

# Community Air Monitoring



## AB 617 Consultation Group

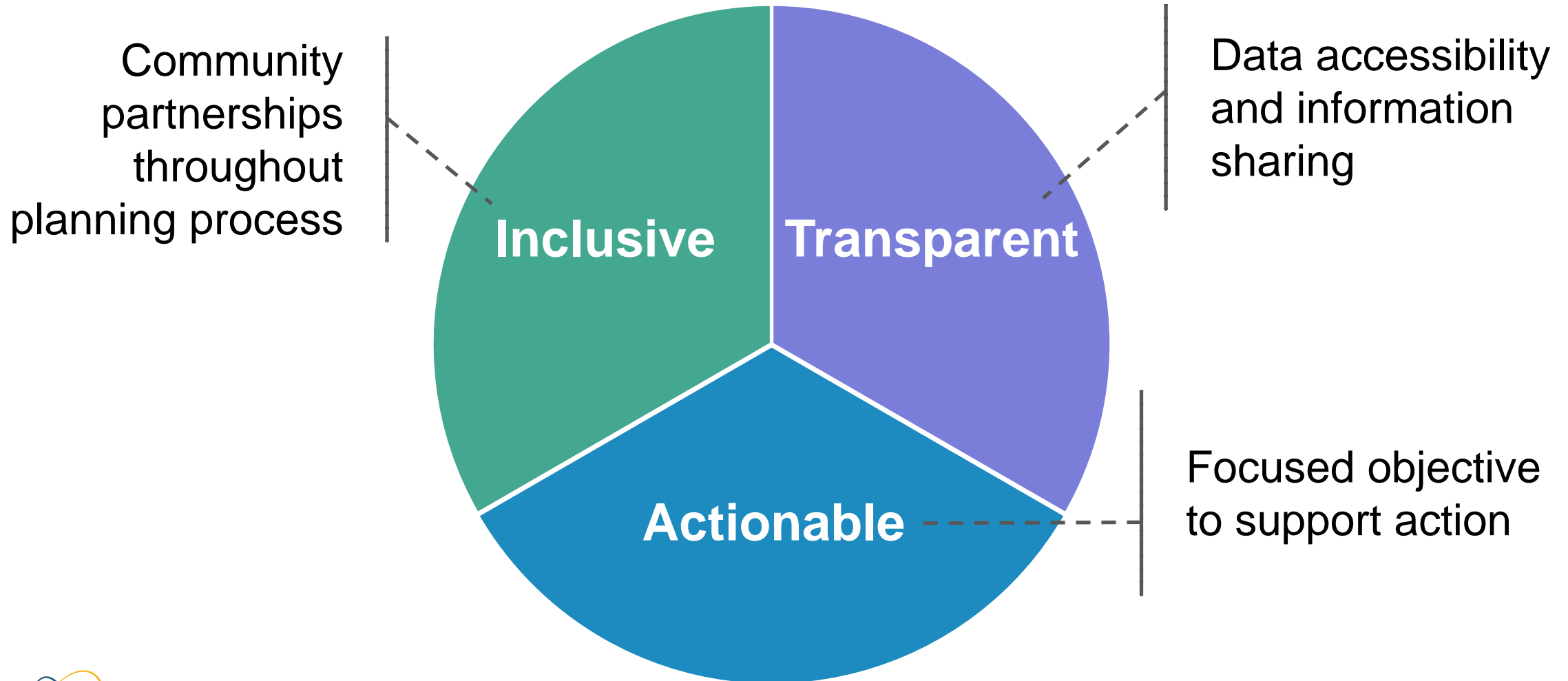
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Presenter: Ken Stroud; CARB

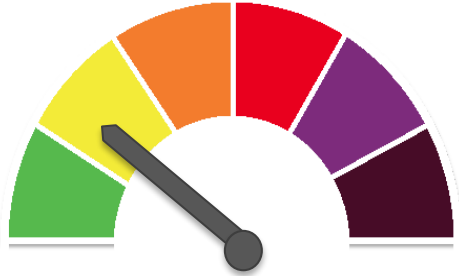
# Monitoring Questions

- Do the proposed planning elements reflect the important aspects of your community air monitoring programs?
  - What are the most important elements?
  - What changes would you suggest?

# AB 617 Air Monitoring Principles



# Action-Focused Air Monitoring



- Increase air quality awareness
- Inform personal choices, e.g. activity



- Evaluate source impacts
- Develop mitigation strategies
- Identify monitoring gaps



- Enforcement
- Abatement orders
- New rules and regulations

# Identifying Violations Affecting Neighborhoods (IVAN)

## Background

Residents want more localized, community-scale air quality information

## Approach

- Provide community a mechanism to report concerns
- Establish low-cost PM sensor network
- Display current air quality measurements on IVAN website

## Actions

- Community receives alerts when air quality is unhealthy
- School flag program established, in part, using IVAN generated data to prevent excessive outdoor exposures

## Air Monitoring Objective



# Arvin Air Quality

## *Air Monitoring Objective*

### **Background**

Arvin experiences poor air quality from pollutants that are emitted from vehicles and industrial activities

### **Approach**

- Deploy continuous air monitoring at six locations for particulate matter, nitrogen dioxide, ozone, and volatile organic compounds
- Provide residents with real-time air quality information

### **Actions**

- Help determine major pollutant sources
- Educate and empower the local community to limit their exposure
- Bring greater awareness to air quality issues in San Joaquin Valley







*know which way the wind blows*

# **West Oakland Environmental Indicators Project**



# San Ysidro Border Traffic Study

## Background

San Ysidro community concerned with vehicle emissions from Ports of Entry.

