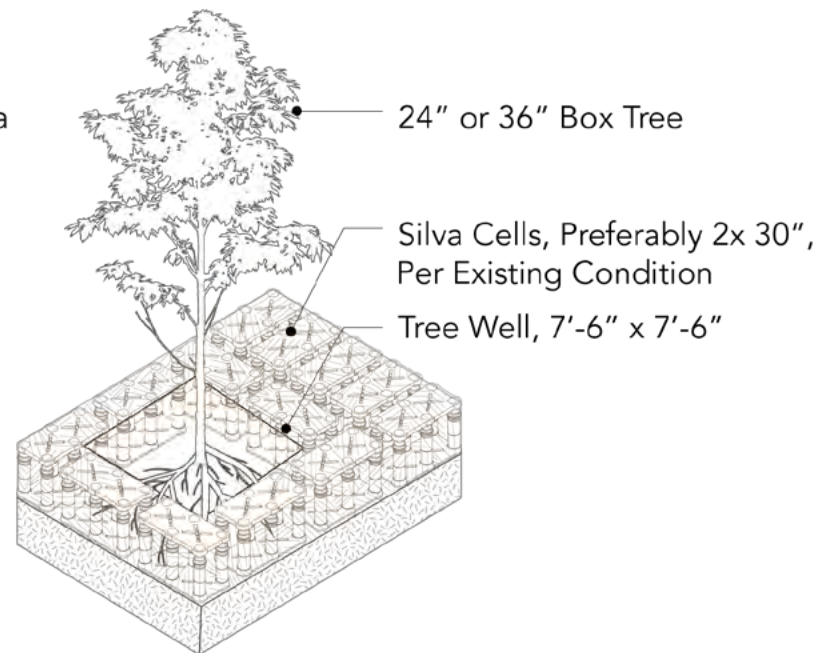
04

Opportunity Sites

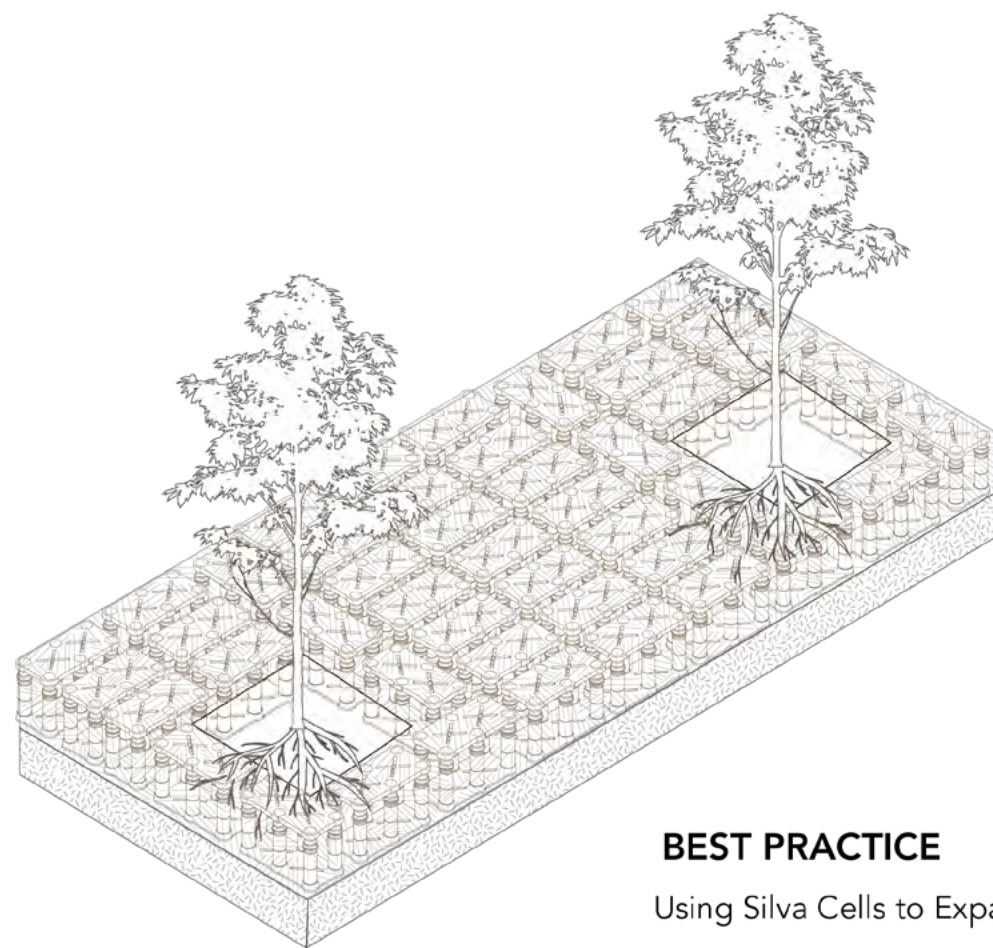




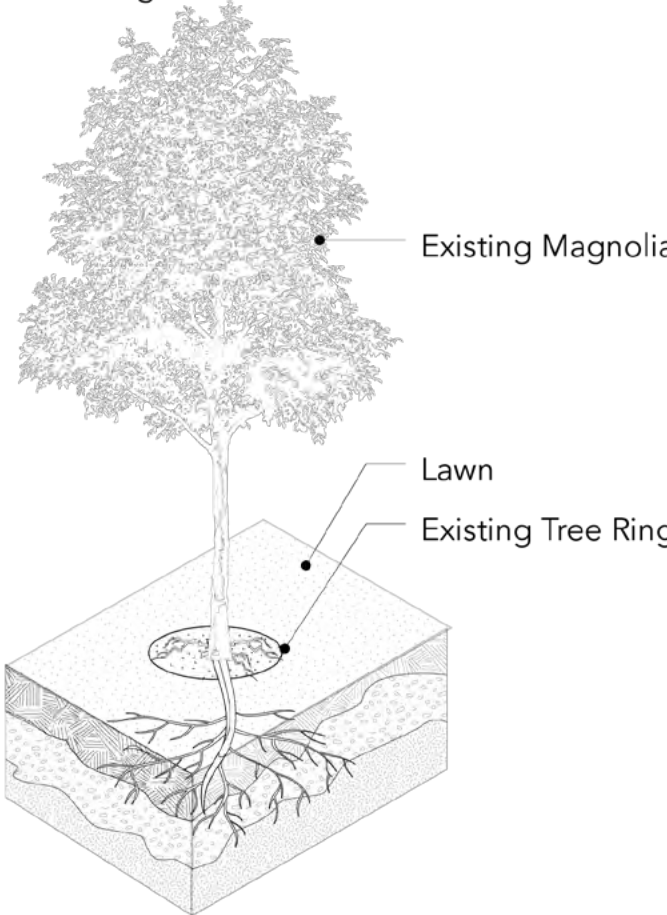
PLANTING TYPE 1:
Planting in Existing 5'x5' Tree Wells



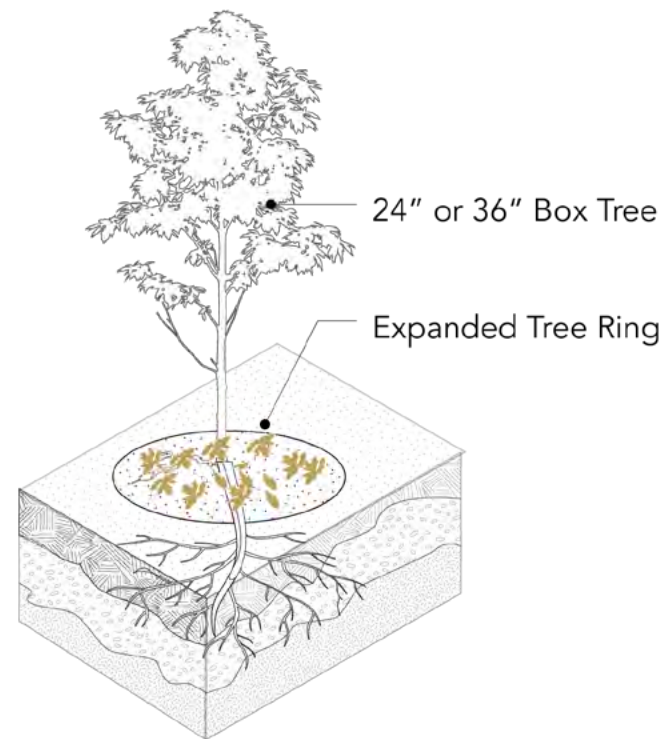
Using Silva Cells to Expand Soil Volume.



BEST PRACTICE
Using Silva Cells to Expand Soil Volume.



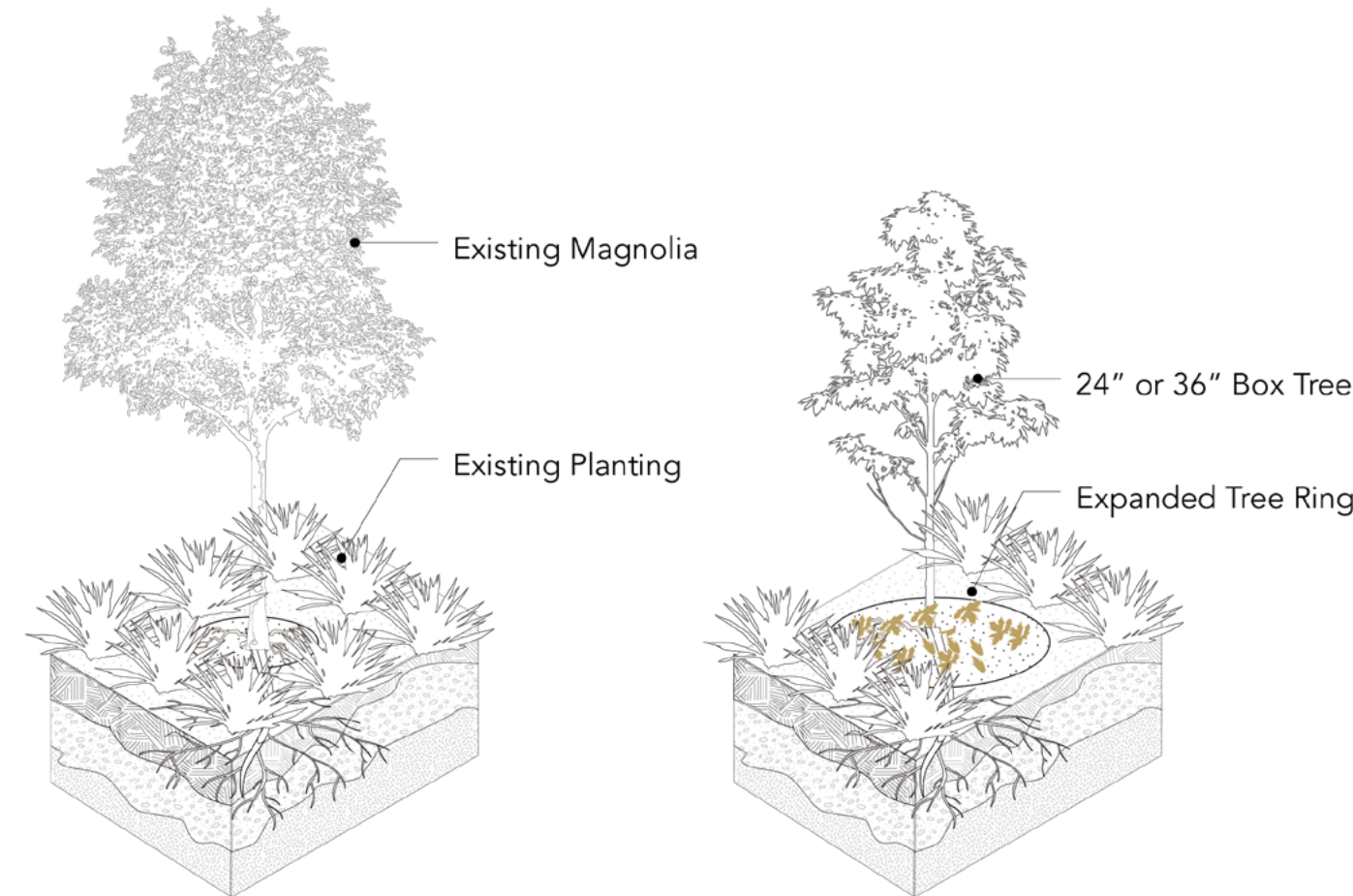
PLANTING TYPE 2:
Planting on Lawn



Keep Leaf Litter to Cover at Least 10' Dia, around Tree Trunk.

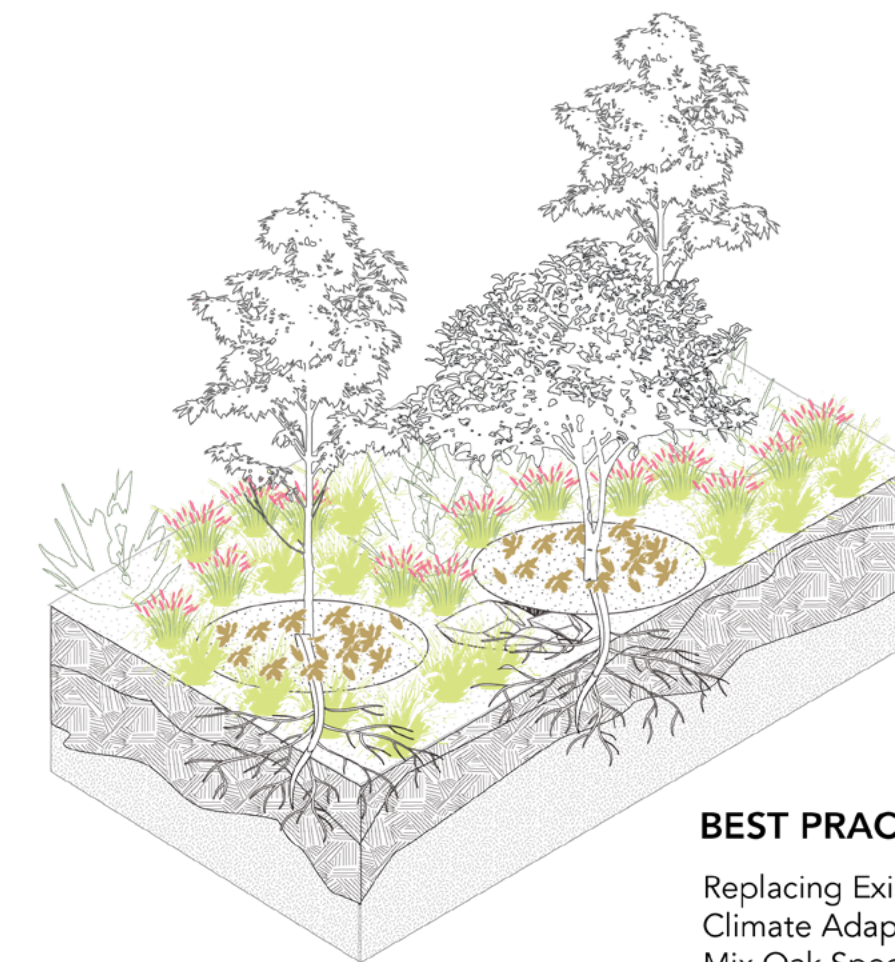


BEST PRACTICE
Replacing Existing Lawn with Native & Climate Adaptive Planting.
Mix Oak Species to Increase Biodiversity.

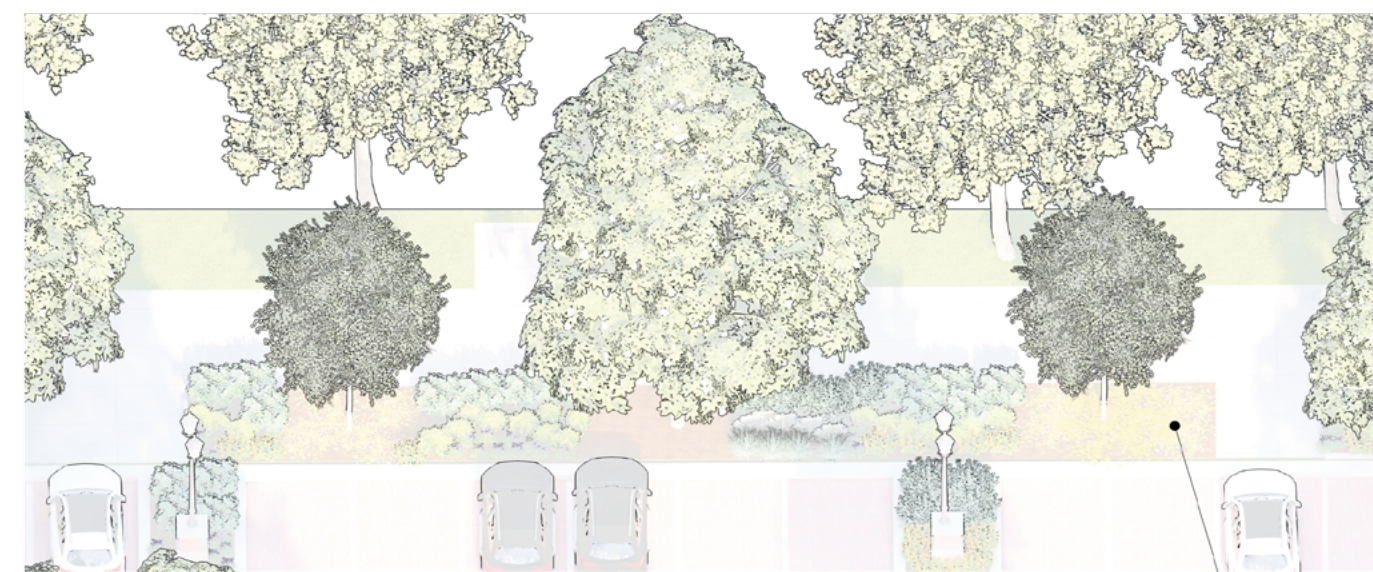


PLANTING TYPE 3
Planting on Regular Planting Area

Keep Leaf Litter to Cover at Least 10' Dia, around Tree Trunk.



BEST PRACTICE
Replacing Existing Planting with Native & Climate Adaptive Planting.
Mix Oak Species to Increase Biodiversity.



8'-0" Min. 8'-0" Min. Mulch With Leaf Litter
Oaks Trees Planted with Native and Adaptive Planting.

NATIVE PLANTING PALETTE



Opportunity Site 1: CHILDS WAY

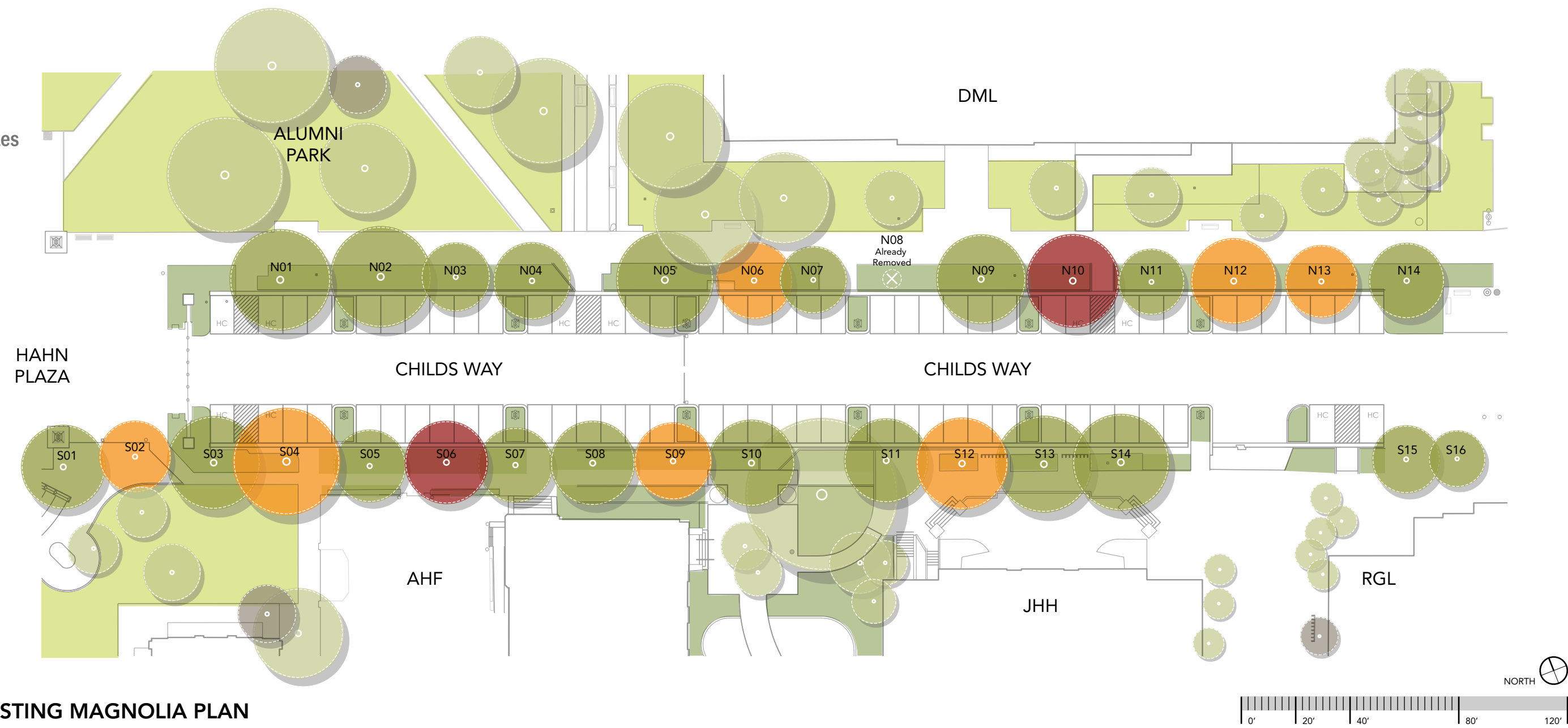
The decline of the Southern Magnolia trees along Childs Way has raised several maintenance and safety concerns. While the causes of decline are interrelated, the trees have a range of minimal to severe infestation of tuliptree scale. This pest is widespread in Southern California and infestation leads to removal of the tree's sap, causing damage, dieback and defoliation that can eventually lead to the death of the tree. The tuliptree scale produces a considerable amount of sticky honeydew that can cover parked cars, sidewalks and streets. These trees have received treatment for the scale, but have not fully recovered and continue to show signs of decline. Furthermore, past construction work in the area has damaged the root system of the Southern Magnolia trees, impacting the tree's stability and overall health. This root damage, combined with visible decay within the trunk and main limbs, creates a potential safety hazard.

