



***Connecting Health
Outcomes and Urban
Forests***

Climate Action Team
Public Health Workshop

Sacramento .CA
April 19, 2016

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Executive Director, Sacramento Tree Foundation



Our Mission

Building healthy, livable communities in the Sacramento region by growing the best urban forest in the nation.

Our Regional Influence is Aligned

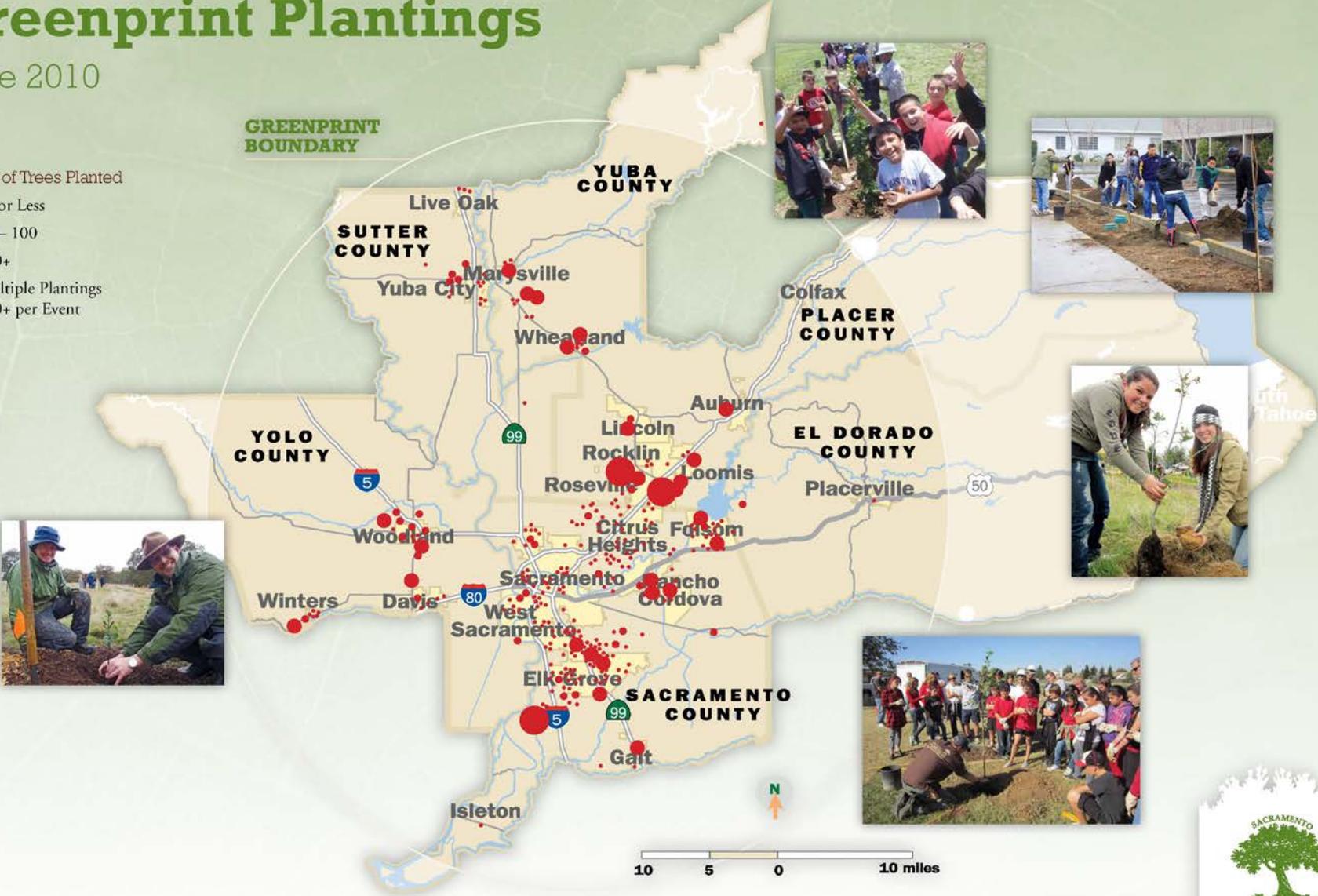
Greenprint Plantings

Since 2010

Number of Trees Planted

- 50 or Less
- 51 – 100
- 100+
- Multiple Plantings
200+ per Event

**GREENPRINT
BOUNDARY**



35% Tree Canopy Goal

- 17% regional average tree canopy cover
- 80%+ of places to increase tree canopy are on private property
- Under-resourced neighborhoods have the least tree canopy cover

