

SMAQMD Winter Study Measuring Toxics from Wood Smoke

SEC Presentation

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SACRAMENTO METROPOLITAN



AIR QUALITY
MANAGEMENT DISTRICT

Introduction

- Impact of reducing particulate-matter pollution
- Purpose of studying toxics from wood smoke
- Existing regulatory monitoring network
- SMAQMD Study details
 - Methodology
 - Community involvement
 - Neighborhood selection

PM is Bad for Your Health

- **Particulate matter 2.5 (PM_{2.5})** is linked to decreased lung function, aggravated asthma, irregular heartbeat, nonfatal heart attacks and early death
- **Wood smoke particles** are included in PM_{2.5}

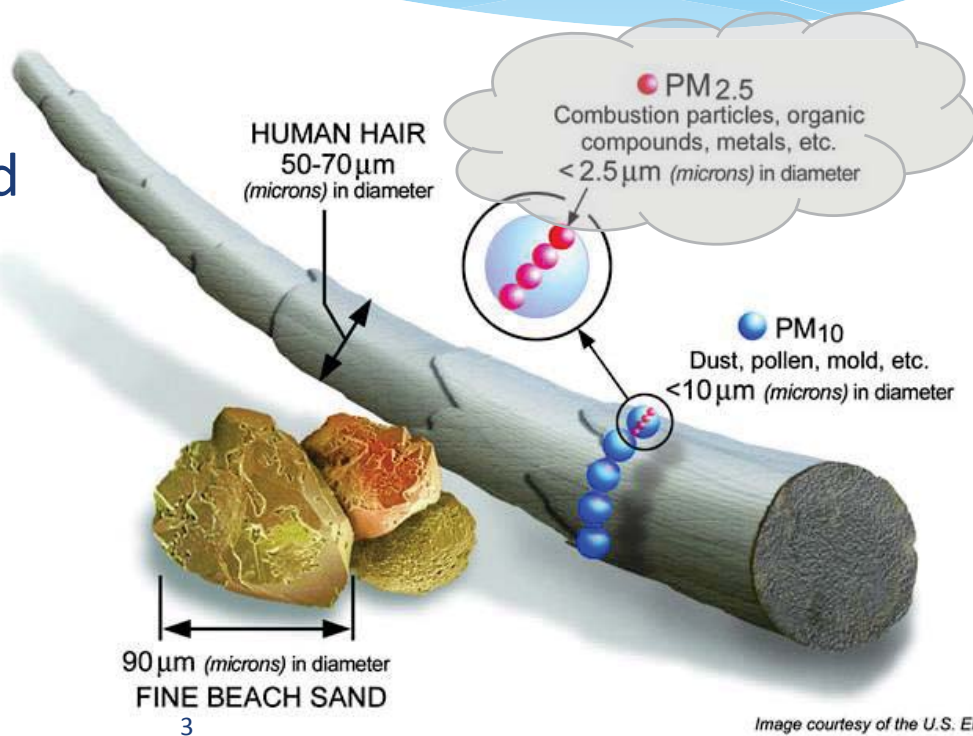
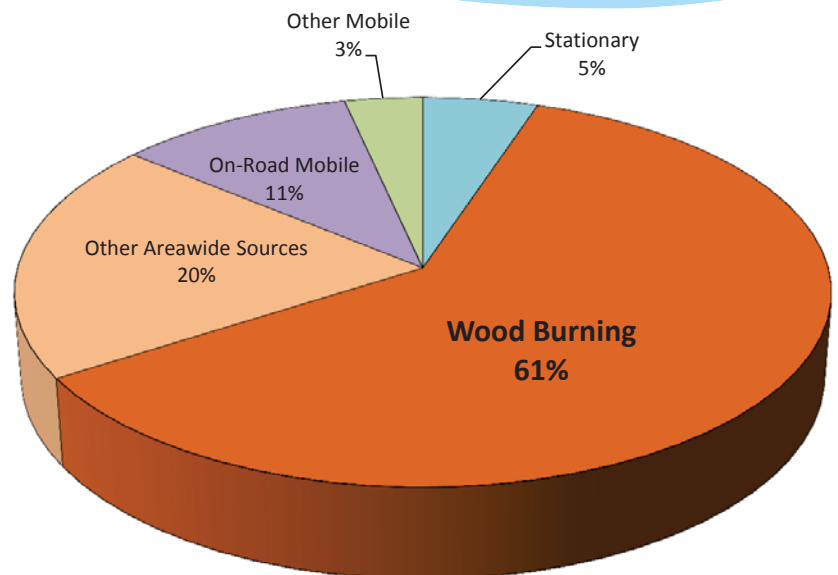


