



THE IMPORTANCE AND BENEFITS OF THE URBAN FOREST

RLUAC - 20 May 2010

RLUAC AREA



Proportion in
RLUAC area
(from 2001 NLCD)

WHAT IS THE URBAN FOREST?

- ⊙ Trees in the urban environment:
 - ⊙ Individual trees (street trees, planters, lawn trees)
 - ⊙ Groups of trees (parkland, woodland)
 - ⊙ Wooded areas on public and private lands



WHERE IS THIS STREET?



Photo: Georgia Forestry Commission

TREES CERTAINLY SPRUCE THINGS UP!



IT'S MORE THAN JUST BEING PRETTY



BENEFITS OF URBAN TREES

⊙ Economic



⊙ Environmental



⊙ Social and Behavioral



ECONOMIC BENEFITS RETAIL



Most inviting

ECONOMIC BENEFITS RESIDENTIAL PROPERTY VALUES



Increase
in property values
by 6%

ECONOMIC BENEFITS

COMMERCIAL PROPERTY OCCUPANCY



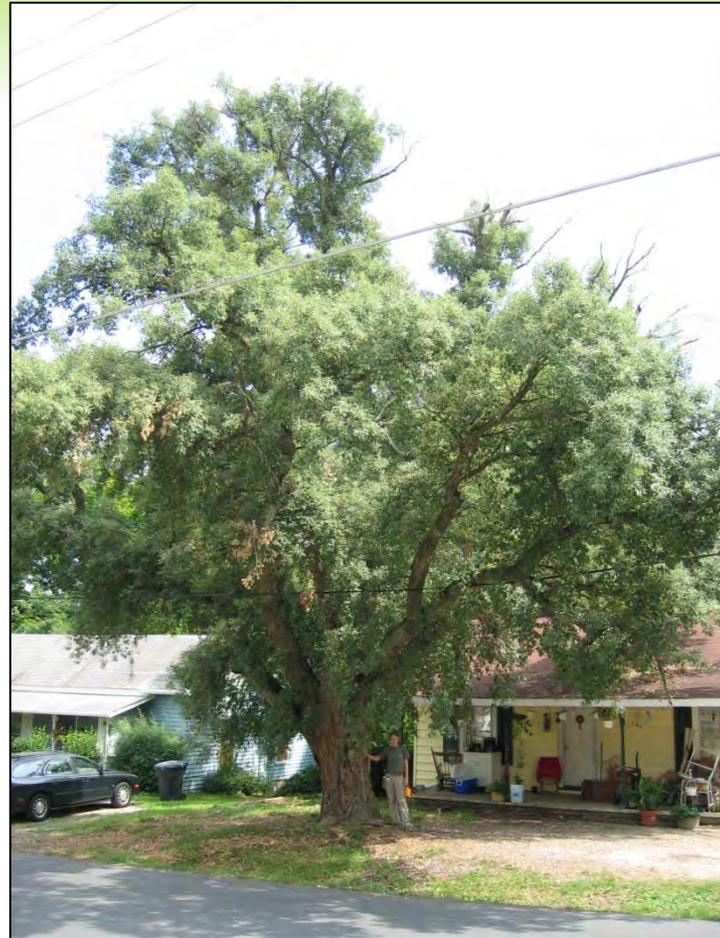
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ENVIRONMENTAL BENEFITS

