

Engage, Educate, and Empower California Communities on the Use and Applications of “low-cost” Air Monitoring Sensors



South Coast
AQMD



BAY AREA AIR QUALITY
MANAGEMENT DISTRICT

STi

Sonoma Technology, Inc.

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for

Air Sensors International Conference
Oakland, CA

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Outline

- Introductions
 - Project Background
 - Current Community Deployments
- Toolkit & Guidebook Overview
- Discussion Topics and Q&A

Project Background

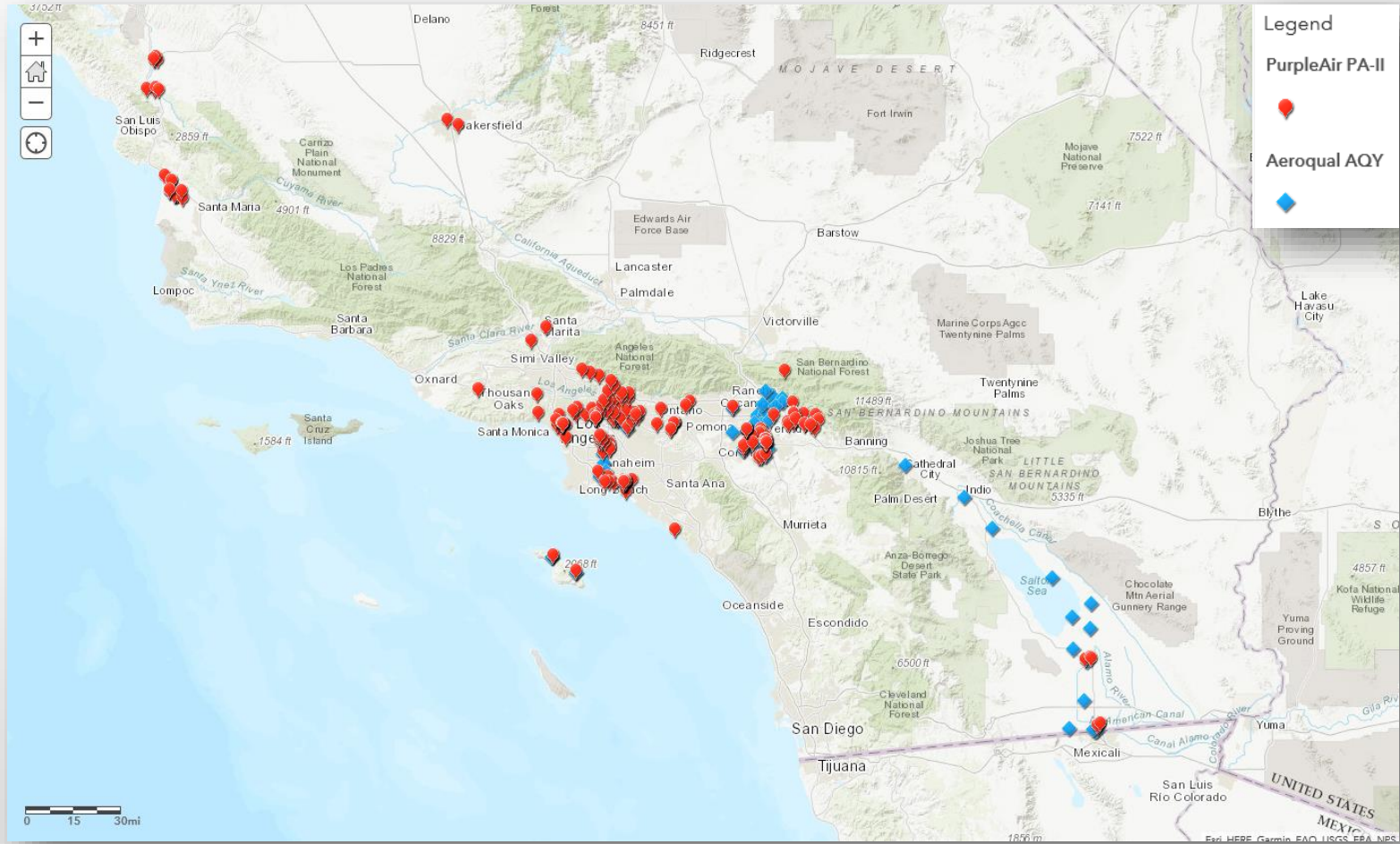
- Environmental Protection Agency (EPA) Science to Achieve Results (STAR) Grant
- Awarded to South Coast AQMD, Sonoma Technology, and University of California, Los Angeles (UCLA)
- Work with California communities to increase awareness and address local air quality issues



Main Objective

Provide communities across California with the knowledge necessary to appropriately select, use, and maintain "low-cost" sensors and to correctly interpret the collected data

Community Deployments



Developing a Toolkit

- Guidebook
 - Best practices
 - Issues to consider during planning and measurement stages
 - Data handling and interpretation
- Training Videos
- Data Collection Checklist
- Surveys

Guidebook Topic Areas



1. Introduction

What makes a project successful?