Image courtesy of the U.S. EPA

PM is Bad for Your Health

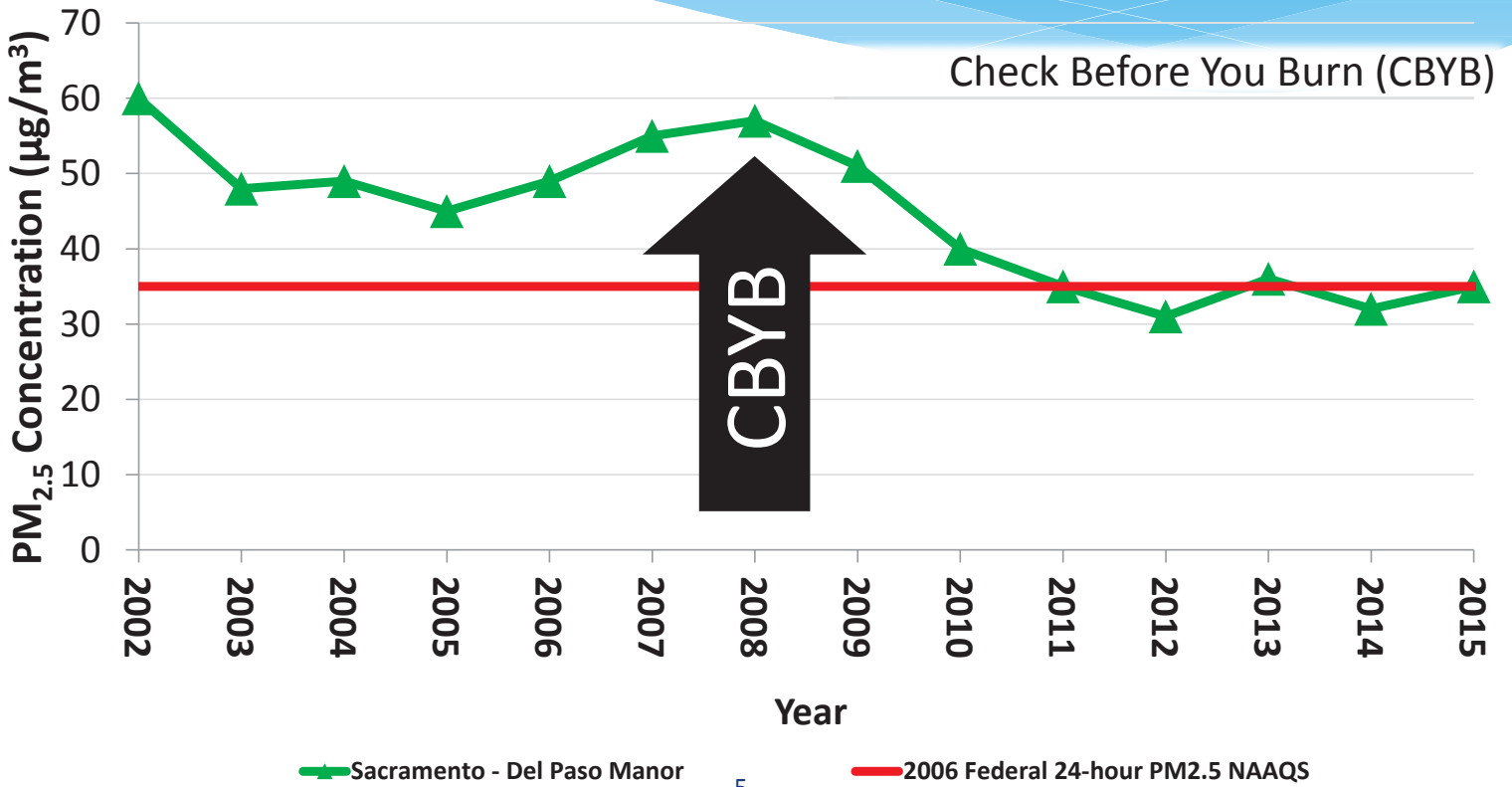
Wood smoke makes up **61%** of the $PM_{2.5}$ emission inventory in Sacramento County on an average winter day



Source: CEPAM: External Adjustment Reporting Tool. SIP2016_Version_101. Access: 14 Oct 15, 10:02 a.m.

