



NCore Implementation Challenges





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NCore Readiness Challenges

- Evaluating existing stations and/or finding suitable new locations
- Complexity of station logistics
- Large number of required measurements
- Trace-level methods push technology and experience
- NCore implementation doesn't exist in a vacuum – many other changes underway in requirements
- Finding resources to operate new network





Choosing a Site: Existing vs. New

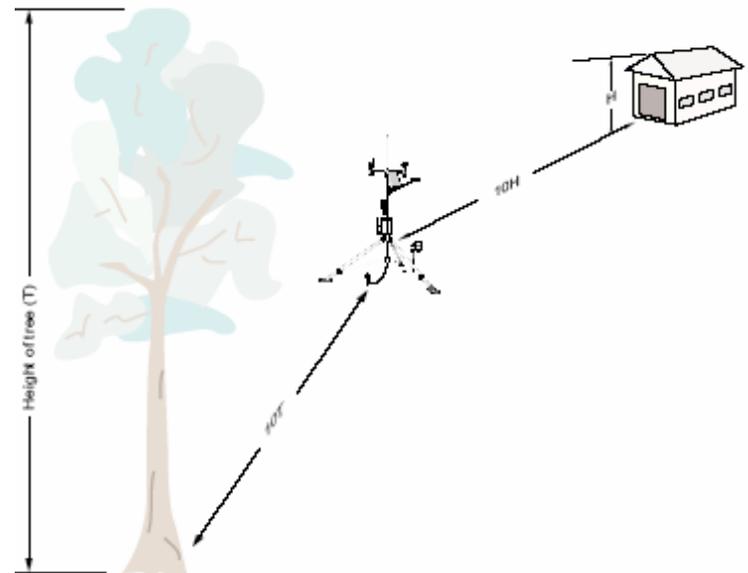
- Largest urban areas
- Key issue: is location representative of overall (population) exposure
 - No biasing local sources within 500m (neighborhood scale/urban sites) or 50 km (regional scale/rural sites)
- Generally downwind of source areas
- EPA is trying to maintain reasonable national spacing between urban sites and “fill in the gaps” with rural sites
- Leverage with existing networks where possible: CSN, NATTS, CASTNET, PAMS, IMPROVE, etc.



Evaluating Candidate Locations

- Does it meet Appendix E requirements?
 - Spacing from roads, biasing sources, trees, obstructions; appropriate for scale of representation
 - What about 5 years from now? 10 years from now?
- Suitability for meteorological measurements
 - Refer to Volume IV of the Quality Assurance Handbook for Air Pollution Measurement Systems
<http://www.epa.gov/oar/tribal/pdfs/EPA%20QA%20Handbook%20Volume%20Version1.0%2011.01.06.pdf>
 - A “perfect” meteorological site can be difficult to locate in urban settings.
- Arrange for EPA regional office staff to visit location if possible

A 10-m Tower Located at Least 10 Times the Height of Obstructions Away From Those Obstructions



A good candidate NCore location should not be rejected solely on meteorological considerations



Evaluating Station Logistics

- There are no guarantees in life but try to arrange access for 5-10 years or more
- Need lots of interior and exterior space
 - Potential for 3 racks of equipment
 - Minimum 1m spacing on roof or platform between inlets
- Need lots of power availability, cooling capacity, and telecommunication bandwidth
- 10 meter tower for WS/WD; provision for tower-mounted NO_y converter
- Room for a TTP audit vehicle or trailer





Measurement Challenges - Gases

- Ozone – must operate year-round (proposed in ozone monitoring rule)
- Trace-level CO – stability of baseline is key, related to purity and humidity of zero air and overall temperature sensitivity of method
- Trace-level SO₂ – just the basic dilution issues for calibration and audit
- Trace-level NO_y – we know that nobody “likes” the tower-mounted converter but most agencies have implemented successfully
- Associated zero air and calibration issues – more later on calibrators





Measurement Challenges - PM

- Still need filter-based $PM_{2.5}$ even if continuous monitor is FEM
- Big decision if $PM_{2.5}$ speciation sampler not already collocated at candidate site
 - Discuss with region and/or OAQPS
- Number of options available for $PM_{10-2.5}$ (more later)





Organizational Challenges - Training

- OAQPS has trained NCore operators and managers from states, local agencies, tribes, and EPA regions
- Materials are posted at <http://www.epa.gov/ttn/amtic/ncore/guidance.html>
 - Training videos for CO, SO₂, and NO_y, and meteorological measurements (calibration on the way) – **limited number of DVD's available this week**
 - Technical Assistance Document
 - Sample SOP documents for trace-level methods
- National technology calls
- OAQPS maintains an NCore-like site for long-term evaluation of instrument performance





Organizational Challenges - Funding

- OAQPS has worked with each EPA regional office to identify equipment needs – this has been ongoing for several years
- Section 103 funding has been provided for monitors, calibration systems, data acquisition needs, and shelters
- We have limited funding available now to complete NCore equipment needs
 - **Find your EPA regional office monitoring lead and communicate your needs this week so that OAQPS can prioritize available funds**





Questions

