Assembly Bill 617 and Low Cost **Sensors – How Can this Technology Provide Actionable Results?**

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Air Sensors International Conference 2018

Review of Goals/Outcomes of **Current Network**

- Regional and limited source-oriented NAAQS compliance and trends determination with a focus on population
- Aids in "truth testing" of regional and single source-oriented models
- Disassociated with emissions inventory and non-regional source attribution

AB 617 program components – designed so elements link and iteratively improve

- Community selection
- Monitoring
- Emission reduction action plans
- Emissions inventory
- Incentives
- BARCT Update/Clearinghouse

Change of focus to hyper-local air quality impacts

- Determine impacts of local contributions and focusing monitoring to identifying localized disproportional impacts
- Identify localized "hotspots", contributions from individual sources and contributions from background and regional sources
- Develop source attributions based on monitoring
- Truth test highly resolved modeling and improve emissions inventories

Community Monitoring Methods

Screening to identify issues

- Conducted by district and communities
- Mobile monitoring
- Dense network of low-cost sensors
- Satellite and other remote observations
- Observations other than pollution concentrations
- May help track progress

Special studies to quantify contribution of sources

- Advanced techniques to isolate and quantify source contribution
- need speciation of PM or toxics to differentiate sources
- combination of ambient and source monitoring

Fixed sites using well-documented methods are still needed to anchor screening, track regional air quality and meet state and federal requirements

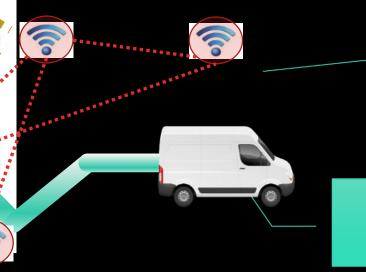


COMPLEMENTARY APPROACHES TO AB 617 MONITORING

Flight Measurements

Optical Tent





Fence line Monitoring Air Monitoring Station

Community Monitoring/ Sensor Networks

Mobile Monitoring

How Can Sensor be used to assist in the effort?

- Need to develop standard for data export and ingestion
- Need to include ways for QA/QC to be evenly applied so that data are comparable
- Need to provide a way for appropriate visualization and context, so that people can determine appropriate ways to limit exposure

Communities can assist with sensor studies if:

- They are provided technical expertise on how to develop a network so data are actionable
- Provided or develop analytical skills necessary
- A means of data storage is provided to allow transparent access and further evaluation







- equal
- Remember to match monitoring goal
- technical assistance

DATA QUALITY

Not all measurements are

quality requirements to Education and provide

DATA COLLECTION AND MANAGEMENT

- with geolocation
- "apples to apples"
- Provide ways to give context



 Large amounts of data Methods to make all data graphics and information

Further Integration

Communities expect incidents to be better characterized and measured

- Need to be able to evaluate "steady state", episodic and unintended releases
- Providing information about limitations

Regions expect better capabilities during regional events (wildfires)

- Provide forecasts of impacts
- Explain how concentrations, forecasts and impacts affect health outcomes

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| | | System Status as of August 13, 2018, | | |
| | | QA/QC and maintenance work for the fence line | and community monitors have been completed. | |
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Path Forward

Develop methods to gain better spatial coverage, while balancing temporal coverage

- This will help identify sources that impact communities
- Need to be able to evaluate "steady state", episodic and unintended releases

Achieving more spatial and temporal measurements to achieve the goals improving better health outcomes

- Decrease air quality disparities with the goal of eliminating them entirely
- Enhance enforcement and compliance





QUESTIONS?