Air Quality



100 mature trees remove about 1000 lbs of pollutants per year including:

400 lbs of ozone

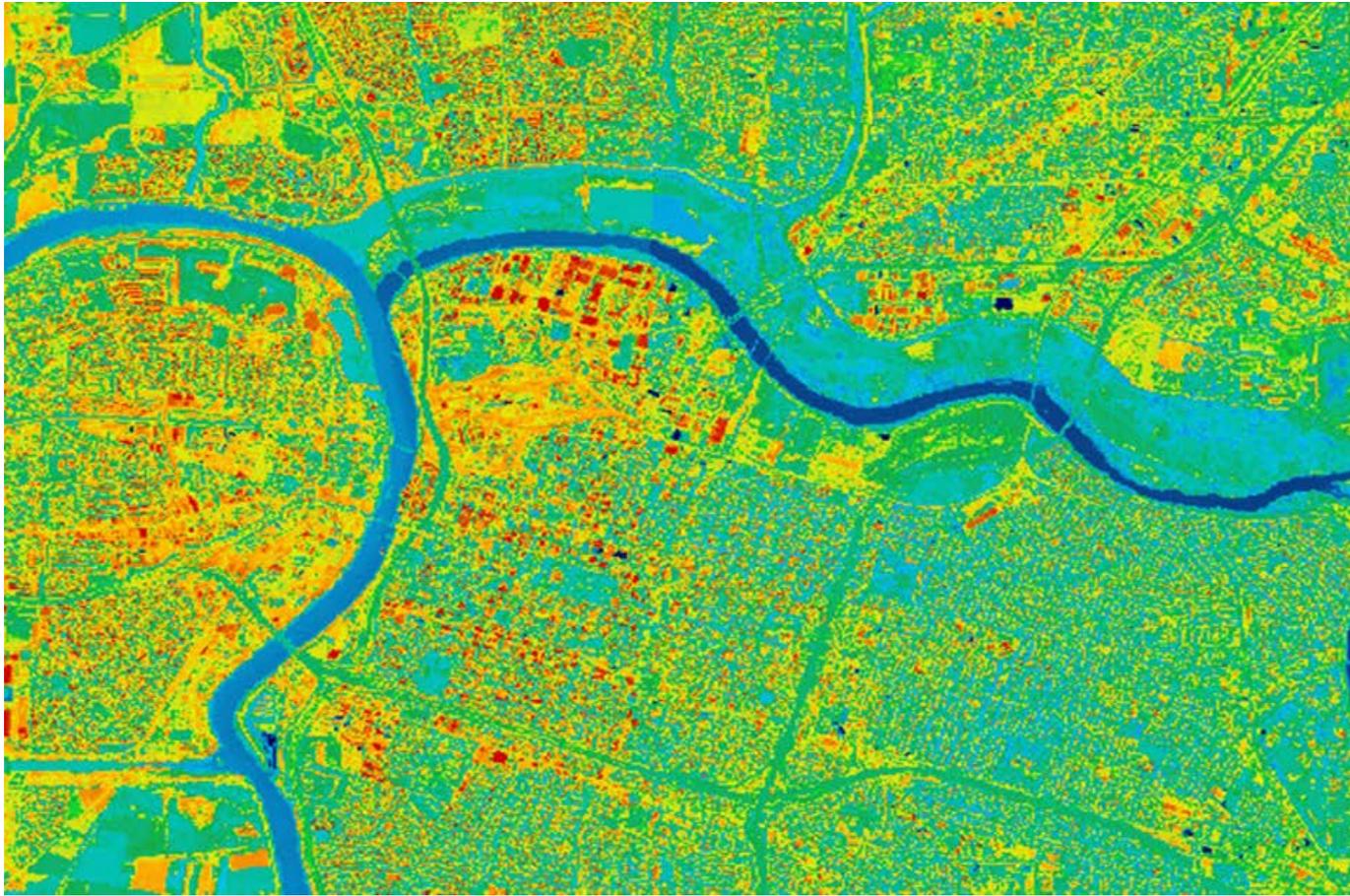
300 lbs of particulates

150 lbs of nitrogen oxides

Center for Urban Forest Research,
Pacific Southwest Research Station, 1999

Young children living in areas with more street trees have a lower prevalence of asthma

