



Sensor Applications & New Technologies



National Air Quality Conference
Ambient Monitoring
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A Little Perspective



Then



May 25, 1961 – John F. Kennedy

"I believe that this nation should commit itself to achieving the goal, before this decade is out, of landing a man on the Moon and returning him safely to the Earth."



Sometime in 1966 – Captain James T. Kirk

"Spock... beam me up. There are no signs of intelligent life down here"



1972 – BGI, Incorporated

"High Volume Air Sampler from 1972 Advertisement in The Journal of the Air Pollution Control Association"



Now



What Does It All Mean?

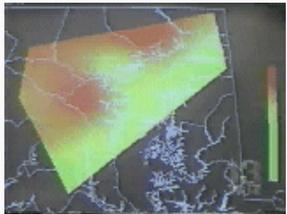


- We have to plan for a future that we may not be able to fully see and/or appreciate today
- Technology is changing rapidly and will continue to change
- How we **adopt** that technology and **adapt** to that technology is key
- This is as true for monitoring as it is for any technology

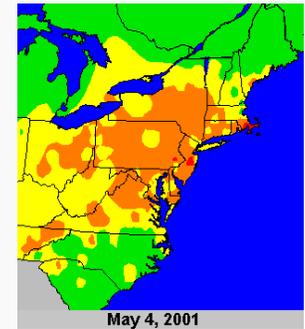
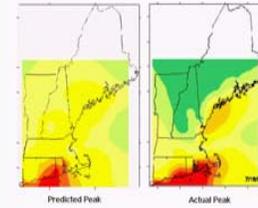
Case Study: AIRNow



1995: Idea to report real-time air quality data **AIRNOW**



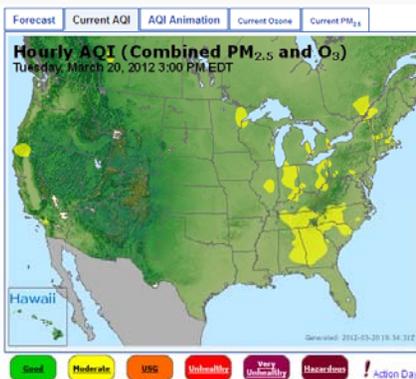
- Concerns over technical ability to deliver data in a timely fashion
- Concerns about data quality
- Concerns over misuse of the data
- Concerns over sustainability of the program



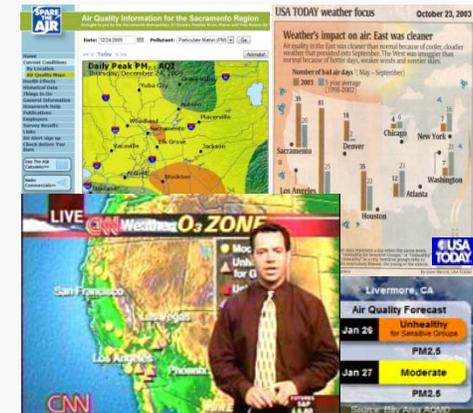
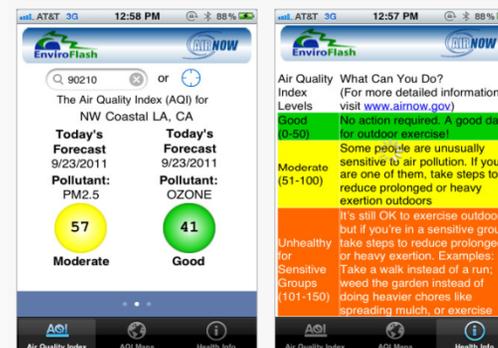
Today: EPA's AIRNow program



- Data delivered from more than 130 agencies, 24/7, 365 days/year including Canada
- AIRNow International
- Air quality now part of mainstream weather pages
- Data embraced by stakeholders and public



iPhone Screenshots



Traditional Air Monitoring



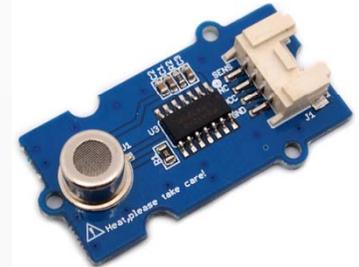
- Air monitoring is a critical component of any air quality management program
 - It informs
 - Air Quality index, compliance with air standards, etc.
 - It directs
 - Nonattainment designations, risk assessments, etc.
 - It controls
 - State implementation plans, MACT program, residual risk programs
- But... monitoring is not everywhere, all the time
- What can be done to better inform communities and individuals of very local-scale issues...
“what’s going on in my backyard?”



Future/Supplemental Air Monitoring



- New sensors and applications will be critical in taking monitoring to the citizen level and **could** one day play a role in supplementing regulatory monitoring
 - It could inform
 - If data quality is good, sensors could provide screening level information to cover a local area, but also provide a more dense coverage over a larger geographical area
 - It could direct
 - If data quality is good, sensors could lead government agencies to take further action to more carefully look at an area; could empower a community to take action
 - It could control
 - Sensors could provide indications of potential problems and lead to mitigation and possible remedies of a local-scale problem; could also lead to individuals taking personal action to limit exposure



Going Forward...



- So... let's embrace new technology and change
 - It will happen whether we as a community are involved or not...
 - If we're involved, we can help direct this technology to be used in a fashion that is appropriate and most useful to us as regulators and to communities and the public.
- But... let us recognize the challenges this brings such as data quality, data representativeness, accuracy, resources, and government response (state/local/tribal & federal)
 - These are potentially high hurdles to overcome and will need to be addressed as we move forward with new technology.

New Technology Opportunities



- March 26-27, 2012 – Apps & Sensors for Air Pollution (ASAP) Meeting
 - RTP, NC
- May 14, 2012 – Technology Market Summit
 - American University, Washington, D.C.
- May 16, 2012 - National Air Quality Conference – Ambient Monitoring
 - Denver, CO
- **August 22, 2012 – EPA Next generation Air Monitoring Webinar*
 - *Focus on ASAP meeting results and plans for NGAM II Workshop*
 - *RTP, NC*
- **Fall 2012 - Sensor App “Technology Expo”*
 - *Location TBD*
- **November 6-7, 2012 – Next Generation Air Monitoring (NGAM II) Workshop (EPA only)*
 - *RTP, NC*
 - *Planned events*