USC's arborist evaluated selected trees along Childs Way and recommended the following actions: Removal and replacement within 5 years, health review within 5 years, or no action. These recommendations provided the foundation for the renewal plan for a one- and five-year-time horizon. New tree plantings will follow principles that mimic natural ecosystems and improve ecological functions. These include infrequent and deep watering of trees within the tree drip line, removal of aggressive ground cover and shrub understory plants, and allowing leaf litter to enrich soil fertility and support healthy understory growth of native herbaceous plants that do not need supplemental irrigation.



04

Opportunity Sites



EXISTING MAGNOLIA PLAN

2 TO BE REMOVED, 7 MAGNOLIA TO BE REVIEWED AT YEAR 5

LEGEND

-  Magnolia grandiflora
In Good Shape for Year 5
-  Magnolia grandiflora
To Be Reviewed at Year 5 For Removal
-  Magnolia grandiflora
To Be Removed Within 5 Year
-  Existing Site Trees
In Good Health Condition
-  Existing Site Trees
In Fair Health Condition



N10 Magnolia: To be Removed Within 5 Years
Trunk Decay, Leaning Towards Parking Side
Limited Canopy, Blocked by Adjacent Sycamore.



N10 Magnolia: To be Removed Within 5 Years
Previous Injection Treatment Sites.



N10 Magnolia: To be Removed Within 5 Years
Damaged Roots & Compacted Soil Around Trees.



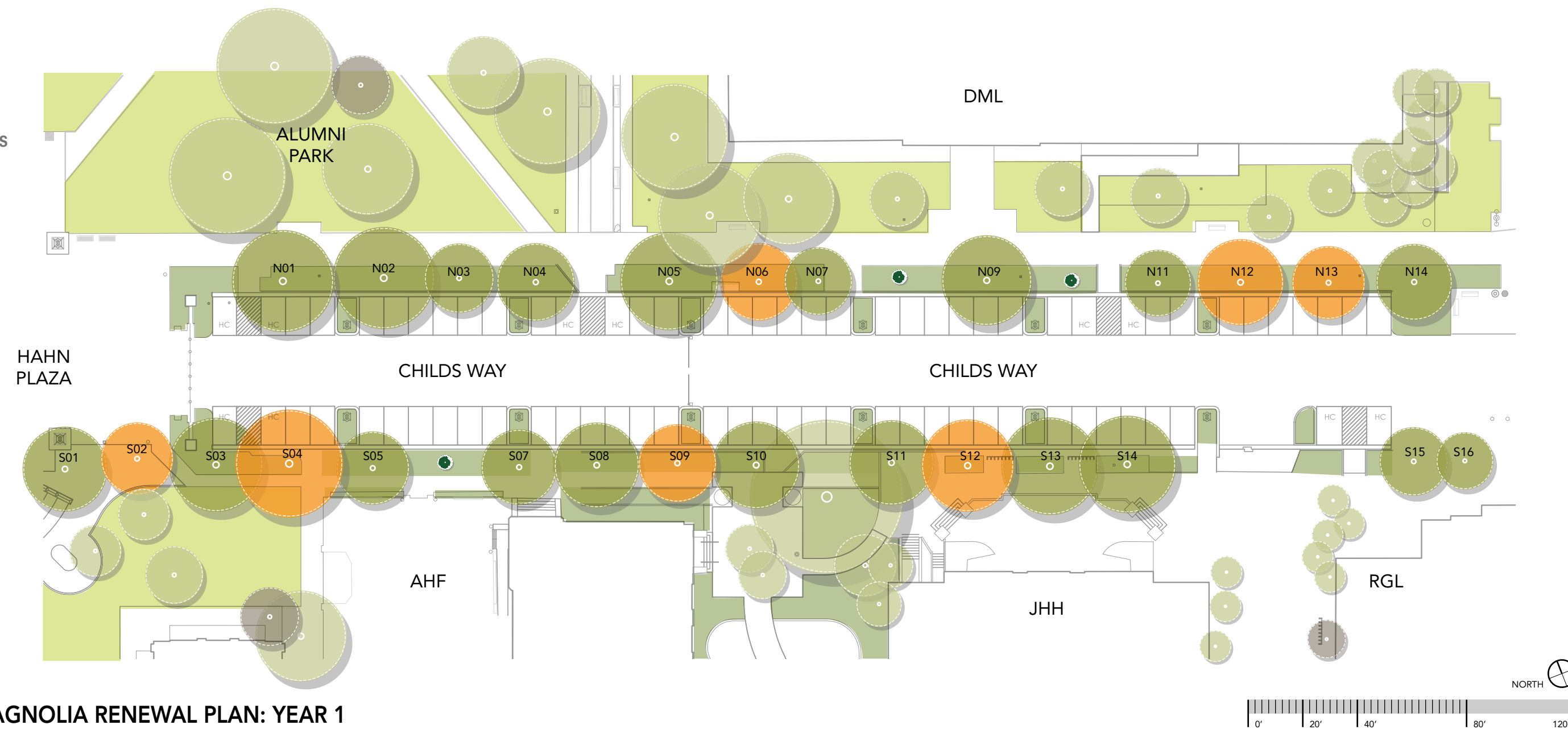
N10 Magnolia: To be Removed Within 5 Years
Trunk Decay, Limited Canopy.



S09 Magnolia: To be Reviewed at Year 5
Split on Trunk, Potential Cracking in Middle of Tree.

04

Opportunity Sites



MAGNOLIA RENEWAL PLAN: YEAR 1 REPLACE 2 MAGONLIA AND ADD 1 ON THE EMPTY SITE LEGEND

-  Magnolia grandiflora
In Good Shape for Year 5
-  Magnolia grandiflora
To Be Reviewed at Year 5 For Removal
-  Existing Site Trees
In Good Health Condition
-  Existing Site Trees
In Fair Health Condition
-  Quercus virginiana
24" Box x3

NOTE:
Newly Planted Quercus virginiana and Quercus agrifolia drawn as 5' Dia,
Based on nursery standard for 24" Box Oak.



Magnolia Renewal Plan Overall View.



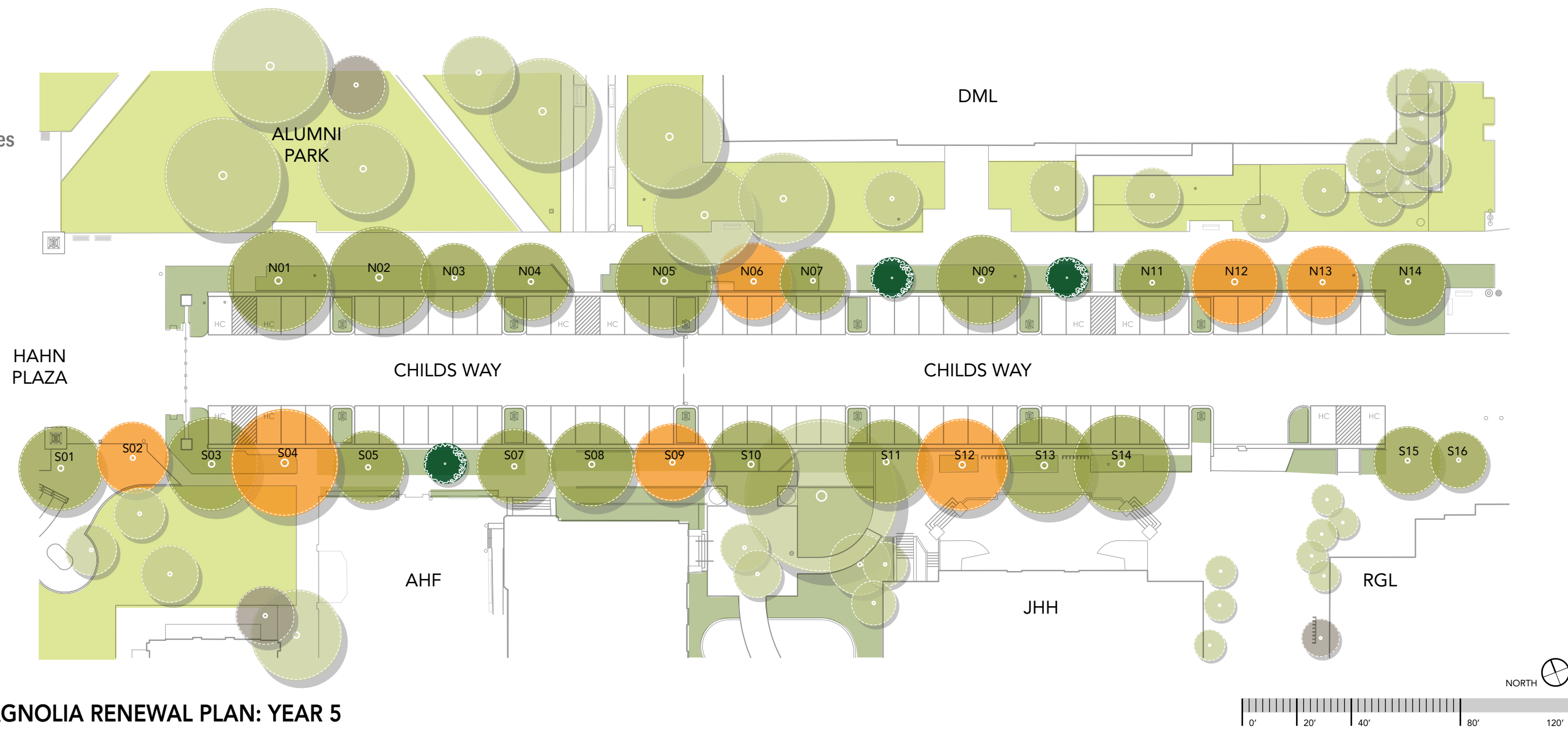
View From Parking Area to 24" Quercus Virginana Replacing Existing Magnolia.



View From Sidewalk to 24" Quercus Virginana Replacing Existing Magnolia.





04

Opportunity Sites



MAGNOLIA RENEWAL PLAN: YEAR 5

LEGEND

-  Magnolia grandiflora In Good Shape for Year 5
-  Magnolia grandiflora To Be Reviewed at Year 5 For Removal
-  Existing Site Trees In Good Health Condition
-  Existing Site Trees In Fair Health Condition

NOTE:

5 Year Quercus virginiana: 17.5' for 24" Box
Based on 2.5' growth per year.



Magnolia Renewal Plan Overall View_ Year 5



View of 24" Quercus virginiana to replace Existing Magnolia from Parking



View of 24" Quercus virginiana to replace Existing Magnolia from Sidewalk

Opportunity Site 2 : TROUSDALE PARKWAY

The Southern Magnolia trees along Trousdale Parkway face similar issues as those on Childs Way, including tuliptree scale infestation, construction root damage, and environmental stress due to compacted soil, or physical damage due to campus activities. Trousdale Parkway is a heavily used campus thoroughfare, and the tree canopies covering pedestrian and bike routes pose a potential safety risk from fallen limbs, and tree failures.

USC's arborist evaluated selected trees along Trousdale Parkway and recommended the following actions: Removal and replacement within 5 years, health review within 5 years, or no action. These recommendations provided the foundation for the renewal plan for a one- and five-year-time horizon. New tree plantings will follow principles that mimic natural ecosystems and improve ecological functions. These include infrequent and deep watering of trees

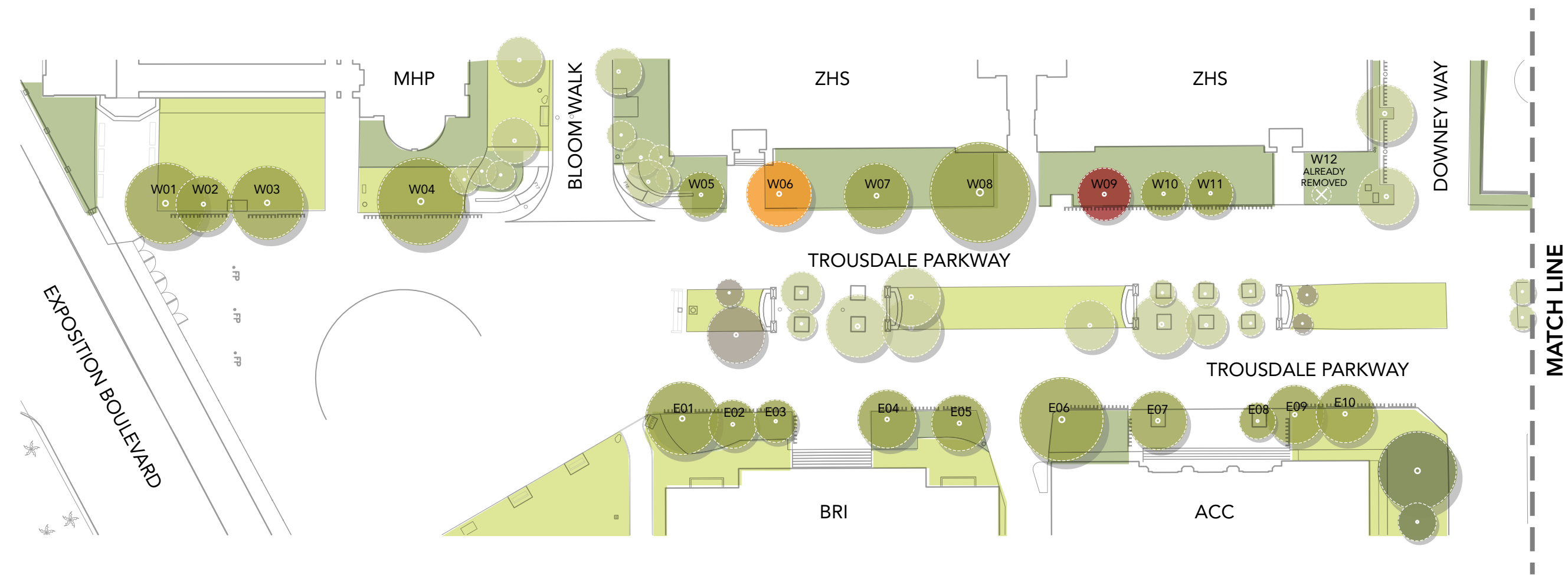
within the tree drip line, removal of aggressive ground cover and shrub understory plants, and allowing leaf litter to enrich soil fertility and support healthy understory growth of native herbaceous plants that do not need supplemental irrigation.

The plan proposes *Quercus virginiana* to be planted in lawn areas, and *Quercus agrifolia* when the understory planting can be native and climate-adapted species that support local pollinators and wildlife, increase campus biodiversity, and reduce long-term water consumption. Additionally, the trees should embody the university's goal of using its grounds as a "living laboratory" and an urban forest for future generations.



04

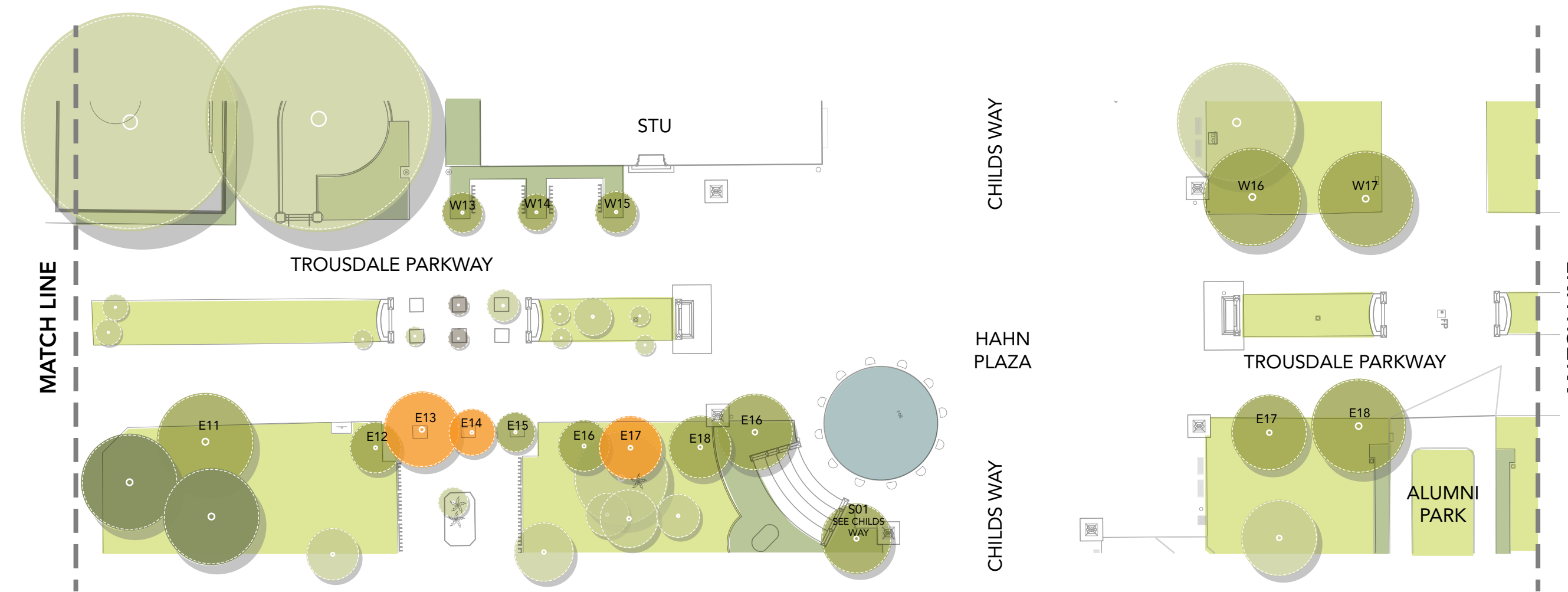
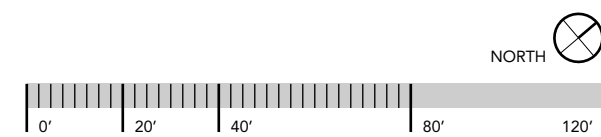
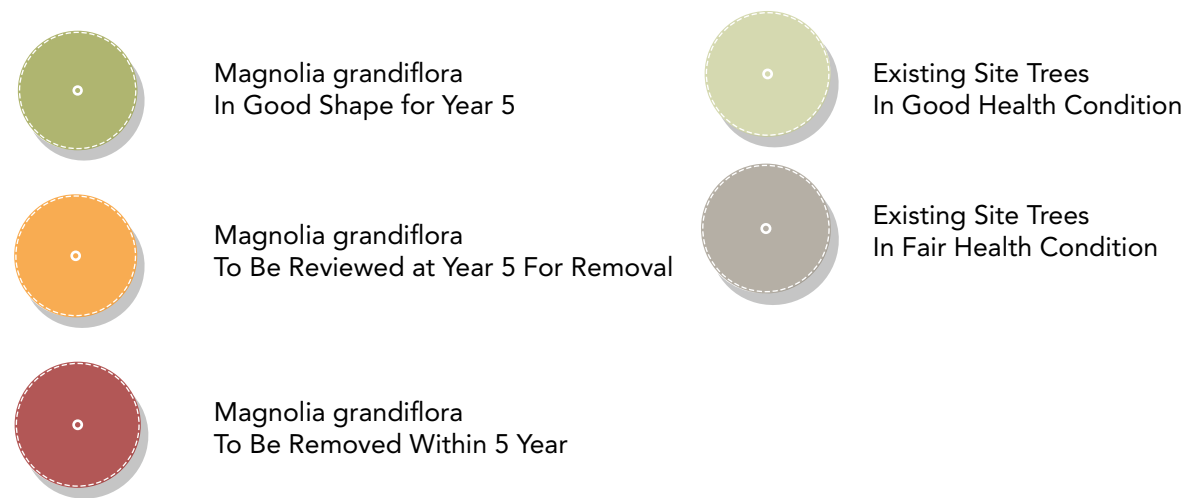
Opportunity Sites



