

# U.S. EPA's AirNow Program

John White and Lourdes Morales, US EPA AirNow Team

AirNow Platform and its Use in Mexico

UNEP ROLAC Webinar

February 20, 2018

## Outline of Discussion

- What is AirNow
- AirNow Platform and Data Sharing
- One System: Two Approaches
- AirNow International Community



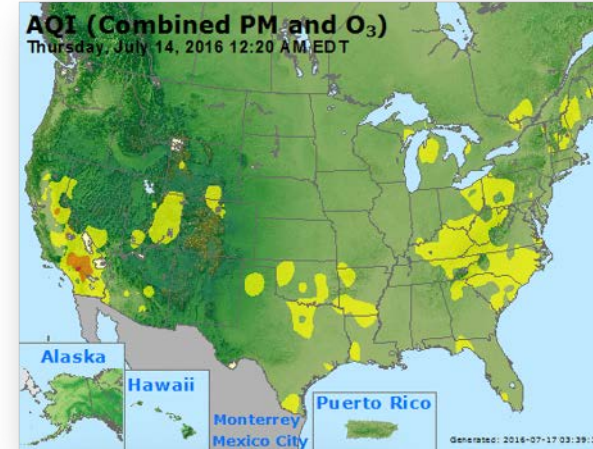
AirNow International Meeting at the 2016 Better Air Quality Conference Busan, South Korea

# AirNow Program

## AirNow is the national framework for acquiring and distributing air quality information

- Gathers and quality assures data provided by 150+ federal, state, tribal, and local air quality agencies
- Real-time and forecasted air quality information to the public
  - ✓ Over 400 cities in the U. S.
  - ✓ U.S. Embassy data worldwide
  - ✓ Canada, Mexico, Taiwan
- Provides air quality data feeds and partners with national media – mobile app and public/private partnerships
- Educates public on air quality and health

*America's "go to" resource for current and forecasted air quality information*



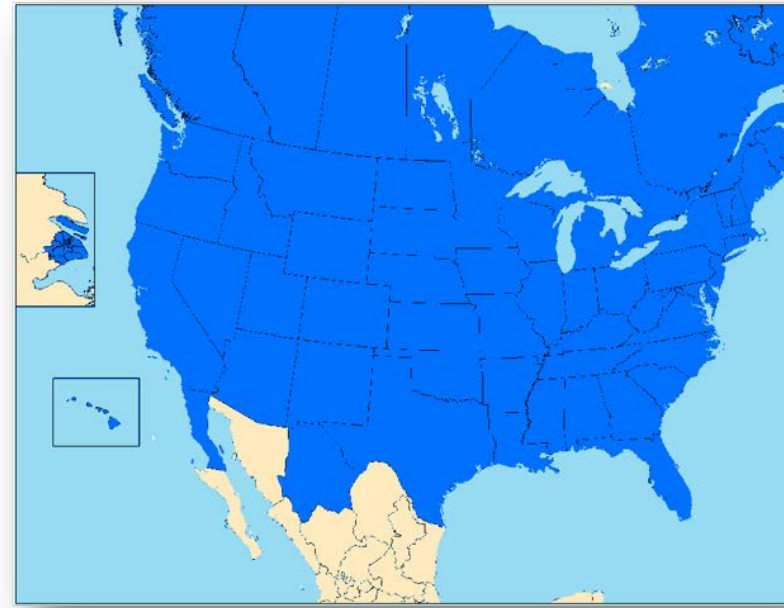
# AirNow Program Evolution

**1998**



**Started with 13 U.S. States...**

**2017**



**50 U.S. States, 12 Provinces in Canada,  
5 in Mexico, Taiwan, and US Embassies  
and Consulates in 16 countries**

# AirNow Software Platform

- **AirNow Data Ingest and Processing**

- Hourly and sub-hourly data from air quality monitoring sites
- Multi-language capable
- Automated QC control checks
  - Customizable by site/parameter/hour
  - Approval and editing modes for your data
  - Chain of custody
- Powerful data analysis (graphing)
- Conversion to an AQI
- Password-protected and assign users to various roles

- **AirNow Distribution of AQI Products and Information**

- Production of maps, file products, data feeds, and web services for public and application developers
- Scheduling of products