SHADE

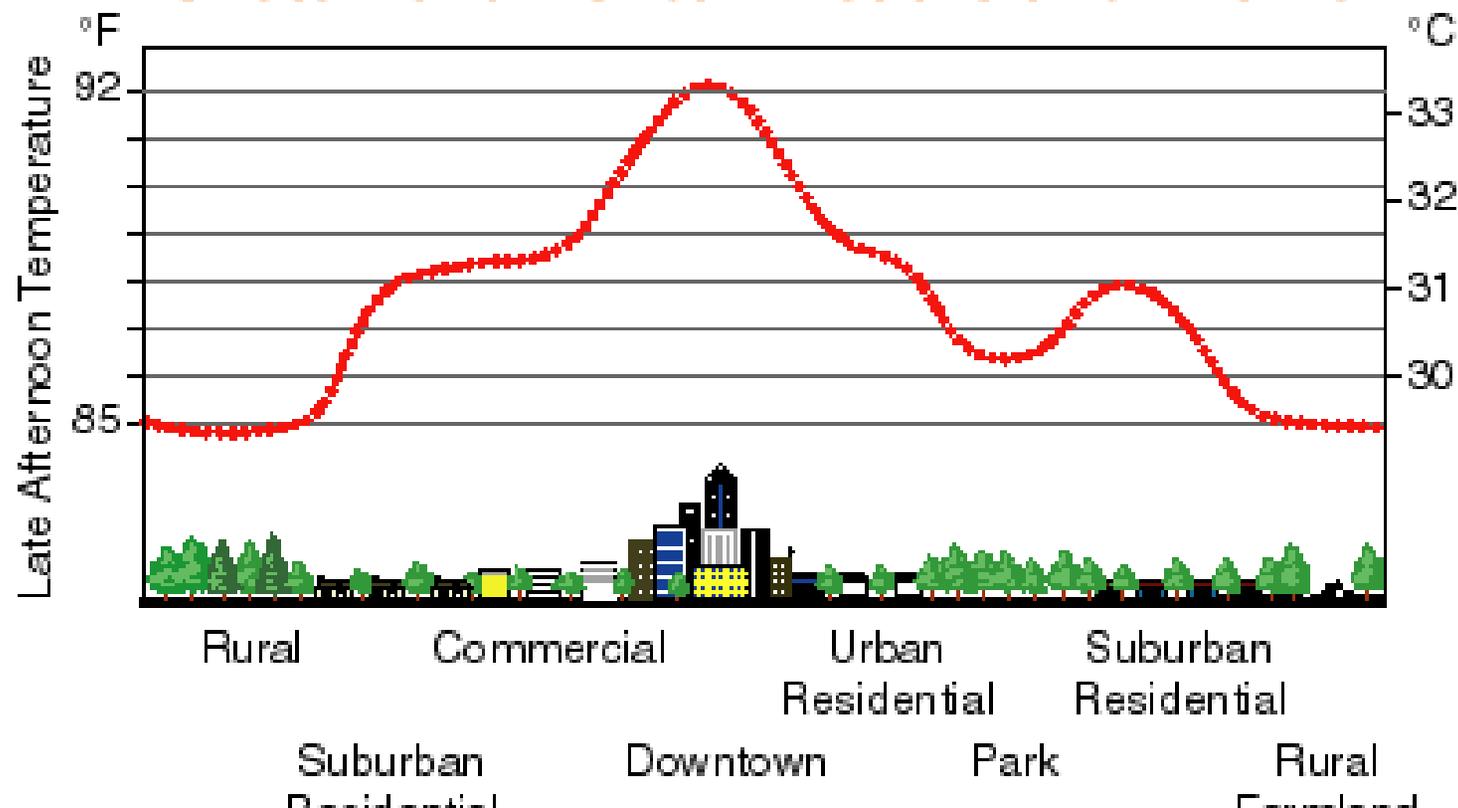
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ENVIRONMENTAL BENEFITS

COMBAT URBAN HEAT-ISLAND EFFECT

Sketch of an Urban Heat-Island Profile



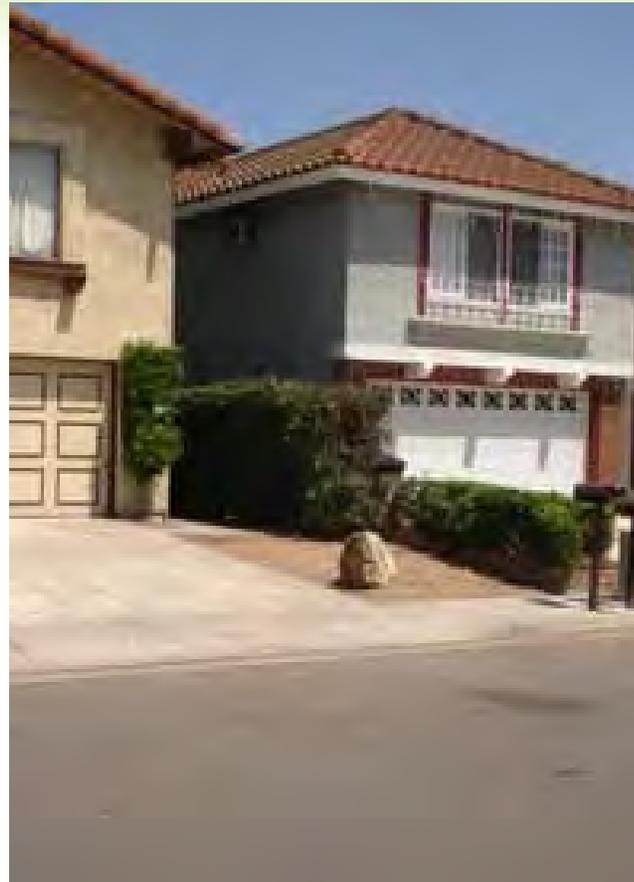
ENVIRONMENTAL BENEFITS

SHADE = LOWER COOLING COSTS

With a tree



Without a tree



ENVIRONMENTAL BENEFITS

IMPROVED AIR QUALITY

- ◎ Trees trap and absorb airborne dirt and chemical particles
- ◎ CO₂ is absorbed and the carbon is stored