EXISTING MAGNOLIA PLAN

OVERALL 2 TO BE REMOVED, 10 MAGNOLIA TO BE REVIEWED AT YEAR 5

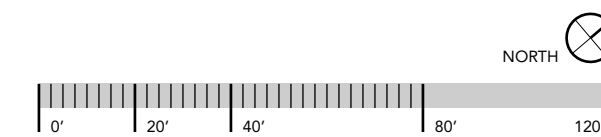
LEGEND



EXISTING MAGNOLIA PLAN

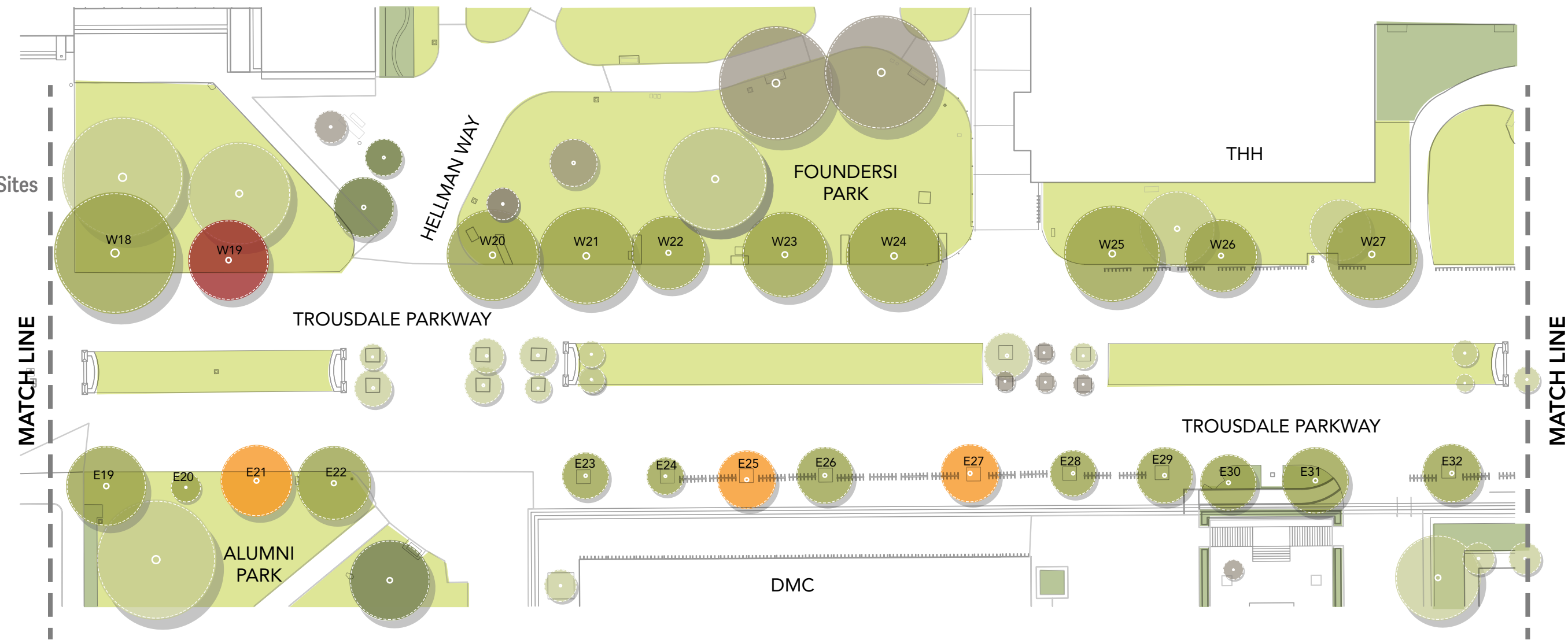
OVERALL 2 TO BE REMOVED, 10 MAGNOLIA TO BE REVIEWED AT YEAR 5

LEGEND



04

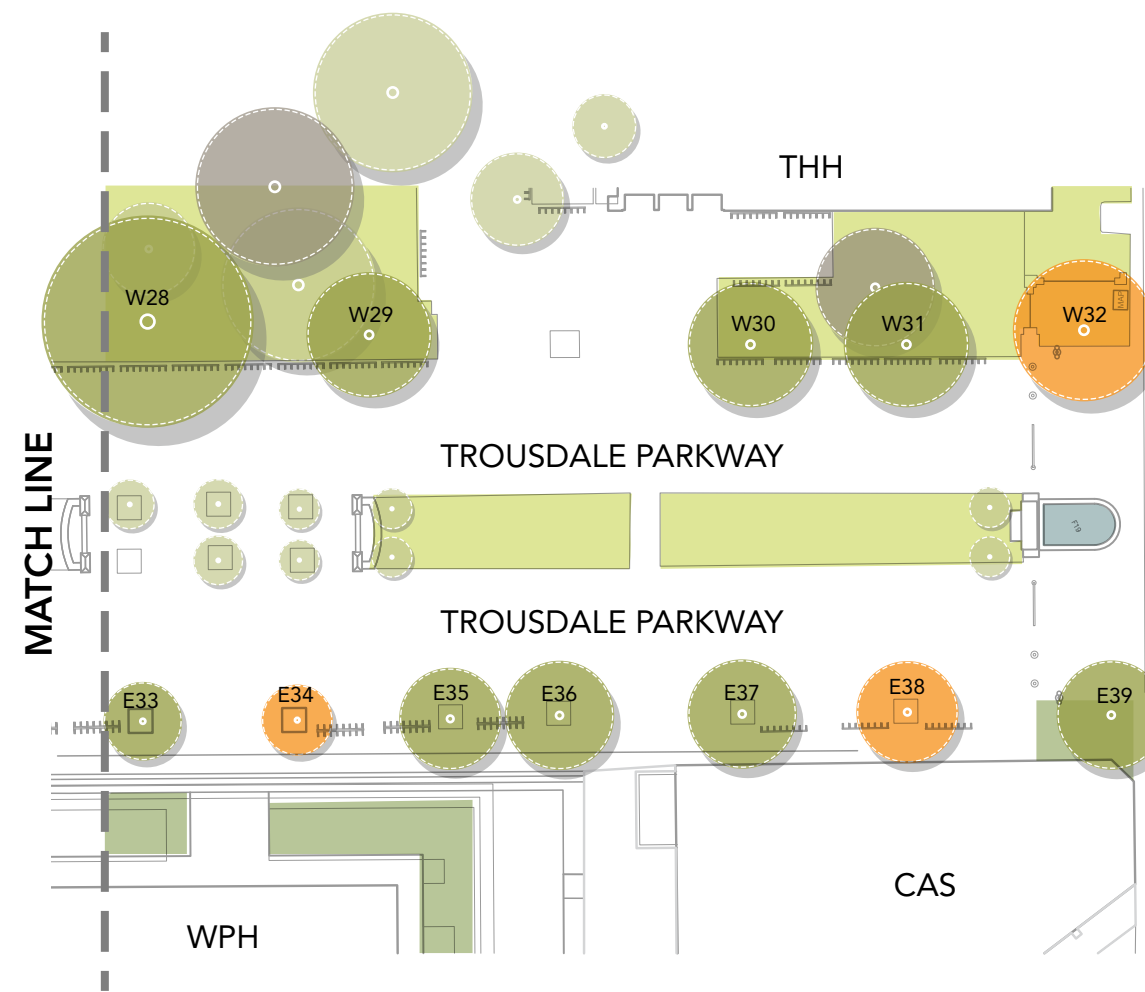
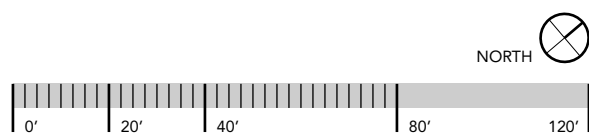
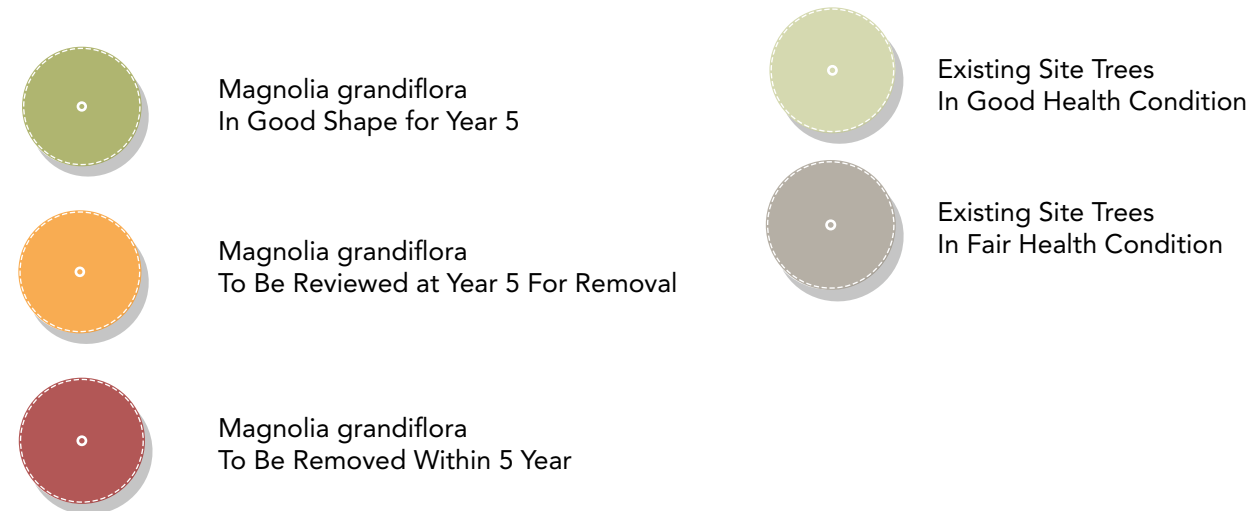
Opportunity Sites



EXISTING MAGNOLIA PLAN

OVERALL 2 TO BE REMOVED, 10 MAGNOLIA TO BE REVIEWED AT YEAR 5

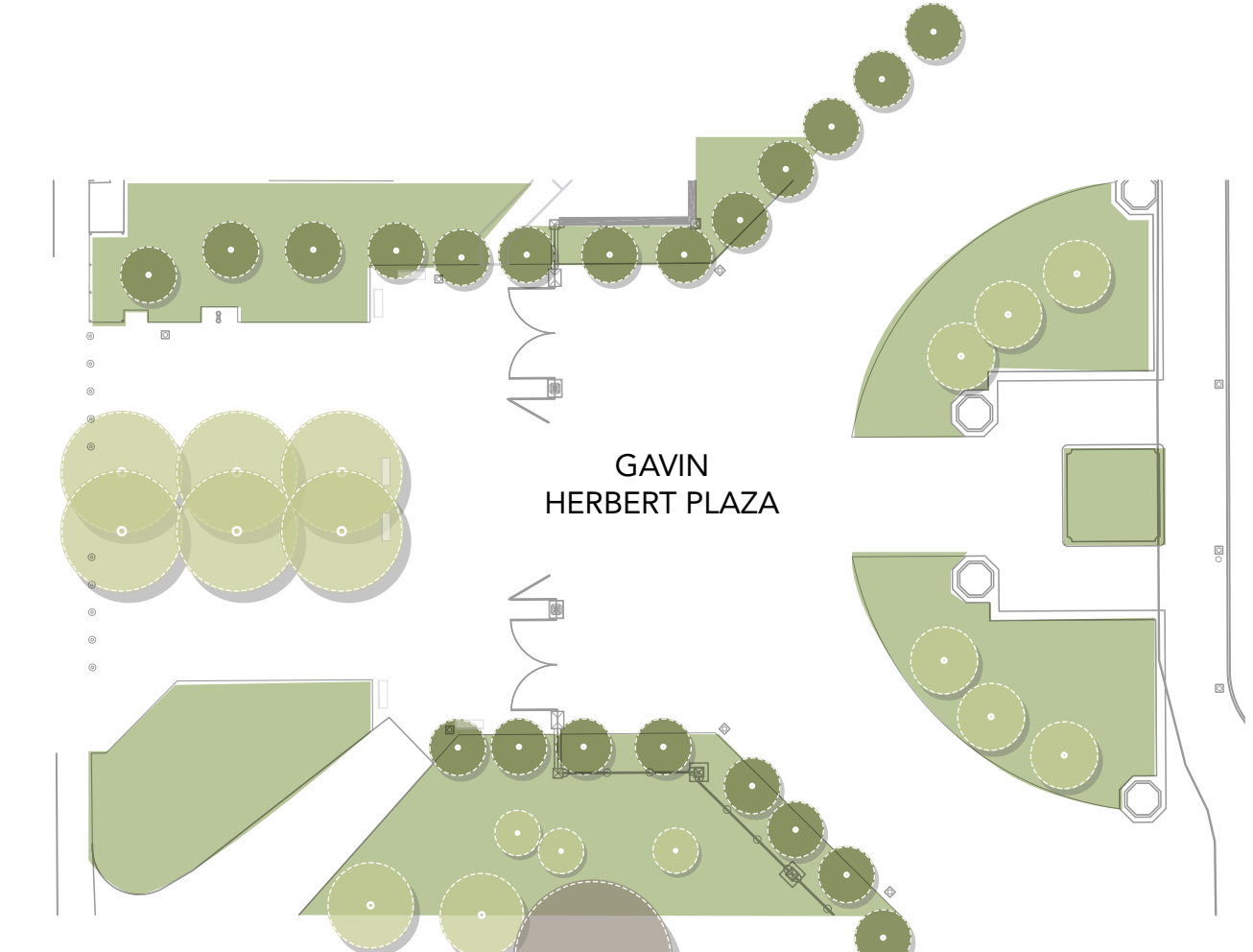
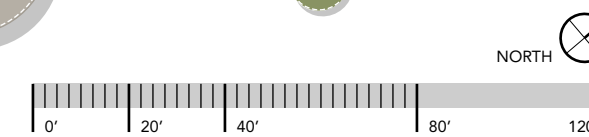
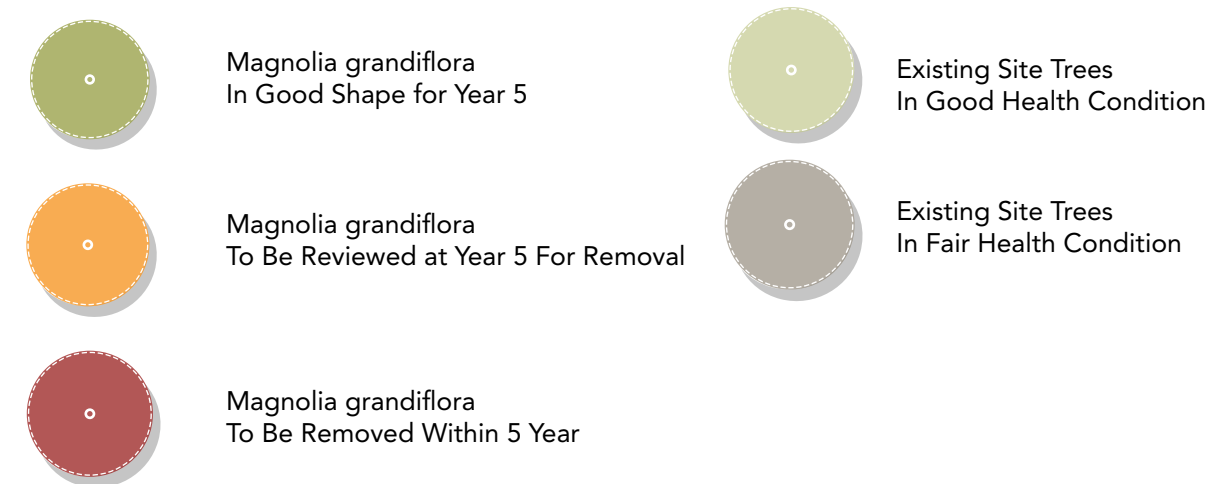
LEGEND



EXISTING MAGNOLIA PLAN

OVERALL 2 TO BE REMOVED, 10 MAGNOLIA TO BE REVIEWED AT YEAR 5

LEGEND



04

Opportunity Sites



W09 Magnolia: To be Removed Within 5 Years
Tree Decaying, With Weak Branches



W09 Magnolia: To be Removed Within 5 Years
Tree Decaying, With Weak Branches



W19 Magnolia: To be Removed Within 5 Years
Tree Decaying, Limited Canopy



Cluster growing/ Epicormic sprouts
Indicating Tree Responding to Stress, or Damage.



Wound on Tree Trunk Indicates Exposure of
the Inner Tissues to Decay and Disease.



E27 Magnolia: To be Reviewed at Year 5
Limited Canopy, Tree in Tree Well With Limited Soil Volume.



Limited Growing Space Next to the Sidewalk



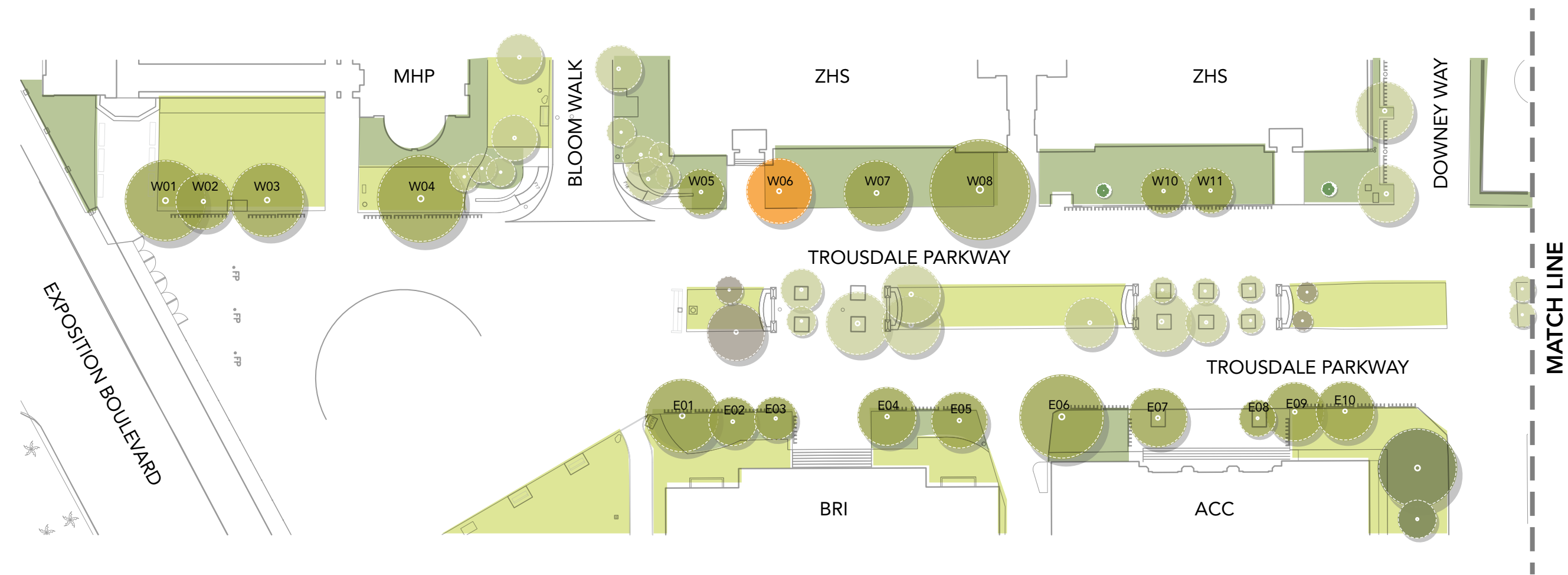
Compacted Soil Within Tree Well



W21 Magnolia: Healthy Canopy and Good Form.

04

Opportunity Sites

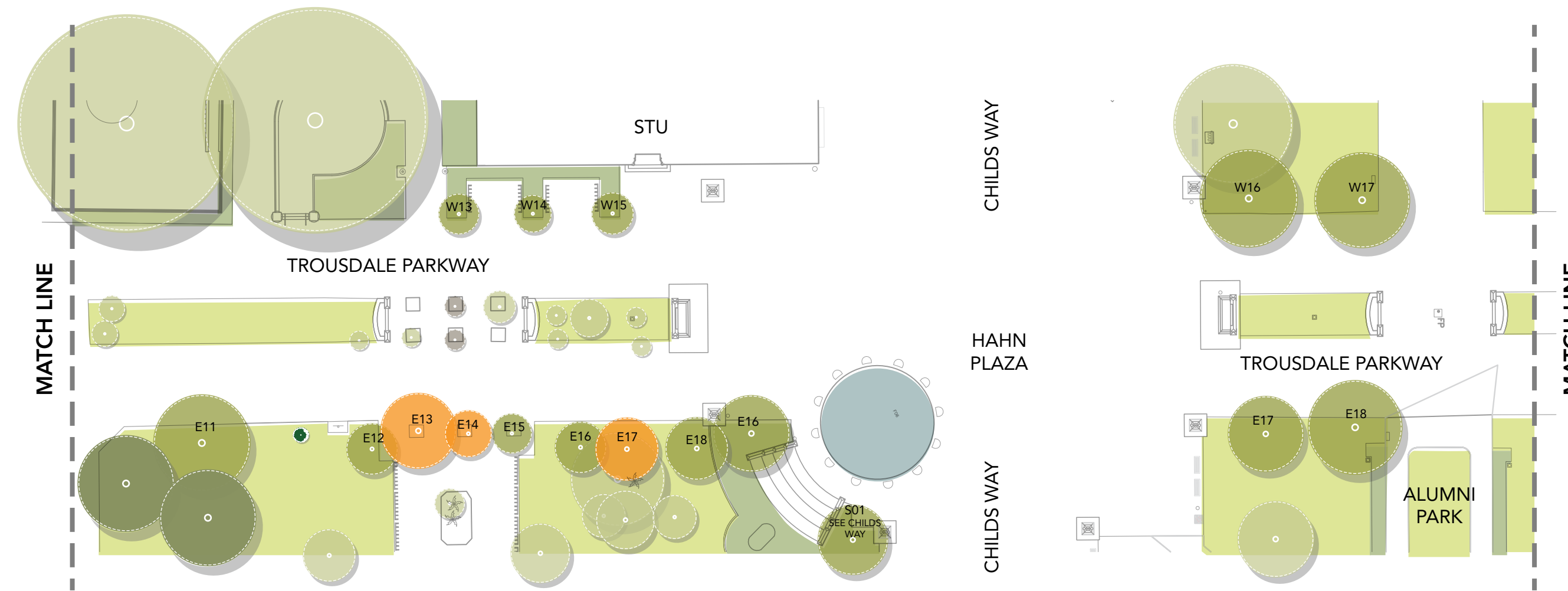
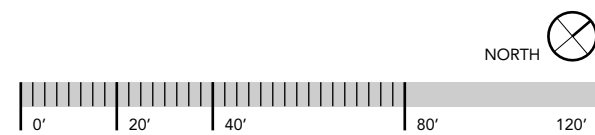


MAGNOLIA RENEWAL PLAN: YEAR 1

REPLACE 2 MAGONLIA AND ADD 2 ON THE EMPTY SITE

LEGEND

-  Magnolia grandiflora
In Good Shape for Year 5
-  Existing Site Trees
In Good Health Condition
-  Quercus agrifolia
24" Box x2
-  Magnolia grandiflora
To Be Reviewed at Year 5 For Removal
-  Existing Site Trees
In Fair Health Condition

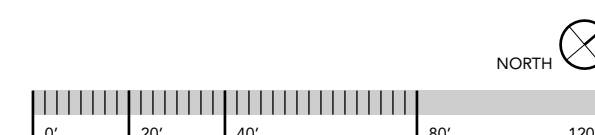


MAGNOLIA RENEWAL PLAN: YEAR 1

REPLACE 2 MAGONLIA AND ADD 2 ON THE EMPTY SITE

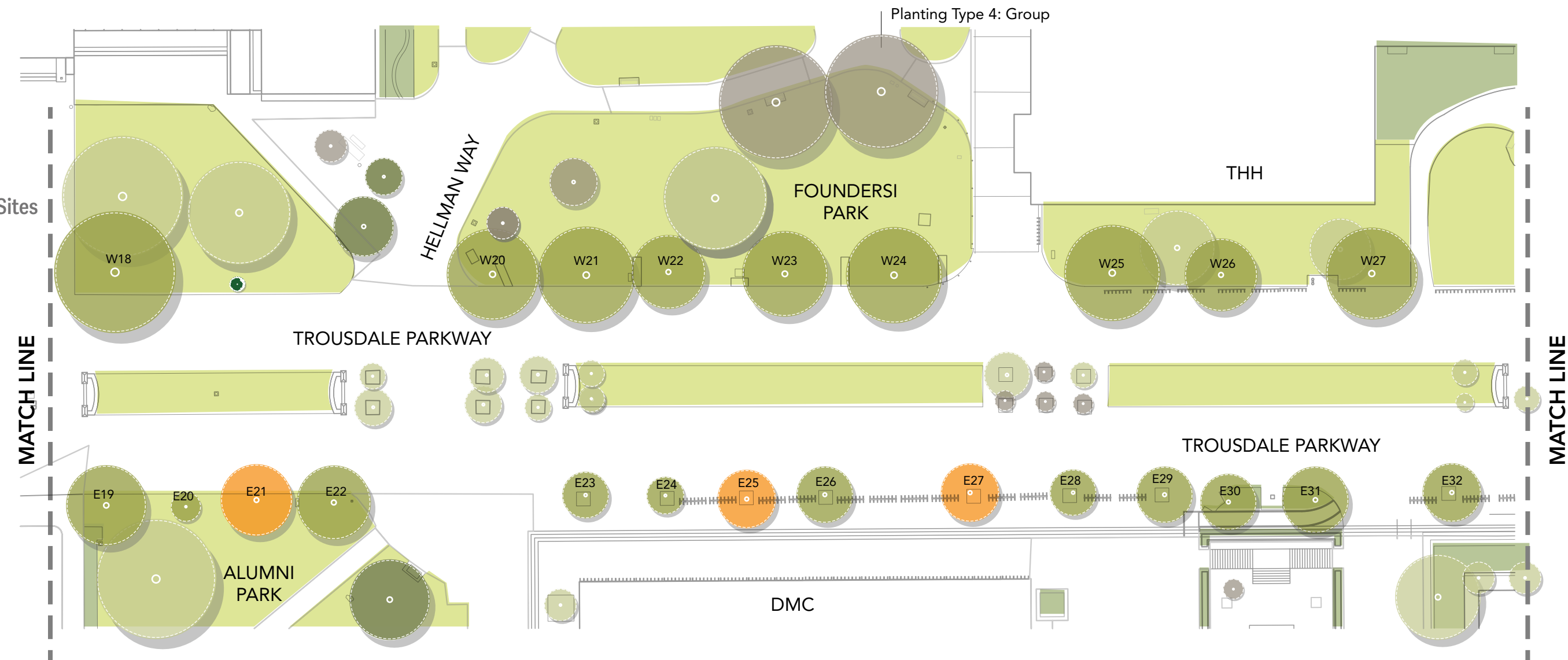
LEGEND

-  Magnolia grandiflora
In Good Shape for Year 5
-  Existing Site Trees
In Good Health Condition
-  Quercus virginiana
24" Box x1
-  Magnolia grandiflora
To Be Reviewed at Year 5 For Removal
-  Existing Site Trees
In Fair Health Condition



