

Community Development Department

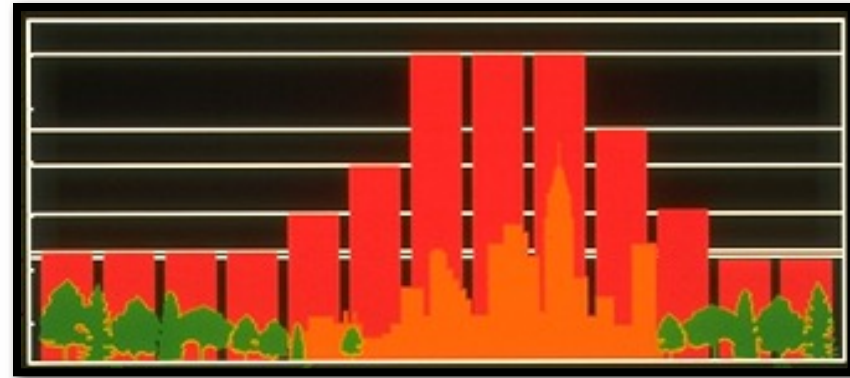
Climate Readiness Collaborative

Quarterly Meeting, October 14, 2016



Urban Heat Island?

- 2° to 10°F hotter than the open countryside
- Increased heat stress
- Increased energy use
- Increased pollution/smog
- Urban heat island + climate change impacts



Benefits of Trees

Sacramento's mature tree canopy

- Shades pavement and cools buildings
- Reduces energy usage, GHG's and cost
- Evapo-transpiration cools and cleans air
- Beautifies neighborhood

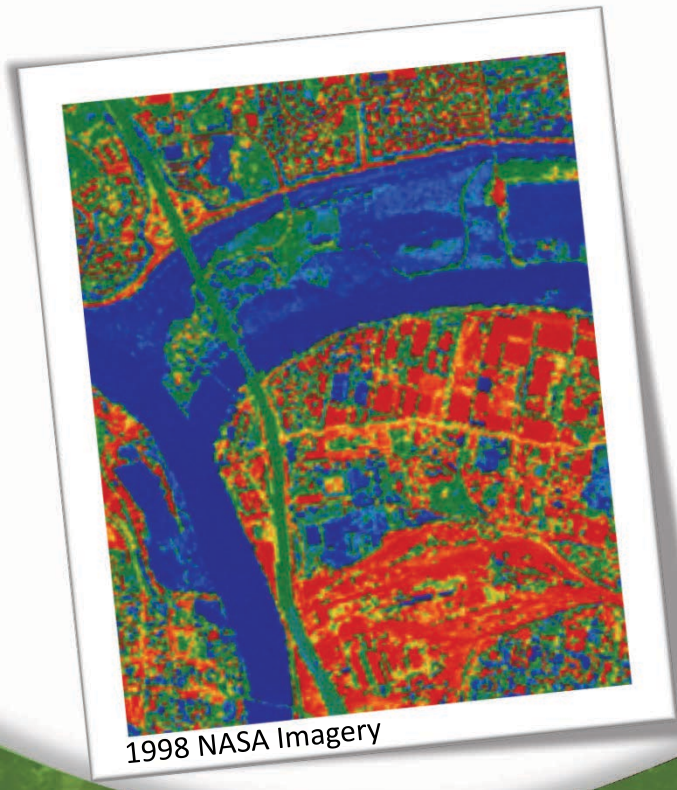


Sacramento Parking Lot Shade Ordinance (1983)

- New parking lots only
- 50% shading within 15 years
- Existing surfaced areas exempt



Cool Community Pilot City



As part of the US EPA Heat Island Reduction Initiative (1998) Sacramento was one of eight Cool Community Pilot Cities.

McPherson Study (2001)

- Survey of 15 Sacramento parking lots
- Failed to meet 50% shading objective
- Achieved less than 30% after 15 years
- Reasons were identified