ENVIRONMENTAL BENEFITS IMPROVED WATER QUALITY

precipitation

canopy
interception



- ⊙ Less stormwater runoff
- ⊙ Less erosion and sedimentation
- ⊙ Reduced peak stormwater flows
- ⊙ Less flooding
- ⊙ Fewer storm sewers and flood easements needed
- ⊙ Groundwater recharge

net rainfall entering

ENVIRONMENTAL BENEFITS INCREASED WILDLIFE HABITAT

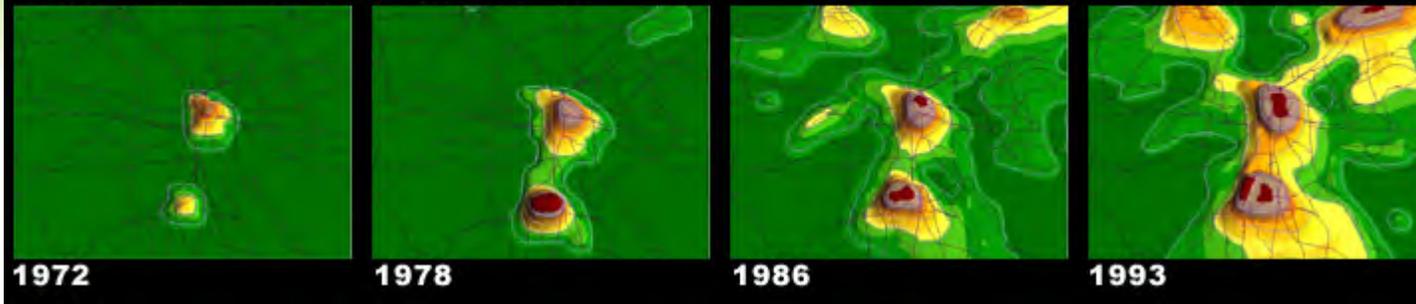
- ◎ Diversity in vegetation promotes wildlife diversity
- ◎ Native vegetation supports native wildlife
- ◎ Backyard wildlife popularity
- ◎ Shaded streams regulate water temperatures



ENVIRONMENTAL BENEFITS

IMPACTS OF TREE CANOPY LOSS

Temperature variance, Atlanta, GA

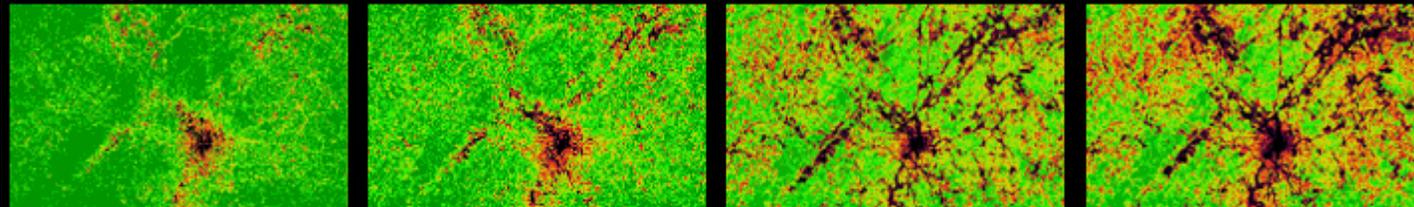


Higher temperatures

Increased incidents of flooding

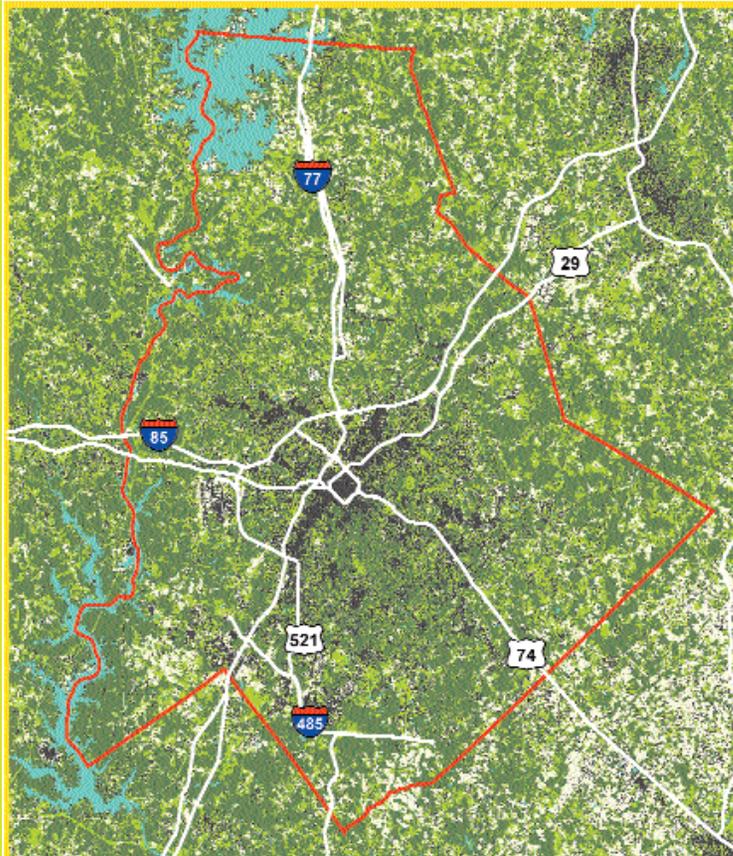
Decreased air quality

Atlanta, GA.



