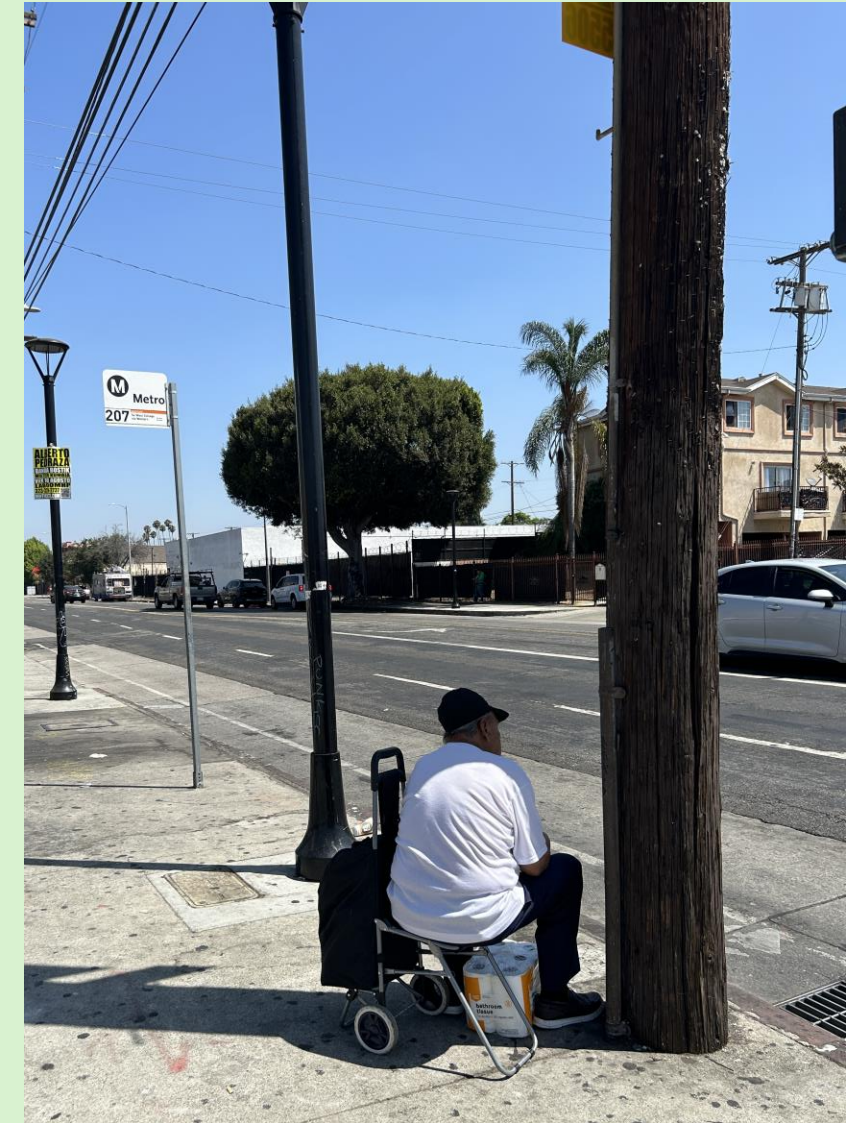


# Designing for Maximum Shade at LA County Bus Stops



# The Problem: No Shade

75% of bus stops don't have a bus shelter



## 3,348 Hours of Sunlight / Year

In SoCal it is sunny 76.4% of daylight hours.

