


# PARTNERS IN COMMUNITY FORESTRY

2024 CONFERENCE



*'Turn Off the Sunshine': Why Shade  
Is a Mark of Privilege in Los Angeles*

Shade in Los Angeles sits at the intersection of two crises: climate change and income inequality. City officials are rushing to deploy cover to hundreds of bus stops and plant 90,000 trees.

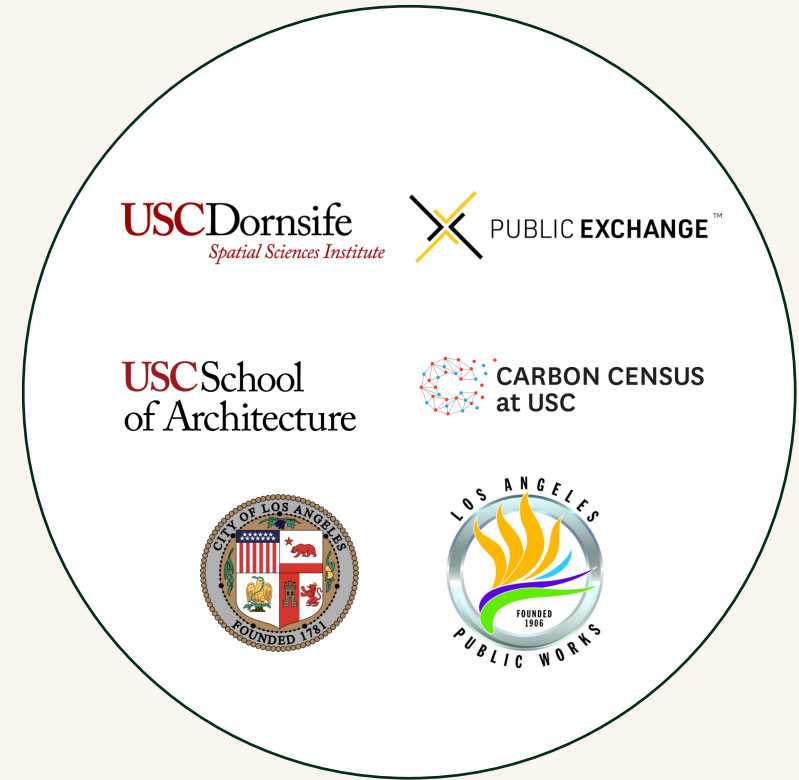
# TREE SPACING GUIDELINES AS A BARRIER TO TREE EQUITY



PRESENTED BY:

**LAURA MESSIER**

PhD Student, Population, Health and Place, University of Southern California  
lmessier@usc.edu



