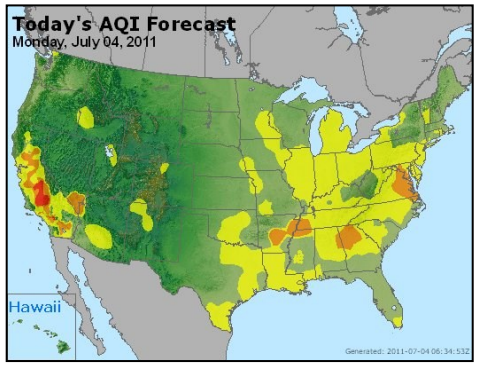
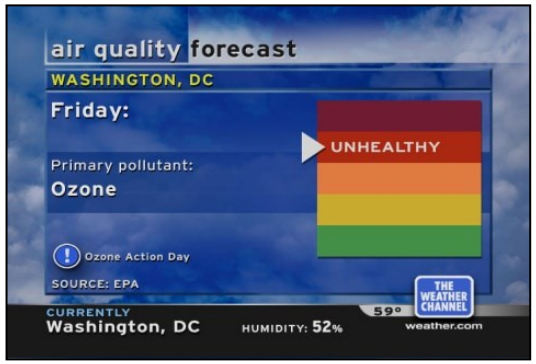
September 10, 2015

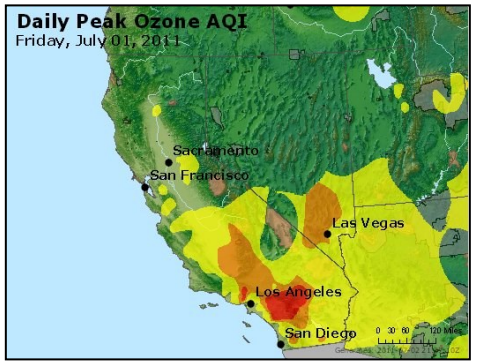
Air Quality Forecaster Focus Group Workshop

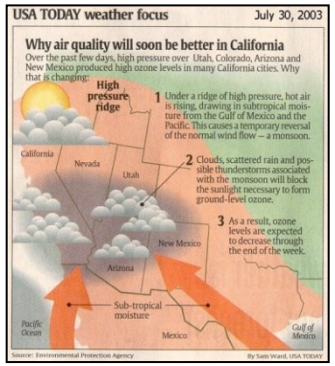
AirNow System Basics

- Year Round 24/7 coverage/delivers real-time data (ozone & particles) for 50 States, 6 Canadian Provinces and 24 U.S. National Parks
- Next-day AQI forecasts for over 400 cities (summer) and over 300 cities (year-round)
- Successful iPhone and Android apps
- State-of-the-science information about air pollution health effects for the public, media and stakeholders
- Public/Private partnerships with The Weather Channel, USA Today, CNN, weather service providers, NOAA National Weather Service





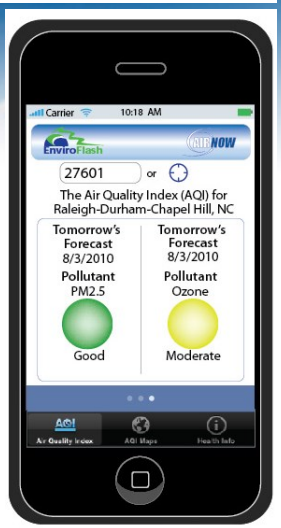




AirNow System Data Flows

Audiences

- Public
  - Website: 4.8 million views/yr
  - iPhone App: 100+ installed/wk; 45,000 installed total
- State/local/tribal agencies
  - 280,000 EnviroFlash subscribers
  - 210 million people in areas that have AQI forecasts
- Media
  - Estimate 3.7 million viewers of AirNow information – USA Today, Weather Channel
- Emergency response
  - Public and states used AirNow to convey info about BP, Katrina, and wildfires
- Others
  - Epi studies, researchers, other federal agencies