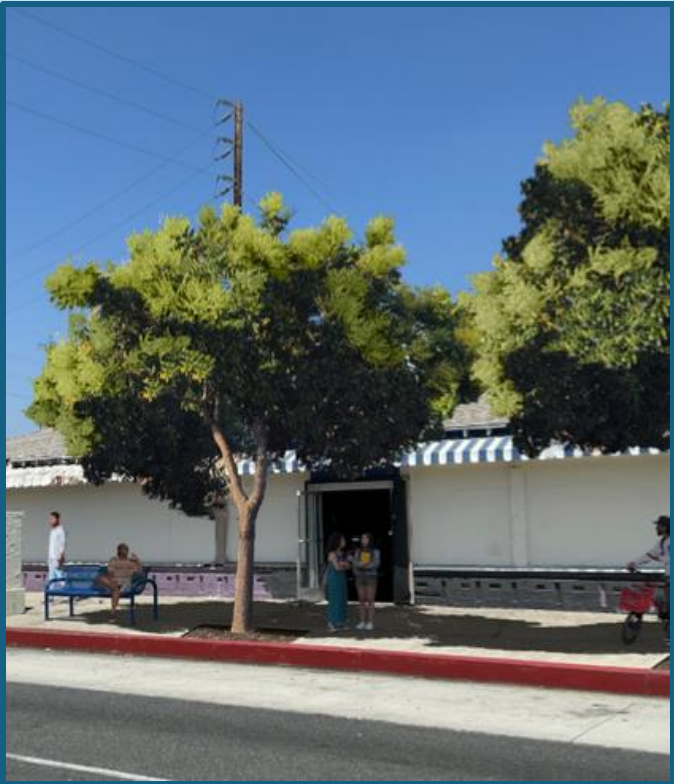
**OUTFRONT / JCDecaux**



# Collaboration for Shade at Every Stop



## TREES



## BUS SHELTERS



## SHADE



Effective Shade Structure  
For Systemwide rollout

**Incomplete Shade**

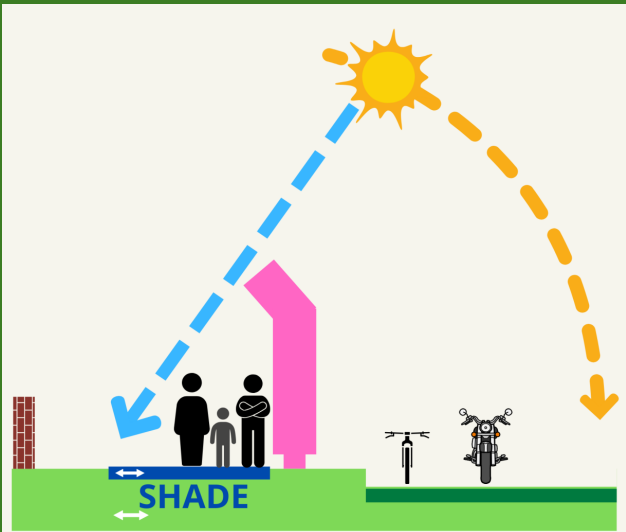
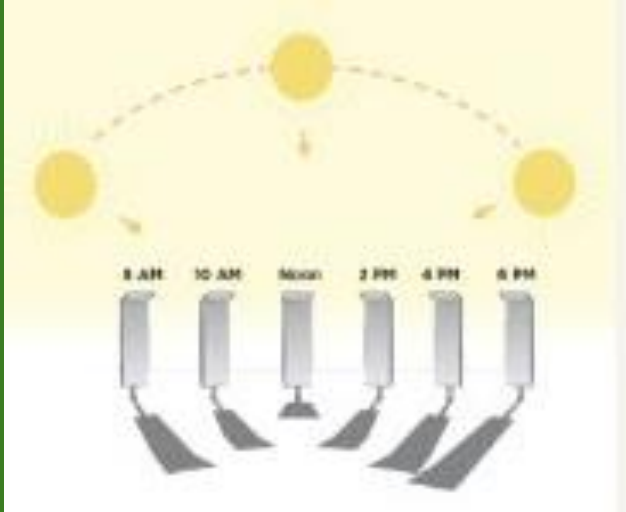