04

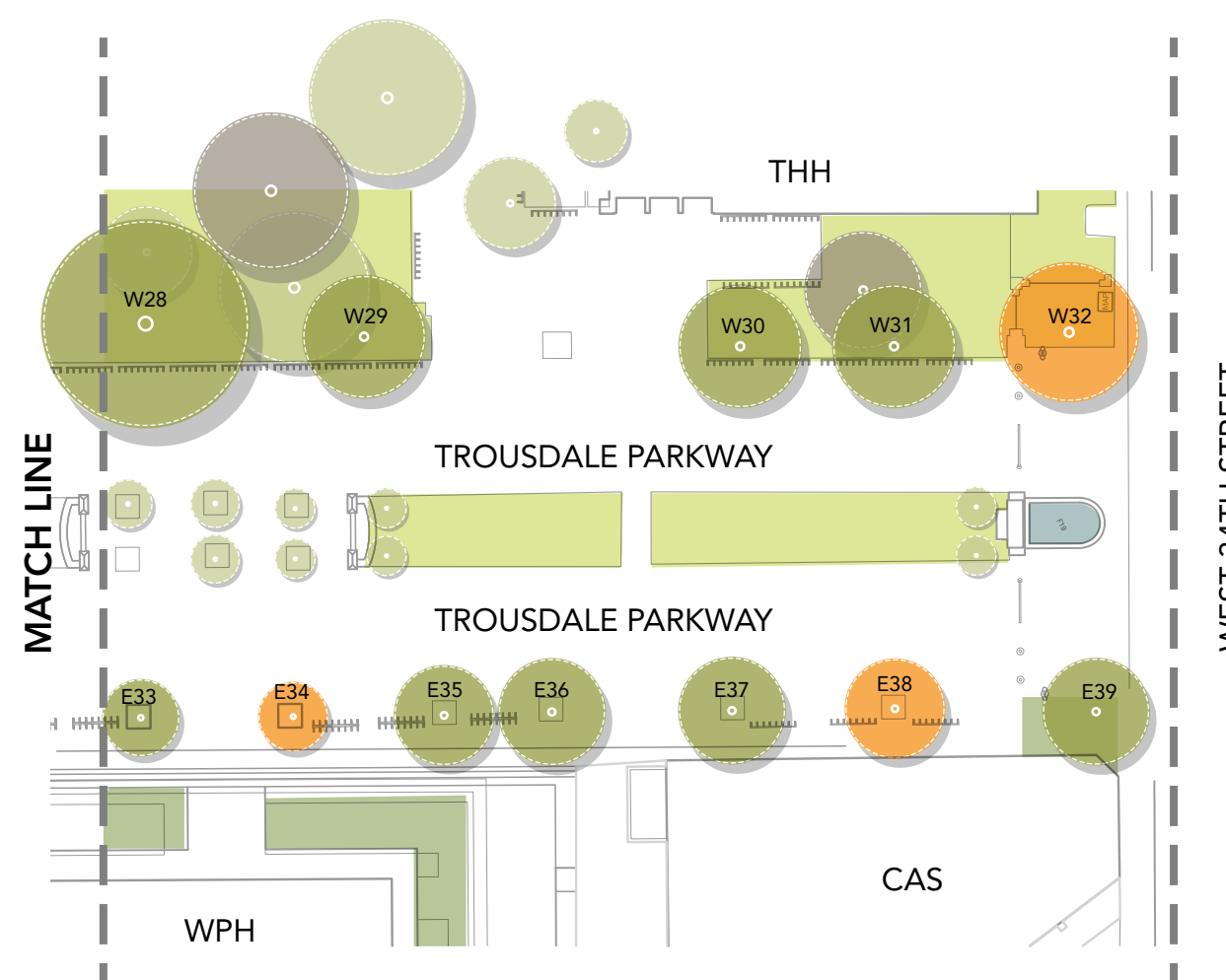
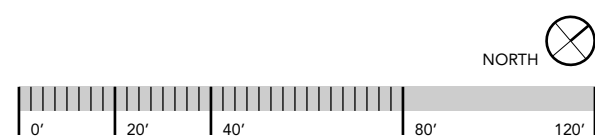
Opportunity Sites



MAGNOLIA RENEWAL PLAN: YEAR 1

REPLACE 2 MAGONLIA AND ADD 2 ON THE EMPTY SITE

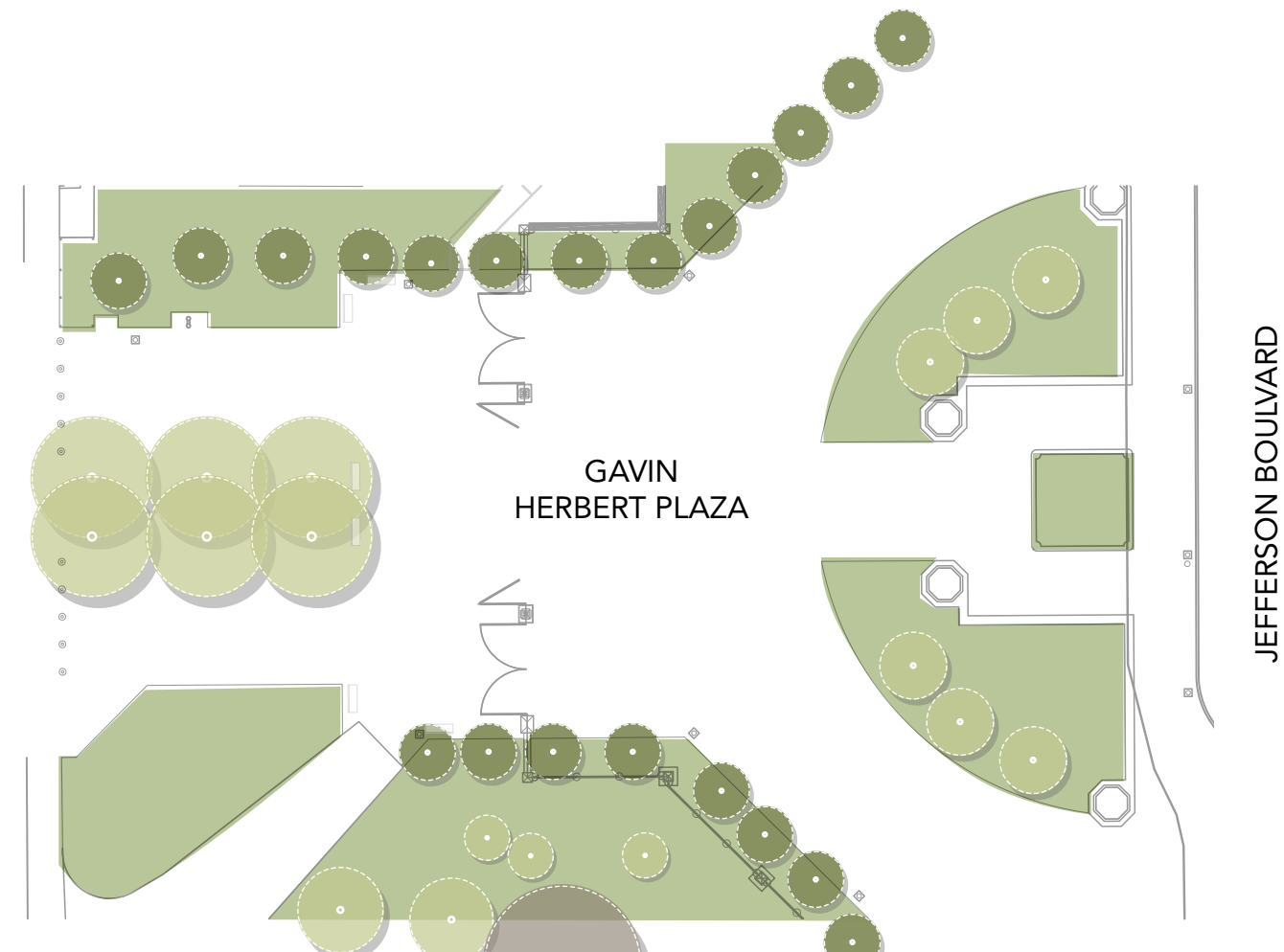
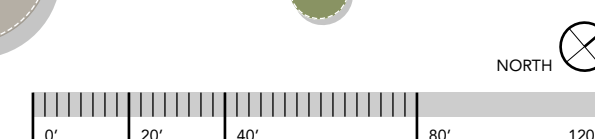
LEGEND



MAGNOLIA RENEWAL PLAN: YEAR 1

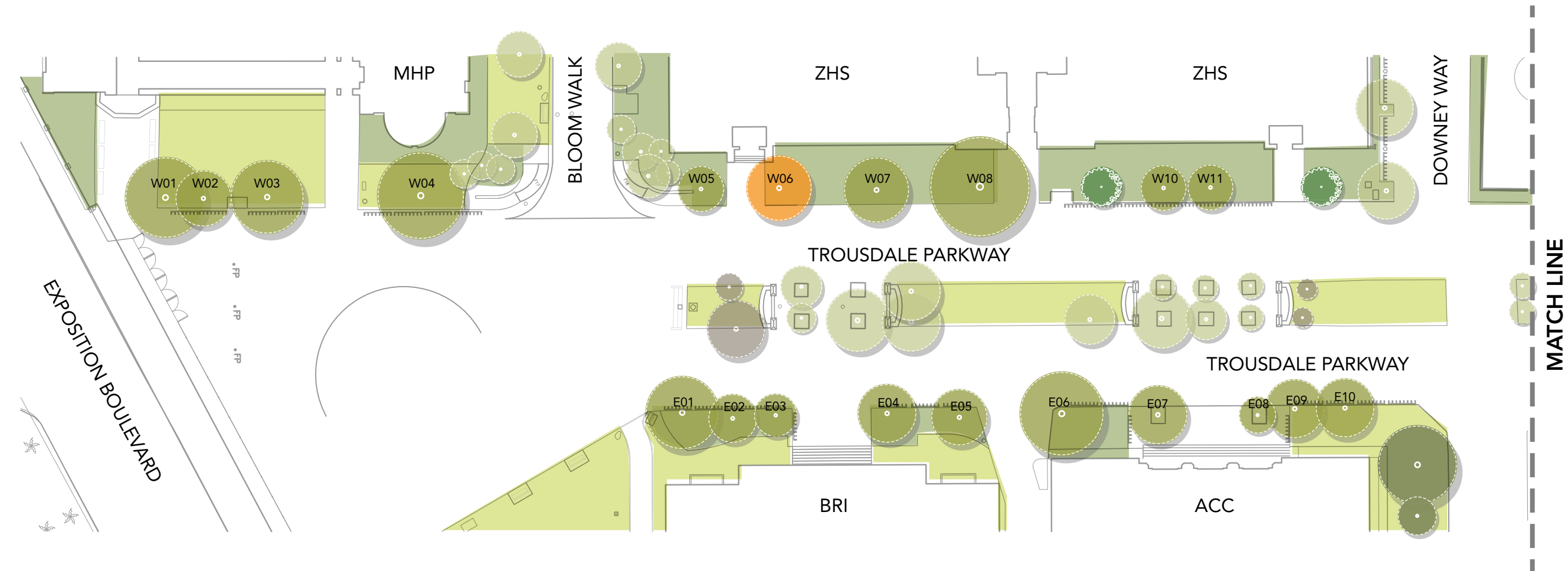
REPLACE 2 MAGONLIA AND ADD 2 ON THE EMPTY SITE

LEGEND



04

Opportunity Sites



MAGNOLIA RENEWAL PLAN: YEAR 5

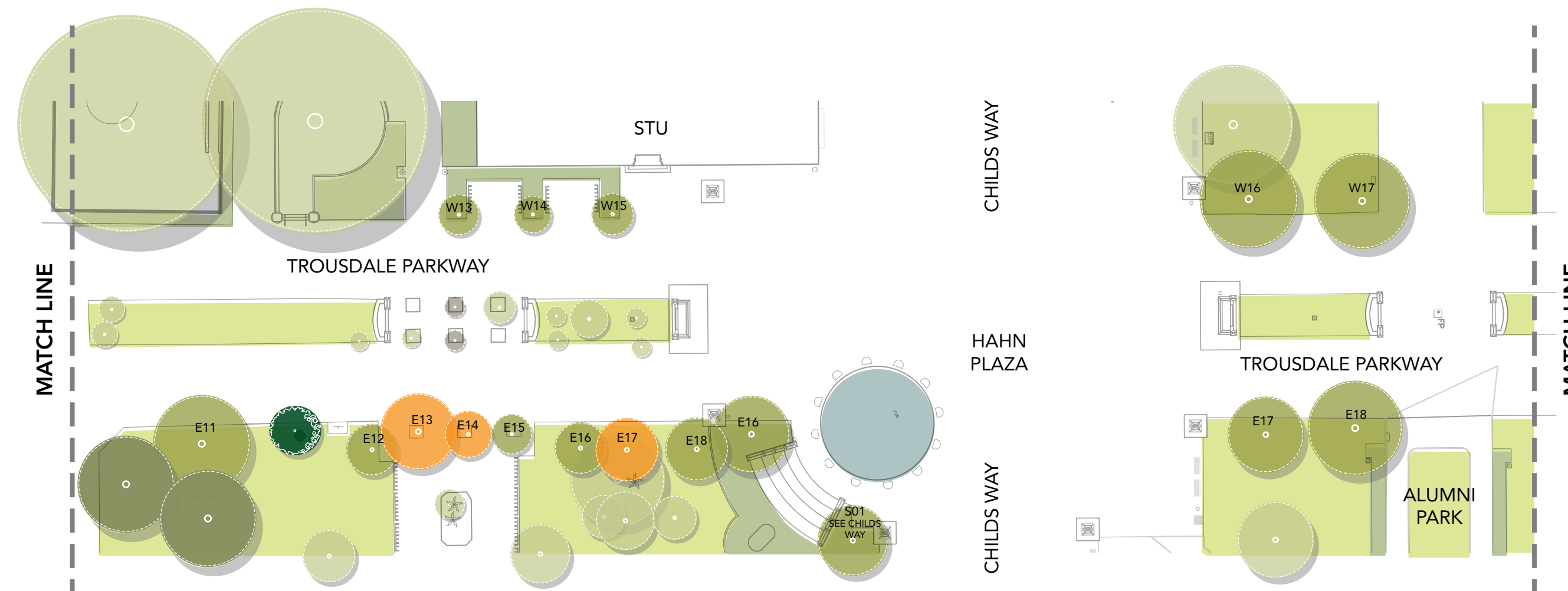
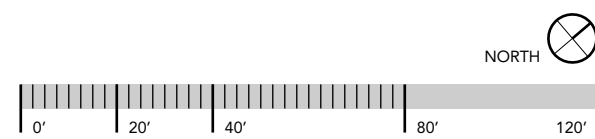
LEGEND

-  Magnolia grandiflora In Good Shape for Year 5
-  Magnolia grandiflora To Be Reviewed at Year 5 For Removal
-  Existing Site Trees In Good Health Condition
-  Existing Site Trees In Fair Health Condition

NOTE:.

5 Year Quercus virginiana: 17.5' for 24" Box Based on 2.5' growth per year

5 Year Quercus agrifolia: 5' for 24" Box Based on 2' growth per year



MAGNOLIA RENEWAL PLAN: YEAR 5

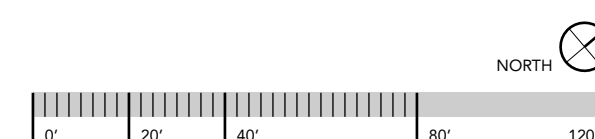
LEGEND

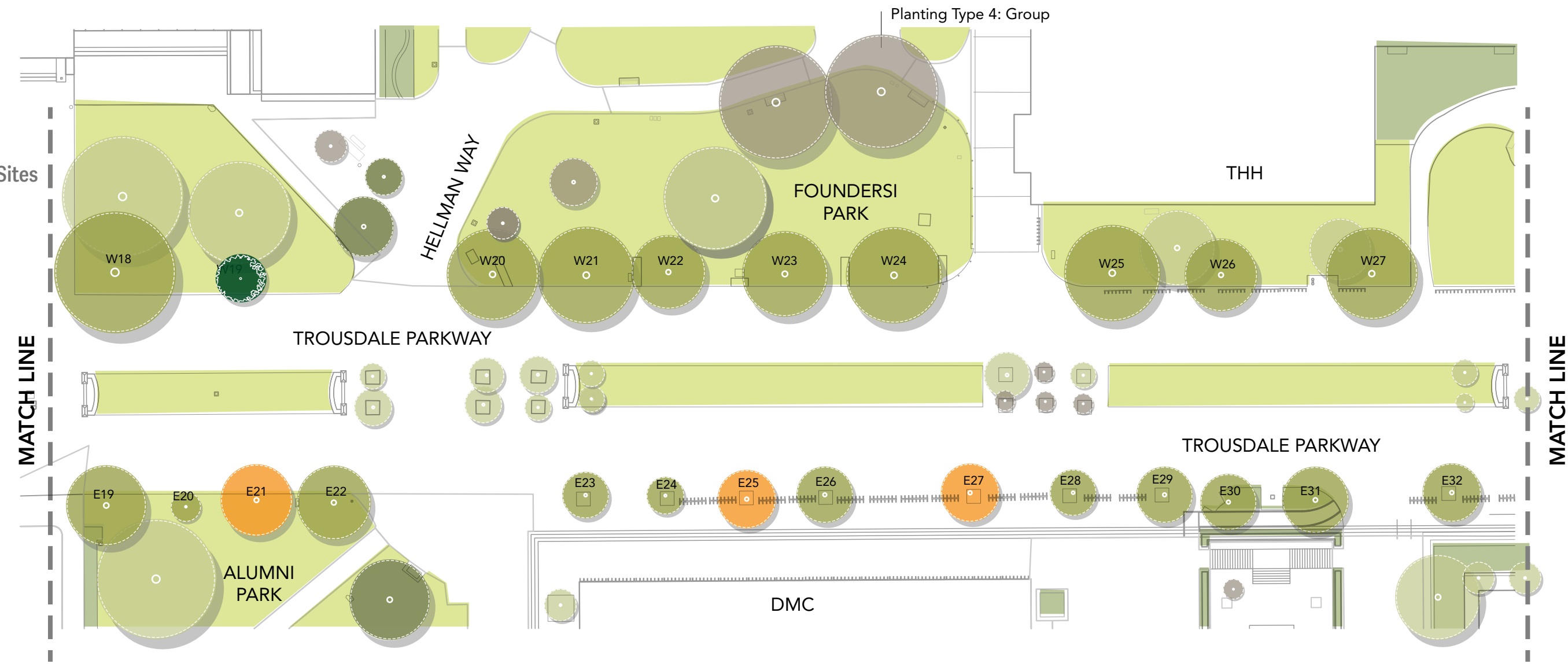
-  Magnolia grandiflora In Good Shape for Year 5
-  Magnolia grandiflora To Be Reviewed at Year 5 For Removal
-  Existing Site Trees In Good Health Condition
-  Existing Site Trees In Fair Health Condition

NOTE:.