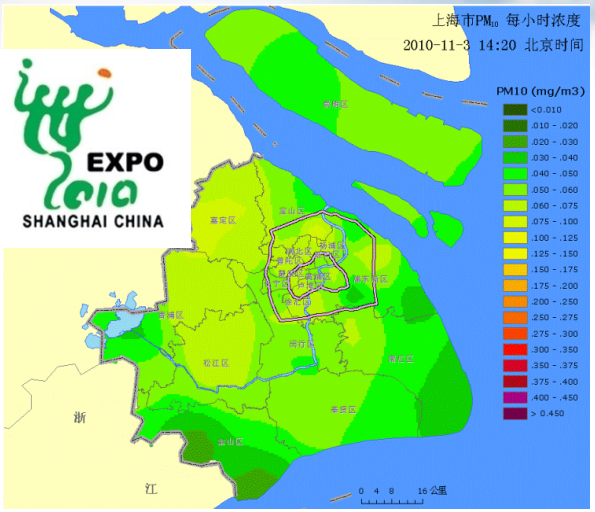


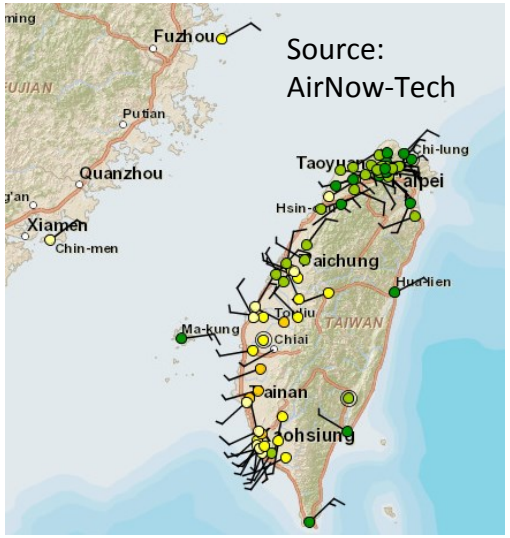
"Several parents I know have discussed with me the importance to them of code orange days and how they are used to limit their child's outdoor activity in daycare in order to reduce their exposure to unhealthy levels of ozone and pm." (Erica Snyder, New Jersey Dept. of Environmental Protection)

"The information on the [AIRNow.gov] web site has helped by having another tool to get information out and help start a new program for air quality (school flag)." "We would like the students and teachers to check out the material on AIRNow." (Jim Carey, Klamath County)

AirNow International

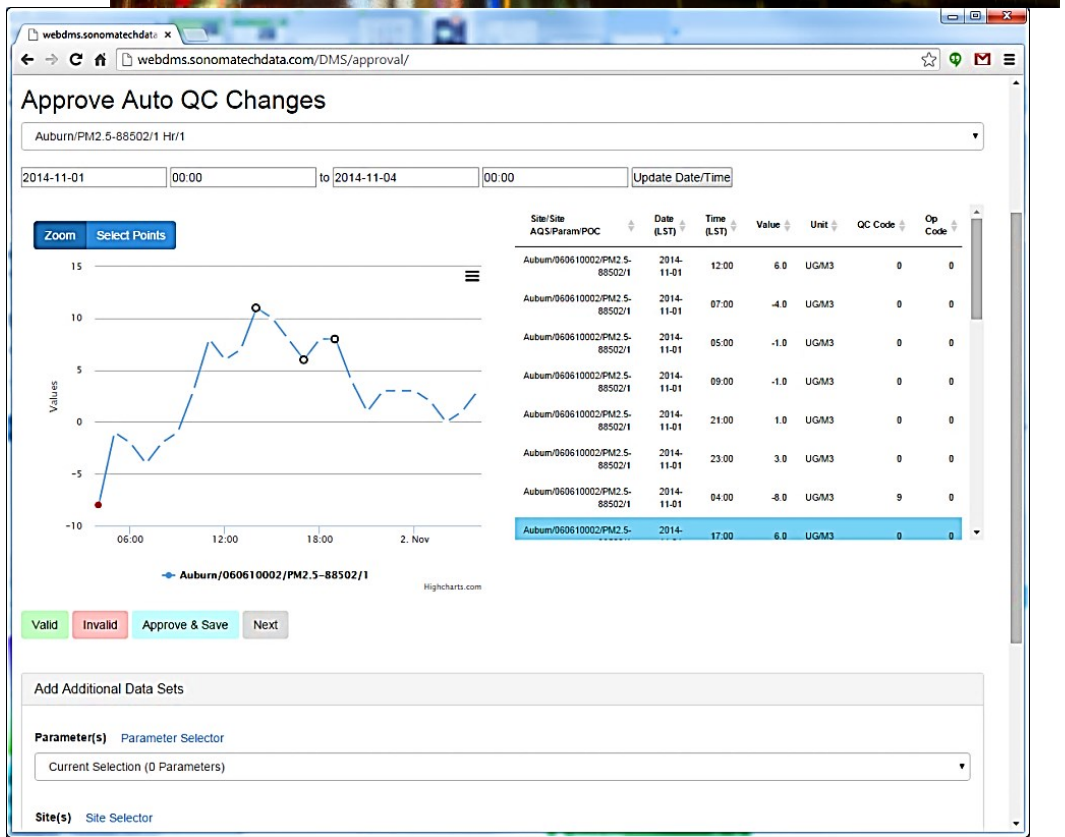
- **State-of-the-science data management system**
- **Goals**
  - Provide tools for AQ management to interested countries
  - Exchange environmental data internationally
  - Make advances in air quality knowledge and applications
  - Build a community of people and organizations
- **Successful pilot at the 2010 World Expo in Shanghai**
  - Second pilot in Monterrey, Mexico in 2012
  - Third pilot in Zhejiang Province in 2013
  - Fourth pilot in Mexico City
- **Data exchange from Environmental Protection Administration Taiwan (EPAT) to AirNow system**