**Complete Shade**



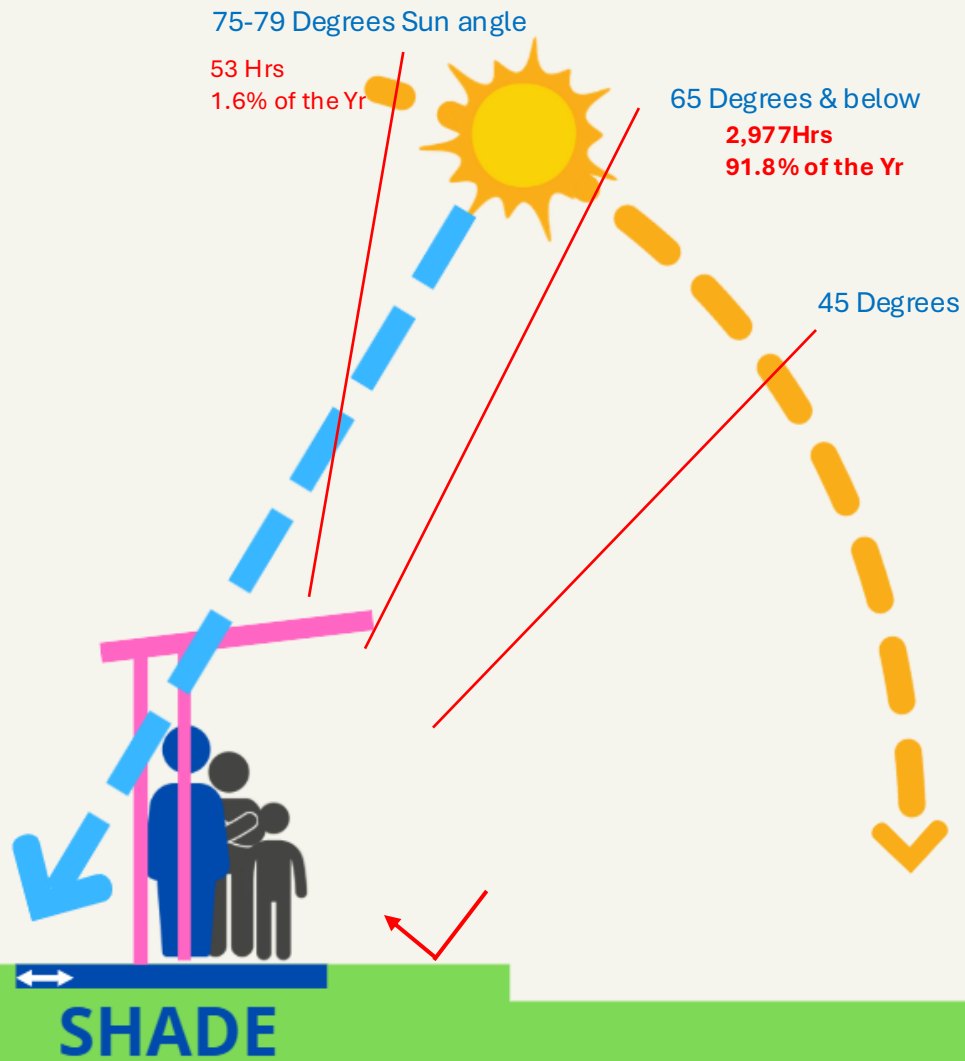


# The science of shade creation



- How to block the sun's rays?
- How to accommodate the sun constantly moving in the sky?
- ➔ • How does the sun's angle impact the shade creation?
- Where does the shade land?
- Is the shade created accessible and useful to people waiting?
- ➔ • How many hours of shade per day/year does it create?
- How many people can use the shade?