5 Year Quercus virginiana: 17.5' for 24" Box Based on 2.5' growth per year


5 Year Quercus agrifolia: 5' for 24" Box Based on 2' growth per year

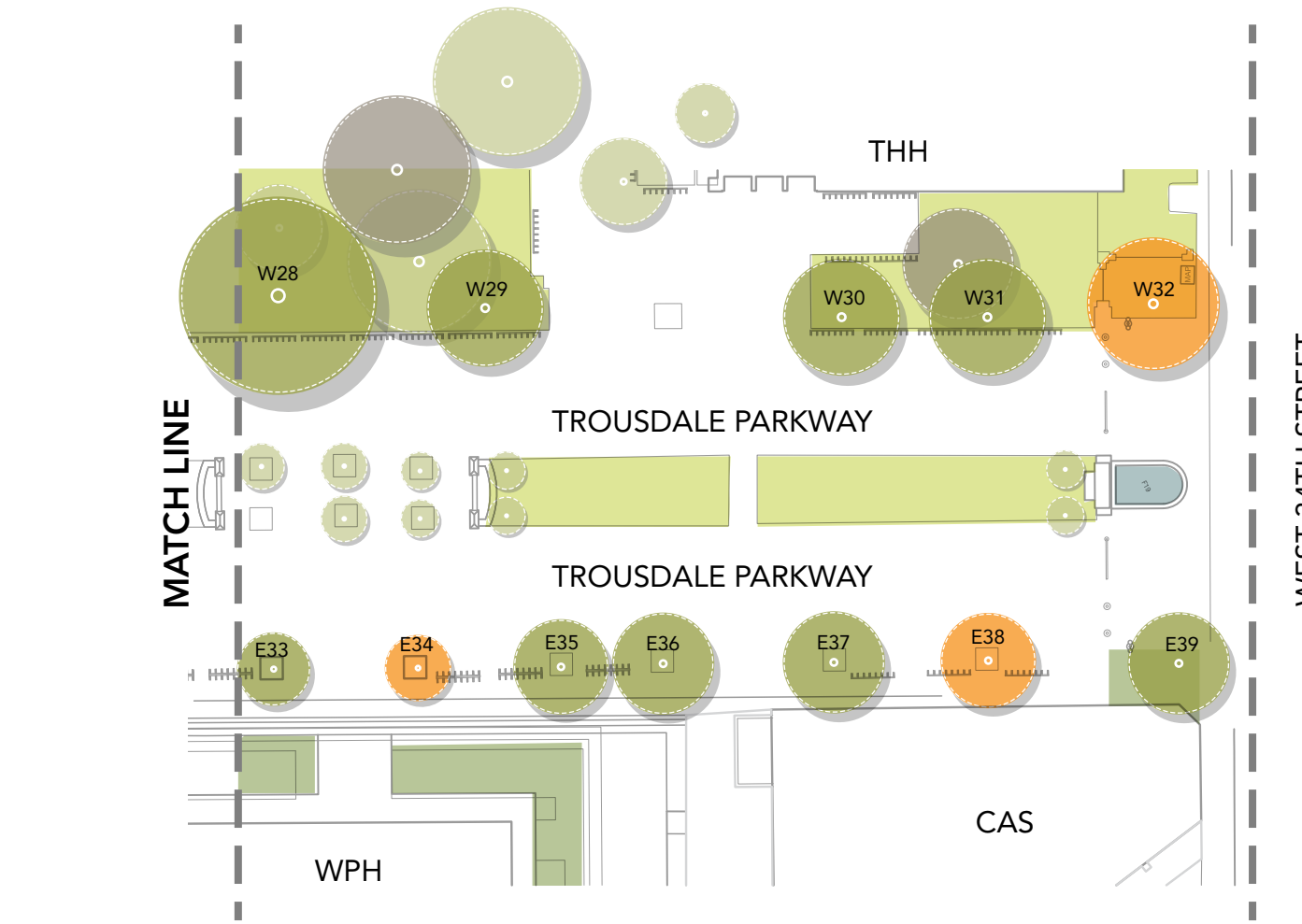




MAGNOLIA RENEWAL PLAN: YEAR 5

LEGEND

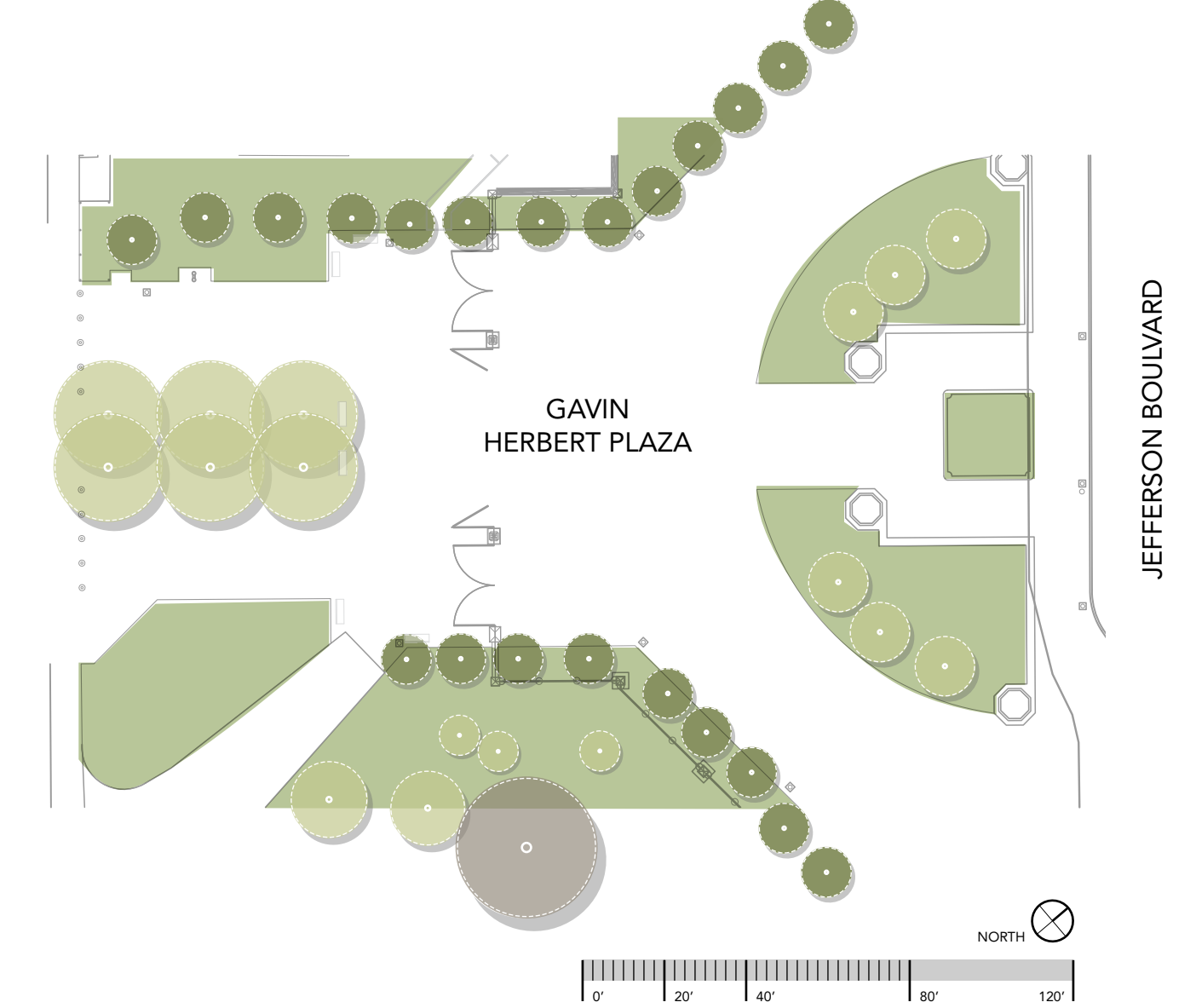
-  Magnolia grandiflora In Good Shape for Year 5
-  Magnolia grandiflora To Be Reviewed at Year 5 For Removal
-  Existing Site Trees In Good Health Condition
-  Existing Site Trees In Fair Health Condition



MAGNOLIA RENEWAL PLAN: YEAR 5

LEGEND

-  Magnolia grandiflora In Good Shape for Year 5
-  Magnolia grandiflora To Be Reviewed at Year 5 For Removal
-  Existing Site Trees In Good Health Condition
-  Existing Site Trees In Fair Health Condition





Future Tree Renewal Plan for W09 and W12 Site



Future Tree Renewal Plan for W19



W09 Magnolia, Replaced with 24" Box Quercus agrifolia, Year 1



W09 Magnolia, Replaced with 24" Box Quercus agrifolia, Year 5



W19 Magnolia, Replaced with 24" Box Quercus agrifolia, Year 1



W19 Magnolia, Replaced with 24" Box Quercus agrifolia, Year 5

Opportunity Site 3: FOUNDERS PARK

Several mature trees within Founders Park, including *Grevillea robusta* and *Sequoia sempervirens*, are nearing the end of their life cycles and have experienced long-term decline in health and structural condition. These trees have been identified as unsafe, with associated risks and maintenance liabilities that now outweigh their remaining benefits. As part of USC's commitment to proactive urban forest management, these declining trees are recommended for phased removal and replacement to ensure campus safety while sustaining canopy cover and landscape quality.

In Founders Park, select areas near buildings and outside of primary event spaces present opportunities to transition from isolated tree plantings to more resilient vegetation

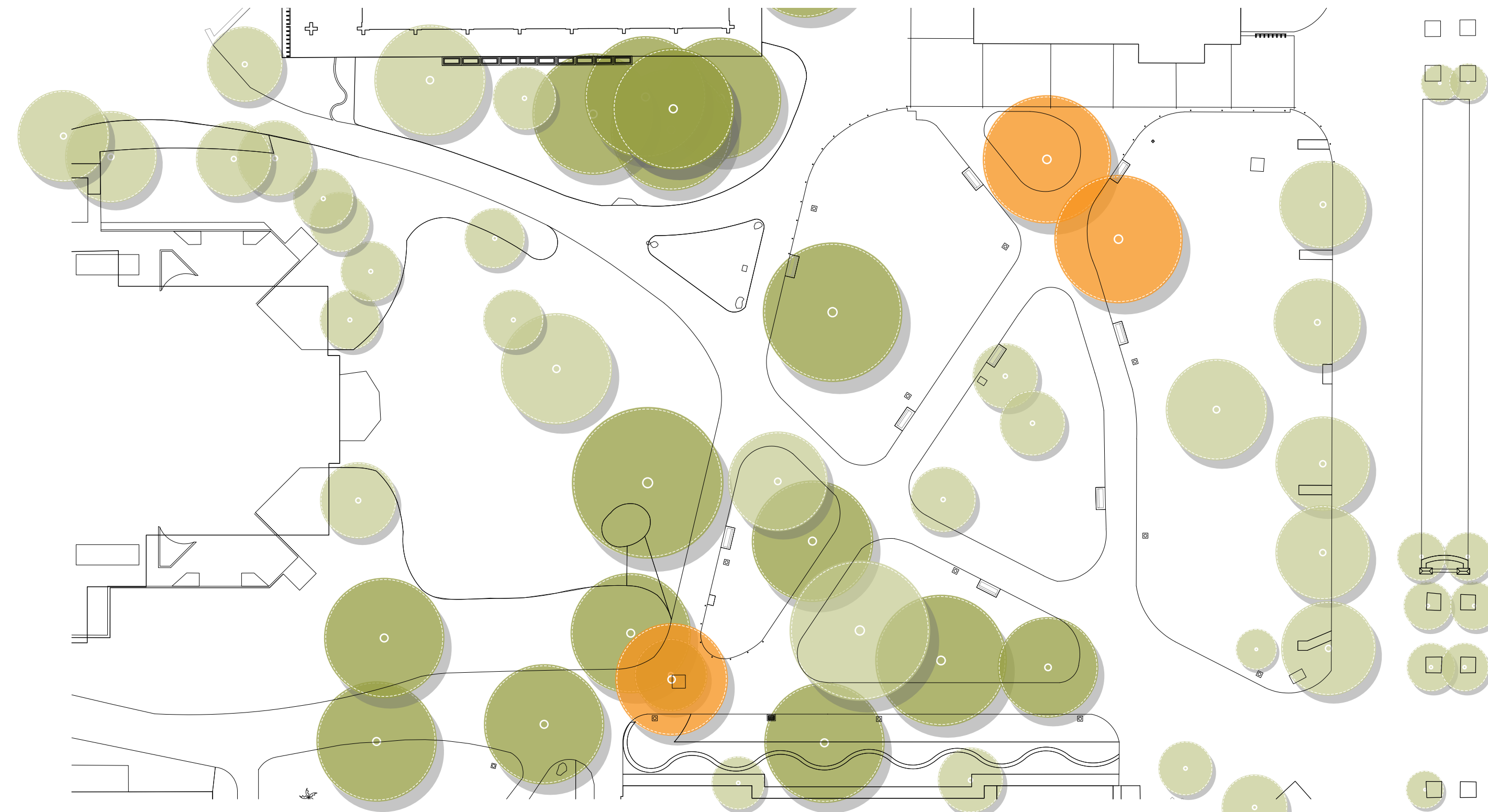
communities. Future tree succession within Founders Park will be guided by principles that mimic natural systems and enhance ecological function. These include establishing diverse, layered planting structures that integrate trees, shrubs, and groundcovers; allowing leaf litter to build soil fertility; and creating shaded, cooling microclimates that support healthy understory growth. Priority will be given to native and climate-adapted plant species that support local pollinators and wildlife, increase campus biodiversity, and reduce long-term water demand.



Founders Park

While turf areas will be retained in Founders Park, the rendering illustrates how select future opportunity areas—particularly those not programmed for outdoor events—could be transitioned over time to landscape treatments that mimic natural vegetation communities.

Design strategies such as mass planting of species, vertical layering of vegetation, and the incorporation of natural stormwater features—such as swales and berms, will maximize on-site rainfall capture, improve infiltration, and create moisture zones that support plant health and habitat value. This active landscape succession approach intentionally manages change over time, replacing declining tree species and associated understory with plant communities better suited to future climate conditions, while preserving the character, functionality, and ecological performance of Founders Park.



EXISTING GREVILLEA PLAN

LEGEND

- 

Grevillea
In Good Health
- 

Grevillea
In Fair or Poor Health
- 

Existing Site Trees

Opportunity Site 4: HSC MARKETPLACE CAFE

The Sycamore trees near the USC HSC Campus Market Café are showing severe signs of stress and decline. These trees have likely been impacted by severe soil compaction, which hampers root development and limits oxygen and water flow necessary for health. While sycamores are known for their adaptability to various soils, including compacted ones, their long-term stability is compromised when their roots are confined as the condition in the Market Café. The following pages show proposed sycamore renewal plan for species adapted to the constrained soil and space conditions found at the Market Cafe.



04



Opportunity Sites



EXISTING SYCAMORE PLAN

5 TO BE REMOVED AND REPLACE WITHIN 5 YEARS

LEGEND



-  *Platanus racemosa*
To Be Reviewed at Year 5 For Removal
-  Existing Site Trees
In Good Health Condition



SYCAMORE RENEWAL PLAN

REPLACE 5 SYCAMORE WITH 6 NEW TREES

LEGEND

-  Red Oak, *Quercus rubra*
oR , Sweetshade, *Hymenoporum flavum*
oR , Crape Myrtle (red flowers), *Lagerstroemia indica*
oR , Chinese Pistache, *Pistacia chinensis*
36" Box x6
-  Existing Site Trees
In Good Health Condition



Year 1 Replacement View



Mature Time View



Fall View

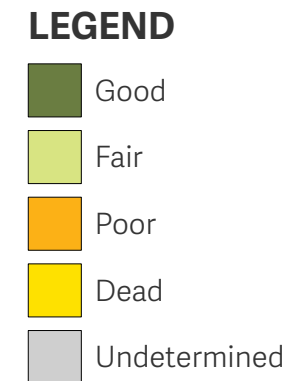


Winter View

05

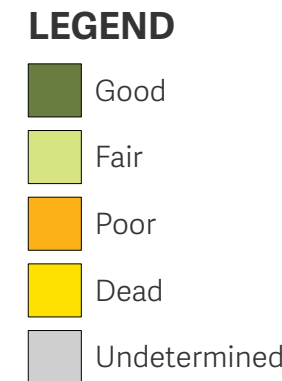
Appendix





p.1	p.2	p.3			
p.4	p.5	p.6	p.7		
p.8	p.9	p.10	p.11	p.12	p.13
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LOCATION MAP



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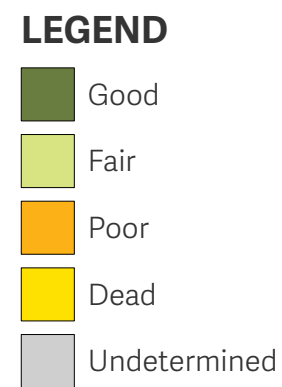
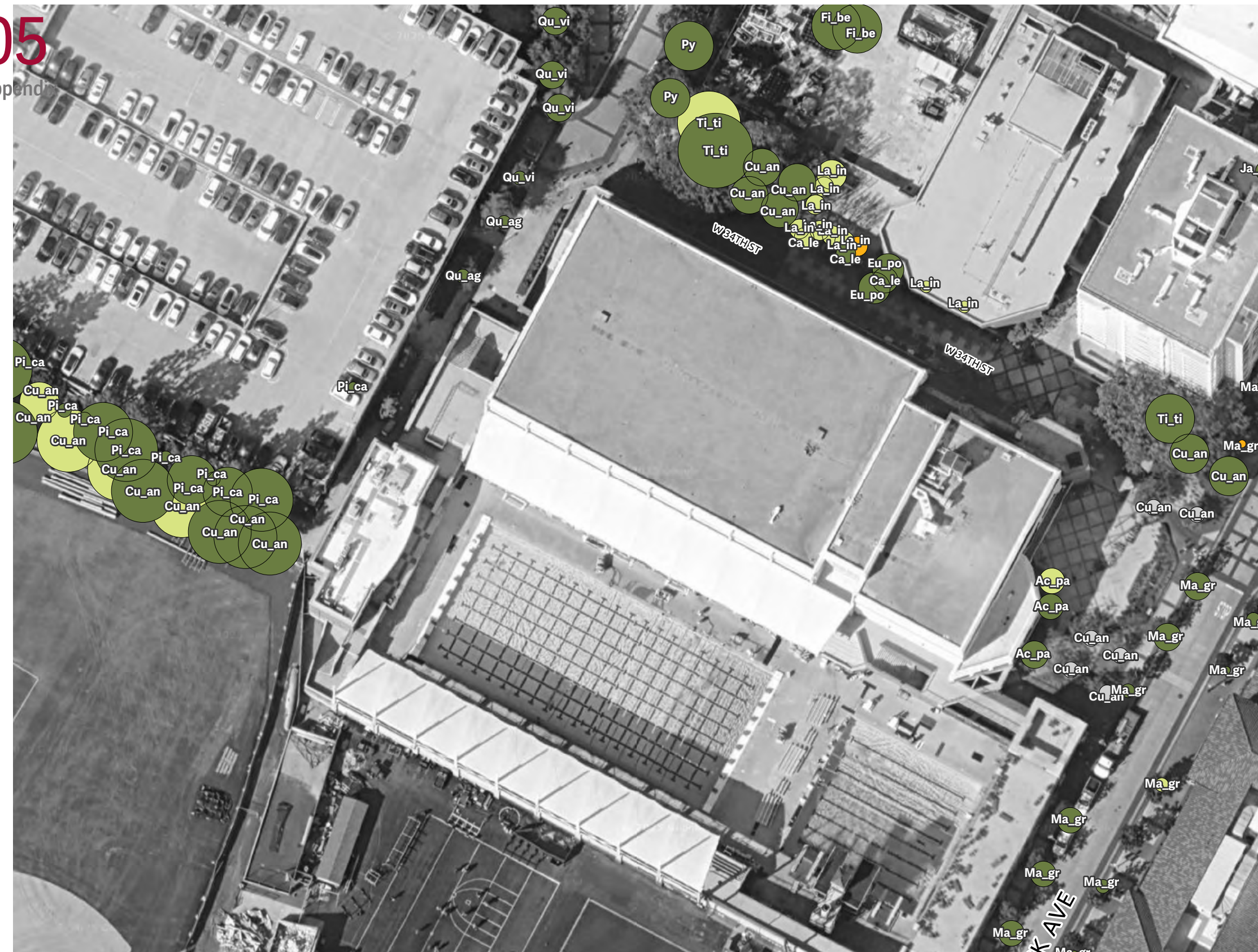
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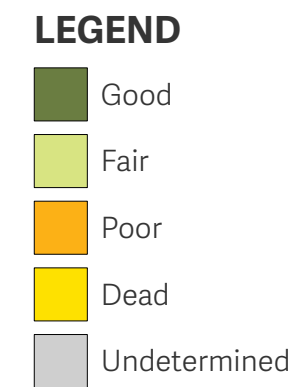
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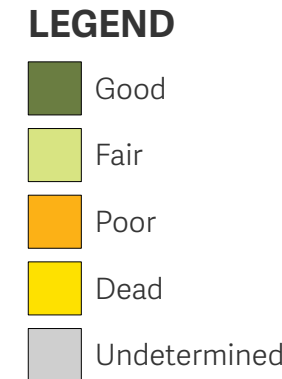
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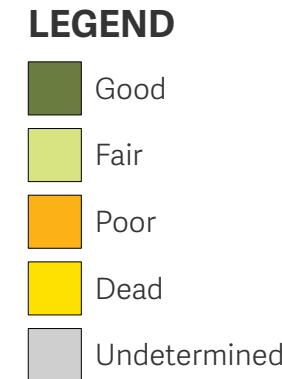
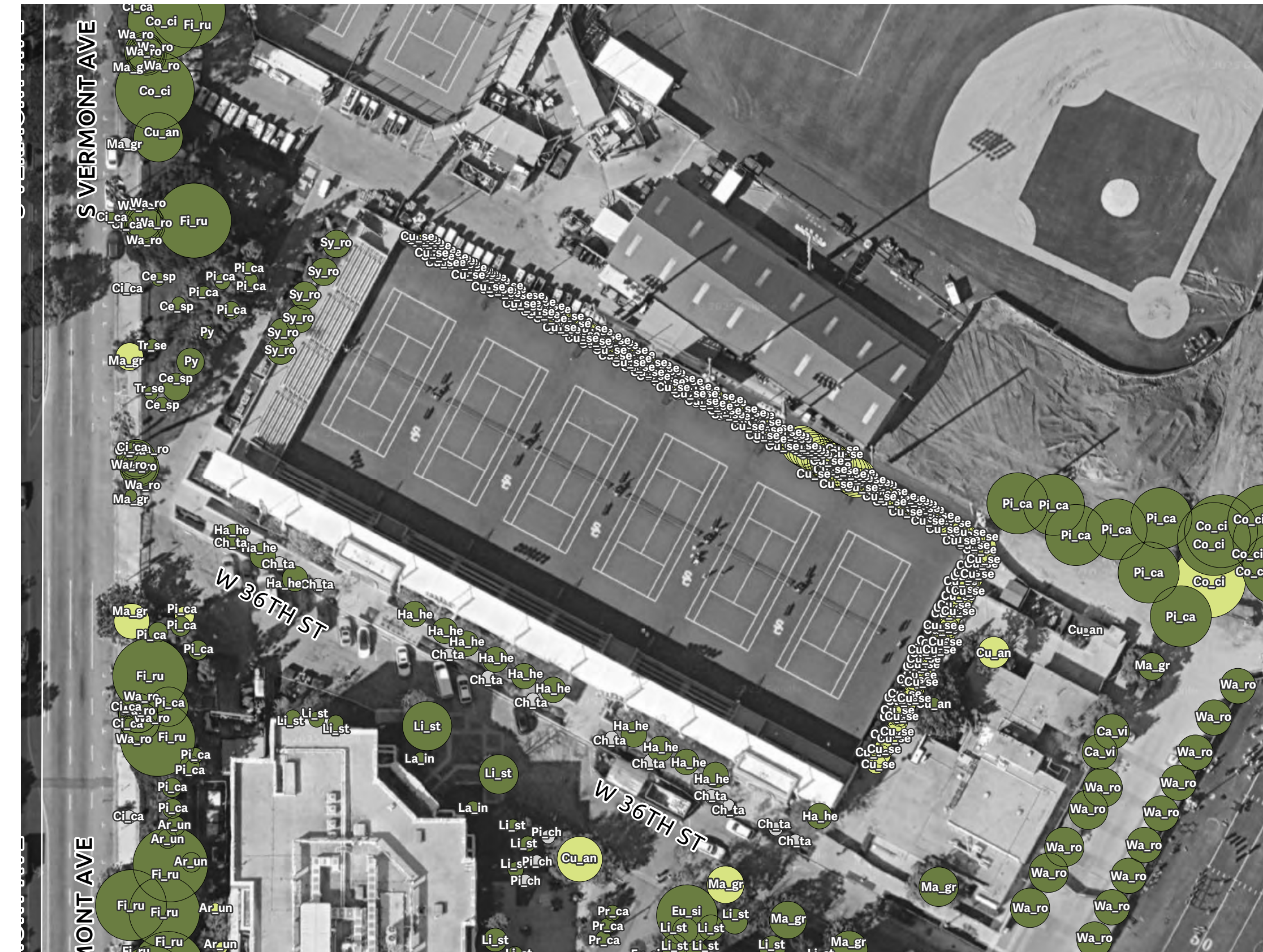
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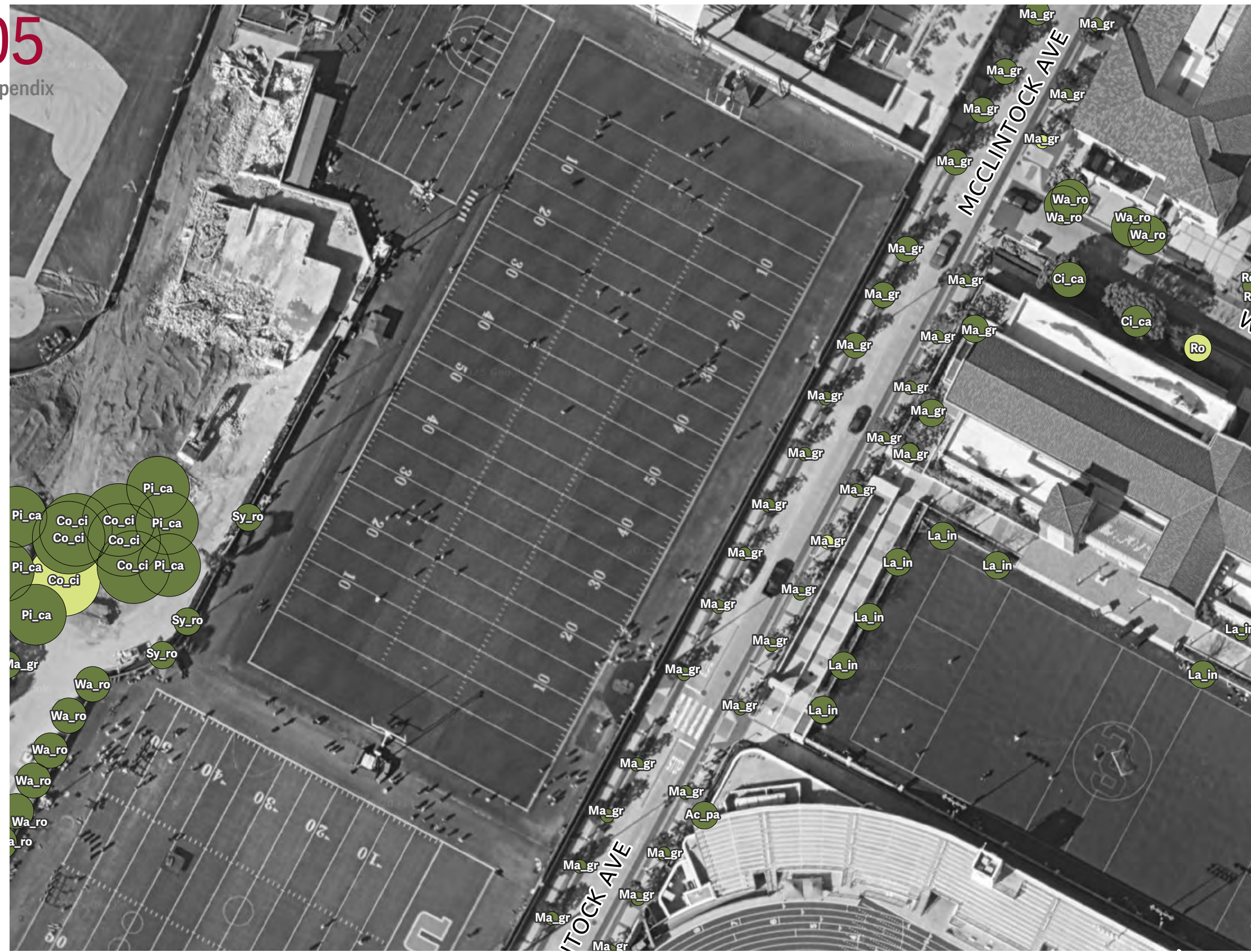
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LOCATION MAP