ENVIRONMENTAL BENEFITS

IMPACTS OF TREE CANOPY LOSS



ENVIRONMENTAL BENEFITS

IMPACTS OF TREE CANOPY LOSS



SOCIAL AND BEHAVIORAL BENEFITS



SOCIAL AND BEHAVIORAL BENEFITS TREES AND COMMUNITIES

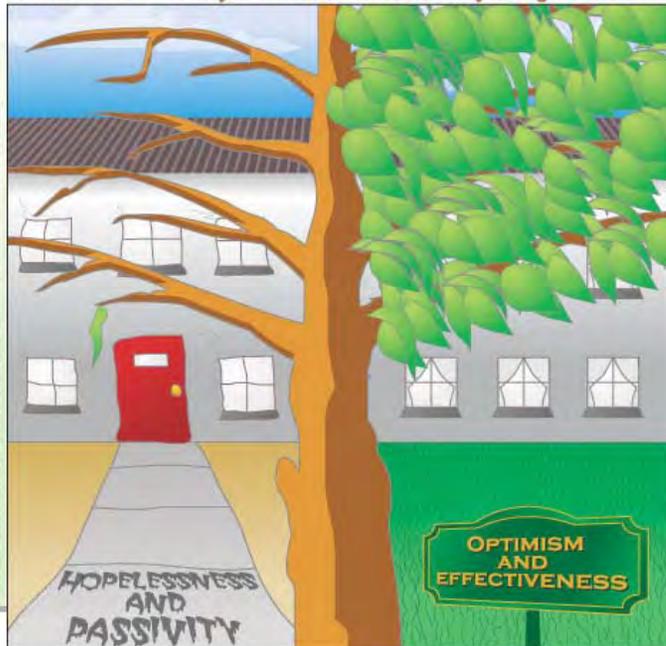
To See You Wild a Neighborhood

Neighbors outdoors on a regular basis,
friendship and ties to one another.



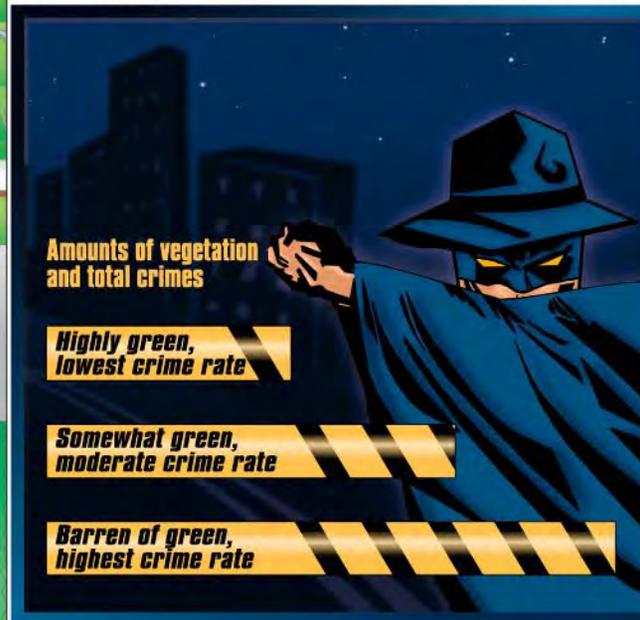
Green Relief

Trees Ease Poverty's Burden in Inner City Neighborhoods



Green Streets, Not Mean Streets

In an inner city neighborhood, the greener the residence, the lower the crime rate.



SOCIAL AND BEHAVIORAL BENEFITS TREES AND PUBLIC HEALTH

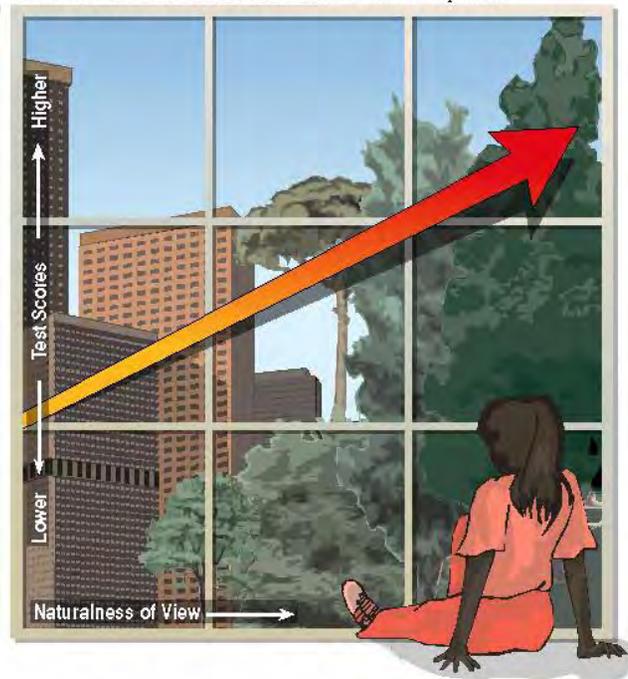
in the Shade

Violence are Reduced with Nature Nearby



Girls & Greenery

Girls with a home view of nature score higher on tests of concentration and self-discipline.