# INTRO.

## SPACE FOR STREET TREES IS LIMITED



Forest of the City of Los Angeles

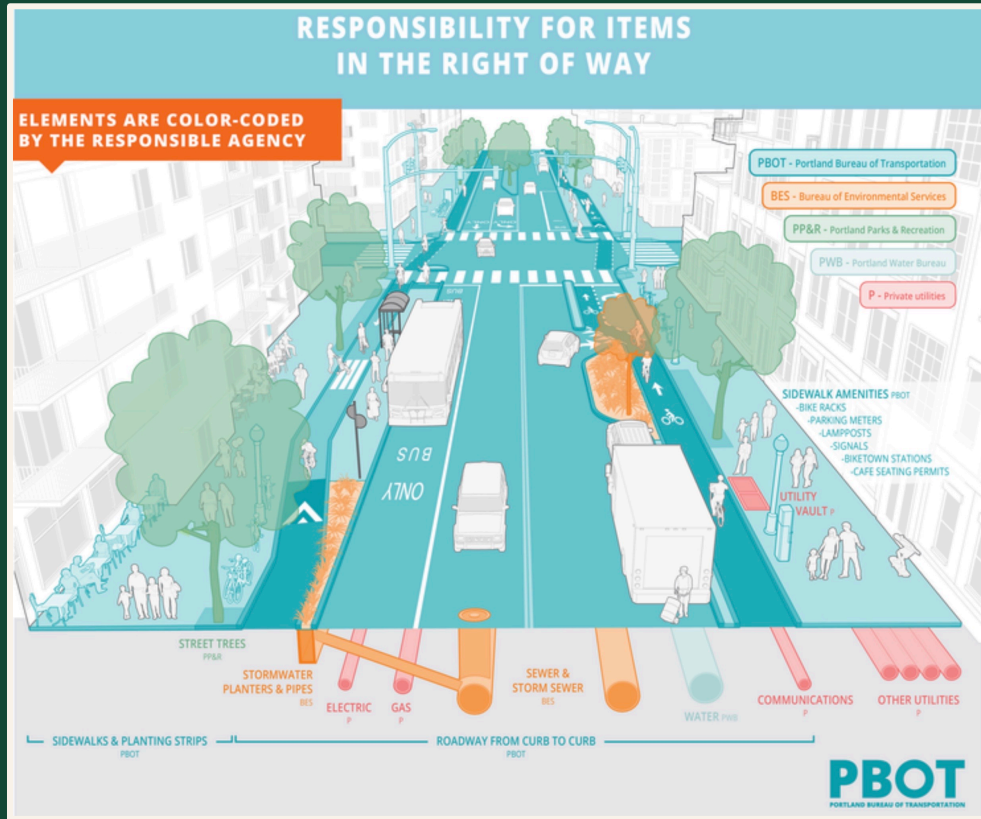


Image credit: Portland Bureau of Transportation, *Streets 2035*

### TREE SPACING GUIDELINES

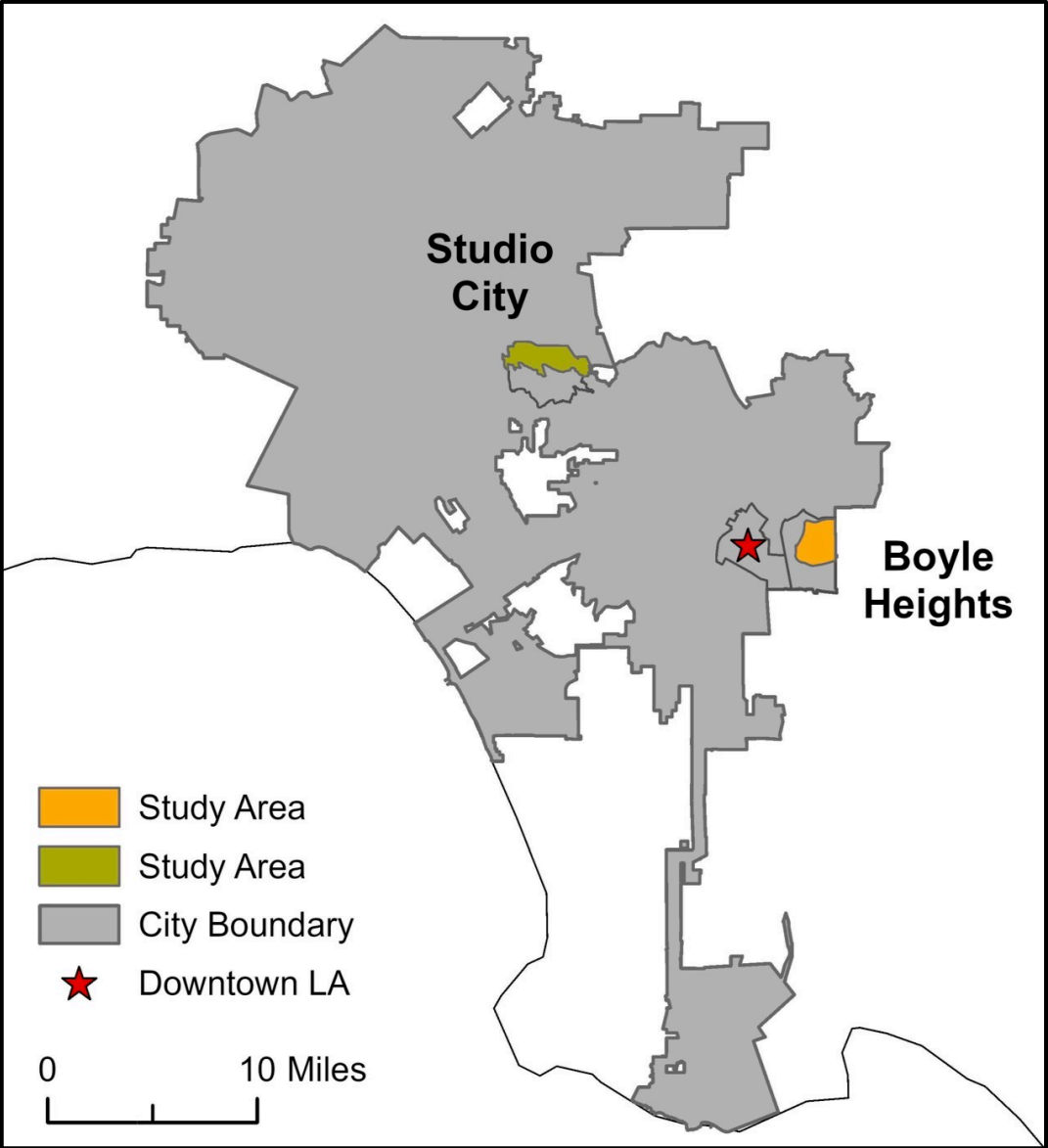
Tree locations exist among other right-of-way infrastructure. The placement of street trees in relationship to each other and other infrastructure is important for the health and vitality of the tree as well as the additional infrastructure.