Future Directions for AirNow

- Continue to expand and improve AirNow-I
  - Infuse resources into domestic AirNow
  - Improve mapping, additional multi-language support, data management, and more
  - Strengthen community with international partners and new prospective countries/agencies
- Reinvent AirNow
  - Apps
  - Cloud Computing



Many Changes Since Last Year!

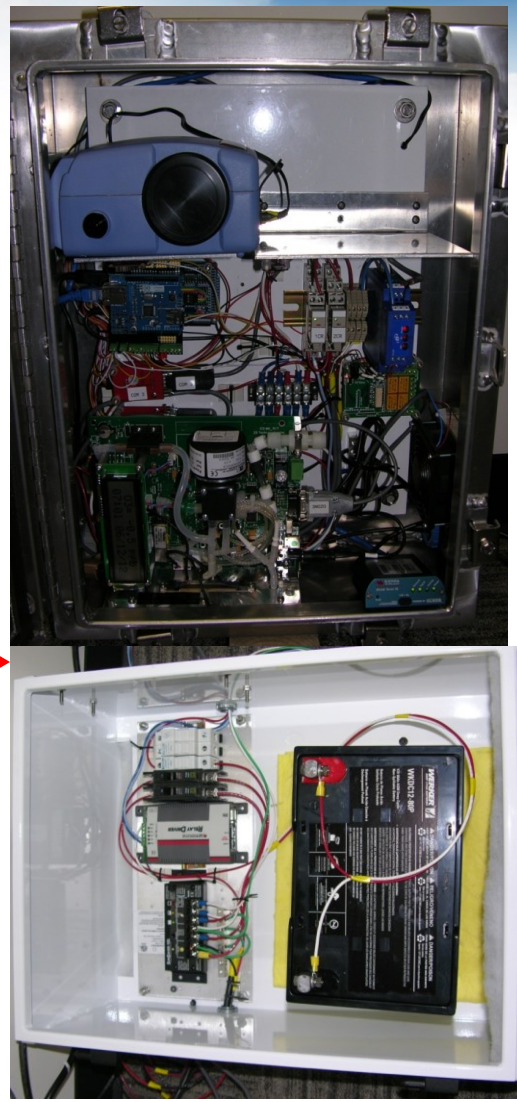
Village Green benches report to AirNow

Park Benches

- Meteorological Instruments
- Solar and wind powered

Components Stored Behind Bench

- Air Sensors (PM & Ozone)
- Communications Component
- Power System



Village Green international prototype

Partners: Hong Kong Environmental Protection Department, City University of Hong Kong

Green Project

Most Recent Observations
Philadelphia, PA

38 Ozone ppb

11 $PM_{2.5}$ $\mu g/m^3$

93.7 °F

48.3% humidity

2.2 mph E

observed Tue 12:10 PM EDT

Updating in 10

Explore Philadelphia, PA

Welcome to the Village Green Project

a research effort to discover new ways of measuring air quality and weather conditions in community environments.