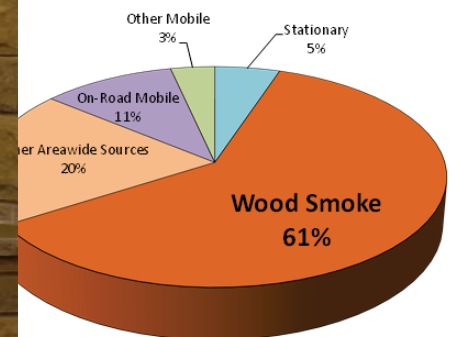
Steady Decline Since 2008...

24-hour PM_{2.5} Design Value



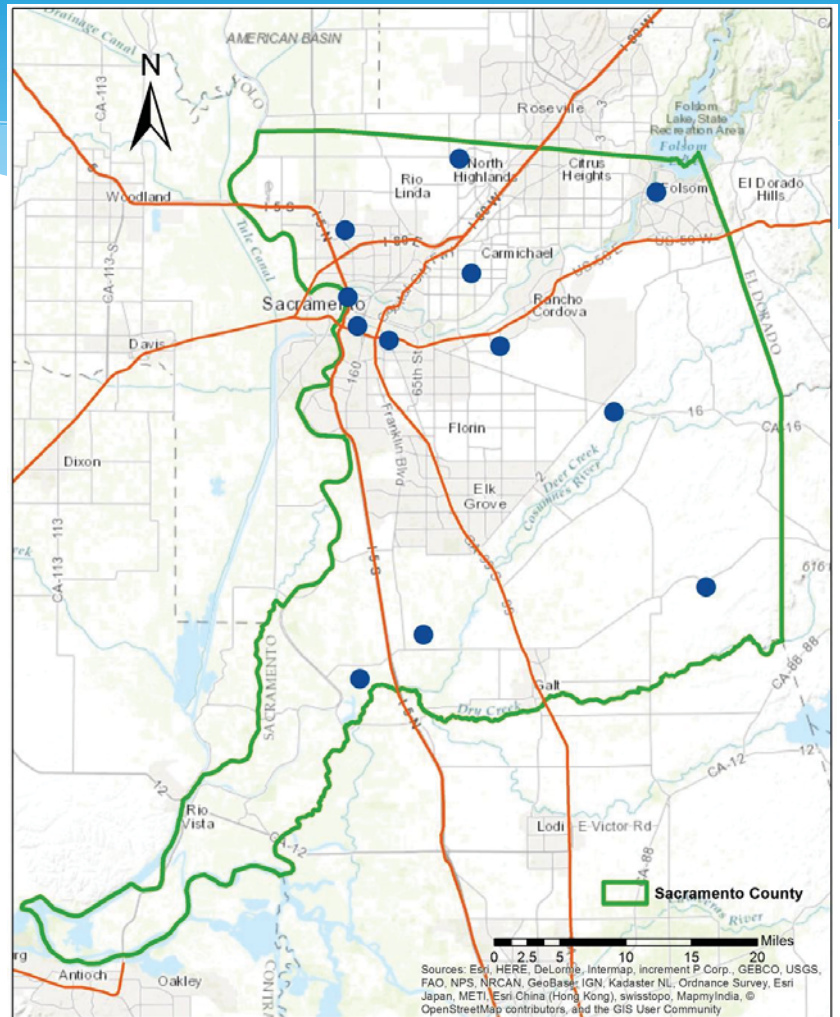
Why is SMAQMD studying air toxics from wood smoke?

To gain a **better understanding of air toxics** from wood smoke, along with wood burning behavior in disadvantaged and non-disadvantaged communities