The recommended desirable distances between street trees are species specific and range from twenty-five to forty feet. Please refer to the [Street Tree Selection Guide](#). The recommended desirable distance between street trees for subdivision projects (for estimating purposes) is thirty feet.

Street tree distances from other infrastructure are as follows:	FEET
Water Meter / Vaults	6
Catch Basins	6
Gas Meters	8
Driveway Aprons	8
Transit Shelters	10
Fire Hydrants	10
Pedestrian Lights	15
Street Lights	20
Electrical Power Poles	20
Alley Entrances	20
Approach to a Traffic Control Device in the Direction of Travel	50
Unsignalized Intersections (45 feet from point of curb line intersect)	45
Railroad Tracks	100

# RESEARCH QUESTION

- Do street tree spacing guidelines impact high- & low- income neighborhoods differently?

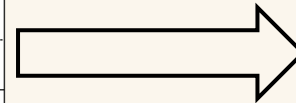


Selection Criteria	Boyle Heights	Studio City
Quartile non-Hispanic white	Bottom	Top
Quartile median household income	Bottom	Top
Area (sq. mi.)	2.40	2.93
Topography	Flat	Flat
Parcels	6,498	7,971
Residential (%)	89	93
Single-family (%)	46	92
Median parcel size (sq. ft.)	5,619	8,500
Development	1920s	1960s
Intersections/sq. mi.	192.5	159