Lovasi, Journal of Epidemiology and
Community Health, 2008



Urban Heat Island Effect

5 – 15 degrees F Cooler

when walking on tree canopied sidewalks

Burden, 22 Benefits of Urban Street Trees, 2006

Tree Foundation Strategic Focus



Engagement

- Social Media
- Partnership Building
- Communications



Urban Forest

- Service-Learning
- Habitat Restoration
- Land Enhancement
- Monitoring



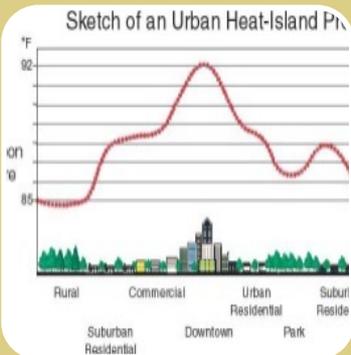
Education

- Expert Consultation
- Training and Instruction
- Translate science into language for every day people

Research and Innovation



- Sacramento Urban Forest Ecosystem
- SunSmart
- Urban Heat Island Study



- Urban Forest for Clean Air
- Fruit for Families
- Young Tree Survival

Research and Innovation



- Governor's Obesity Prevention Plan
- California's Health in All Policies
- Governor's Let's Get Healthy Report





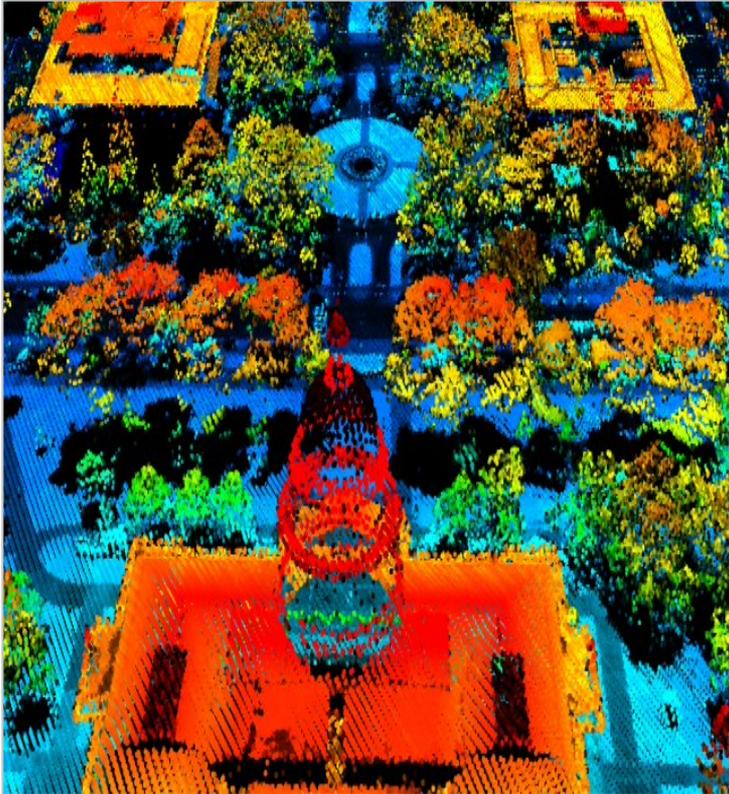
GreenRx

- **Statistical Modeling**
- **Predictive Modeling**
- **Multiple Health Indices**
- **Adults, Teens & Children**





Study Team



- Urban Design 4 Health
- Expert Advisory Committee
- California Health Interview Survey, UCLA
- University of Vermont Spatial Analysis Lab
- WebWorks and GeoSprocket
- California Department of Water Resource LIDAR data



Advisory Committee

Desirée Backman, DrPH, MS, RD

Chief Prevention Officer
UC Davis Health System & California
Department of Health Care Services