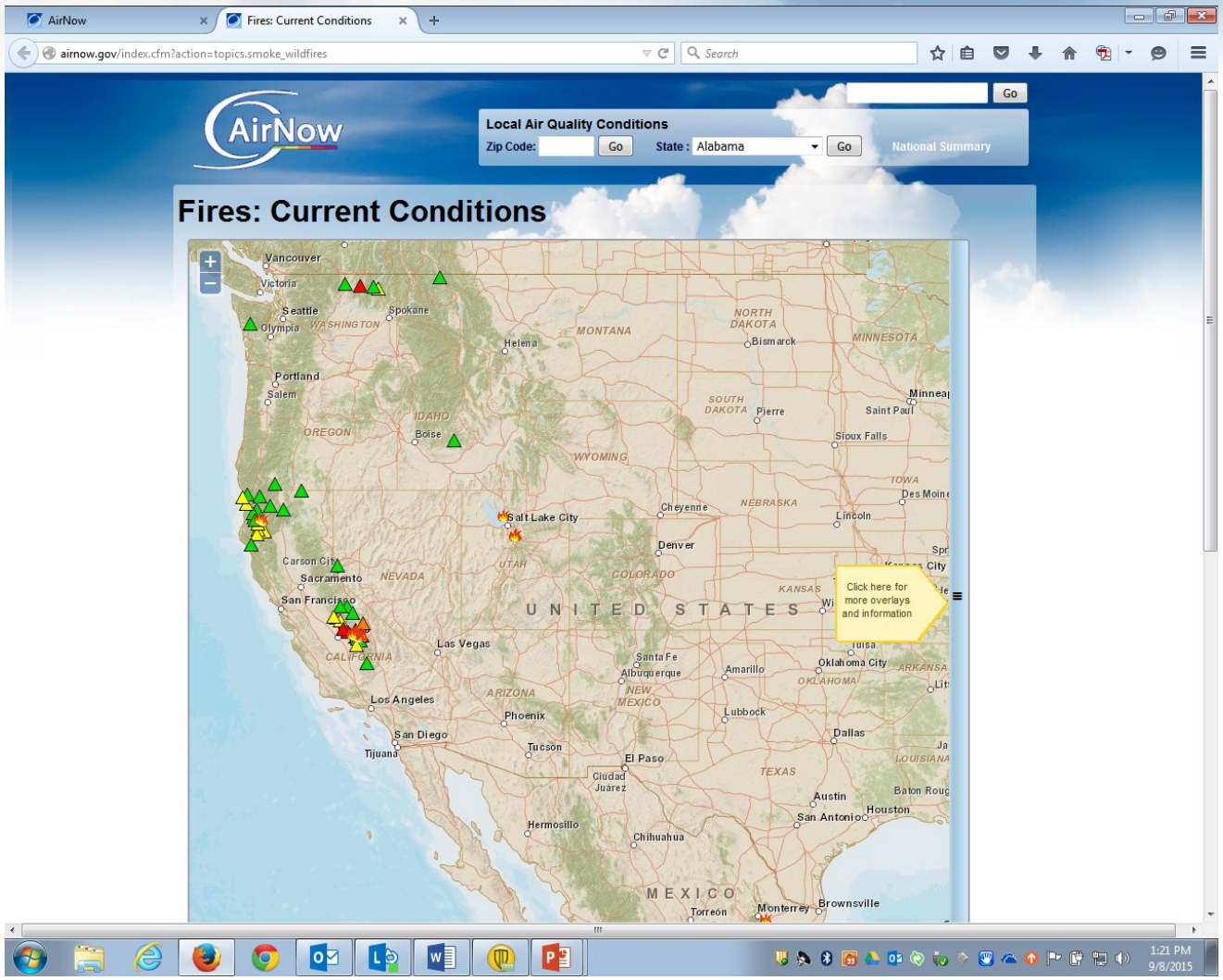
Measuring and communicating on-the-spot air quality and weather conditions for research and

Developing small and rugged data collection systems that can be powered by the wind and sun

Partnering with communities to pilot test the new technology in outdoor community spaces

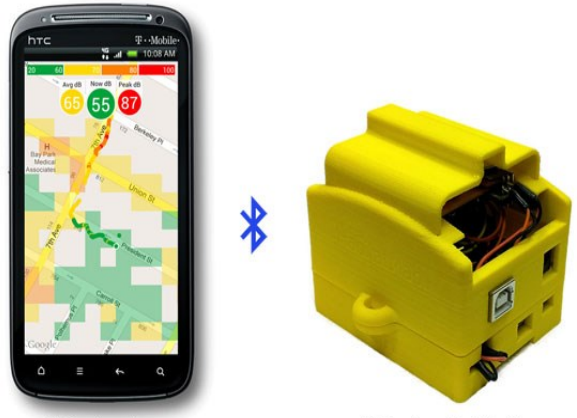
Smoke and Wildfire Map

- USFS data flowing into AirNow
- They are delivering real-time data for all USFS currently deployed emergency monitors.
- New Wildfire interactive map



Next Generation Air Monitoring (NGAM)

- Workshops bring together sensor designers, state, local, tribal agencies, and EPA
- Taking stock of the technology and its impact
- As a result of Village Green, AirNow can now accept one-minute data
- AirNow being considered as a source of realtime data for small sensor evaluation; few agencies able to share one-minute data at present



AirCasting App

AirCasting Air Monitor

Department of State Monitoring

- Agreement between USEPA and DoS
- DoS will deploy monitors at multiple missions around the world
- AirNow will receive the data and allow for both DoS and public access