## Approach

- Establish community steering committee and technical advisory group to guide community-led air monitoring
- Deploy continuous air monitoring at ten locations for particulate matter and gases (CO, NO, NO<sub>2</sub>, O<sub>3</sub>)
- Conduct intensive measurement campaigns with research-grade equipment

## Actions

- Assess community needs and concerns
- Develop capacity for community to collect air monitoring data
- Provide air quality data in real-time and to CalEnviroScreen

## Air Monitoring Objective





# West Oakland Metals Monitoring Project

**Background:** Community concerns about emissions from a scrap metals recycler in West Oakland

## **Approach:**

- Work with community, facility, and city
- PM mass and metals analysis for one year
- Quarterly meeting to discuss results

## **Actions:**

- Increased community/ facility communications
- Informed BAAQMD rules for foundries and for metals recycling
- Facility improved practices to reduce emissions



# Paramount Air Monitoring

**Background:** South Coast Air Quality Management District received metallic odor complaints

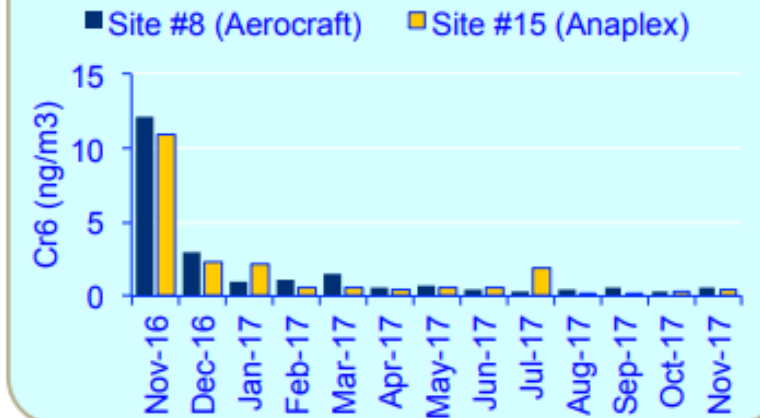
## **Approach:**

- Community outreach (townhall meetings & calls)
- Deploy portable air samplers in community
- Conduct on-site inspections and measurements
- Expedited data reporting on website
- Work with facilities, agencies, and city

## **Actions:**

- Facility improvements
- Orders for Abatement, new rules
- New state law (AB 1132) providing additional authority

## **Average Hexavalent Chromium Levels**



# Conduct Air Monitoring to Lead to Action

- Proposing criteria to guide process of planning action-focused community air monitoring
  - Supports air districts and communities
  - Broad enough to apply to a variety of air monitoring objectives using different methods
  - Robust enough to support desired actions
- Scientifically sound data supports decision-making and action

# Air Monitoring Approach

- Wide variety of appropriate techniques, methods, equipment
- Approach selected based on air monitoring objective and data quality needed to support action



**Traditional  
Methods**



**Air  
Sensors**



**Mobile**



**Fence-line**



**Remote  
Sensing**



# Community Air Monitoring Plan Elements

## What is the question?

- Form community partnerships
- Develop community-specific problem statement
- Define air monitoring objectives
- Establish roles and responsibilities

## How will monitoring be conducted?

- Define data quality objectives
- Select monitoring methods and equipment
- Determine monitoring areas
- Develop quality control procedures
- Describe data management
- Provide work plan for conducting field measurements

## How will the data be used?

- Specify process for evaluating effectiveness
- Analyze and interpret data
- Communicate results

# What is the question?

## Community Steering Committee

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Community Steering Committees will be an integral part of community air monitoring.

Problem statements should describe community concerns to help develop air monitoring objectives that yield actionable data.

Defining roles and responsibilities will ensure expectations are understood and clarified.

# How will monitoring be conducted?

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Defining the quality of data needed to support proposed actions allows for selection of methods that produce data of appropriate quality.

Selected monitoring areas should support air monitoring objectives.

Defining quality control procedures in a documented work plan ensures all parties can understand how data were generated.

# How will the data be used?

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- Communicate results

Plans should include a process for evaluating effectiveness to review results and determine if adjustments are needed.

Determining how data will be analyzed and interpreted ensures monitoring data are used appropriately to achieve the desired objectives.

Defining how air monitoring results will be communicated helps stakeholders understand where and when data are available.



# Monitoring Questions

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# Performance Goals for Air Monitoring Methods

- Concept to define metrics for how well methods must perform to fulfill different air monitoring objectives

<b>Example Performance Tiers</b>				
<b>Tier</b>	<b>Application Area</b>	<b>Precision and Bias Error</b>	<b>Data Completeness</b>	<b>Related Air Monitoring Objectives</b>
I	Indicative	<50%	≥50%	qualitative estimate of temporal and spatial trends, increase awareness and education
II	Quantitative	<30%	≥70%	identify gaps in monitoring, evaluate emission sources and personal exposure
III	Regulatory	<10%	≥75%	precise measurements to meet regulatory requirements, enforcement

# Contact Information

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