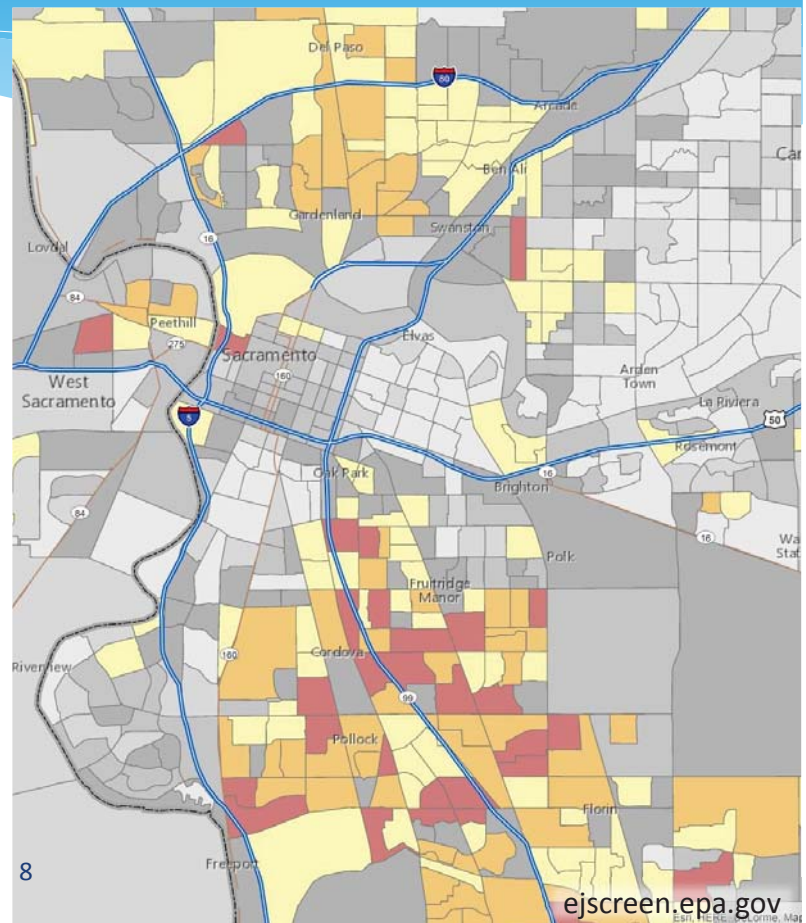
Monitoring Network

- **Monitoring objectives**
 1. Public awareness and notification
 2. Demonstrate compliance with health standards
 3. Support research studies
- Received **\$360,000** grant from EPA for community monitoring of toxics from wood smoke
- Winter 2016



What questions will this study answer for our communities?

- What are the concentrations of toxics?
- To what degree does wood smoke versus traffic contribute to toxics?
- Are some communities disproportionately impacted by wood smoke than others?
- Are there outreach efforts that could assist in reducing this toxics exposure?




Technical Advisory Group

- Approached scientists from the following:



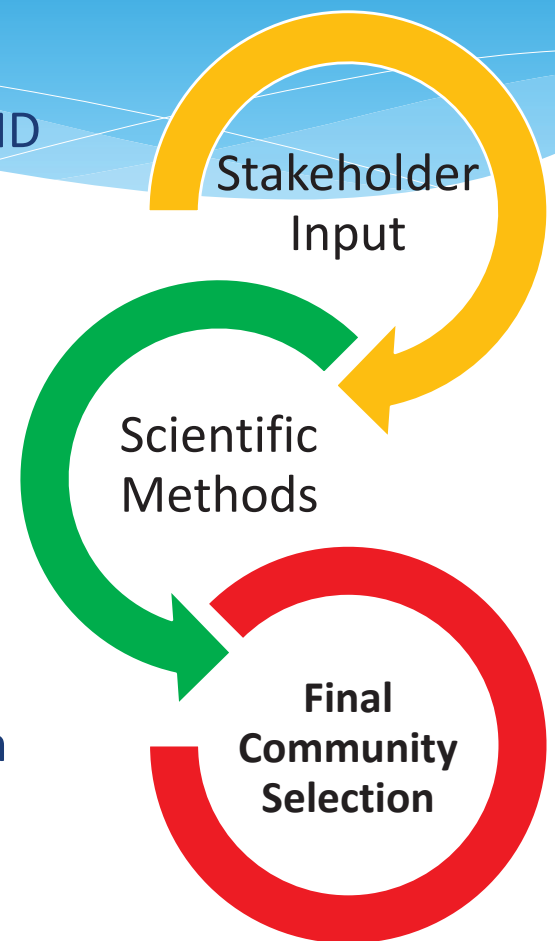
- Provided **technical feedback** on study

Study Design Criteria

- Monitoring will take place in six communities
- These six communities will represent **three “pairs”**:
 - One EJ community paired with one non-EJ community
- Two of the community pairs are located near existing regulatory monitors
 - **13th & T Street** and **Del Paso Manor**
- Remaining pair will be **south of**  in an area not currently covered with a regulatory monitor

How Were the Communities Selected?