# AirNow Platform and Data Sharing

- **AirNow Platform of Regional Collaboration**
- **Data sharing is useful to your own organization's mission**
  - ✓ Improves your decision-making
  - ✓ Allows the development of better tools/capability/services
  - ✓ Collaboration with others can assist in other projects/initiatives within your organization
  - ✓ Forecasting (regional input), public reporting (regional maps)
  - ✓ Analysis of your air quality events
    - ❖ Future planning and control strategies
- **Transparency for the public and promotes good will amongst neighbors**

## Data Sharing



# AirNow Program: One System, Two Approaches

## **Installation offers the full suite of AirNow**

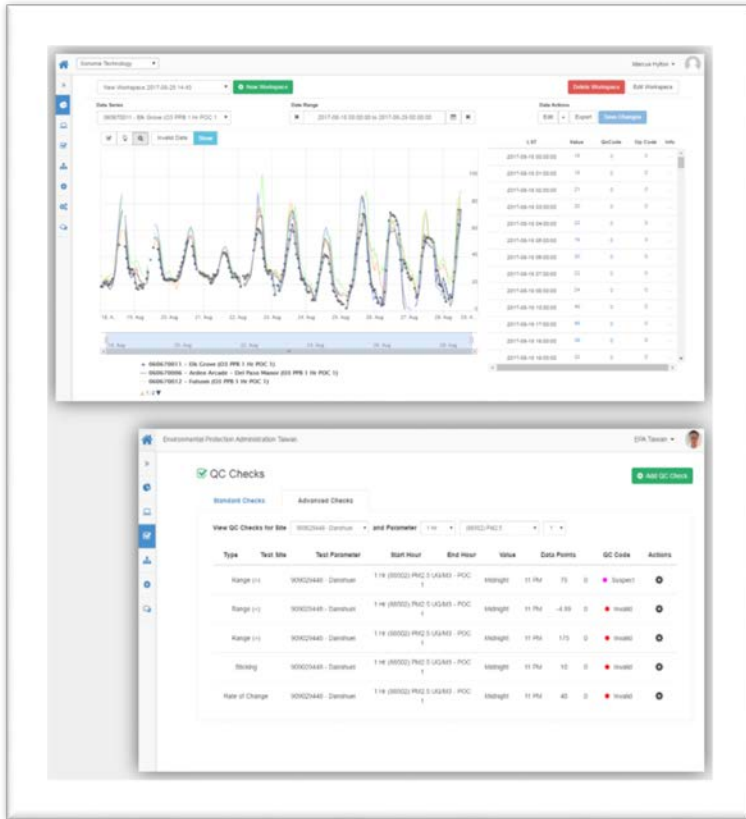
- Real time data collection, quality assurance, mapping, and distribution
- Support for forecast distribution and forecast model input, but no forecast model itself
- 18 years of operational experience and investment
- Same platform as U.S.
- Web-based or local install
  - More complex - hardware, software, licenses, network connections, system configuration and testing considerations

## **Data Sharing offers AirNow-Tech**

- Decision Support System – management and analysis tool for the AirNow Program
- GIS functions – worldwide HYSPLIT trajectory tool, satellite, and smoke products blended with air quality and meteorological data
- Data queries, personalized tools, and preferences
- Password-protected user accounts

# Two Approaches: Products

## Install AirNow Platform



## Flow Data to AirNow...use AirNow-Tech





# Data Sharing and AirNow

## Two options

- Local installation
  - Full configuration of the AirNow system in-country
  - Technical training to local staff for system operations
- Data submission
  - Format data in AirNow AQCSV format
  - Validate and test file format
  - Push data to AirNow FTP site
  - *Or use the new AirNow incoming data API*