LEGEND

- Good
- Fair
- Poor
- Dead
- Undetermined

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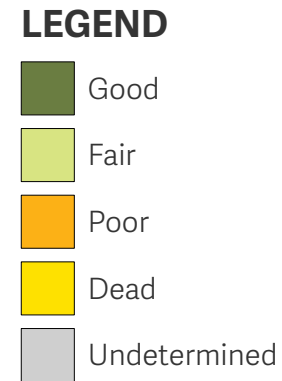
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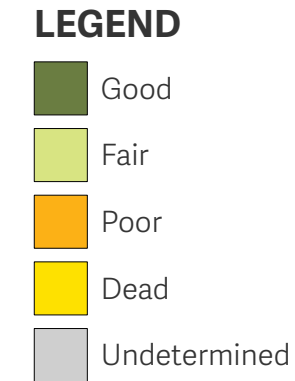
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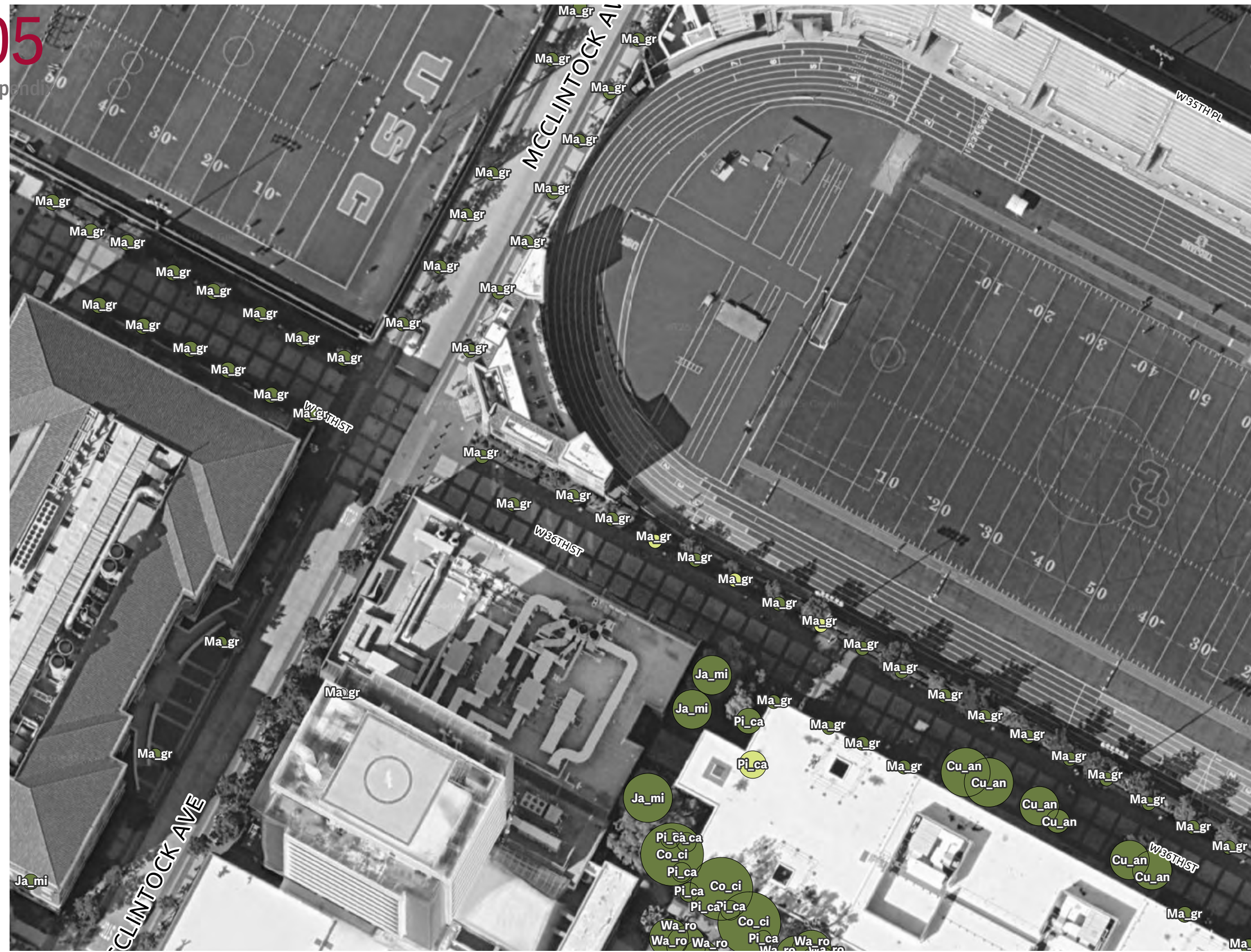
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- Undetermined

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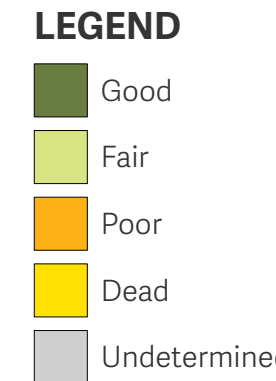
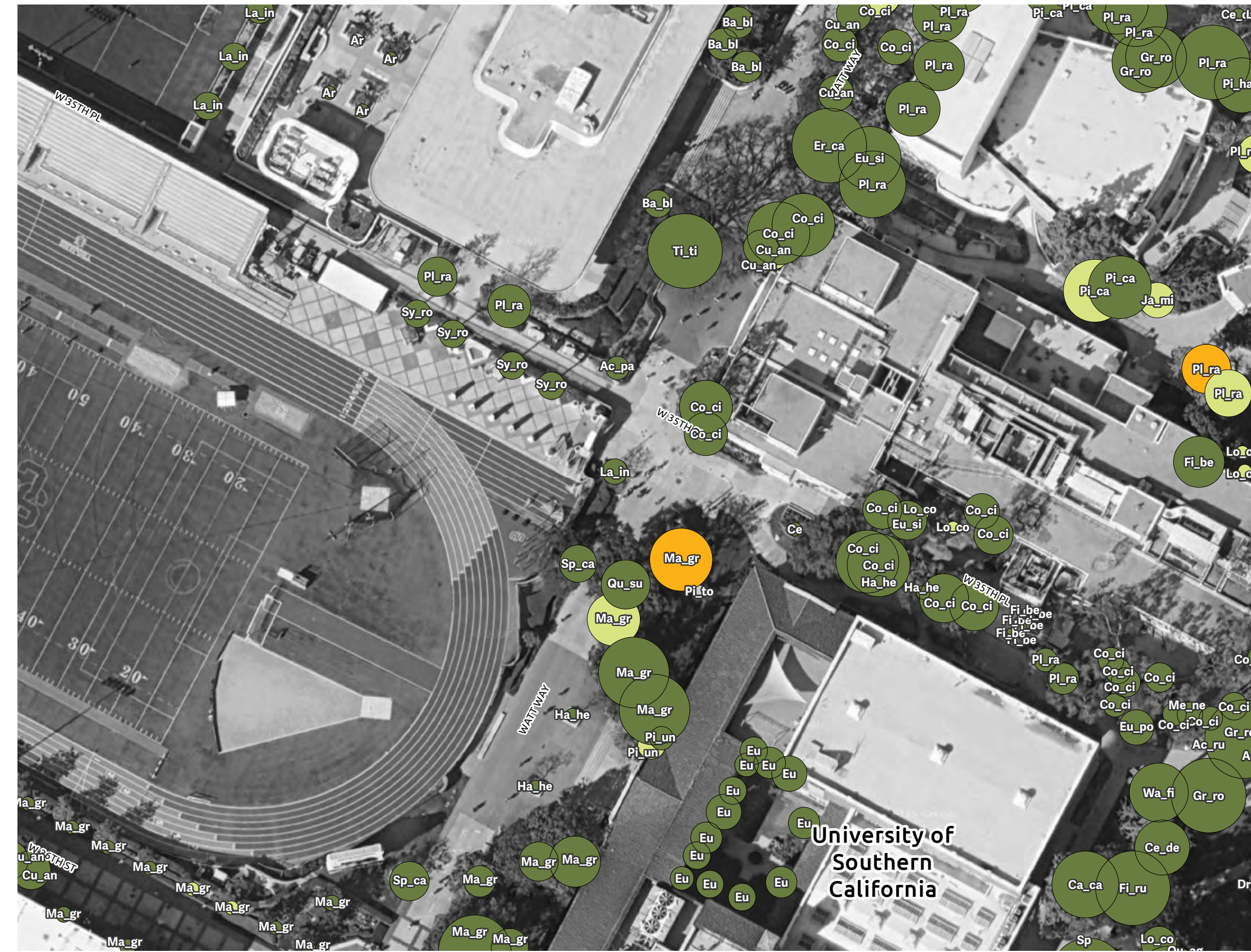
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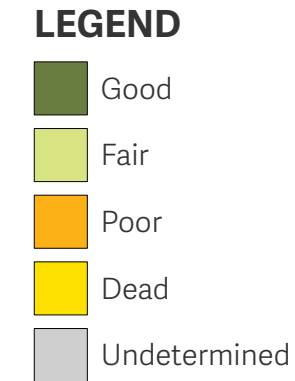
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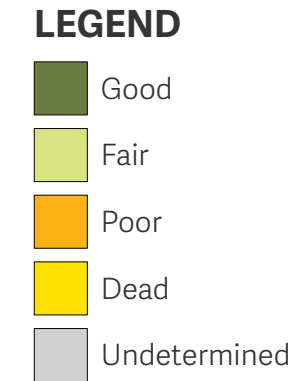
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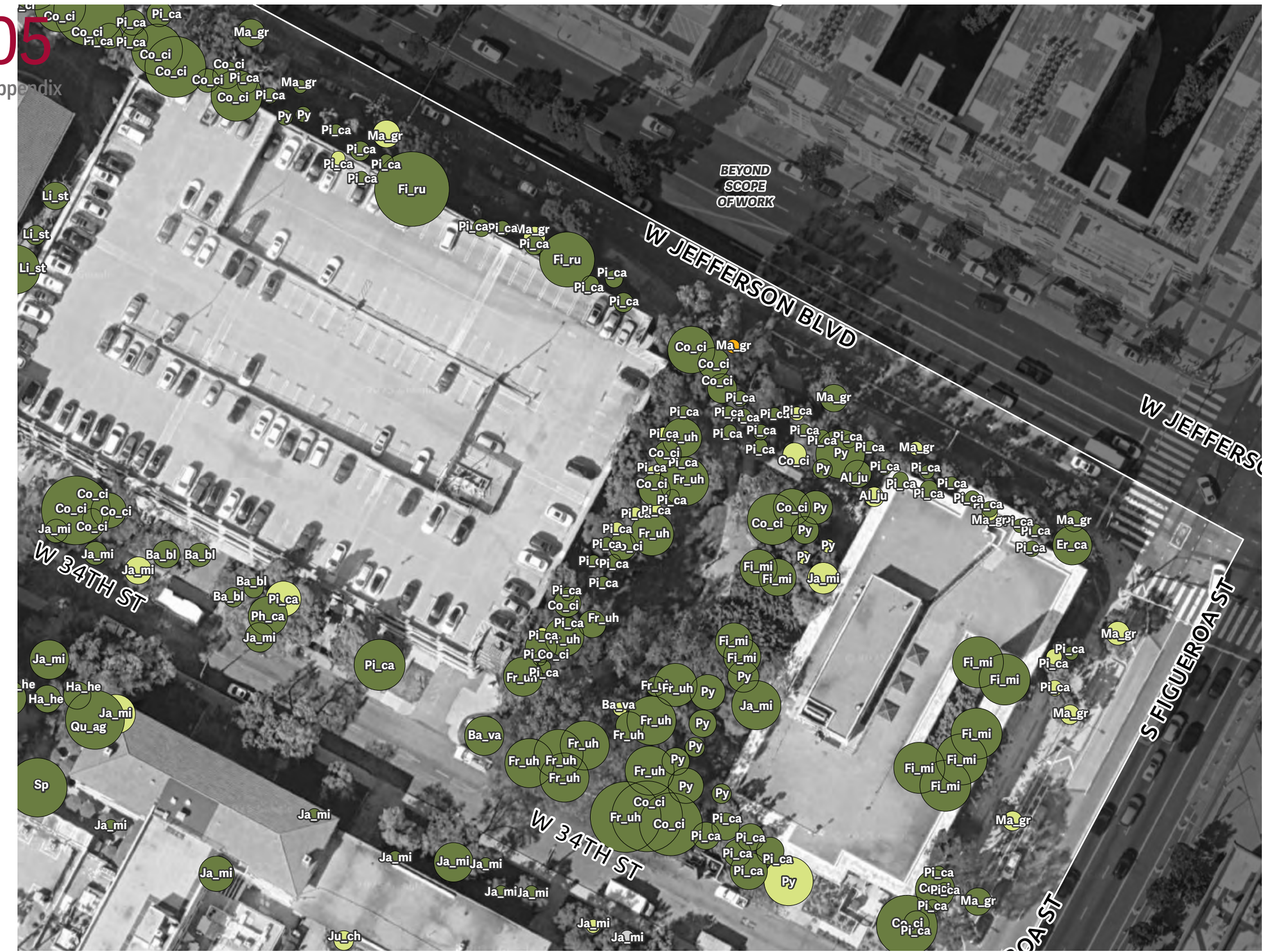
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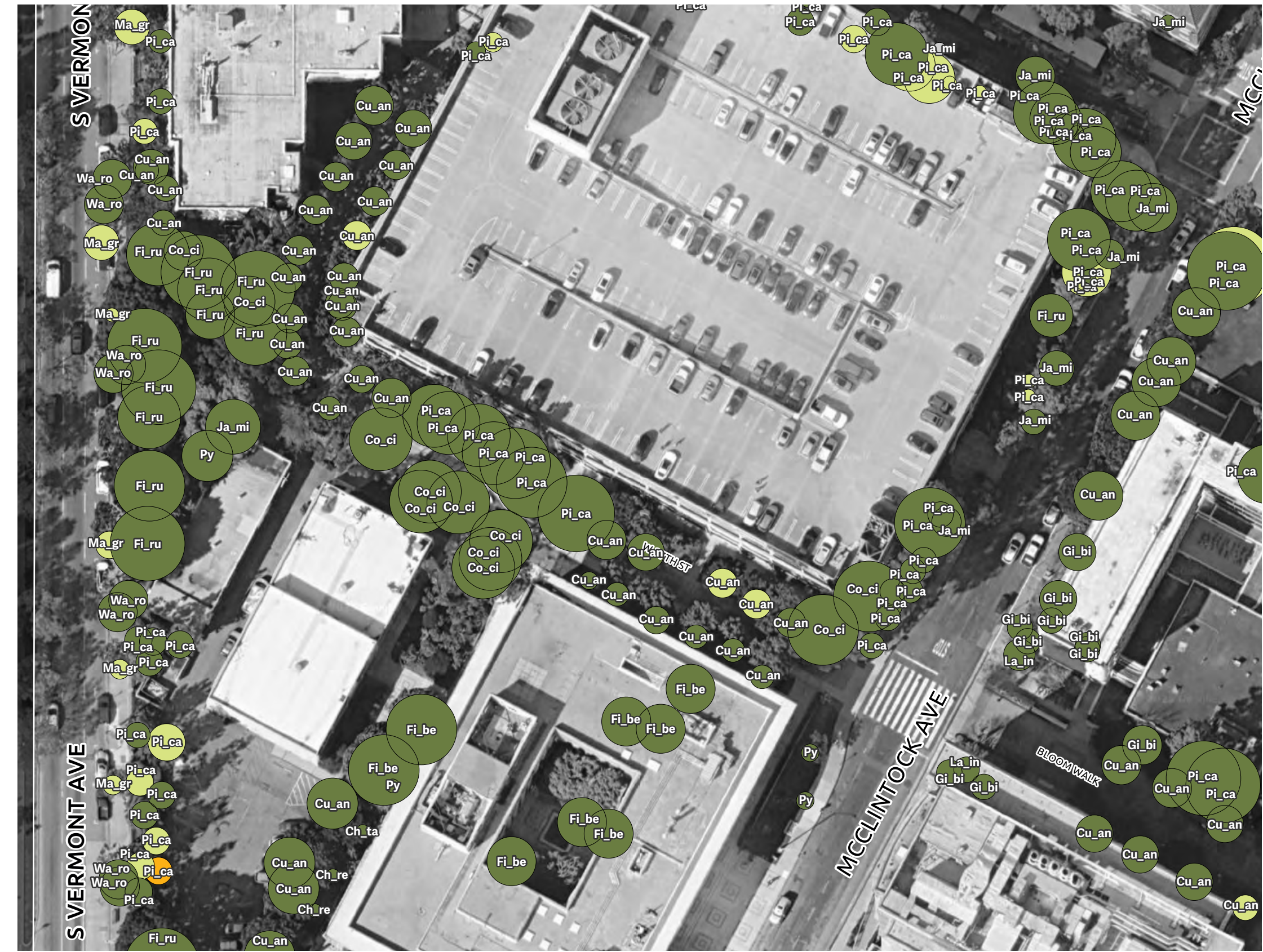
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- Poor
- Dead
- Undetermined