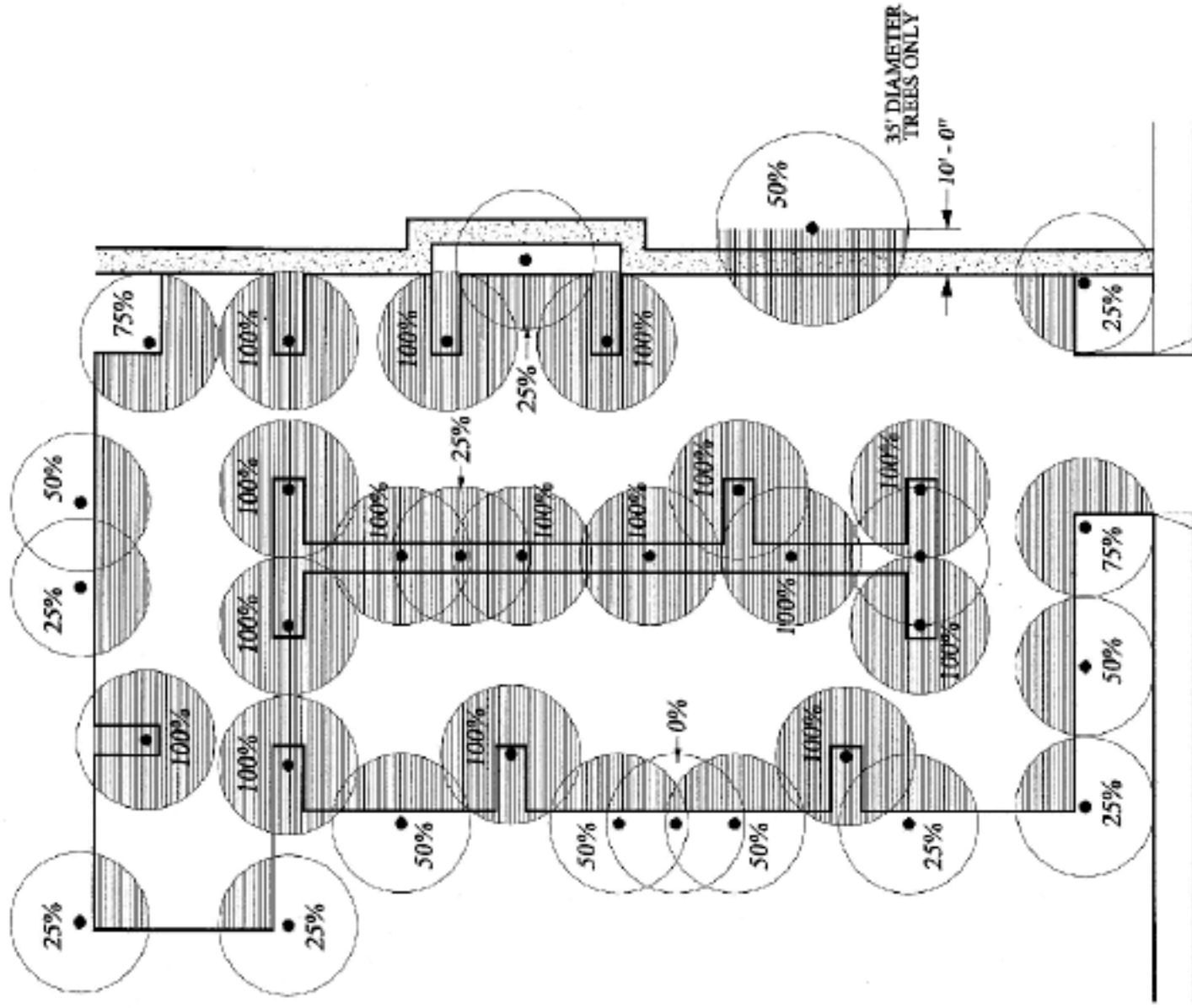
City Ordinance Changes (2003)

- Adopted Design and Maintenance Guidelines
- Expansion of non-conforming lots
- Compliance for life of project
- Certification of compliance



Design & Maintenance Guidelines

- Shading requirements and calculations
- Tree planting practices and specs
- Tree species & shading credit
- Drainage / water quality options



PARKING LOT

- NOTES:**
1. This diagram is intended to reflect the manner in which shade is credited under various conditions. It is not necessarily an illustration of 50% coverage.
 2. Trees may receive 25%, 50%, 75% or 100% credit as shown.
 3. Shade overlap is not counted twice.