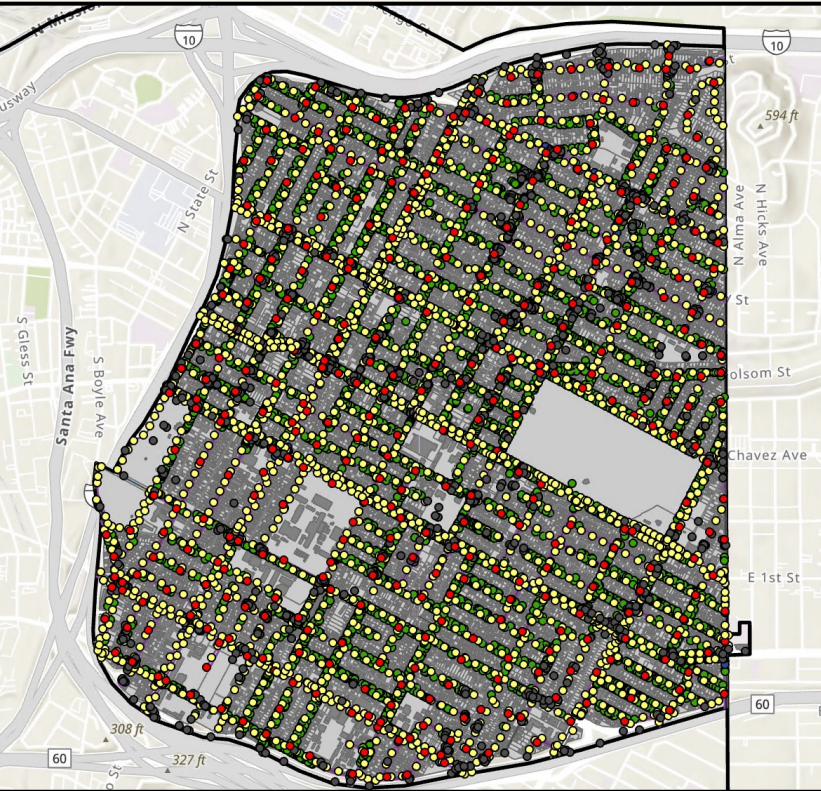
# METHODS

		Distance of Tree (feet)								
		Anaheim	Freemont	Fresno	Oakland	Pleasanton	San Francisco	San Jose	Los Angeles	California Minimum
<b>Tree Spacing</b>										
Tree spacing (by size of tree)	Small				15-20		15-20		25	15
	Medium		35	20	20-25	45	20-25			20
	Large				25-35		35		40	25
<b>Intersections</b>										
Signalized	Approach to Intersection	40					25		50	15
	Departure from Intersection	25					5			5
Unsignalized	Approach to Intersection	25	15	30	20		25	40	45	15
	Departure from Intersection	10					5			5
Stop sign	Approach to Intersection	25								20
	Departure from Intersection	10		30			20	20		10
	Alley Entrance			15					20	15
Driveway Apron	Residential	10	8	10	5	10		5	8	5
	Commercial				10			10		8
	Railroad tracks								100	100
<b>Utilities and Fire Safety</b>										
<i>Electrical</i>										
	Utility Pole			15	5		5		20	5
Street Light (by tree size)	Small						9			9
	Medium	15	15	20	20		15	20	20	15
	Large						21			15
	Pedestrian Light								15	15
<i>Water, Sewer and Stormwater</i>										
	Water Meter or Vault				5			5	6	5
Water line	Main		5	3	10					3
	Other line									
Sewer line	Main	10	8	8	10			10		8
	Other line				5					5