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LOCATION MAP



0 40 80 120 Feet



LEGEND

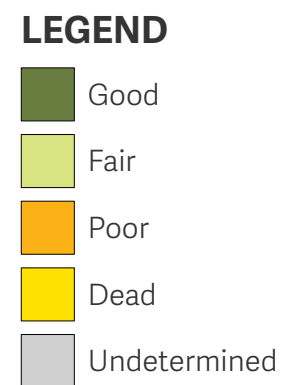
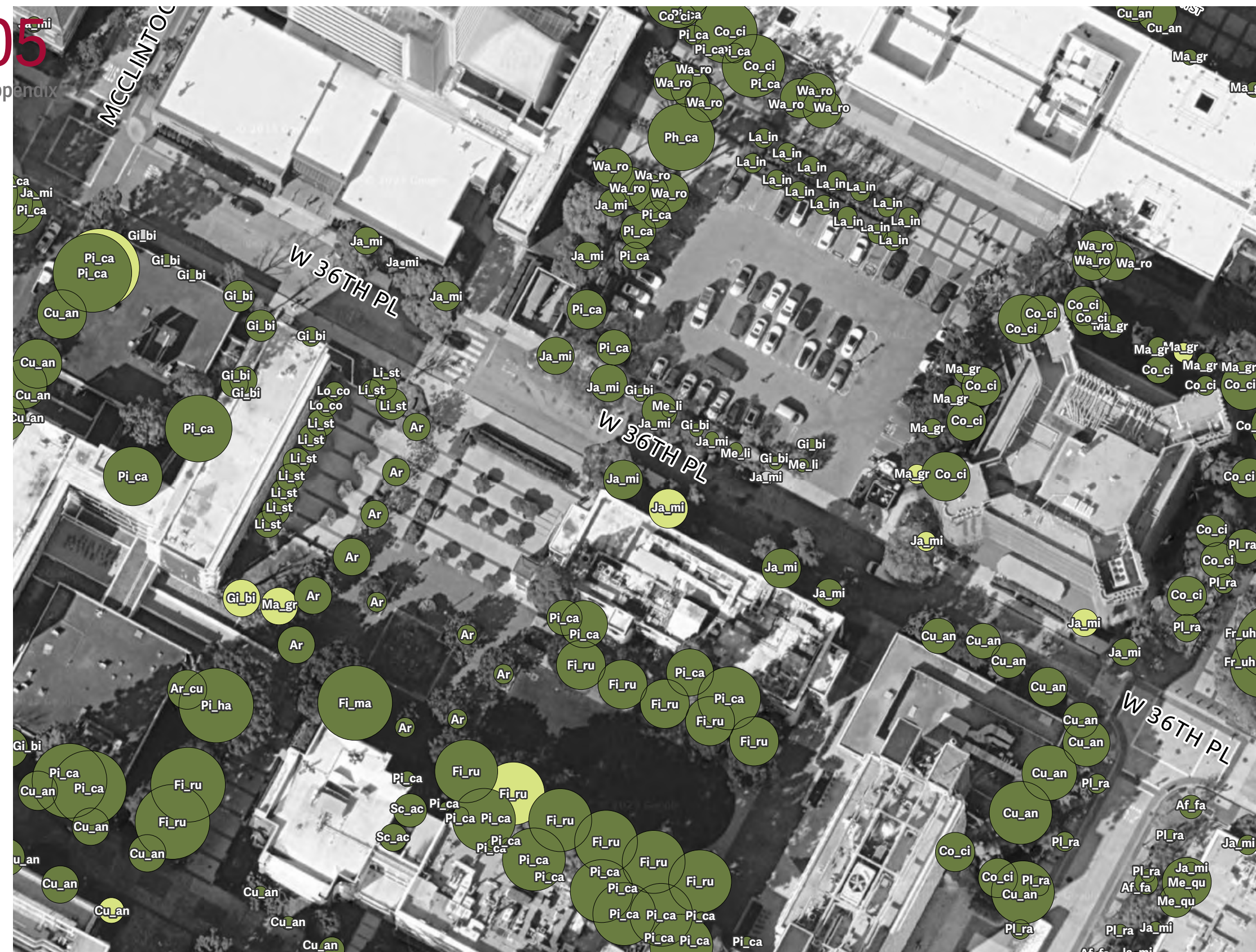
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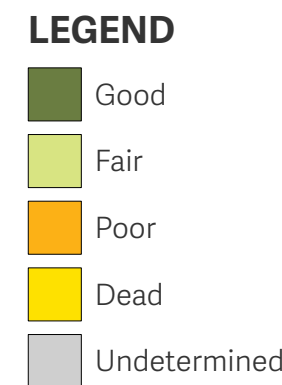


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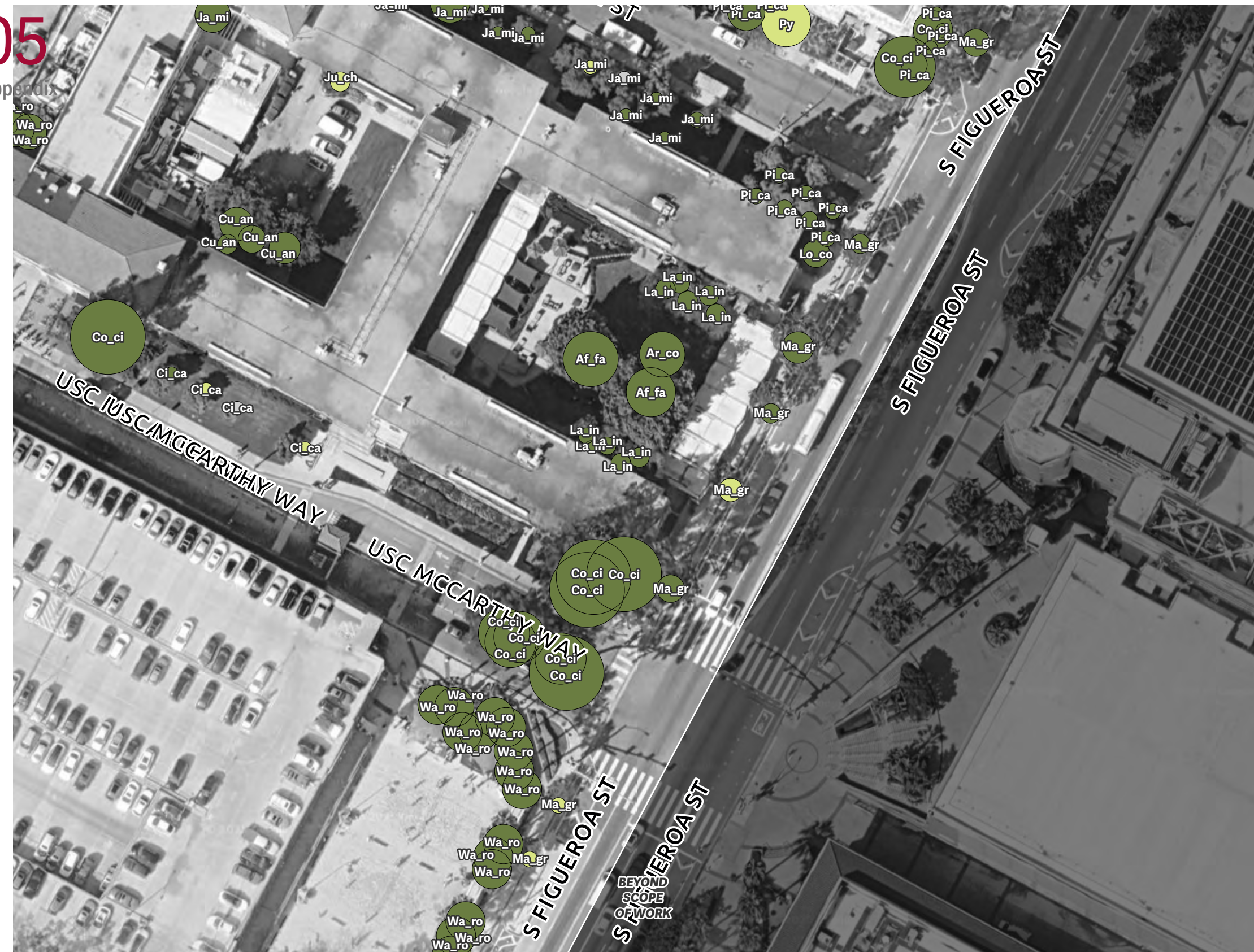
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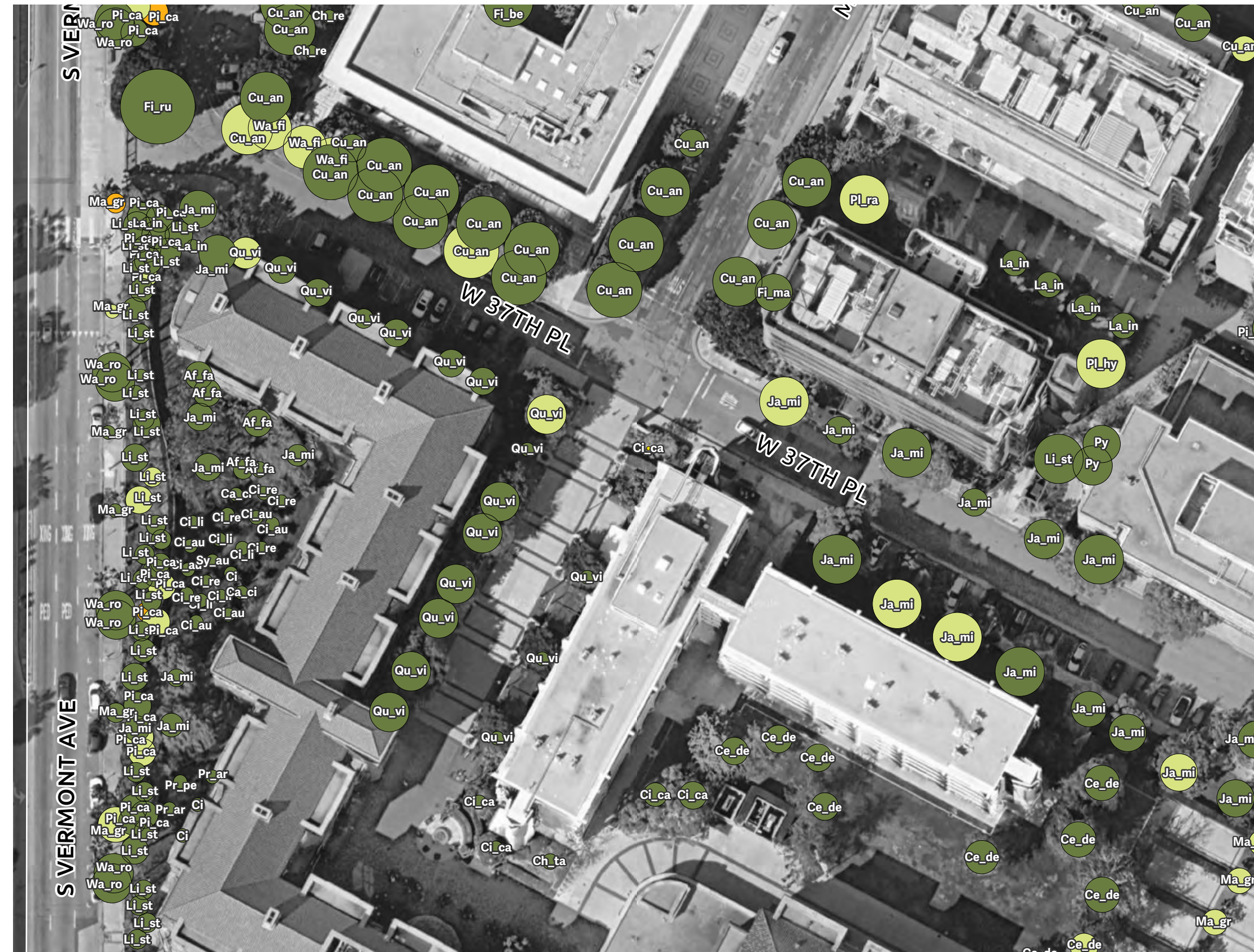


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LOCATION MAP



0 40 80 120 Feet



LEGEND

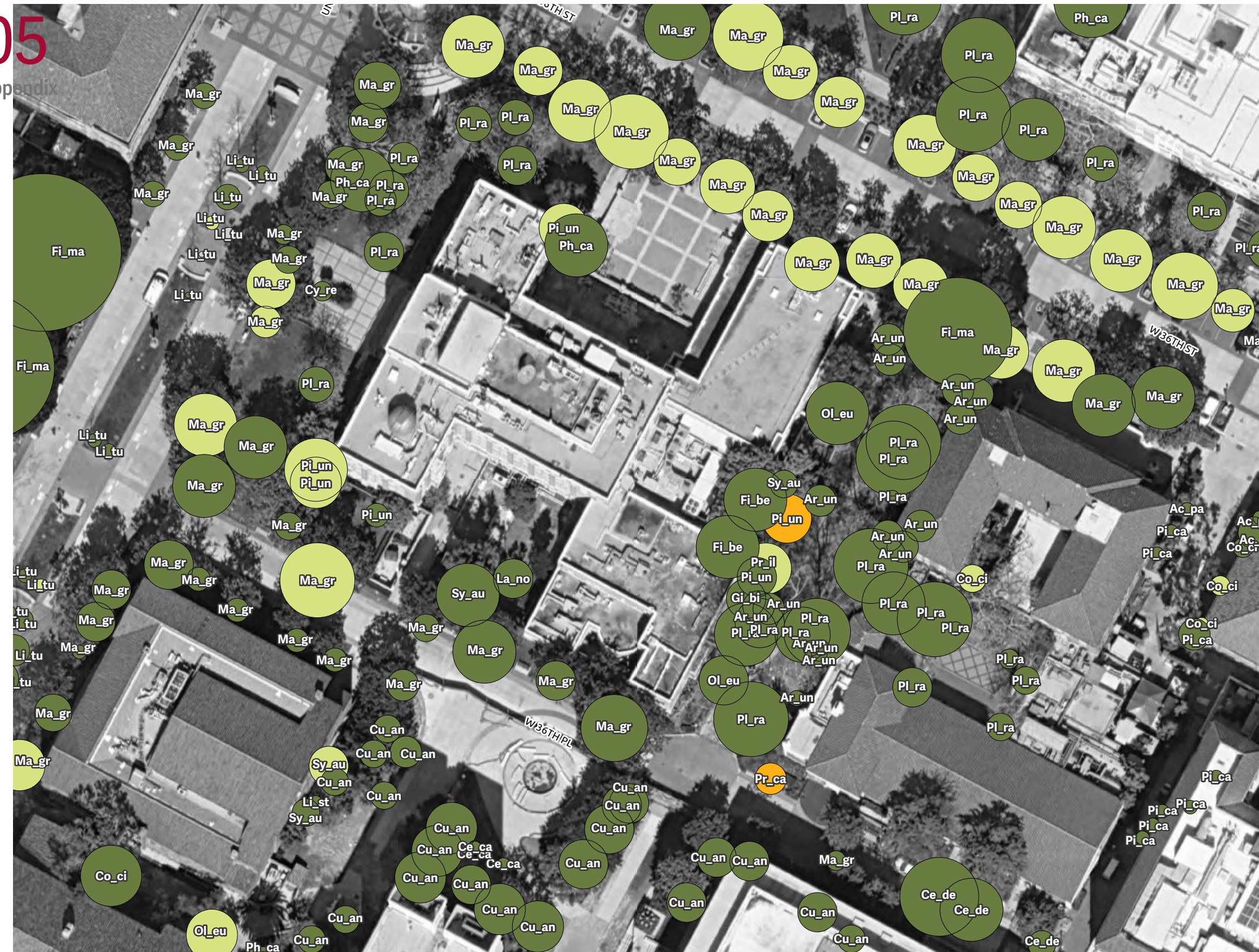
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- Dead
- Undetermined

p.1	p.2	p.3			
p.4	p.5	p.6	p.7		
p.8	p.9	p.10	p.11	p.12	p.13
p.14	p.15	p.16	p.17	p.18	p.19
p.20	p.21	p.22	p.23	p.24	p.25
p.26	p.27	p.28	p.29	p.30	p.31
p.32	p.33	p.34	p.35	p.36	

LOCATION MAP



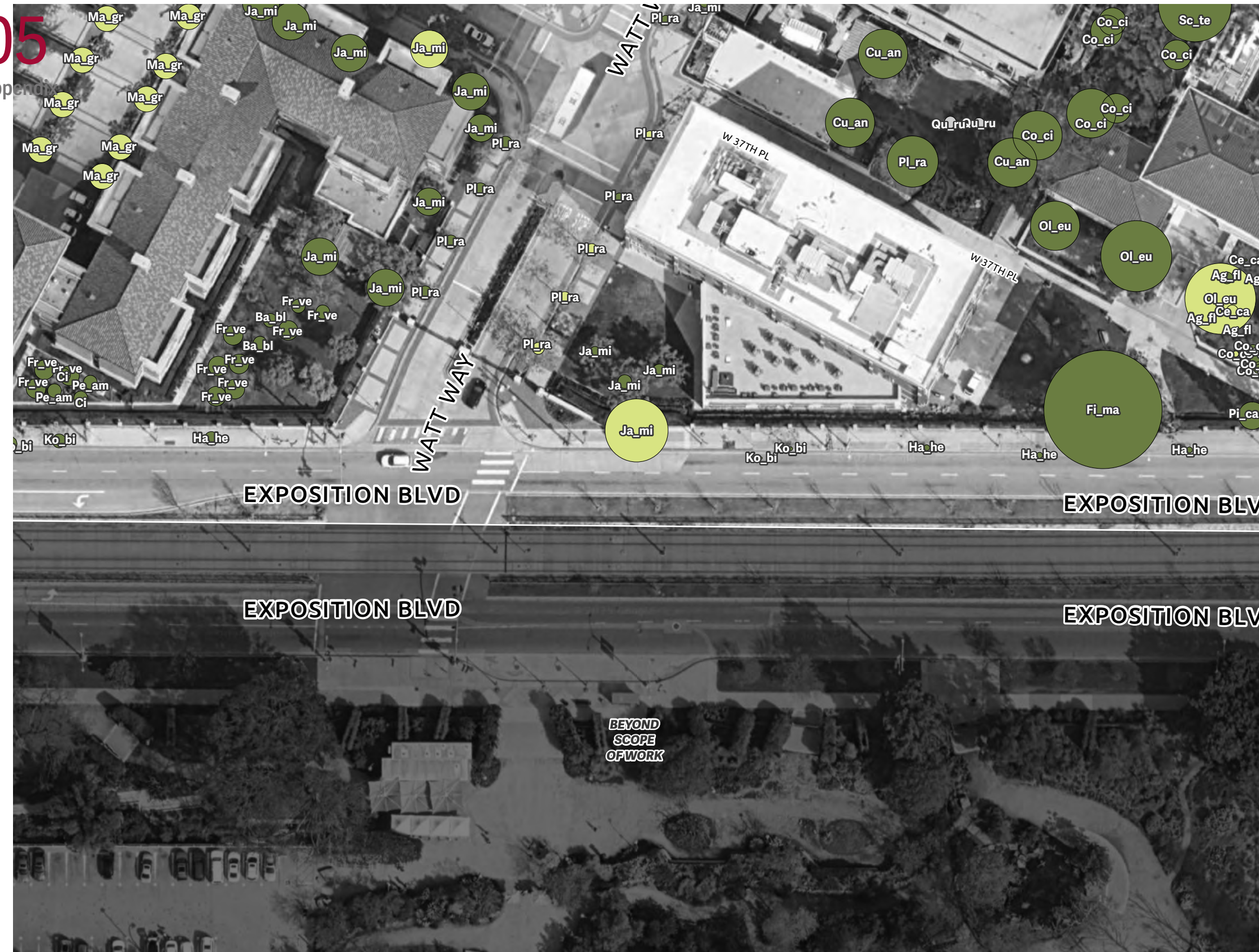
LEGEND

- Good
- Fair
- Poor
- Dead
- Undetermined

p.1	p.2	p.3			
p.4	p.5	p.6	p.7		
p.8	p.9	p.10	p.11	p.12	p.13
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p.26	p.27	p.28	p.29	p.30	p.31
p.32	p.33	p.34	p.35	p.36	

LOCATION MAP





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p.32	p.33	p.34	p.35	p.36	

LOCATION MAP



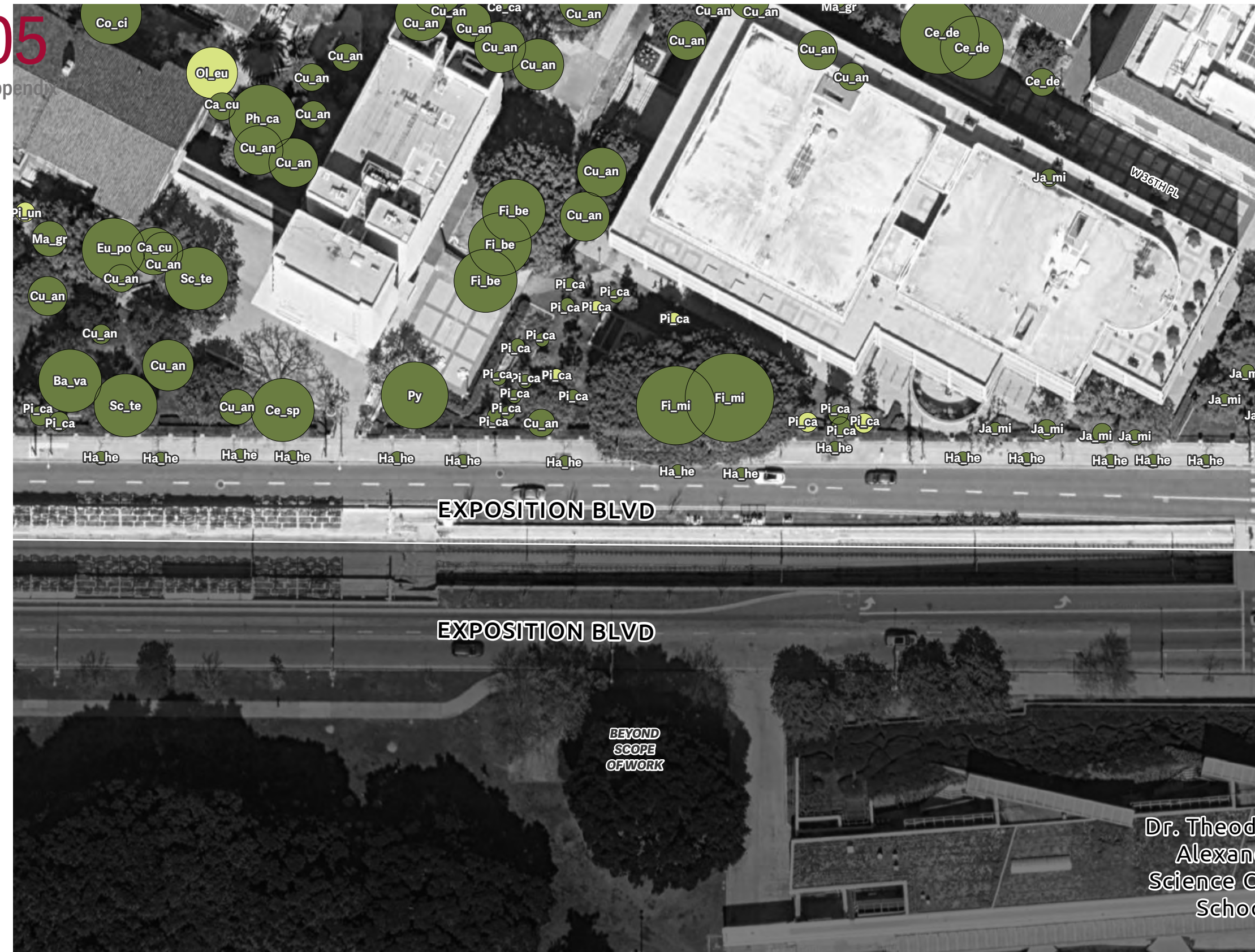
LEGEND

- Good
- Fair
- Poor
- Dead
- Undetermined

p.1	p.2	p.3			
p.4	p.5	p.6	p.7		
p.8	p.9	p.10	p.11	p.12	p.13
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LOCATION MAP