- To determine optimum locations, SMAQMD combined:
 - what is important to the **Stakeholders**,
 - **scientific** considerations,
 - and **goals** of the study
- Housing and demographic characteristics
- Locations and coverage area
- Meteorological characteristics
- Proximity to freeways and complex terrain
- **Improve outreach in the future**



Community Stakeholder Involvement



Many Local Groups Helped with Community Selection!



BREATHE CALIFORNIA
of Sacramento-Emigrant Trails

La Familia COUNSELING CENTER, INC.



SIERRA CLUB CALIFORNIA



City of

SACRAMENTO



Three Types of Project Monitors

Tier 1: Existing regulatory sites



Tier 2: New temporary community sites

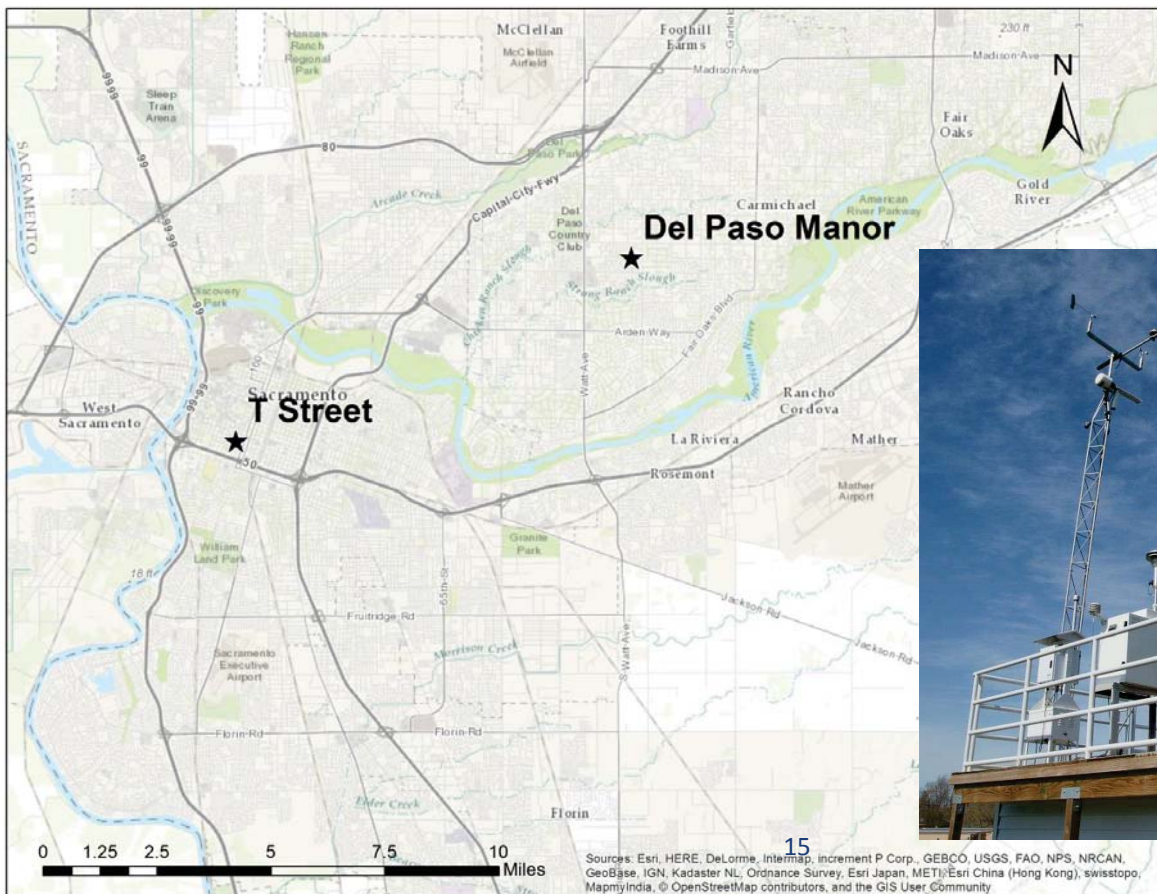


Tier 3: New temporary tripod sites
(low cost monitors)