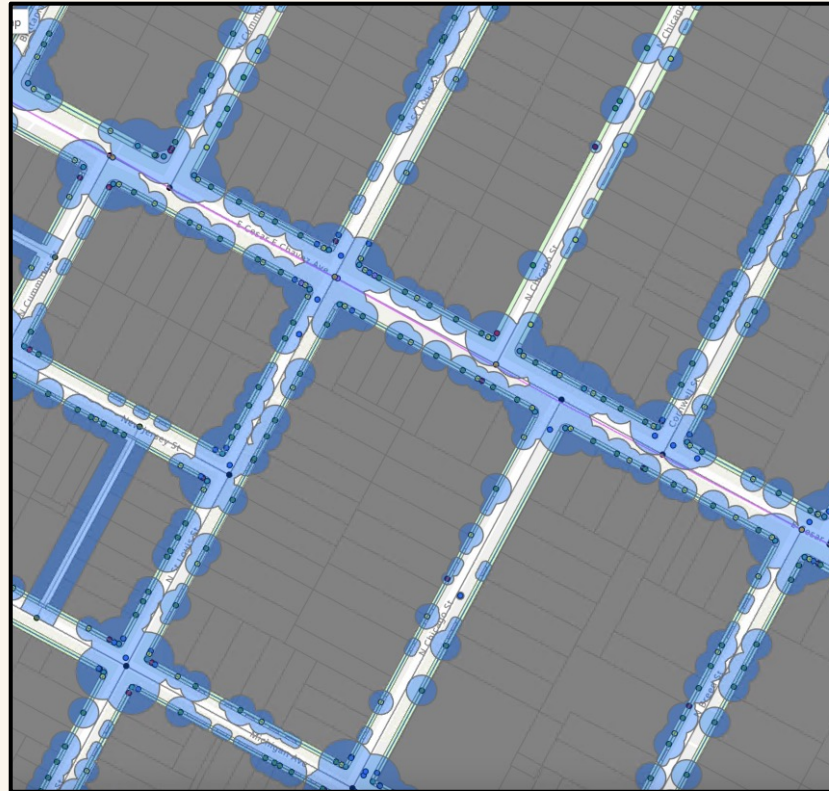


Element		Distance of Tree (feet)	
		Los Angeles	California Minimum
Trees		25	25
Intersection	Signalized	50	15
	Unsignalized	45	15
Alley Entrance		20	15
Driveway Apron	Residential	8	5
	Commercial		8
Utility Pole		20	5
Street Light		20	15
Pedestrian Light		15	15
Sewer lateral		8	5
Catch Basin		6	5
Fire Hydrant		10	5
Gas line		8	3
Bus stop		30	30