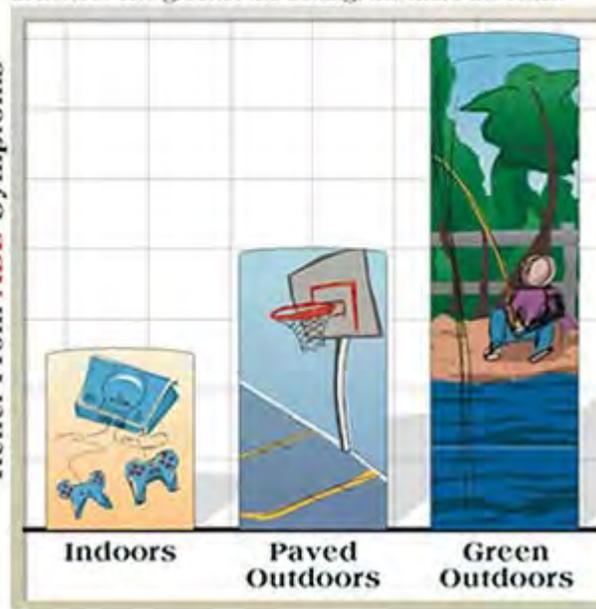


ADD Kids:

"Go Out and Play!"

ADD symptoms in children are relieved after spending time in nature. The greener the setting, the more the relief.

Relief From ADD Symptoms



SOCIAL AND BEHAVIORAL BENEFITS BUFFERS AND SCREENING

- ⊙ Trees absorb and deflect sound energy
- ⊙ Act as noise buffers/barriers
- ⊙ Buffer/hide unwanted views
- ⊙ Direct vehicle or pedestrian traffic
- ⊙ Reduce glare



SOCIAL AND BEHAVIORAL BENEFITS

COMMUNITY PRIDE



- ⊙ Community image or identity
- ⊙ Sense of place
- ⊙ New business/visitor promotion
- ⊙ Downtown revitalization
- ⊙ Tree City USA®

SOCIAL AND BEHAVIORAL BENEFITS

COMMUNITY PRIDE

- ◎ Nine Tree City USA® Communities in RLUAC area
 - ◎ Fayetteville, Fort Bragg, Laurinburg, Maxton, Pinehurst, Pope AFB, Red Springs, St. Pauls, and Southern Pines
- ◎ Communities with tree themed nicknames
 - ◎ Fayetteville – City of Dogwoods
 - ◎ Angier – Town of Crepe Myrtles
- ◎ Communities with tree names
 - ◎ Linden , Pinebluff, Pinehurst, Pineview, Southern Pines, Whispering Pines



SOCIAL AND BEHAVIORAL BENEFITS INSPIRATIONAL VALUE

**es because they seem more resigned to the way they have to live
ner things do.** Willa Cather (1873-1947), *O Pioneers* 1913

**Knowing trees, I understand the meaning of patience. Knowing grass, I
can appreciate persistence.** Hal Borland, *Countryman: A Summary of Belief*

k that I shall never see a poem lovely as a tree... Joyce Kilmer (1886-1918), *Trees*

people who will not sustain trees will soon live in a world that will not sustain people.
ce Nelson

**Acts of creation are ordinarily reserved for gods and poets. To plant a pine,
one need only own a shovel.** Aldo Leopold

BENEFITS OF URBAN TREES

BENEFITS AND COSTS

Benefits

- ⊙ Cooling
- ⊙ Heating
- ⊙ CO₂ Absorption
- ⊙ Air Quality
- ⊙ Water Quality
- ⊙ Aesthetics
- ⊙ Property Values

Costs

- ⊙ Planting
- ⊙ Pruning
- ⊙ Mulch
- ⊙ Removal and Disposal
- ⊙ Pest Control
- ⊙ Infrastructure Repairs
- ⊙ Irrigation
- ⊙ Clean-up
- ⊙ Contribute VOC
- ⊙ Legal and Liability
- ⊙ Inspections
- ⊙ Allergy Medications