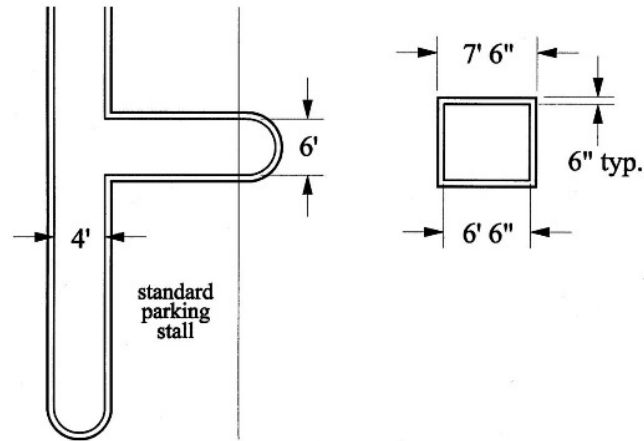
Tree List

35' DIAMETER TREES

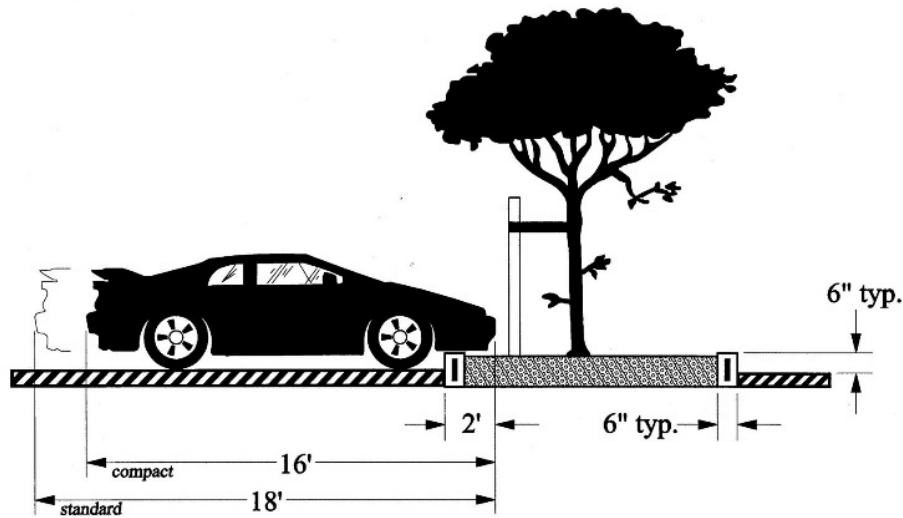
Shading Calculations: 100% = 962 SQ. FT. 75% = 722 SQ. FT. 50% = 481 SQ. FT. 25% = 240 SQ. FT.

<u>Botanical Name</u> <u>COMMON NAME</u>	<u>Minimum</u> <u>Planter</u> <u>Width</u>	<u>Height</u> <u>To:</u>	<u>Growth</u>	<u>Roots</u>	<u>Remarks</u>
Celtis australis EUROPEAN HACKBERRY	6'	50'	Moderate	Deep	Deciduous, mod. irrigation, fruit
Fraxinus americana 'Autumn Purple', 'Chicago Regal' WHITE ASH	6'	40'	Fast	Shallow	Deciduous, fall color, some insect & disease damage Mod. irrigation
Fraxinus pennsylvanica 'Patmore', 'Leprechaun', 'Centerpoint' GREEN ASH	6'	40'	Fast	Shallow	Deciduous, some insect and disease damage
Fraxinus uhdei EVERGREEN ASH	6'	40'	Fast	Medium	Evergreen, prone to insect and disease damage