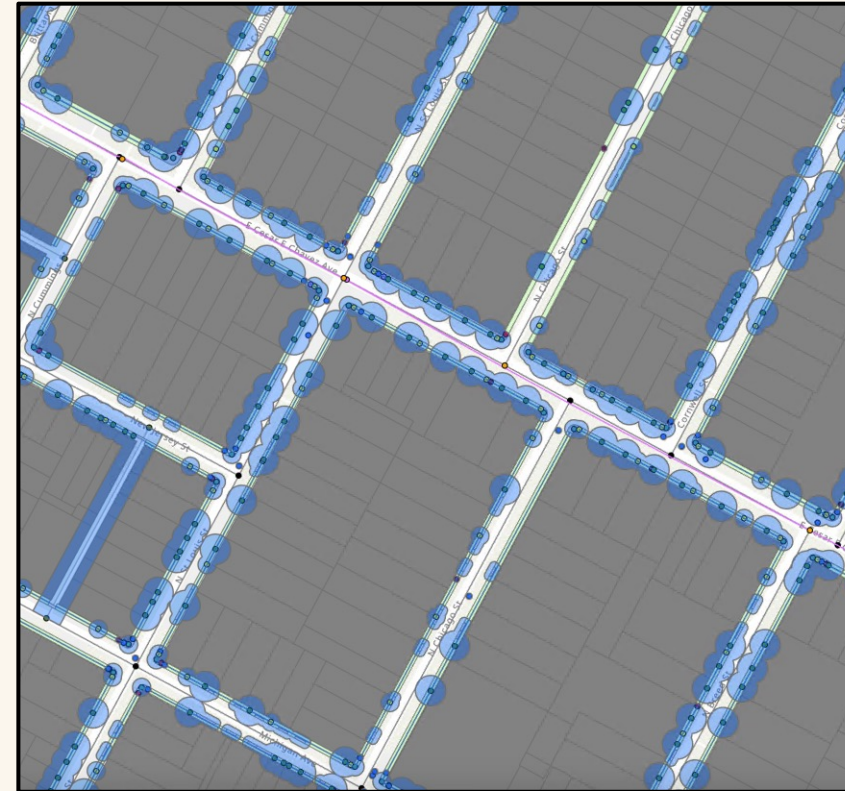
# METHODS



Boyle Heights

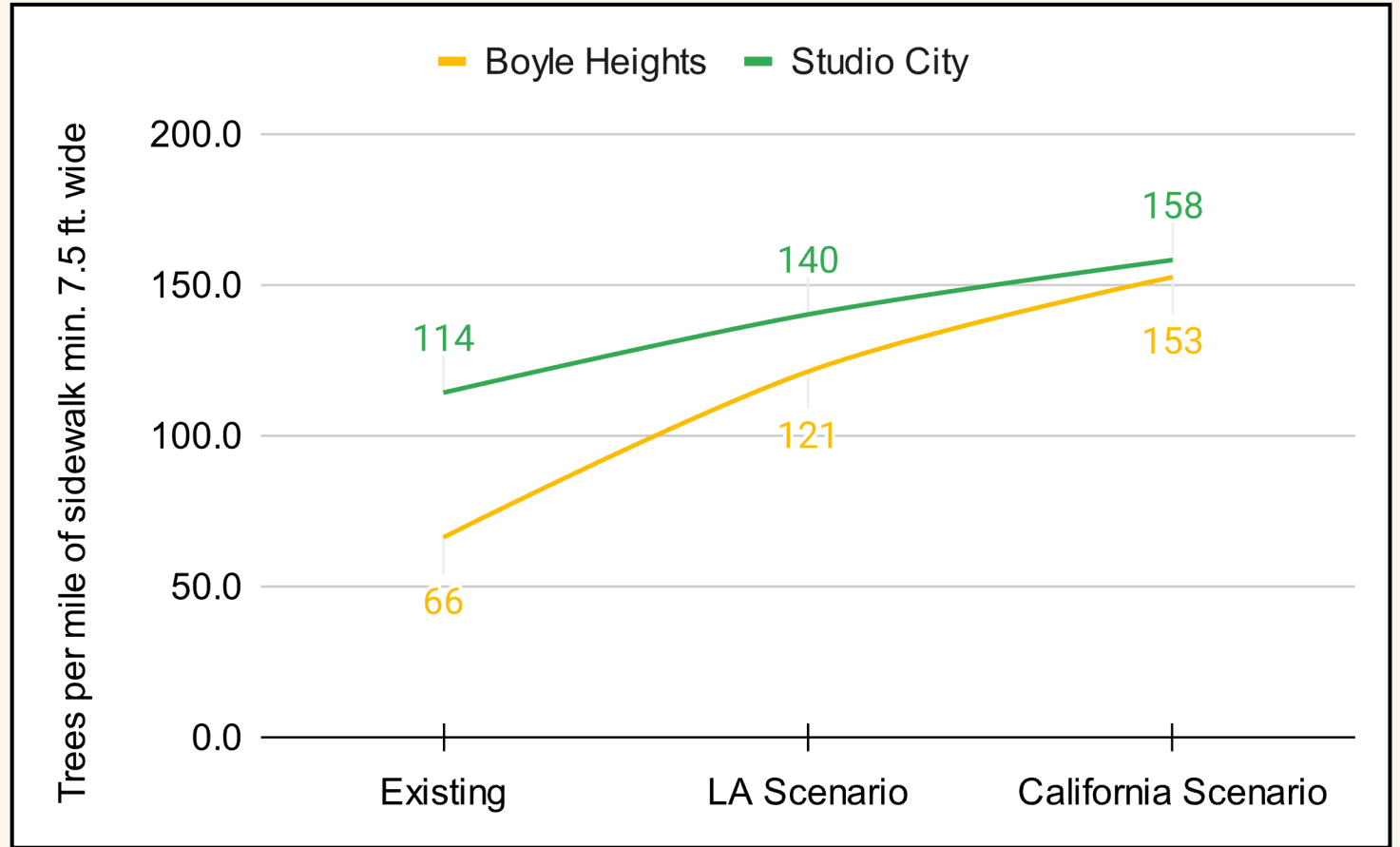
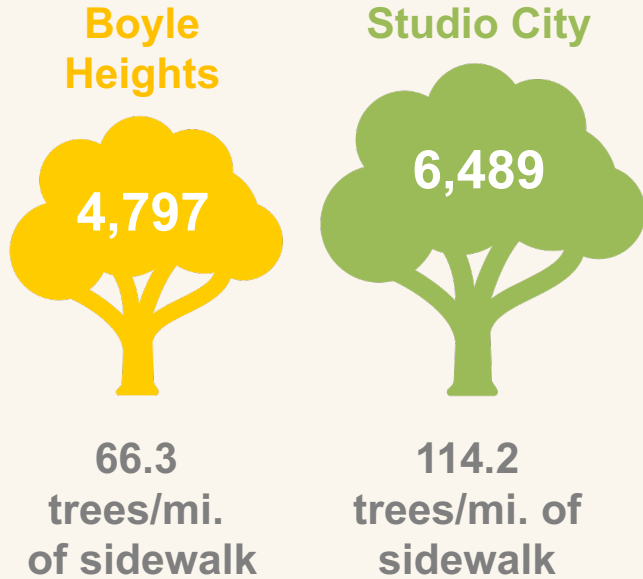