BENEFITS OF URBAN TREES

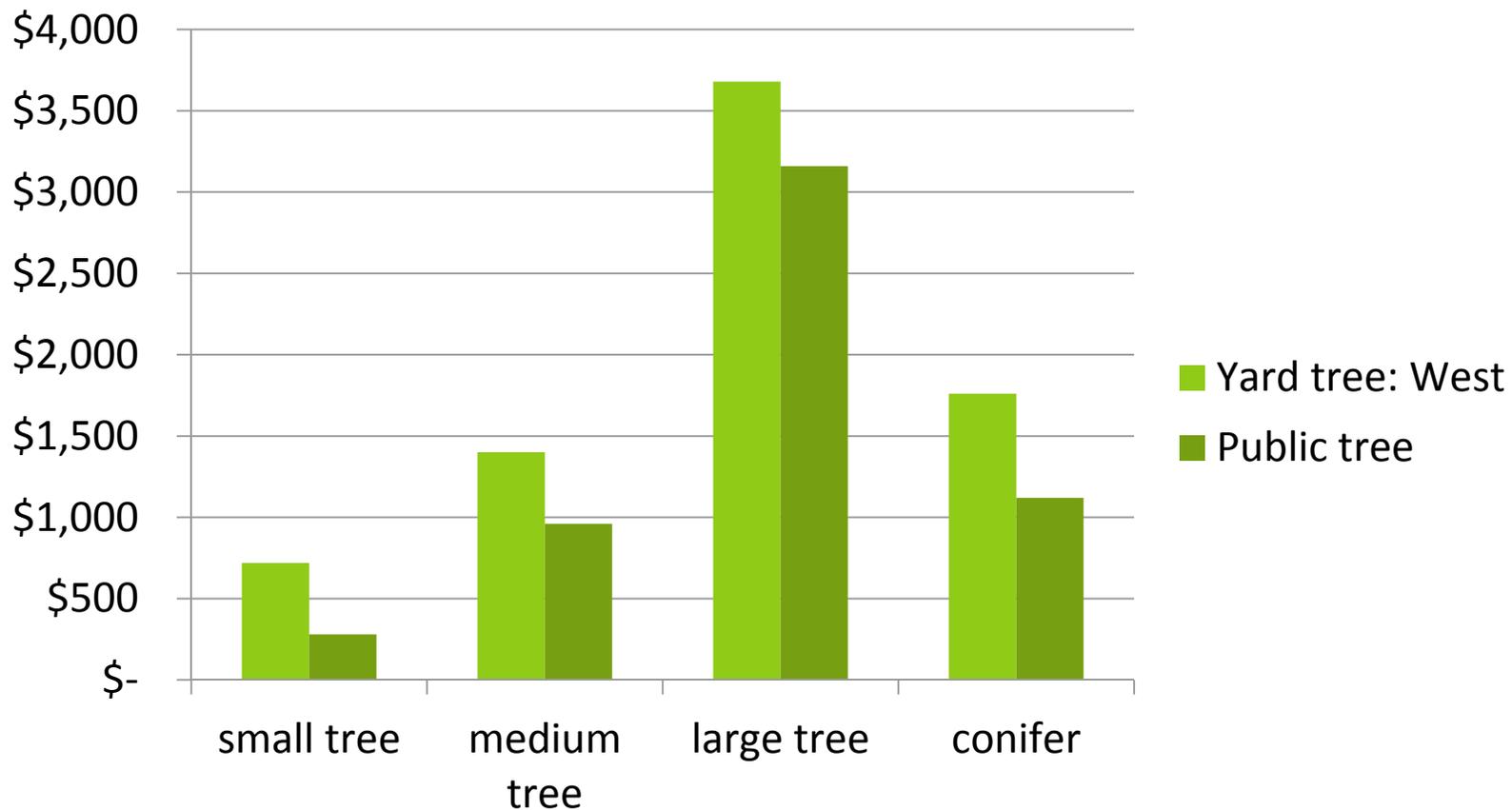
NET BENEFITS

40 year average of net benefits

	large tree	medium tree	small tree	conifer
tree: West	\$ 91.63	\$ 34.63	\$ 17.88	\$ 43.00
tree: South	\$ 82.88	\$ 22.63	\$ 11.25	\$ 31.00
tree: East	\$ 87.63	\$ 29.63	\$ 14.25	\$ 38.88
ic tree	\$ 77.63	\$ 23.00	\$ 6.25	\$ 27.25