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Research Social Scientist
Urban Forestry & Urban Ecology
University of Washington

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US Forest Service

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Public Health Officer

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Editor-in-Chief
American Journal of Public Health

Teri Duarte, MPH

Executive Director
WALKSacramento

Sandra Shewry

External Engagement
California HealthCare Foundation





Advisory Committee

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Trees Forever, Iowa

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Government Relations Director
UC Davis Health System

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State Urban Forester
CALFIRE

Aimee Sisson, MD, MPH

Health in All Policies Task Force
California Department of Public Health

Dee Marian

Landscape Architect / Community Planner
Centers for Disease Control and Prevention



California Health Interview Survey

Sacramento region data 2003, 2005, 2007, 2009

4,821 adults (18-65)

601 teens (12-17)

1,244 children (11 and younger)

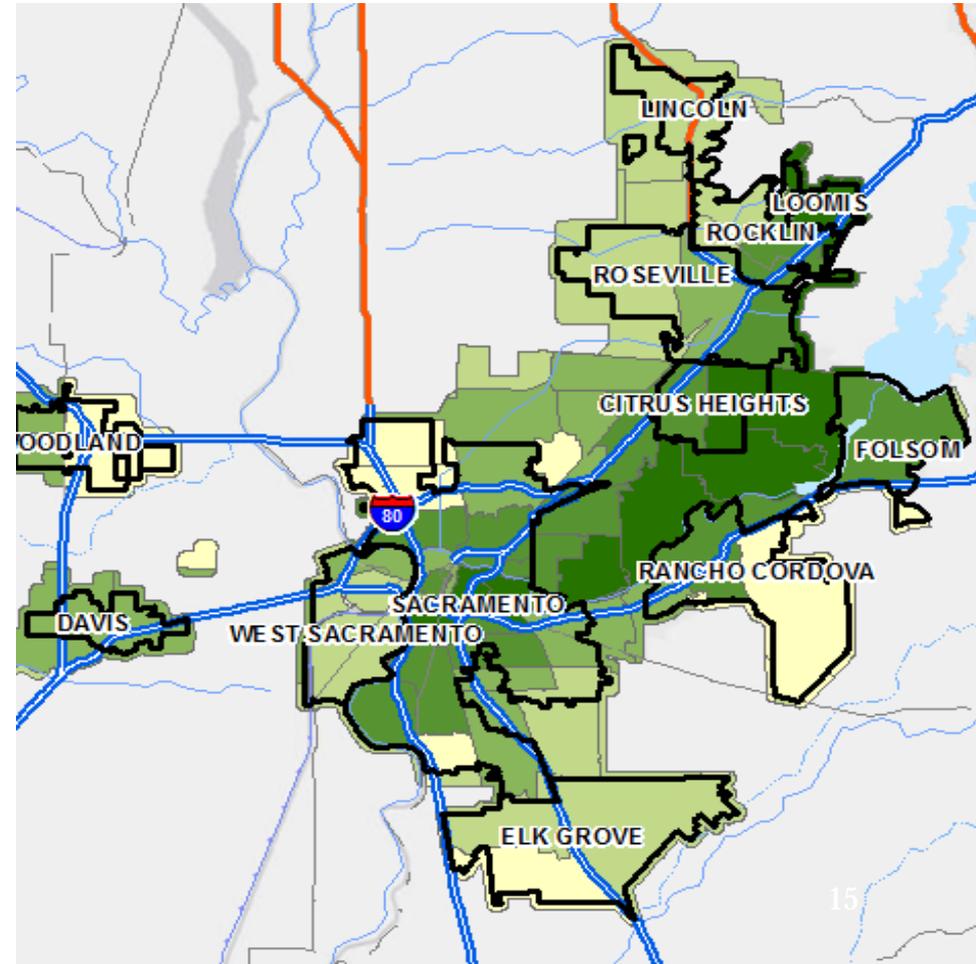
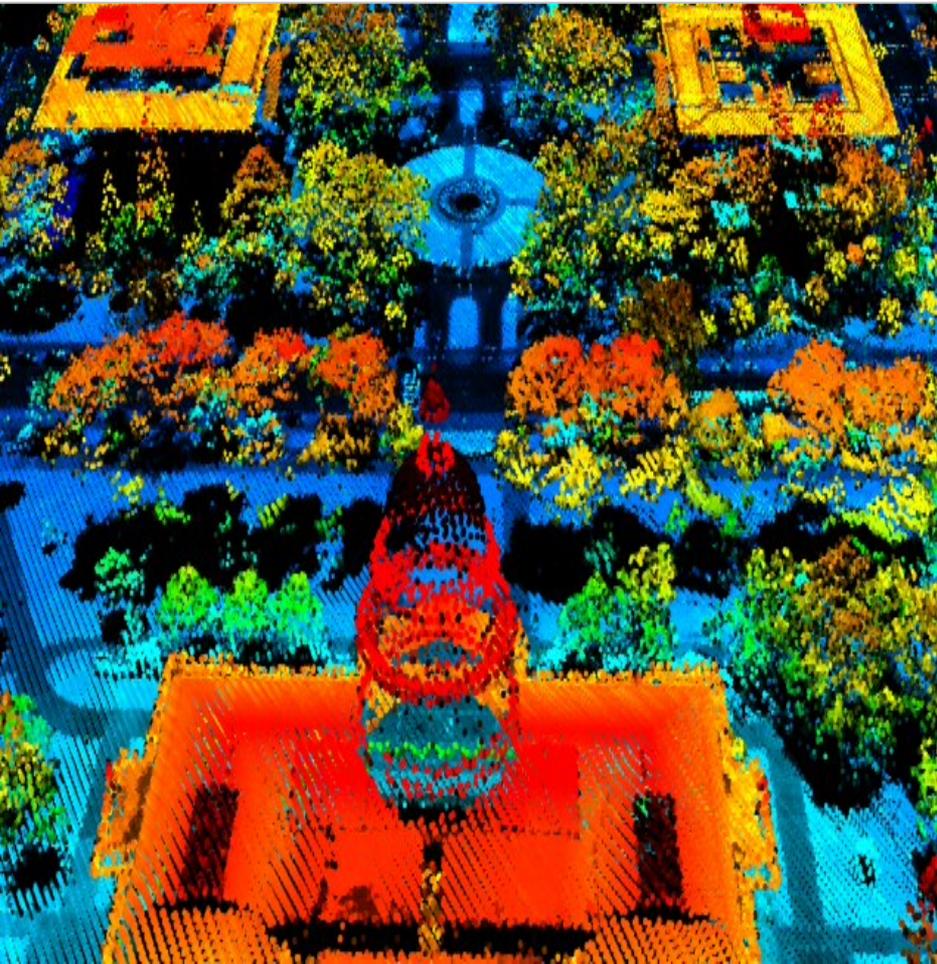
The screenshot shows the website for the California Health Interview Survey (CHIS). At the top, the UCLA Center for Health Policy Research logo is visible. The navigation menu includes links for Newsroom, Join Our Newsletter, Contact, and Login. Below the navigation, there are tabs for About The Center, Publications, Programs, Making an Impact, California Health Interview Survey (highlighted), AskCHIS, and Health Profiles. The main banner features a diverse group of people and the text "California Health Interview Survey". Below the banner, the breadcrumb "Home > California Health Interview Survey" is shown. On the left, a sidebar lists links: About CHIS, AskCHIS, Get CHIS Data, Analyze CHIS Data, Design & Methods, and CHIS Research Projects. The main content area has a "Welcome to CHIS" heading followed by a paragraph describing CHIS as the nation's largest state health survey. To the right of the text is a "HEALTH DATA ALL-STAR" badge and a "Vote now for the data most important to you!" call to action. At the bottom right, there are "print" and "share" icons.