LA Scenario



CA Minimum Scenario

# RESULTS



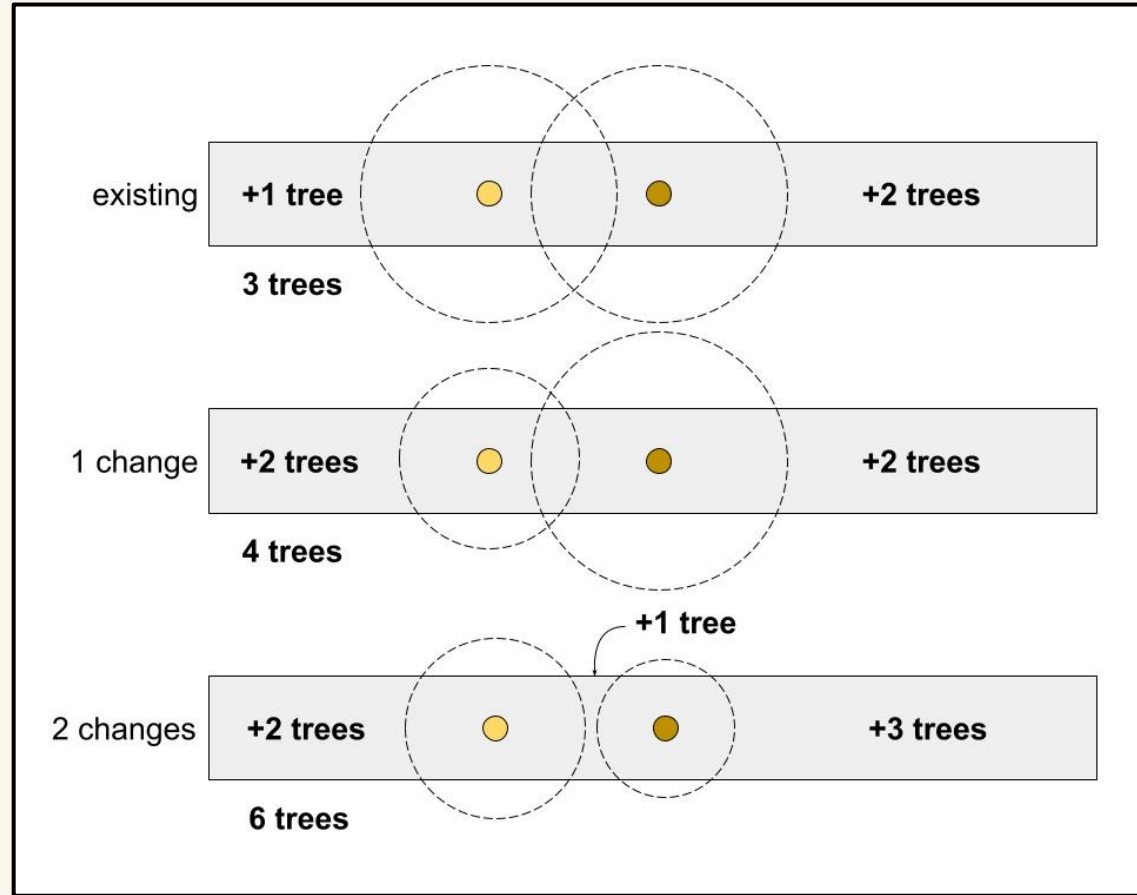
1. Studio City has more trees

2. Close the gap (almost) on tree equity with CA Minimum guidelines

# RESULTS

Element	% Increase
Intersections	7.6
Utility Poles	5.5
Gas lines	2.6
Street Lights	2.2
Driveways	1.4
Alleys, Fire Hydrants, Sewer lines	< 1