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LOCATION MAP



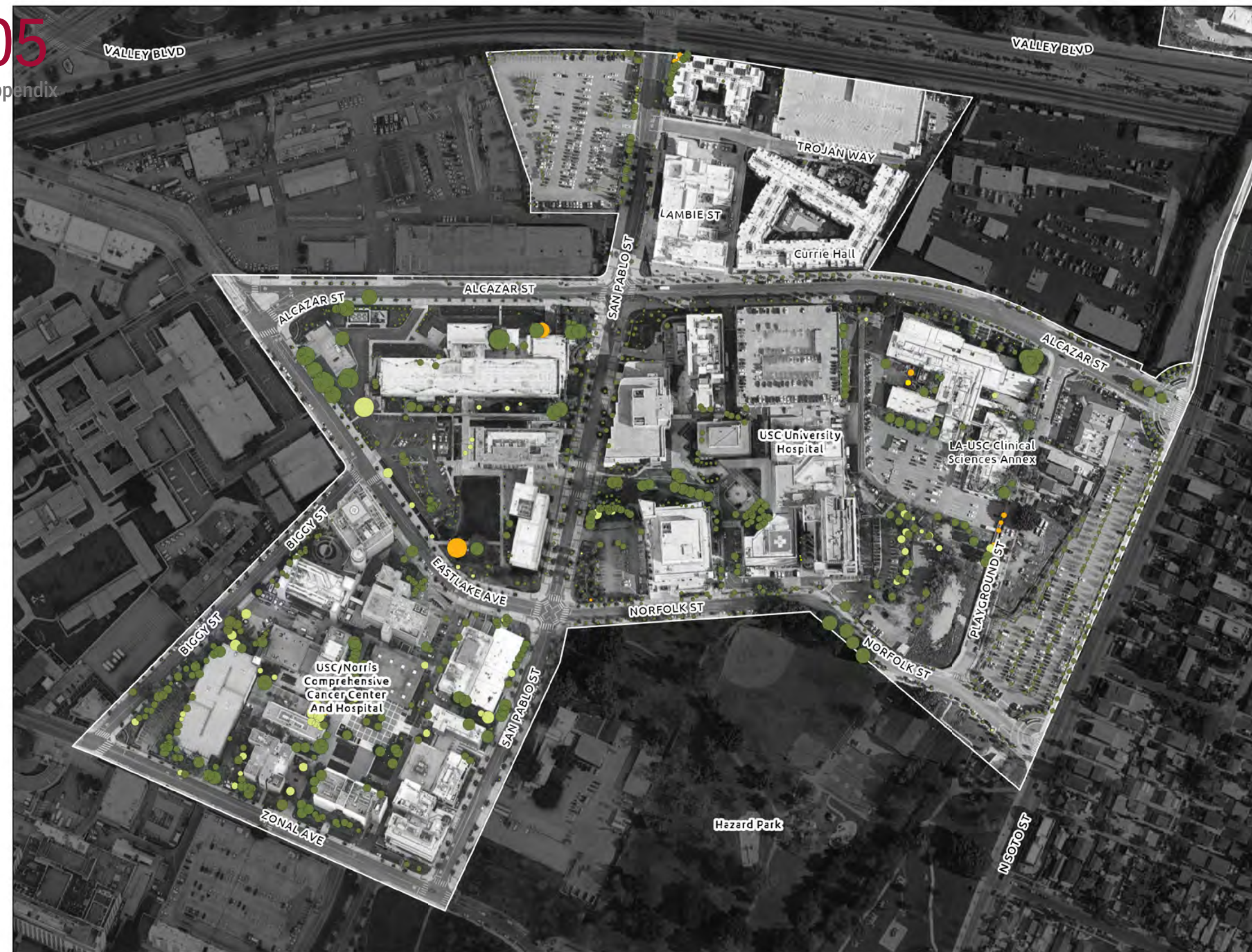
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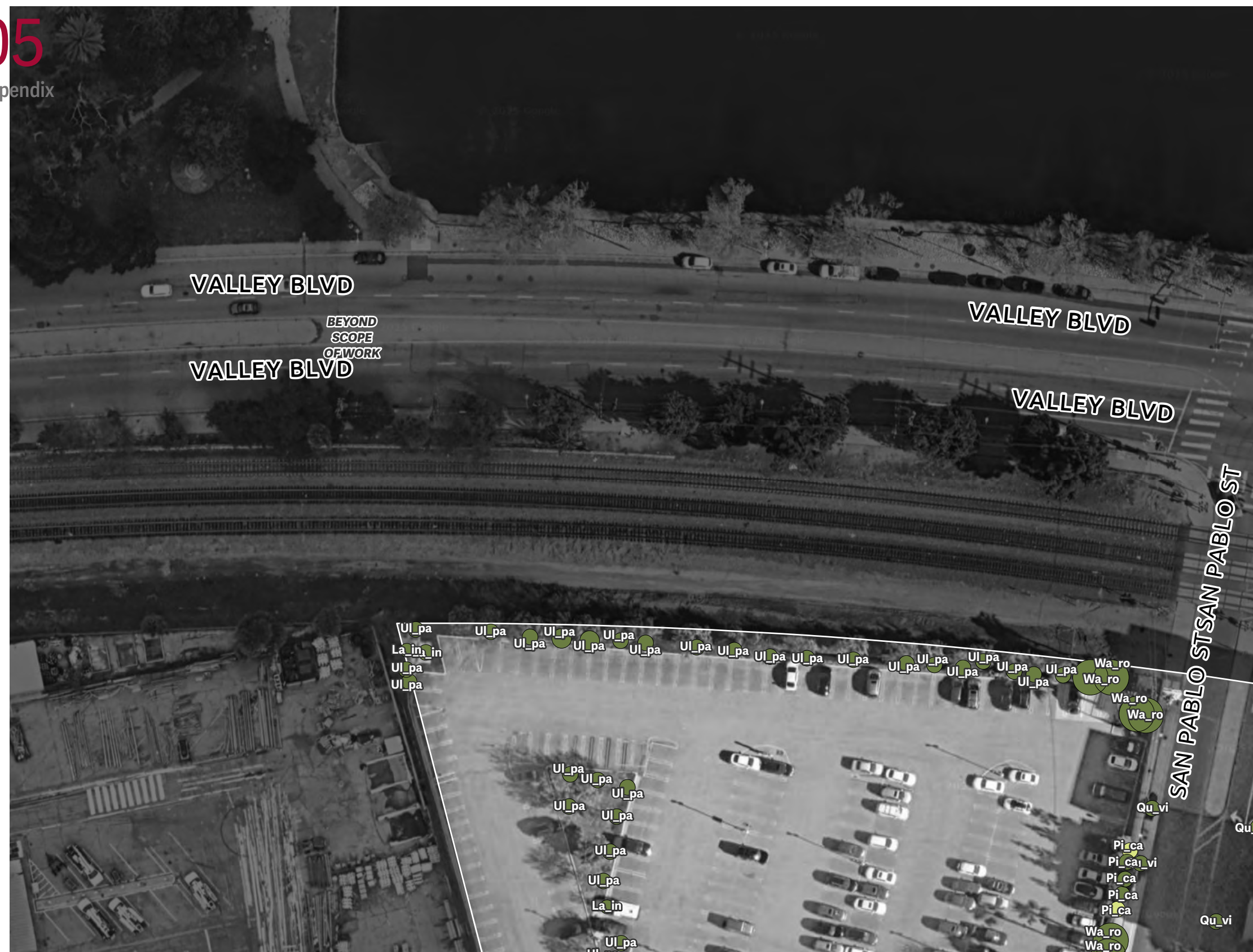
- Good
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p.4	p.5	p.6	p.7		
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LOCATION MAP





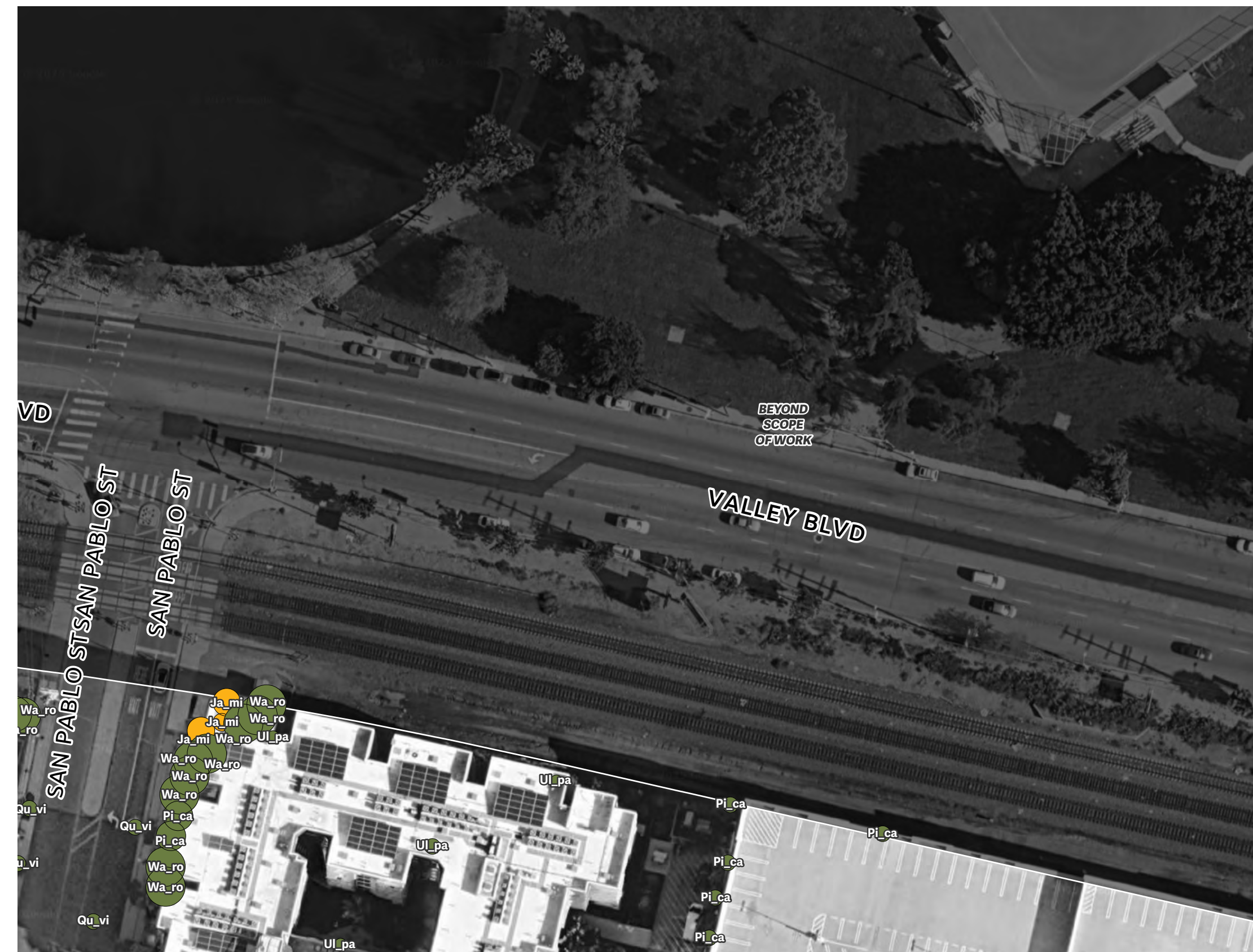


LEGEND

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LOCATION MAP

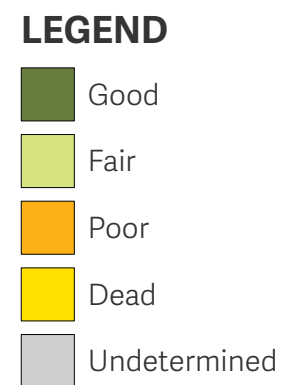


LEGEND

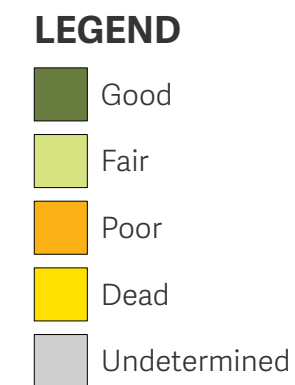
- Good
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LOCATION MAP



LOCATION MAP



LOCATION MAP





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LOCATION MAP



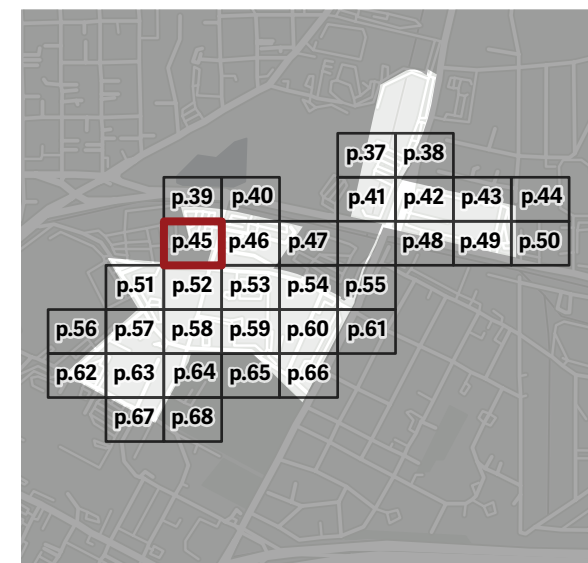
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LOCATION MAP



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LOCATION MAP



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LOCATION MAP





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LOCATION MAP

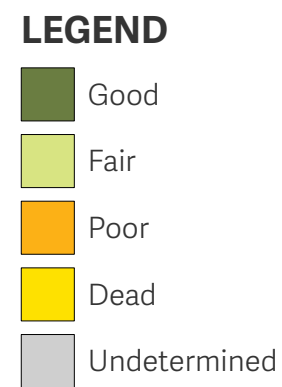


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- Good
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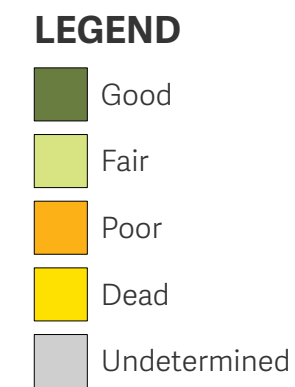


LOCATION MAP



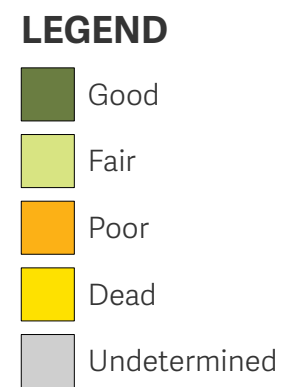


LOCATION MAP

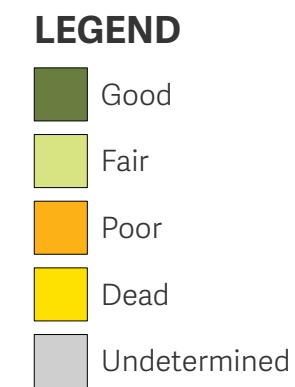


LOCATION MAP





LOCATION MAP

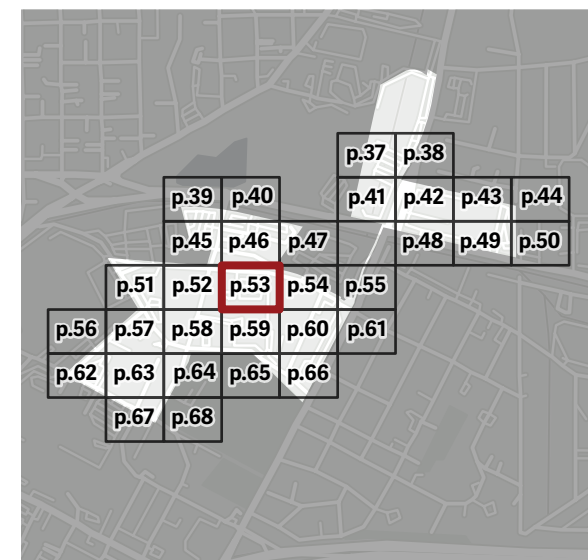


LOCATION MAP

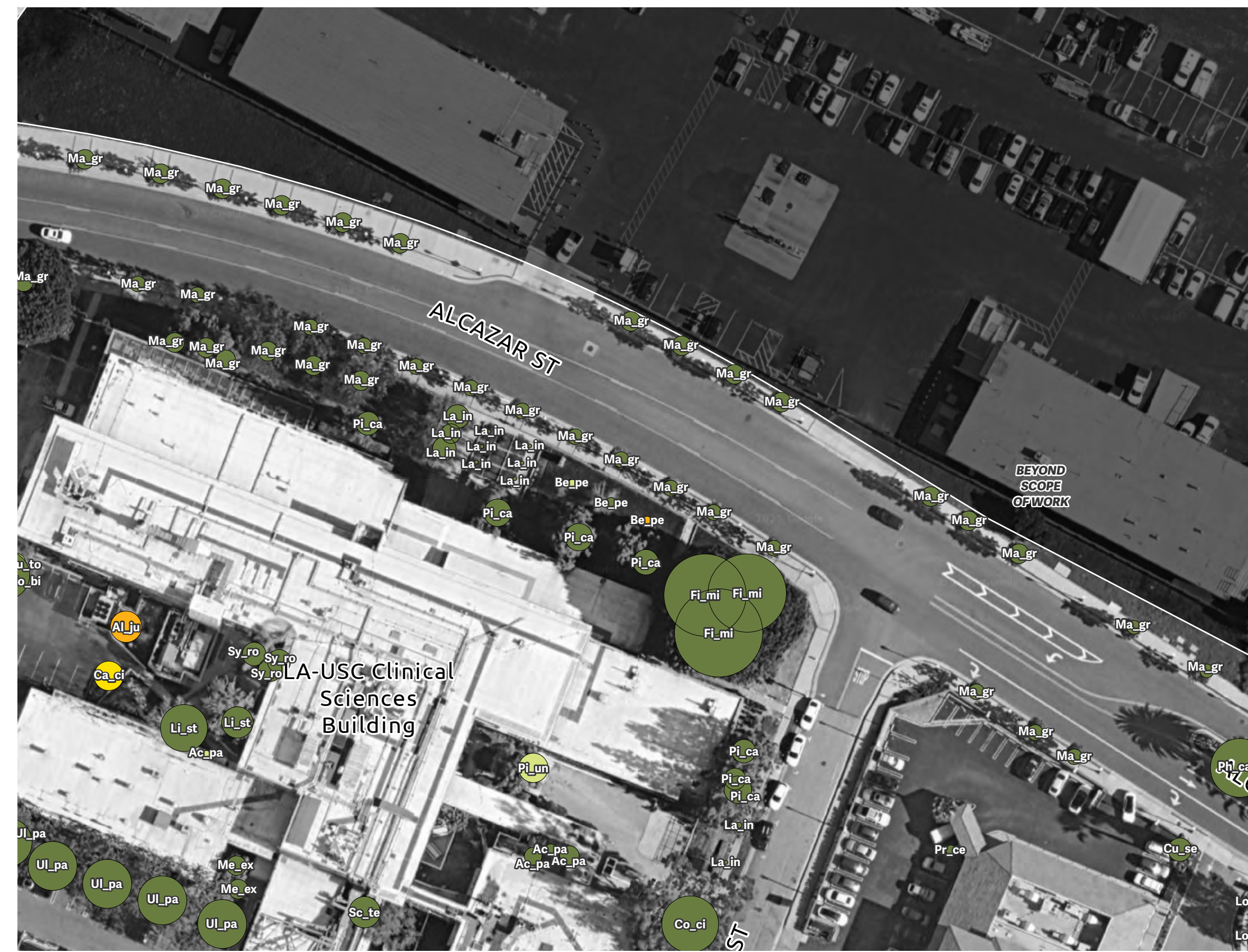


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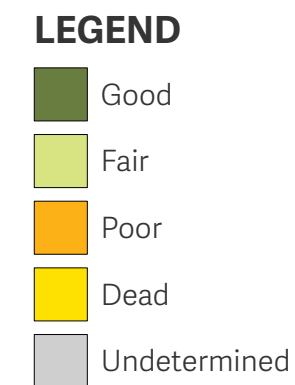


LOCATION MAP



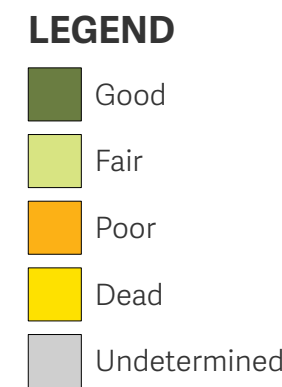
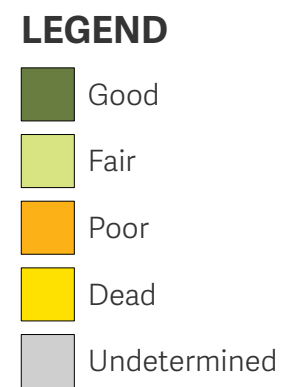


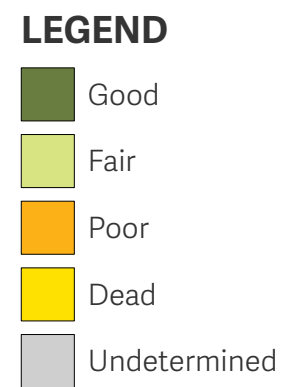
LOCATION MAP



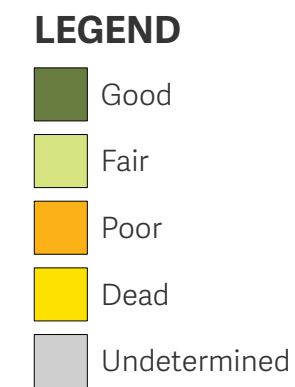
LOCATION MAP







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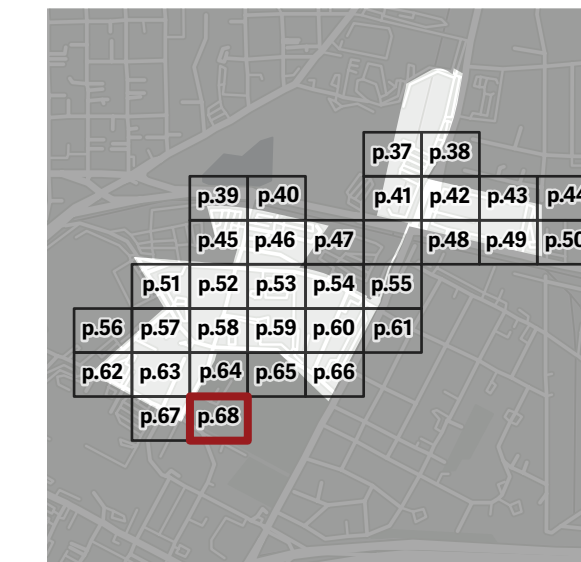


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