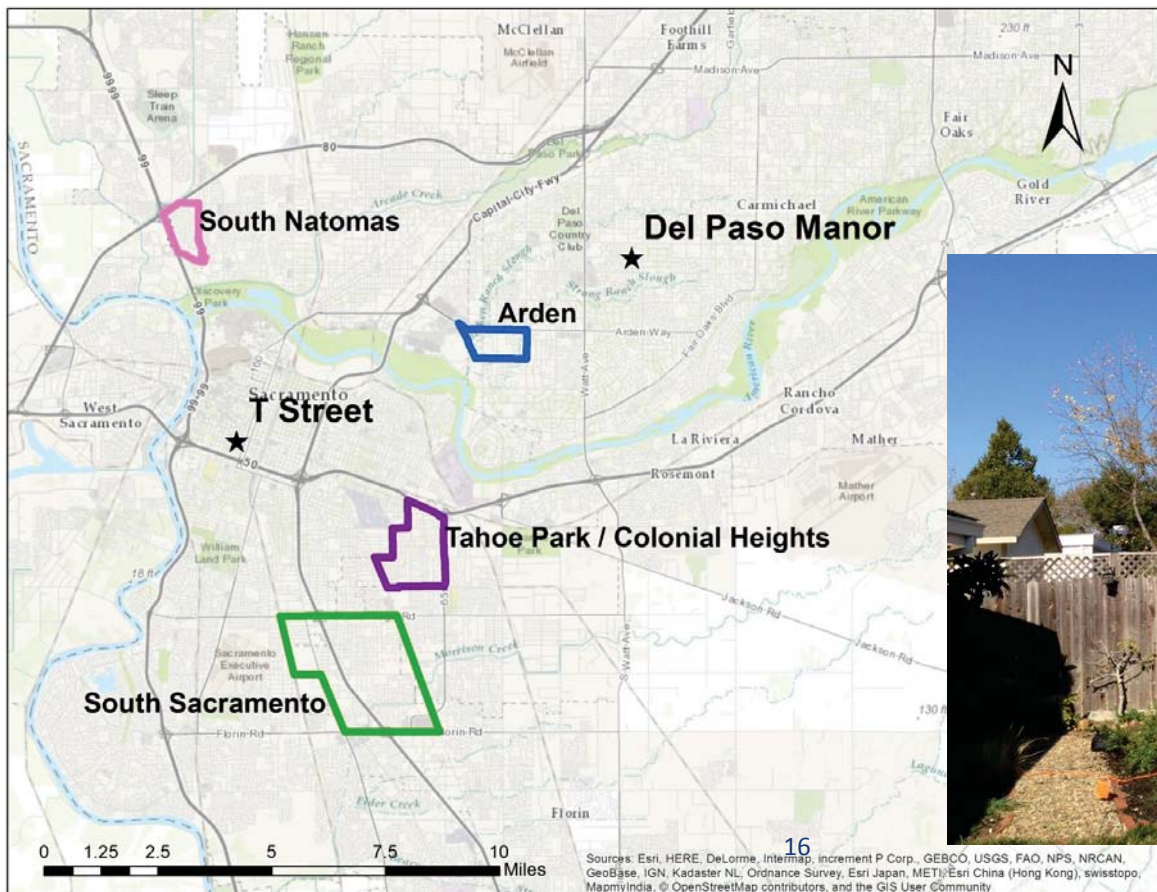


TIER 1 Monitoring Sites

(Two Locations: Del Paso Manor and T Street)

