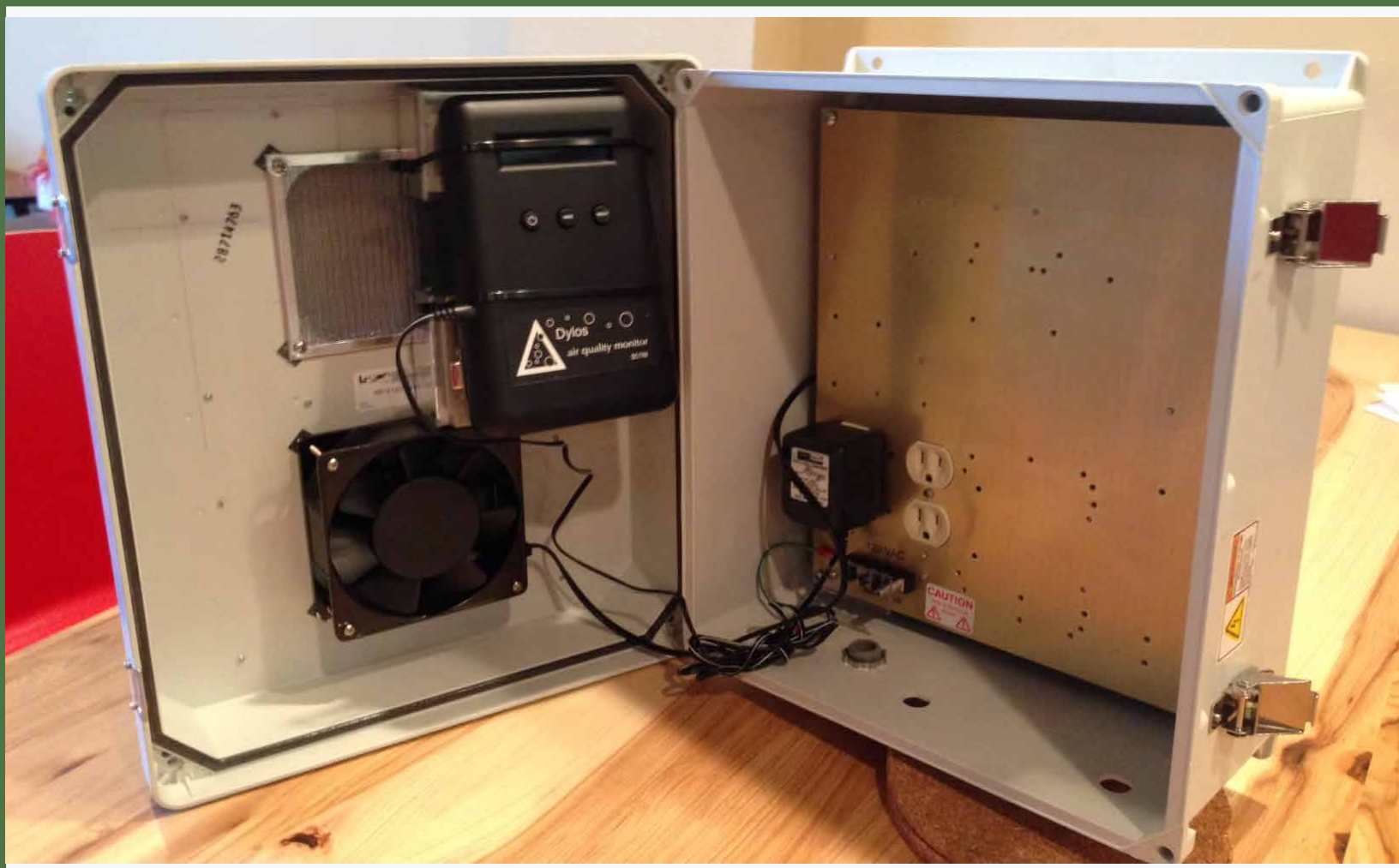


# Participatory Science Data Management Case Studies

## *Imperial County Community Air Monitoring Network*



# Imperial County Community Air Monitoring Network

## *Improving Data Management for Participatory Science*

In response to community needs, the Imperial County Community Air Monitoring Network project created a network of 40 air monitors that provide real-time particulate matter data. Regular maintenance and attention to sensor performance data help extend the life of the network's sensors.

### ***Project Overview & Goals***

The Imperial County Community Air Monitoring Network (ICCAMN) was developed in response to community residents' concerns about air quality and their desire for more neighborhood-level data. The network was designed with significant input and decision-making from community residents, while incorporating technical priorities to ensure scientific integrity.

ICCAMN is a network of 40 air monitors located throughout Imperial County, CA. These monitors measure current levels of particulate matter air pollution (both fine particulate matter (PM<sub>2.5</sub>) and respirable particulate matter (PM<sub>10</sub>)). The project was developed through a partnership between the nonprofit organization Comite Civico del Valle (CCV), Tracking California (a program of the Public Health Institute), University of Washington School of Public Health, and collaborators at University of California at Los Angeles and George Washington University.

### ***Role of Project Participants***

A steering committee of community members helped guide the project and connected CCV with local utility companies to obtain encroachment permits and to

engage and train additional project participants for site evaluation and selection. A larger group of 45 participants engaged in a mapping exercise to identify sensitive locations for monitor placement.

### ***Data Management***

Sensor data is transmitted remotely, and the community air quality levels are made available via the Identifying Violations Affecting Neighborhoods (IVAN) Air website. Technical and physical sensor maintenance training is provided by CCV based on methods developed with Tracking California and the University of Washington. Quality assurance and quality control procedures assure the completeness of data and the performance of sensors.

### ***Data Use***

A public website displays the ICCAMN data. Interested parties may also make a request to obtain the data. Data from ICCAMN is used by the general public, academic researchers, policy makers and advocacy groups.

**Issue:**  
Air Quality

**Location:**  
Imperial County,  
CA

**Tools:**  
Air Monitoring  
Network

**Contact:**  
[Paul English](#)

### ***Issues & Lesson's Learned***

Technical issues encountered include power and network availability in remote areas and maintenance of the sensors. However, regular maintenance and attention to sensor performance and conditions help extend the life of sensors. Additional calibration can also help with sensor performance. Non-technical issues include challenges in accessing sensors located in buildings that may be closed at times (e.g., schools) or locations where a host became inaccessible.

The project has been able to find avenues for funding and support. However, not all organizations have the staff to maintain the server, manage data, create visualizations, etc. For organizations with an interest in building their own network, providing support (in terms of people or server space) would be helpful. Technical knowledge and support can help people take the next step.

### ***Outcomes & Success Factors***

The ICCAMN has enabled the community to use the data for personal decision making, especially around asthma education and mitigation of asthma

attacks. The project and data were a model for California's Assembly Bill (AB) 617, a law relating to air pollutants and contaminants from sources other than vehicles.

The project attributes its success to having community buy-in. This has enabled them to make inroads with essential community partners and recruit volunteers. The project has also benefited from a foundation in scientific methodology and providing a novel service to the community.

### ***Opportunities***

- The ICCAMN project has several resources that can be made shareable to support participatory science projects such as their guidebook, technical manual, video trainings, SOPs and workshop presentations.
- Support is needed for dedicated training sessions and workshops focused on creating CCS and air monitoring networks.
- The data needs of individual communities should be emphasized.