2. Understanding Air Quality

Air quality basics & monitoring air quality fundamentals



3. Planning Your Project

- *Framing the problem*
- *Identifying pollutants of interest*
- *Where and when to measure*
- *Selecting a sensor system*



4. Deploying your sensors

- *Using and troubleshooting your sensor*
- *Collecting useful data*
- *Interpreting your data*

5. Taking Action

- *Communicating results*
- *Mitigation and outreach*

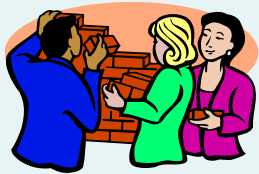
6. Resources

- *Links to more information*
- *Resources and citations*



1. Introduction

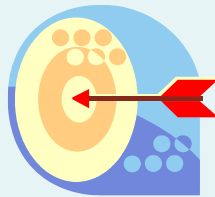
- What makes a project successful?



Establish a stakeholder group



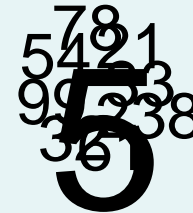
Assess issues of concern



Set project goals



Design full project



Collect and QC data



Interpret data & recommend actions



Take action

- Match goals and expectations to project design
- Communicate limitations (if any) early-on

2. Understanding Air Quality

- What is air pollution?
- How does air pollution impact our health?
- How is air pollution measured?

WHAT ARE THE SOURCES OF AIR POLLUTION?

Outdoor air pollution affects urban and rural areas and is caused by multiple factors:

INDUSTRY & ENERGY SUPPLY

TRANSPORT


WASTE MANAGEMENT

DUST

AGRICULTURAL PRACTICES

HOUSEHOLD ENERGY

Countries cannot tackle air pollution alone.
It is a global challenge we must all combat together.

CLEAN AIR FOR HEALTH #AirPollution  World Health Organization

3. Planning Your Project (1)

- What are the air quality issues concerning our community?
- What pollutants may be of concern?



- Frame the issue
- Define SMART project goals

3. Planning Your Project (2)

- Where, when, and how can we measure?
- How do we select a sensor (or other) monitoring system?



WHAT ARE AIR SENSORS?

Temperature, Wind, Ozone, Particles, Carbon Monoxide, Humidity, NO₂, SO_x

Portable, low-cost devices that measure air quality

WHAT ARE THE BENEFITS?

Localized air quality, Real-time data, Some are mobile compatible

WHAT ARE SOME CHALLENGES?

No health standards for short periods of time, Devices need to be tested for long period of time for accuracy & precision, Data overload - hard to interpret

Learn more at: ourair.org/air-sensors

OurAir.org @OurAirSBC

Santa Barbara County Air Pollution Control District

3. Planning Your Project (3)

- How can we engage our community and encourage participation?



WEDNESDAY, FEBRUARY 28, 2018
AIR QUALITY COMMUNITY MEETING

South Coast Air Quality Management District (AQMD) and the South Gate Community Environmental Health Action Team (CEHAT) will be providing the community with air quality sensors to gain a better and more accurate understanding of how air quality changes in the city of South Gate. The sensor will collect real-time data on particulate matter (PM 2.5), ozone, and other air pollutants. Sensors will be mounted outdoors throughout the community and will require a wireless internet connection. Data will be available to the public, helping you become more informed about the air quality in your area. If interested in participating, you must plan to live in your residence until at least July 2019 and provide Wi-Fi to the sensor. Please join us on Wednesday, February 28 at 6pm at South Gate Museum to learn more. Sensors are available on a first-come, first-served basis.



Host an air quality sensor at home

Wednesday, February 28, 2018

6pm - 8pm

South Gate Museum
 8680 California Ave., South Gate, CA

Light refreshments and kid-friendly environment

For more information contact:

Haydee Becerra
 323-563-9592
 hbecerra@sogate.org

What's in our air?

Alhambra residents! Are you interested in learning more about our local air quality? Come to an informational session to learn how you can host an air quality sensor at home and contribute to local data gathering that can help better understand our air!