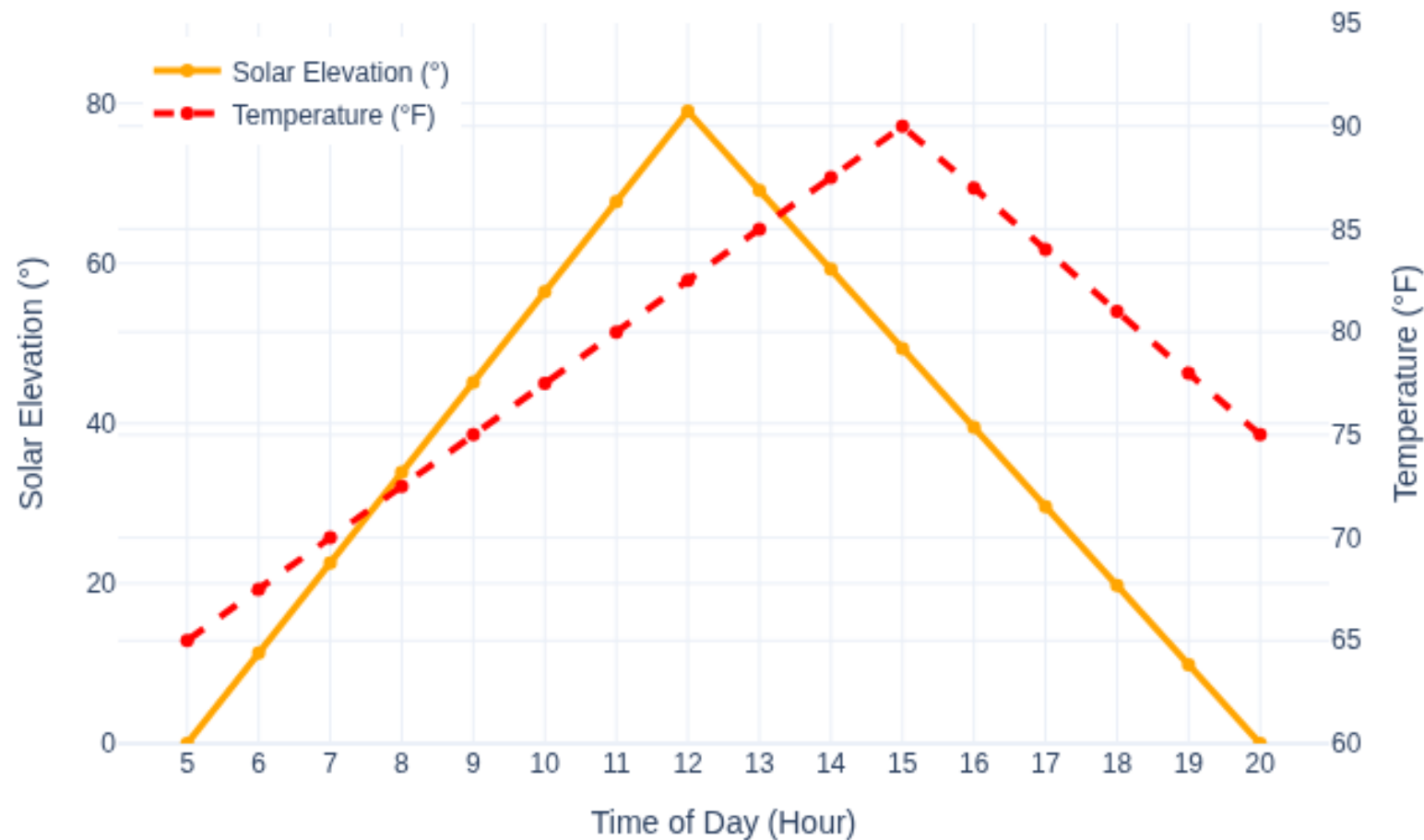
# 3,348 Hours of Sunlight / Year



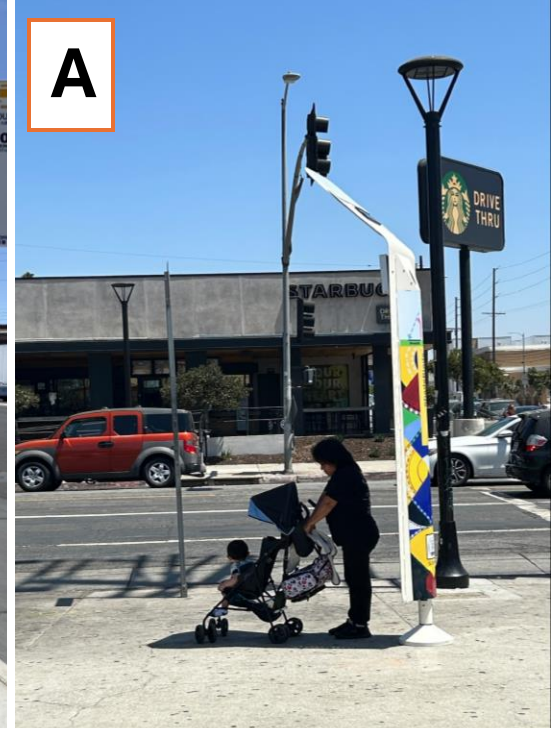
The challenge with traditional horizontal roof

# Solar elevation vs Heat in LA County

Summer Solstice: Solar Elevation vs Temperature (Los Angeles)