BENEFITS OF URBAN TREES

NET 40 BENEFITS SUMMED



BENEFITS OF URBAN TREES

20 YEARS GROWTH IN DESERT SOUTHWEST

Monahan AFB, AZ

Canopy – 42%

Water Runoff Reduction – 23%

Energy Savings - \$20.02/home

Carbon Sequestration – 2.40 tons/yr



PLAN FOR THE URBAN FOREST

- © New parking lots designed to utilize trees



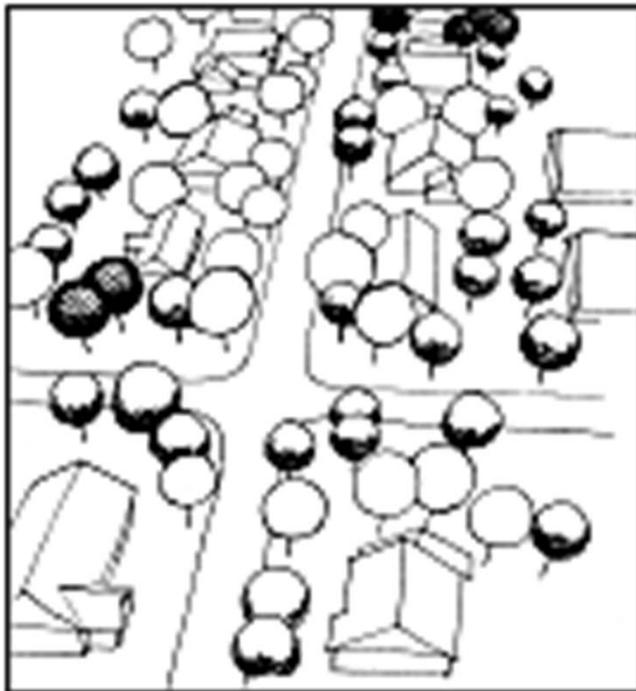
PLAN FOR THE URBAN FOREST

- ◎ Old parking lots retrofitted for trees



PLAN FOR THE URBAN FOREST

- © Flexible set-back requirements for older suburbs



PLAN FOR THE URBAN FOREST

- ◎ Planting the right tree in the right place in urban core areas and commercial districts