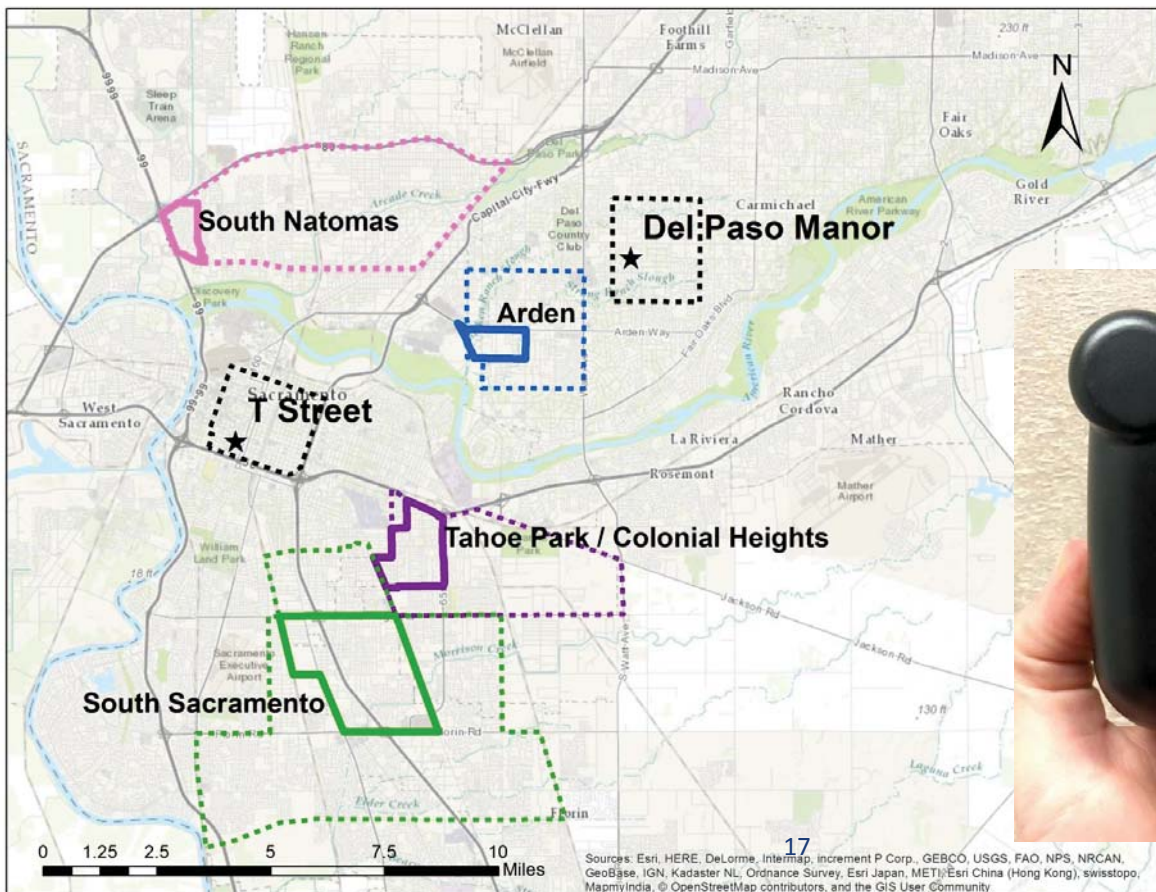


TIER 2 Monitoring Sites (Four locations to be determined)

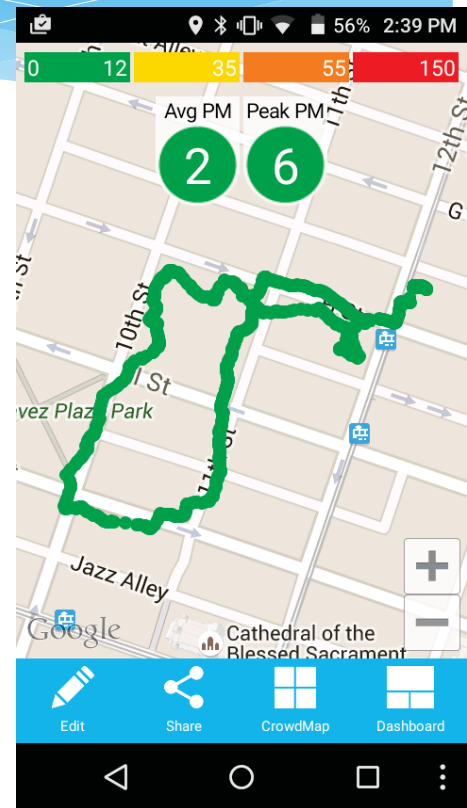


TIER 3 Monitoring Sites (20 total monitors)

AirBeam



AirBeam Handheld Monitor



Community Participation

- **Volunteers** will host Tier 2 and Tier 3 monitors (20-25 locations needed)
- SMAQMD and Sonoma Technology (STI) will install and remove the TIER 2/3 monitor from the property
- **No need for volunteers to check the equipment**, maintenance will be completed by study staff
- Monitors are **quiet, safe**, and only require a regular electrical outlet
- Participants will receive **compensation** for hosting a monitor



Community Outreach During the Study (Phone Surveys)