Data Flow to AirNow Tech

Scenario 1

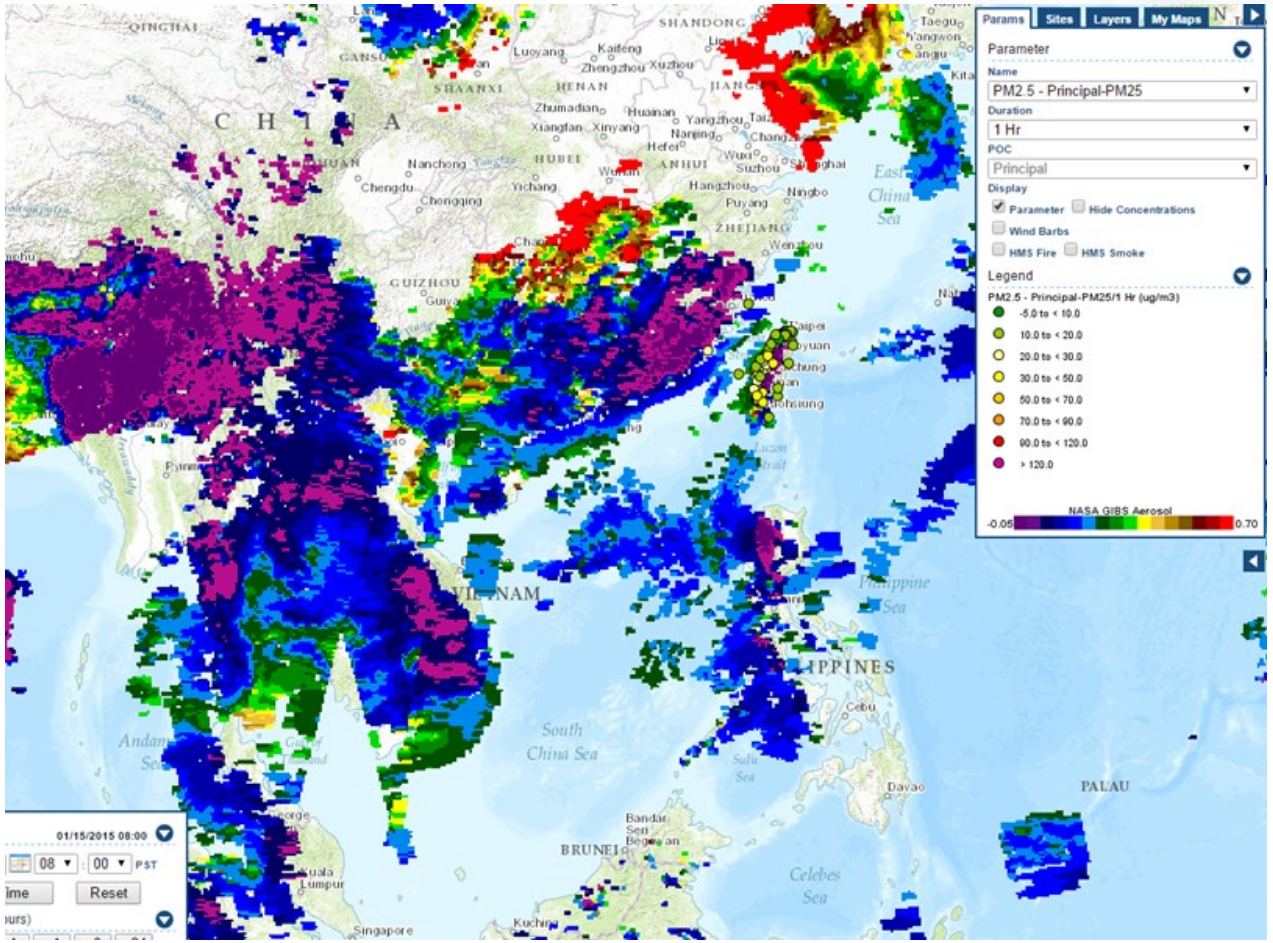
- Format data in AirNow AQCSV format
- Validate file format
- Push data to AirNow FTP site

Scenario 2

- Provide existing data files to AirNow DMC
- DMC converts files to AQCSV format
- Set up files to be pushed to or pulled from AirNow DMC

AirNow-Tech

- Decision Support System – management and analysis tool for the AirNow and AirNow-I Program
- GIS functions – HYSPLIT trajectory tool, satellite, and smoke products
- Data queries, personalized tools, preferences, and services
- Ability to view meteorological and air quality data
- Worldwide satellite data
- Password-protected user accounts



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