Tree Canopy Data

Aerial Imagery – NAIP 2009

LIDAR – DWR 2008





Hypotheses

- Attention Deficit Hyperactivity Disorder
- Asthma
- Body Mass Index
- Type 2 Diabetes
- General Health Status
- Cardiovascular Disease
- Social Cohesion
- Physical Activity
- Mental / Emotional Health





Statistical Findings

Residents in neighborhoods with more tree canopy:

Lower **Body Mass Index**

Reduced likelihood of being **Overweight/Obesity**

Greater participation in **Vigorous Activity**

Lower likelihood of **Asthma**

Higher levels of **Social Cohesion**

Improvements in **Mental Health**

Better reported **General Health**



GreenRx Predictive Modeling Results



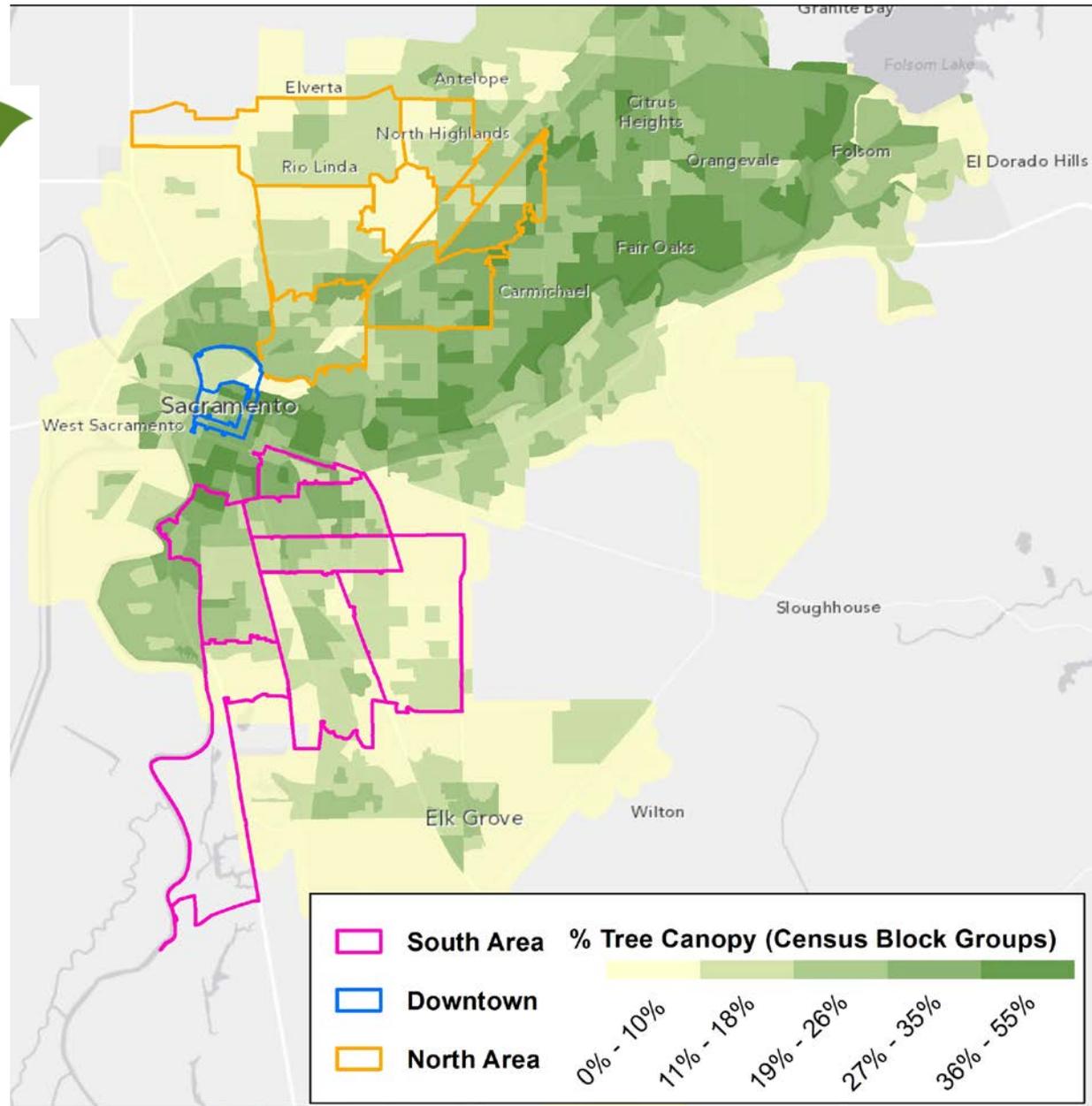


For healthy neighborhoods immediate actions are needed to nurture those trees now in the ground, and to plant new ones.