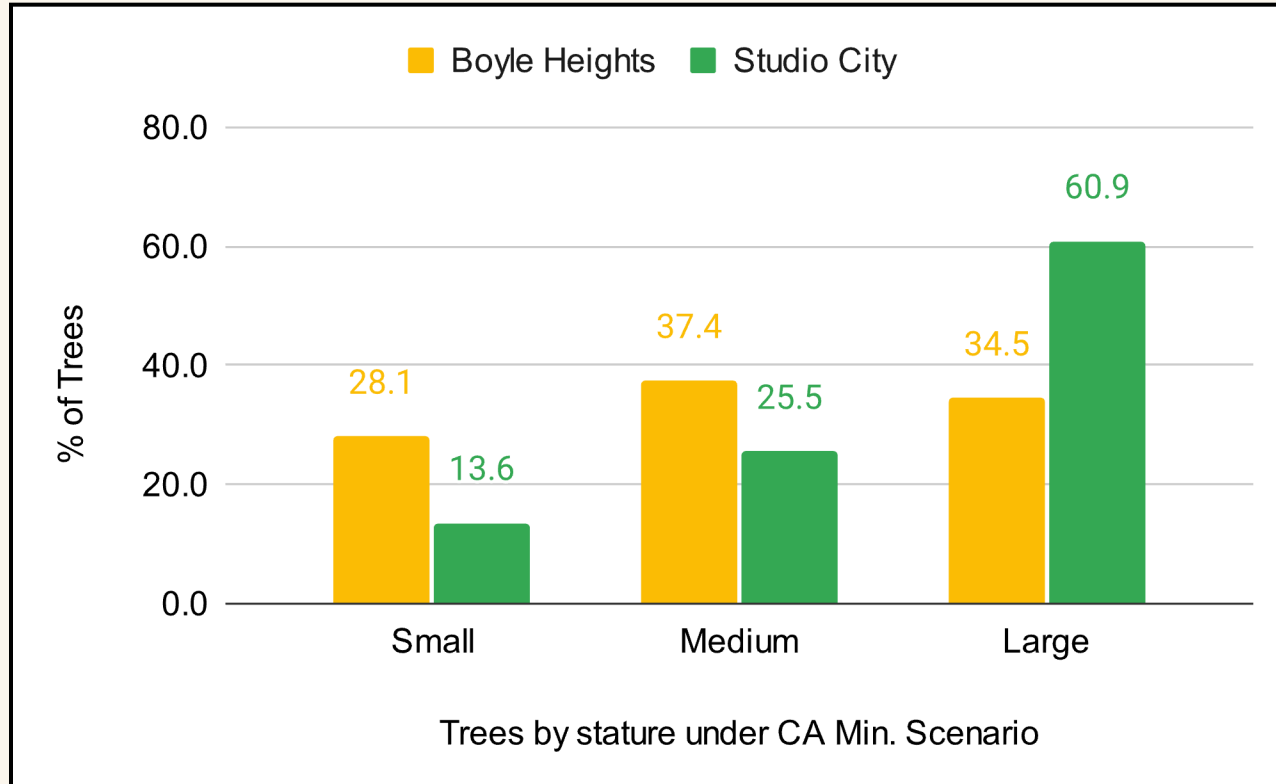
20.3%  
vs.  
25.8%



3. Multiple guideline changes amplify the impact



# RESULTS



4. Guidelines alone can't achieve shade equity: need wider sidewalks and parkways (co-benefits for accessibility, space for trees and seating at bus stops)

Image credit: SelecTree

**47%**

**Boyle Heights**

**39%**

**Studio City**

**Existing non-compliant trees**

## CLOSING THOUGHTS

- Structural differences likely to be replicated across other high-income neighborhoods
- Later suburban development
- Wider streets
- Lower intersection density
- Larger lots
- Less multi-family housing (less utilities)

<https://publicexchange.usc.edu/urban-trees-initiative/>



 PUBLIC EXCHANGE  
USC Urban Trees Initiative

# Thank you.

Get in touch: [Imessier@usc.edu](mailto:Imessier@usc.edu)

My work is supported by the National Science Foundation Graduate Research Fellowship Program under Grant No. DGE-1842487. Any opinions, findings, and conclusions or recommendations expressed in this material are mine and do not necessarily reflect the views of the National Science Foundation.

## Forthcoming publications:

Messier, L., Macdonald, B., Wilson, J.P. (2024). *Equity impacts of street tree spacing guidelines: A case study in two Los Angeles neighborhoods.*

Messier, L., Margulies, E., Wilson, J.P. (2024). *Elevating street trees to infrastructure status: A comparison of street tree spacing guidelines in Los Angeles with U.S. peer cities.*

USC Dornsife  
Spatial Sciences Institute



USC School  
of Architecture