A

## Protecting Diverse Communities

U.S. Patent No. 11,771,197 B2 & 11,998,120 B2

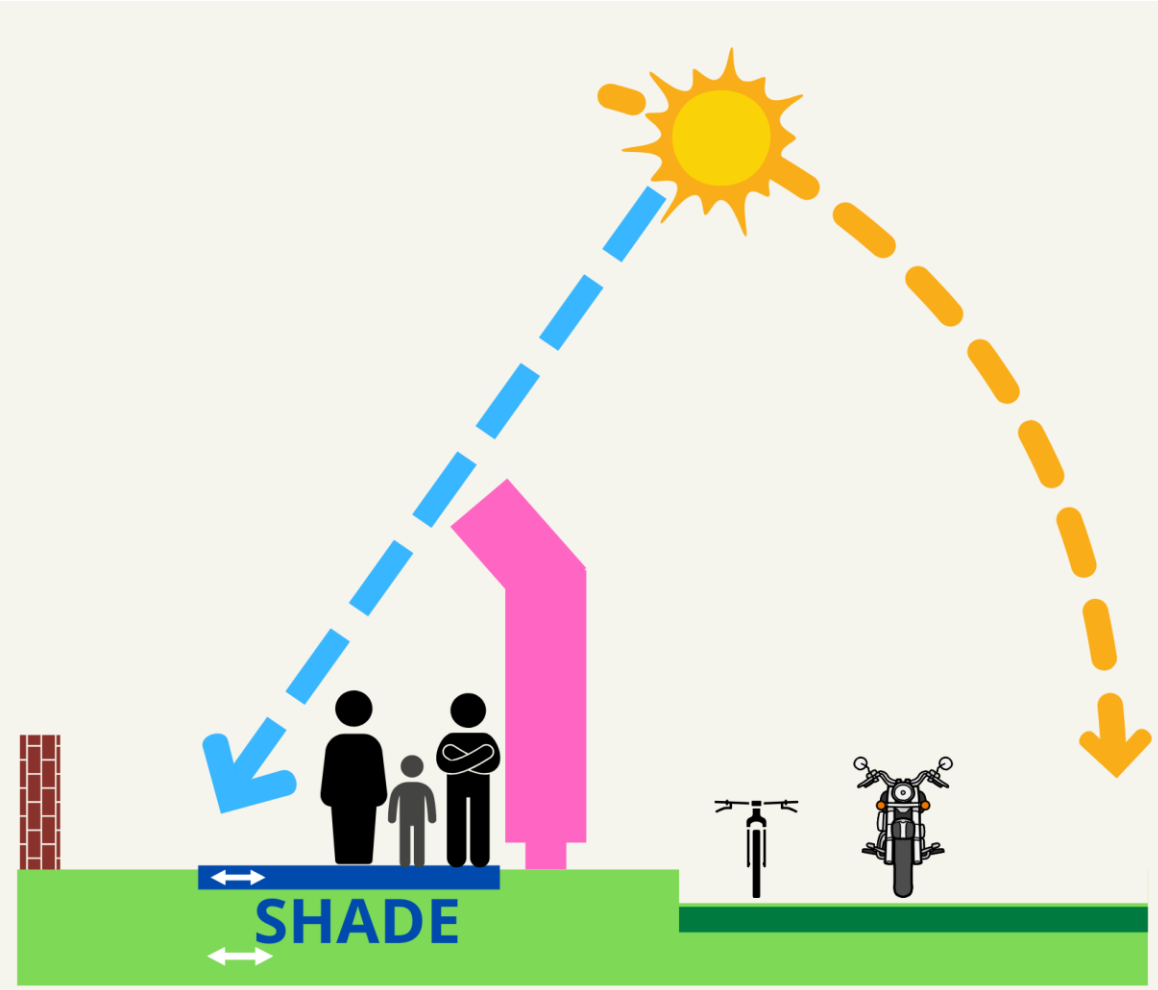


B





# Scalable & Cost Efficient




- **Efficient scalable shade solution to benefit transit riders at all hours of the day, year round**
- **Fast deployment of up to 500 units/month, enabling a 10,000-unit rollout in few months**
- **Lower cost per unit than traditional bus shelters, with minimal maintenance. Costs are similar to a bus bench.**
- **Ideal for system-wide implementation across LA Metro, other regional agencies and cities across LA County, protecting millions per week**

# Thank you!

 : [ShadeBlade](#)

 : @outfrontdecaux

 : @commutersofla

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## OUTFRONT / JCDecaux

Transit amenities such as **bus shelters**, seating, **shade structures**, pedestrian light, vending kiosks, **public toilets**, with **daily maintenance**, and community activations enhance transit rider experiences at bus stops across Greater Los Angeles where we have **provided and installed** over 2,400 bus shelters.

We are **Outfront/Decaux Street Furniture**, a joint venture between Outfront Media and JCDecaux North America. Transit rider needs come first, our methodology of implementing urban services and transit amenities to enrich the urban transit experience and revitalize public space at no extra cost to municipalities comes second.

Through the marketing of advertising media panels, we are able to finance the City's P3 programs.