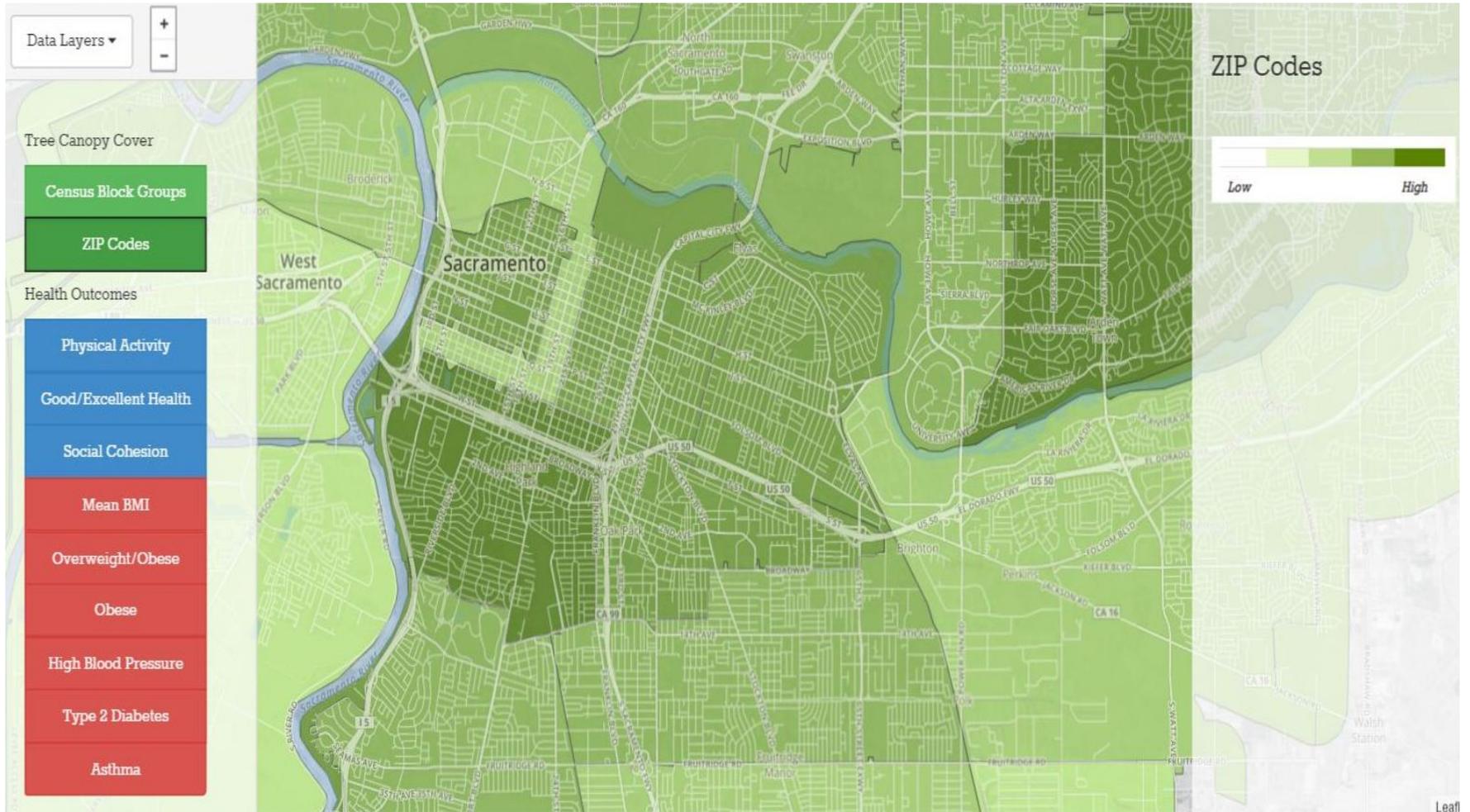




Tree canopy coverage

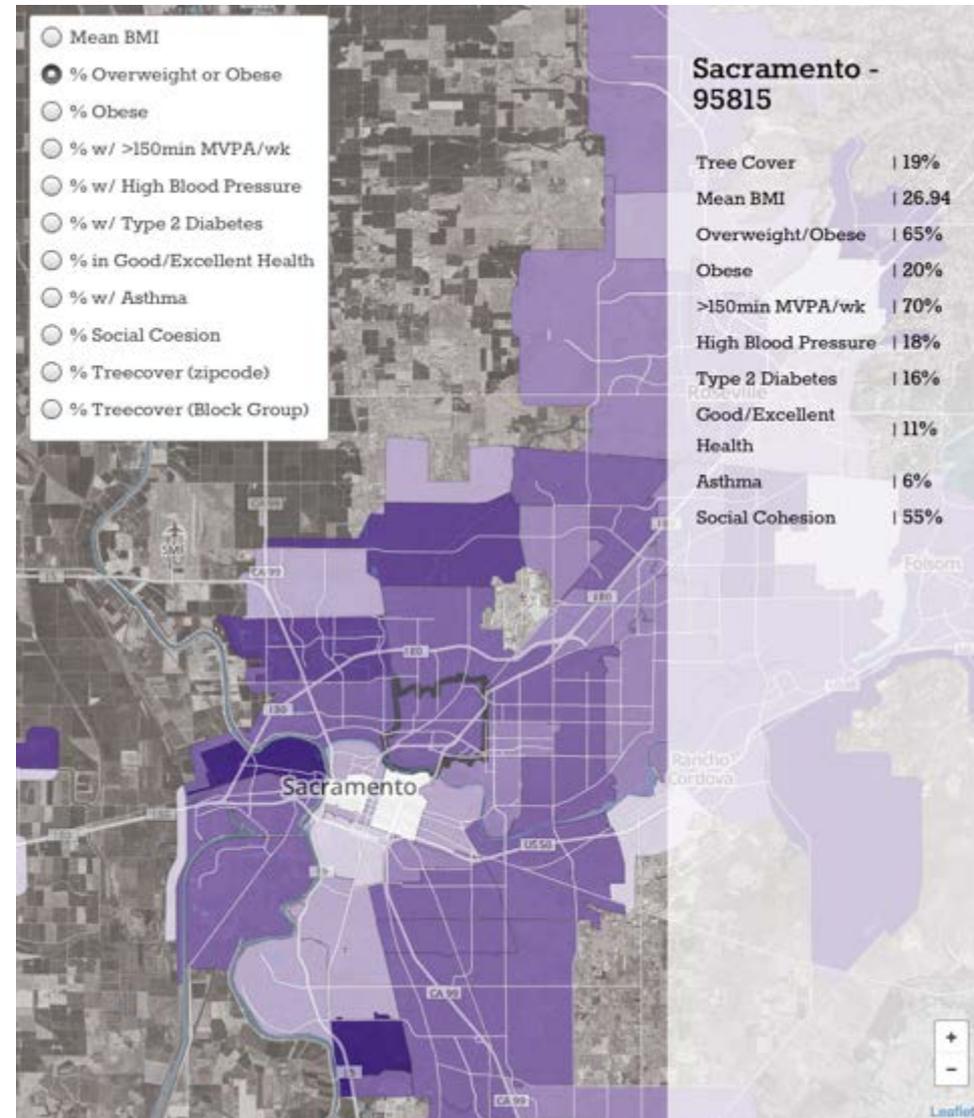


Interactive Regional Mapping





Tree Canopy Cover and Health Outcomes by zip code





Next Steps

- Build connections to climate and health equity communities
- Think twice before removing a tree
- Focus new trees in under-resourced neighborhoods
- Impact policy - advocate
- Support targeted research

NeighborWoods South Sacramento GHGR Grant

3,000 new trees for public and private property

New curriculum on social justice, urban environment and civic engagement

Build capacity to monitor trees and educate homeowners/renters on increasing tree growth, health and survivability



Urban Wood Rescue

GHGR Grant



CalFire
Saw Mill
Grant



City of
Sacramento
MOA



West Coast
Arborist
Partnership





“Maybe we want to start thinking of trees as part our
public health infrastructure.

Maybe trees are not only essential for the natural environment but just as
essential for our well being.”

G. Donavon, US Forest Service

Thank You...Questions?

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