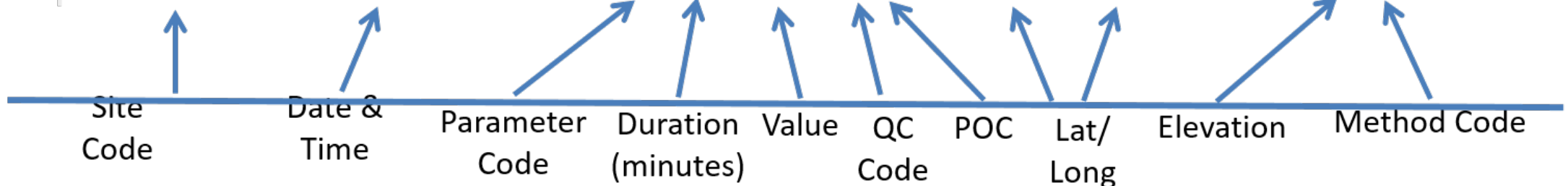


# AQCSV File Format

- **The AQCSV file format supports**
  - AQS Standards (parameter codes, parameter occurrence codes [POC])
  - Speciated/lab data
  - Mobile monitor data
  - Sub-hourly data
- **Allows for**
  - Easy encoding and parsing of data
  - Support of international data exchange

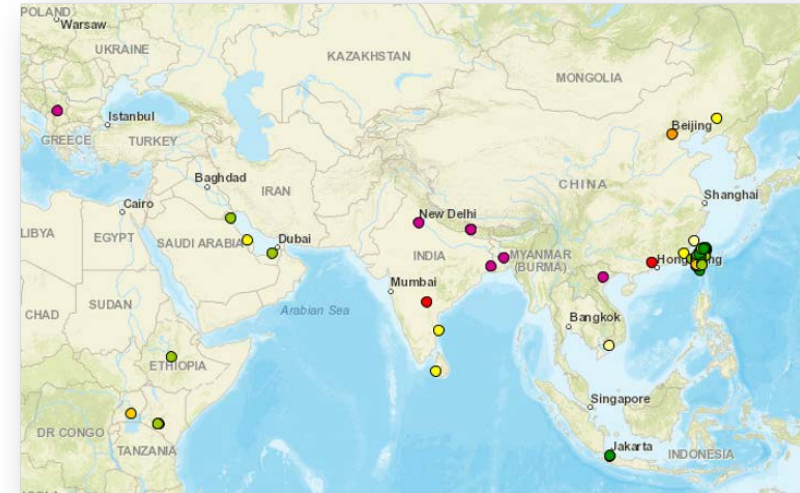
## Sample line from an AQCSV file

```
840060670011,0,0,20161122T1200-0800,42601,60,,1,008,0,1,38.302591,-121.420838,WGS84,6,074,,,,
```



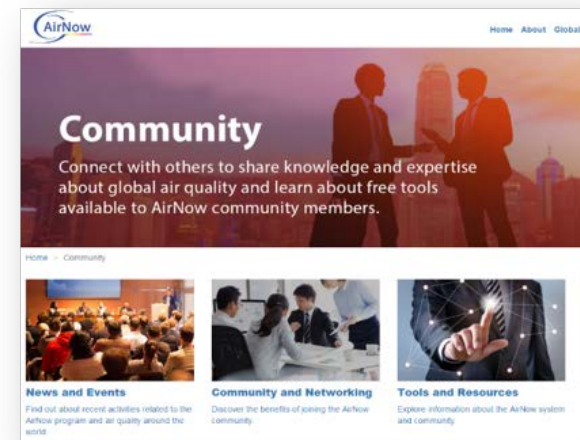
# Data Sharing Partners

- Canada (various agencies)
- Mexico (various agencies)
- Environmental Protection Administration Taiwan
- Nairobi (through United Nations Environment Programme)
- Department of State Embassies and Consulates
- Coming Soon
  - Ministry of Environment Japan
  - Thailand Pollution Control Department
  - Nepal Department of Environment



# AirNow International Community

- **AirNow International Community**
  - Advances air quality management worldwide by sharing tools and information.
  - Collaborates on the development and enhancement of air quality tools that will advance air quality and forecasting knowledge and applications.
- **Community Resources**
  - Website, <http://www.airnow.gov/international>
  - Webinars
  - Forum <http://www.airnowinternationalforum.org>
  - Community Meetings & Training
    - Better Air Quality Conference (BAQ) - Asia
    - National Air Quality Conference - U.S.



# Thanks

**John White**

[white.johne@epa.gov](mailto:white.johne@epa.gov)

**Lourdes Morales**

[morales.lourdes@epa.gov](mailto:morales.lourdes@epa.gov)

**Phil Dickerson**

[dickerson.phil@epa.gov](mailto:dickerson.phil@epa.gov)

