

### Summary

The purpose of this project is to assess the potential benefits of using AirNow air quality information that has been enhanced with NASA satellite data from the perspective of selected government agencies, communities, and other stakeholders. A case study approach that represents a variety of contexts for implementing the initiative will be used. In addition, the cases will be supplemented with national or state-level data where available.

### Scope of Work

AirNow is the national repository of real-time air quality data and forecasts for the United States and is the main vehicle for providing timely Air Quality Index (AQI) information to the public and media. It provides hourly data from over 130 state and local air quality agencies to the media and other environmental stakeholders and regional consortia. Drawing data from a network of more than 2000 monitors that measure ozone and particle pollution data, AirNow is designed to provide the public with air quality information that can be used to make daily lifestyle decisions by helping people take precautionary measures to avoid or limit their exposure to air pollution. Community-level action or awareness days, based on air quality forecasts, are used to implement voluntary programs to reduce pollution and improve local air quality. AirNow also supplies data to government agencies, researchers, and the media for analysis and public outreach and education.

Extensive as the monitor network is, considerable gaps exist in certain parts of the U.S. Even areas with more monitors still lack granular information to resolve some air quality events (e.g., fires). Thus some areas of the U.S. have little or no air quality data while others that have reasonable coverage lack detail. Monitors are expensive to deploy and maintain; thus, EPA is seeking other means for improving coverage and detail. One method is to incorporate NASA satellite estimates of particulates into AirNow. Currently these satellite estimates are updated twice per day, but future plans provide for hourly updates. Satellite-estimated data can provide information about particle pollution for many places where ground monitors do not exist, and the satellite data can supplement ground monitors, providing better additional information for use in analysis and forecasting.

This study will address the ways in which current and satellite-enhanced AirNow data can contribute to socioeconomic benefits. The socioeconomic benefits will be assessed through local case studies, which will describe existing uses of AirNow information and the potential value of incorporating NASA satellite data in each case study location. The analysis will describe challenges, limitations, and successes related to each case study's current use of AirNow data and expected use of satellite-enhanced data. Estimates of potential socioeconomic benefits (e.g., health effects, quality of life effects) in each case study area will be prepared using local data on health effects, historical trends in AQ, and other measures. Individual case reports will be prepared as well as an overall report on the factors that affect the ability of government organizations to communicate air quality data and the ability of consumers to understand and use it.

Each case will evaluate the current use of AirNow data and potential use of satellite-enhanced AirNow data using the following questions:

- Who are stakeholders in air quality information in the case study area? What are their needs and capabilities?
- Who uses AirNow data now and how do they use it?
- What techniques or strategies seem to have the most positive effect on public awareness and behavior? What evidence is available on these effects?
- What gaps or weaknesses in AirNow data reduce its usability and usefulness for different kinds of users? To what extent could NASA satellite data ameliorate these problems?
- What other activities, information, or capabilities would enhance the usability and usefulness of AirNow data for informing and educating the public about air quality and its effects on health and quality of life?

### Partners

#### Government Partners

- United States Environmental Protection Agency

#### Corporate Partners

- Sonoma Technology, Inc

## **Funding Sources**

This project is funded by Sonoma Technology, Inc. under contract with the US Environmental Protection Agency.

## **Related Websites**

AirNow

## **Contact Information**

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