Mark Keppel High School
 Friday, December 1, 2017
 6:00pm - 8:00pm

RSVP to schan@apifm.org

ASIAN PACIFIC ISLANDER FORWARD MOVEMENT
www.apifm.org

This is a joint project of API Forward Movement and the South Coast Air Quality Management District

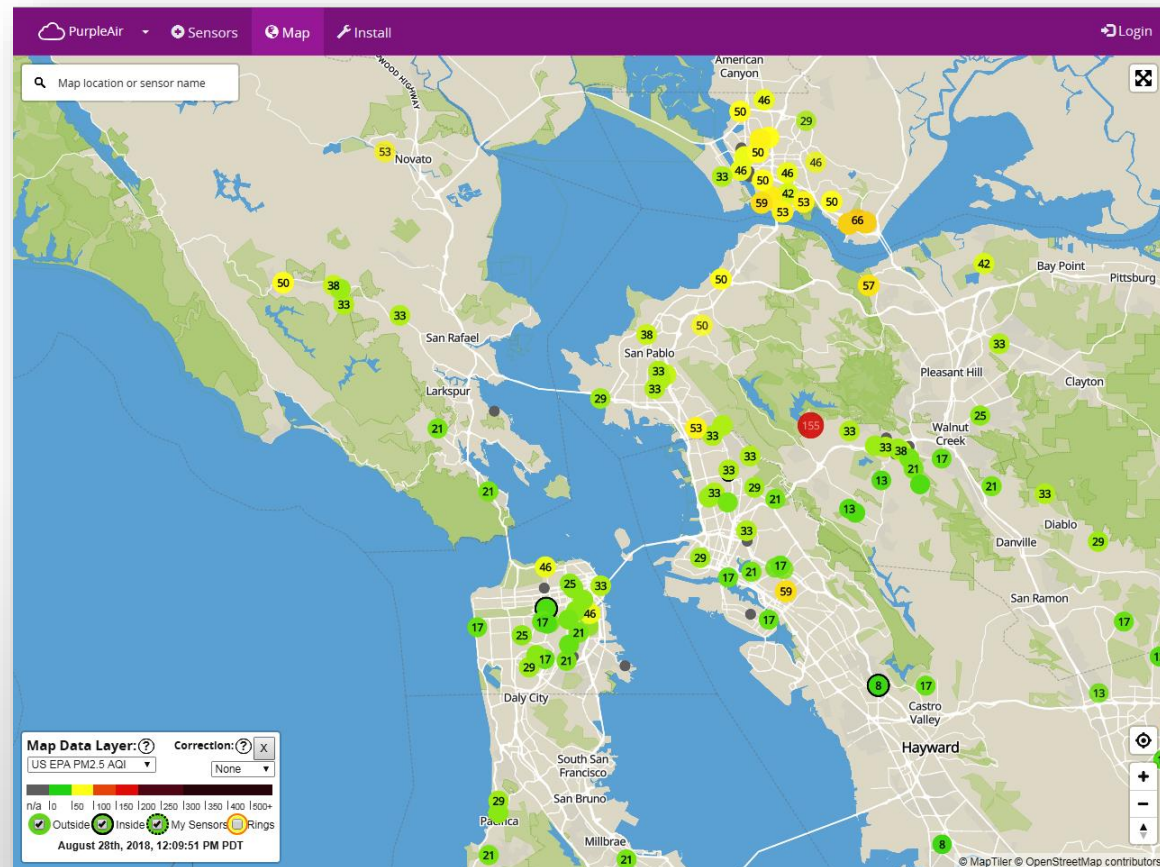
4. Deploying Sensors (1)

- Where should we install sensors?
- What are common problems with sensors?



4. Deploying Sensors (2)

- How do we view the data and what does it mean?



5. Taking Action

- What are actions that can be taken?
 - Personal/Individual Actions
 - Personal exposure-avoidance
 - Education and awareness
 - Data analysis ('citizen science')
 - Group Actions and Campaigns
 - No-idle campaign at schools
 - Identifying Violations Affecting Neighborhoods (IVAN)
www.ivanonline.org
 - Sharing results at civic meetings



6. More Resources

- Air District Web Pages
 - South Coast AQMD (<http://www.aqmd.gov/>)
 - Bay Area AQMD (<http://www.baaqmd.gov/>)
- Information about California Assembly Bill 617 and the Community Air Protection Program (<https://ww2.arb.ca.gov/our-work/programs/community-air-protection-program>)
- EPA's AirNow provides real-time information nationwide (<https://airnow.gov/>)
- Latest air quality data for California (<https://www.arb.ca.gov/aqmis2/aqmis2.php>)