PLAN FOR THE URBAN FOREST

- ◎ Tree canopy provisions inserted into zoning requirements



PLAN FOR THE URBAN FOREST

- ◎ Plant freeway on and off ramps in trees instead of high maintenance grass

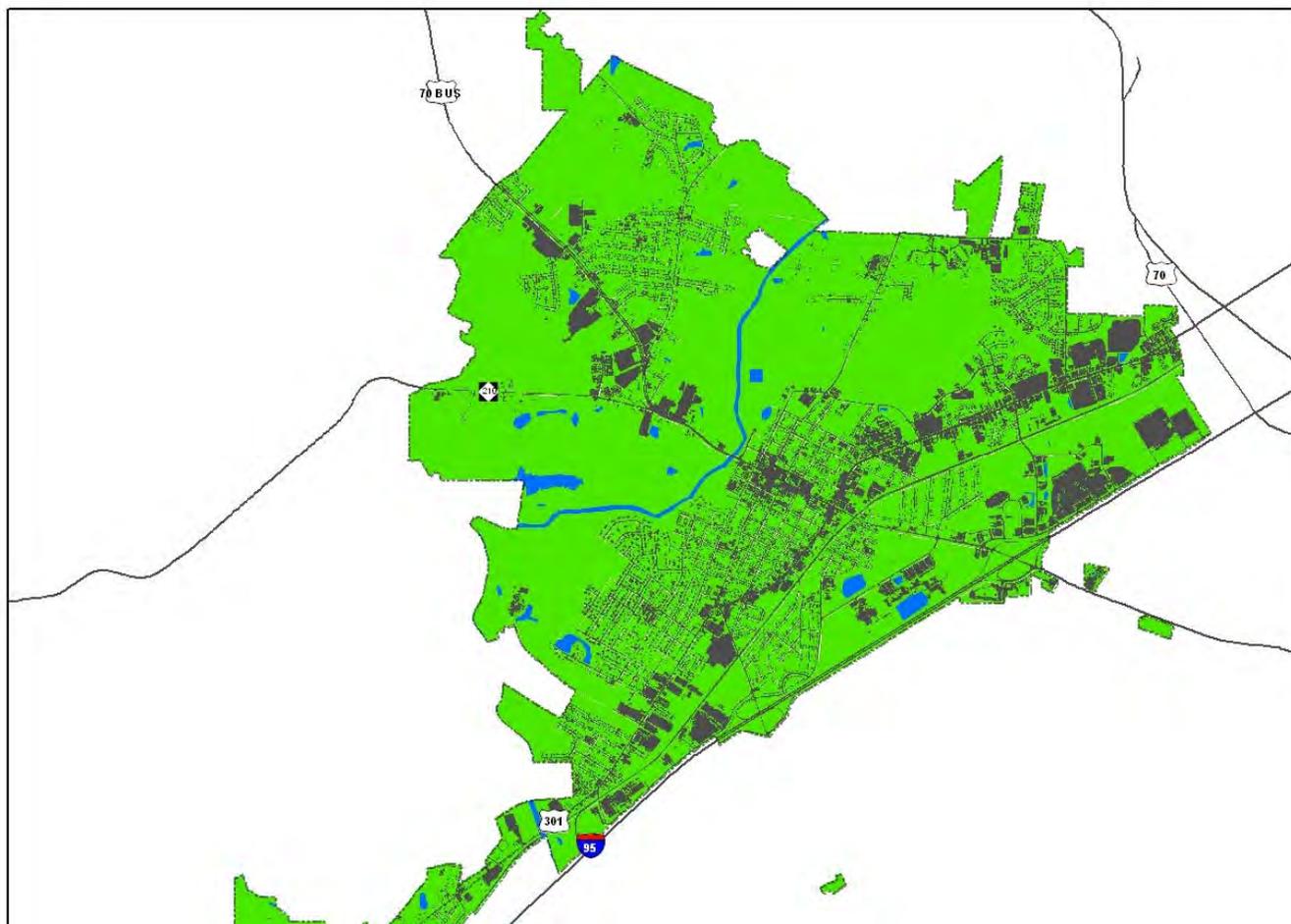


Photo: Texas Forest Service

PLAN FOR THE URBAN FOREST

- ⊙ New parking lots designed to utilize trees
- ⊙ Old parking lots retrofitted for trees
- ⊙ Flexible set-back requirements for older suburbs
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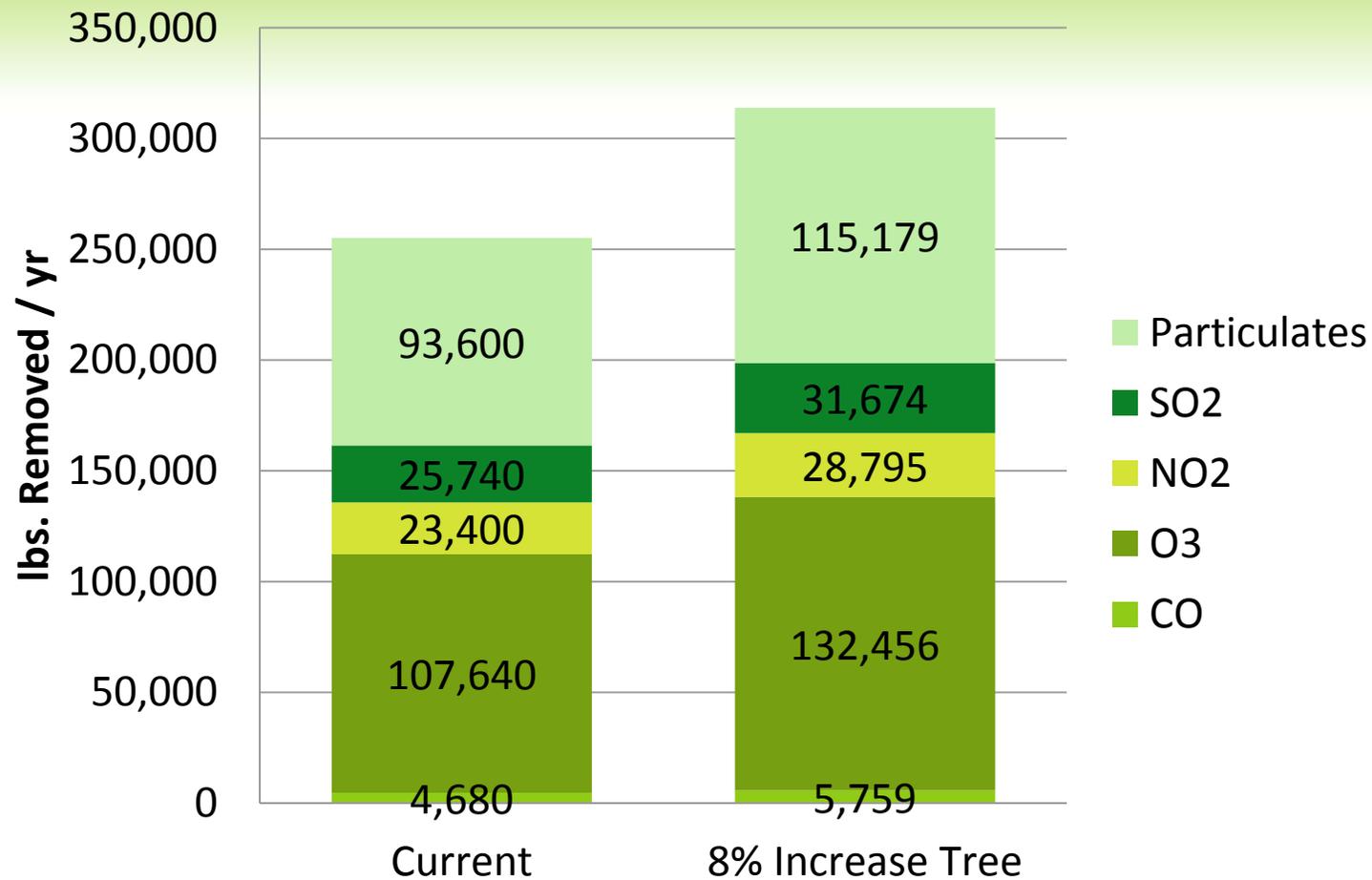
INCREASE URBAN TREE CANOPY



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THE IMPORTANCE AND BENEFITS OF THE URBAN FOREST



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QUESTIONS?



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