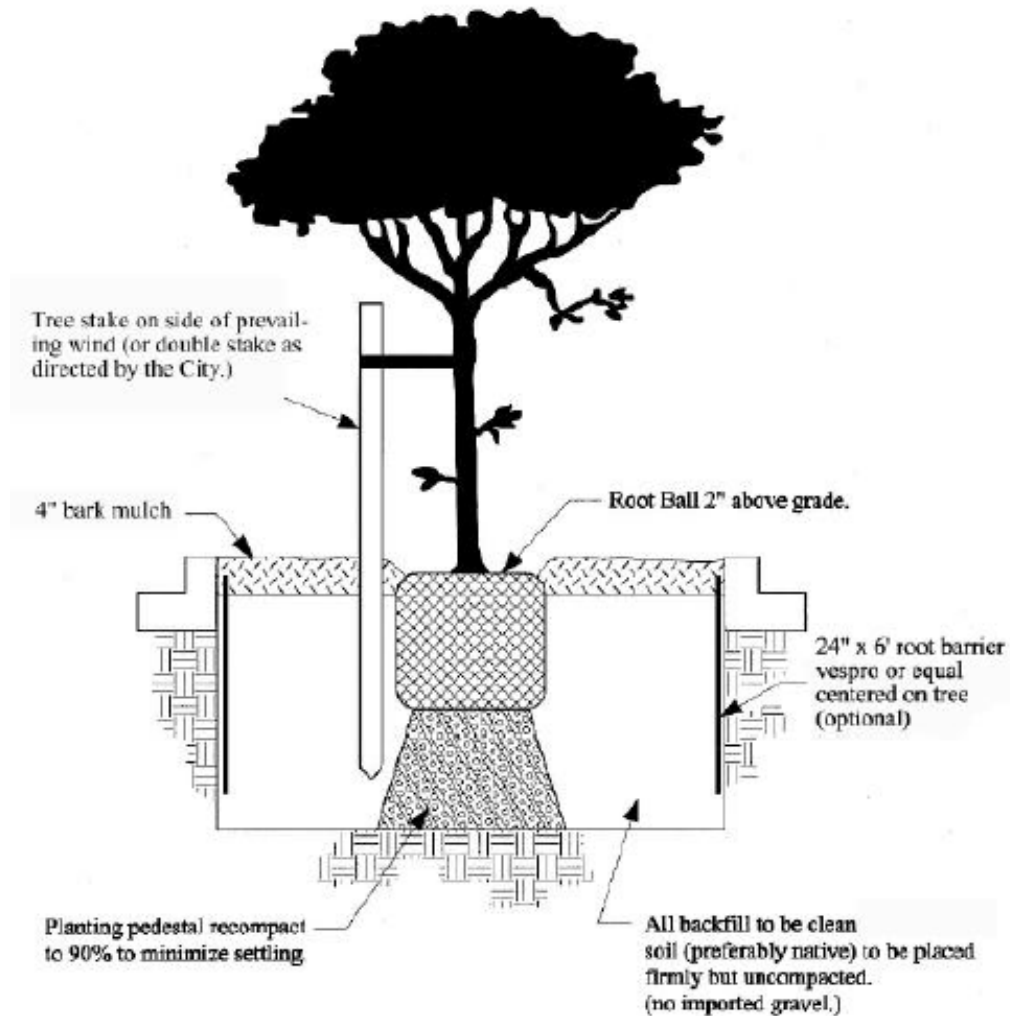
TYPICAL PLANTER SPECIFICATION



TYPICAL POURED CURB WITH OVERHANG



TYPICAL ISLAND/MEDIAN TREE PLANTING



Implementation Issues

- Installation
- Monitoring/enforcement
- Existing unshaded lots

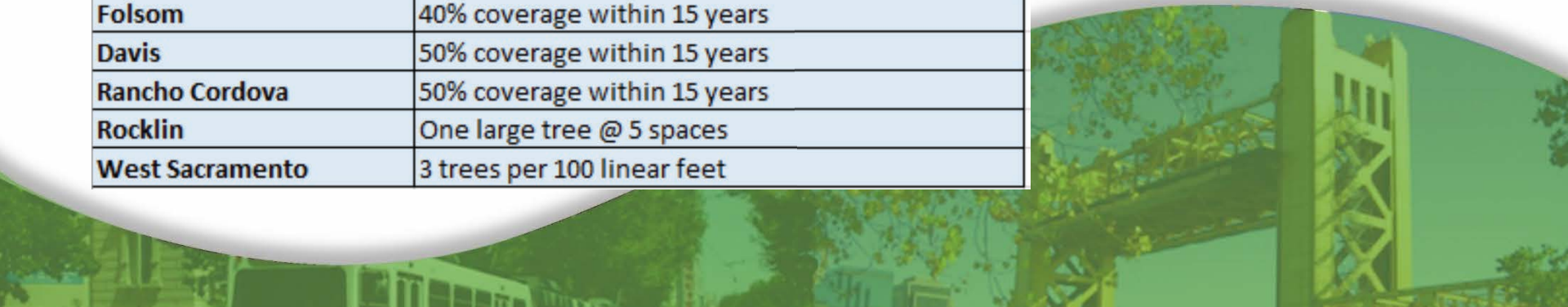


Local Parking Lot Shade Measures

SURVEY OF LOCAL MEASURES TO REDUCE URBAN HEAT ISLAND EFFECT

Jurisdiction	Parking Lot Shading Requirement
Sacramento	50% coverage within 15 years
Sacramento County	30-50% coverage within 15 years, depending on number of spaces.
Placer County	50% coverage within 15 years
Yolo County	50% coverage within 10 years
Elk Grove	30-50% coverage within 15 years, depending on number of spaces.
Roseville	50% coverage within 15 years
Citrus Heights	50% coverage within 15 years
Folsom	40% coverage within 15 years
Davis	50% coverage within 15 years
Rancho Cordova	50% coverage within 15 years
Rocklin	One large tree @ 5 spaces
West Sacramento	3 trees per 100 linear feet

All surveyed counties, cities have similar measures in place.



Summary of measures in place:

- Parking lot shading ordinance(s)
- Cool roofs are now required by Title 24
- Reduced parking requirements in 2012
- Mature urban forest



Conclusion

- People have cut back on irrigation for trees.
- Trees lost will take 15-50+ years to replace.
- Priority should be saving our mature trees
- Save our water & our trees campaign
 - Saveourwater.com/trees