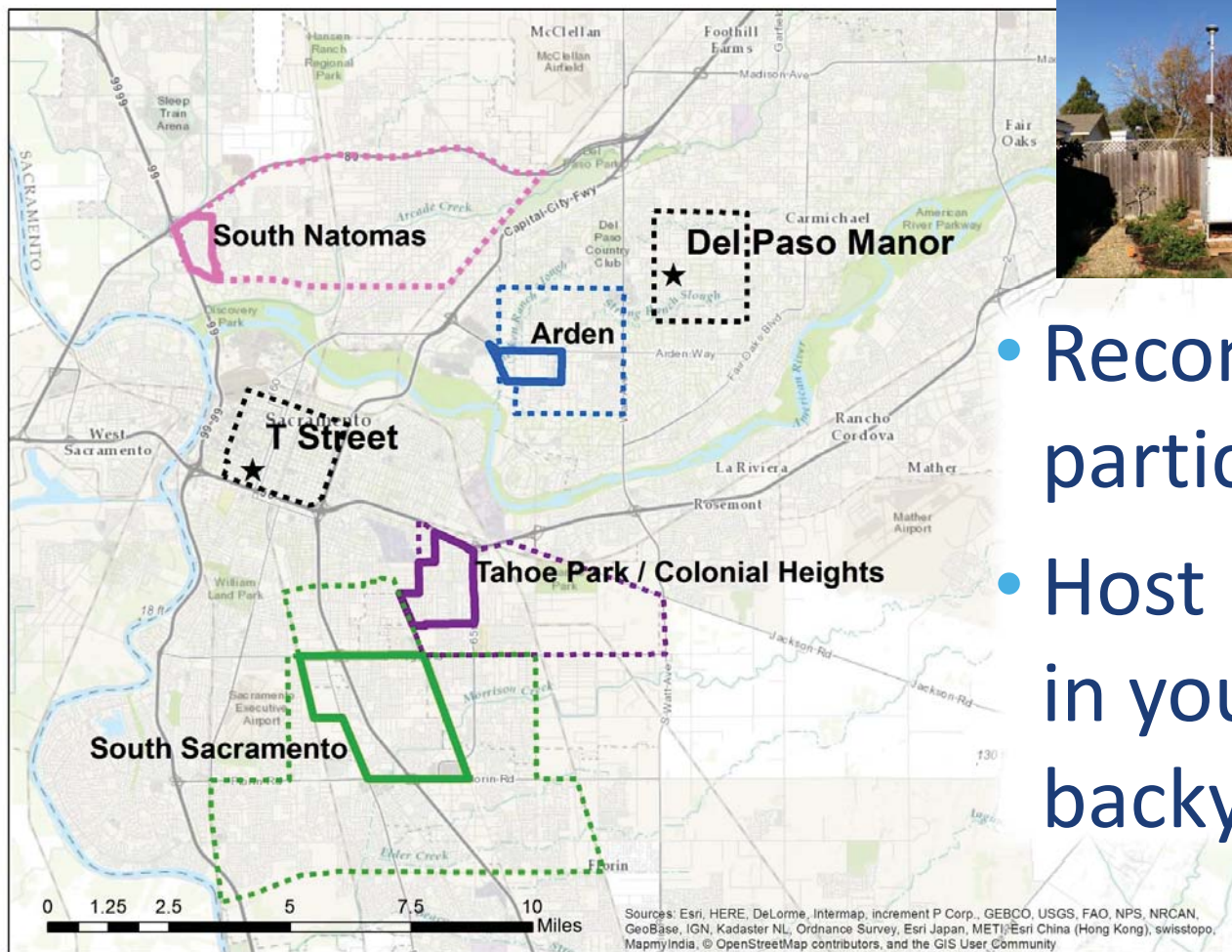
- **Community phone survey** will be performed in communities where monitoring will occur
- Characterize **wood burning behaviors**
- Survey results will be paired with ambient data
- Help to inform **future community involvement and outreach** efforts



Next Steps for the Study...

- Hands-on training session late Summer 2016
- Participant Agreements late Summer 2016
- Install monitors October 2016
- Measurements/Phone Surveys to be conducted November 2016 through February 2017
- Remove monitors February 2017
- Reporting of results late 2017

SMAQMD Requests Input



- Recommend participants?
- Host monitor in your backyard?

Extra Slides

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Study Communities

