EPA OAQPS Ambient Air Monitoring Update

2020 MARAMA Air Quality Monitoring Training Committee Virtual Workshop

December 8th, 2020

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U.S. EPA Office of Air Quality Planning & Standards

Ambient Air Monitoring Topics

- COVID-19
- Ambient Air - Protocol Gas Verification Program (AA-PGVP)
- Revised Ozone Photometer TAD Status
- Community Scale Air Toxics Air Monitoring (CSATAM) Grants
- Air Toxics Monitoring
- Ambient Air Monitoring Assessments on AMTIC
- Fire and Smoke Map/Sensor Updates
- On The Horizon

COVID-19 Ambient Air Monitoring Update

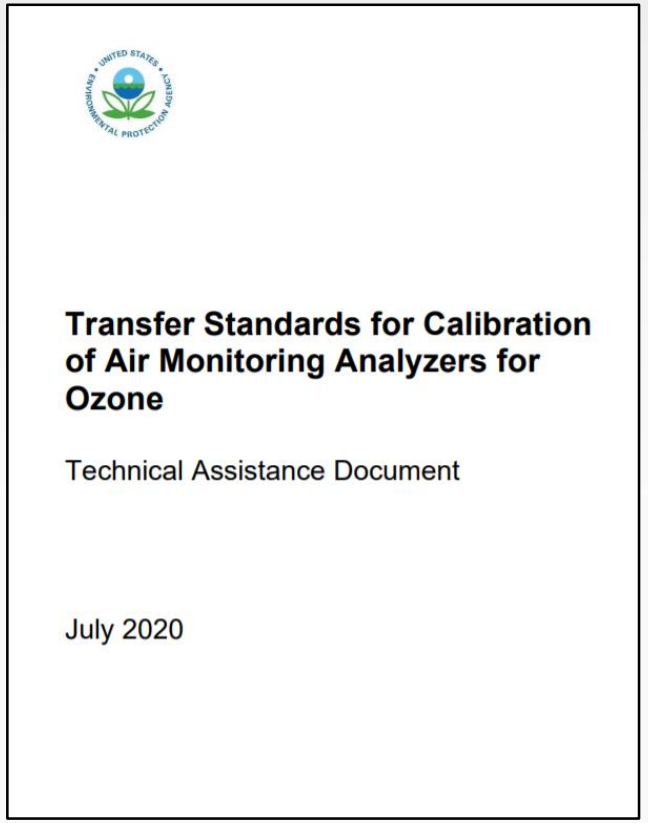
- COVID-19 related impacts: monitoring and lab operations
  - Tracking of suspended monitors began March 2020.
  - Early in the COVID-19 response: about 6% of all monitors (and about 4% of regulatory monitors) were offline.
  - November: 1.2% of all monitors (0.7% of regulatory monitors) were offline.
  - November: all labs are operating, but some continue to have limited operations.
- EPA Memos on Ambient Air Monitoring as Mission Essential
  - Ambient Air Monitoring Programs and Continuity of Operations
  - Ambient Air Monitoring Priorities
  - Resuming Operations of National QA Programs
- Evaluation of Air Quality During COVID - ongoing
  - Air quality impacts, emission inventory changes, etc.
  - Exceptional Events
  - Interest in analyses going on elsewhere

Ambient Air - Protocol Gas Verification Program (AA-PGVP)

- Traceability of NAAQS gas standards
  - Independent EPA verification of calibration gas standards
  - Specialty Gas Producers follow EPA's traceability "Protocol"
  - Allows SLTs to make informed decisions when procuring Gas Standards
- AA-PGVP results from CY2018 and CY2019
  - 2018: 31 verifications (10 exceeded the ±2% Acid Rain Program criteria; one was -17.76% of the certified concentration)
  - 2019: 16 verifications (3 exceeded the ±2% Acid Rain Program criteria; one was +15.68% of the certified concentration.)
- Updates
  - EPA Regional lab shifts: R7 remains in program; R2 to be replaced by R4
  - Assess funding (for both annual and one-time equipment expenditures)

Revised Ozone Photometer TAD Status

- EPA Review
  - Completed EPA review of the Technical Assistance Document in October.
- Monitoring Organization Review
  - TAD was distributed to Regions on October 21st of this year. We have asked Regions to forward to SLTs for review.
  - 6 months will be given to test the new TAD and provide comment
  - We'll address any comments
- Incorporate Ozone Photometer TAD in CFR by Reference



Community Scale Air Toxics Air Monitoring (CSATAM) Grants

- 2020 grant competition
  - RFA announced February 13, 2020 and extended (due to COVID-19) until May 1, 2020.
  - Total funding: $5 Million
  - Projects to assist S/L/T air agencies in identifying and characterizing air toxics.
  - This RFA noted particular interest in Benzene, 1,3-Butadiene, Chloroprene, Ethylene Oxide, and metals Arsenic, Hexavalent Chromium, and Nickel.
  - EPA received 24 eligible applications.
  - 11 applications were selected for award.
  - Grant work periods are up to 3 years.
  - Total funding: $5 Million using FY20 and FY21 funds
    - Initial half of funding has been distributed.

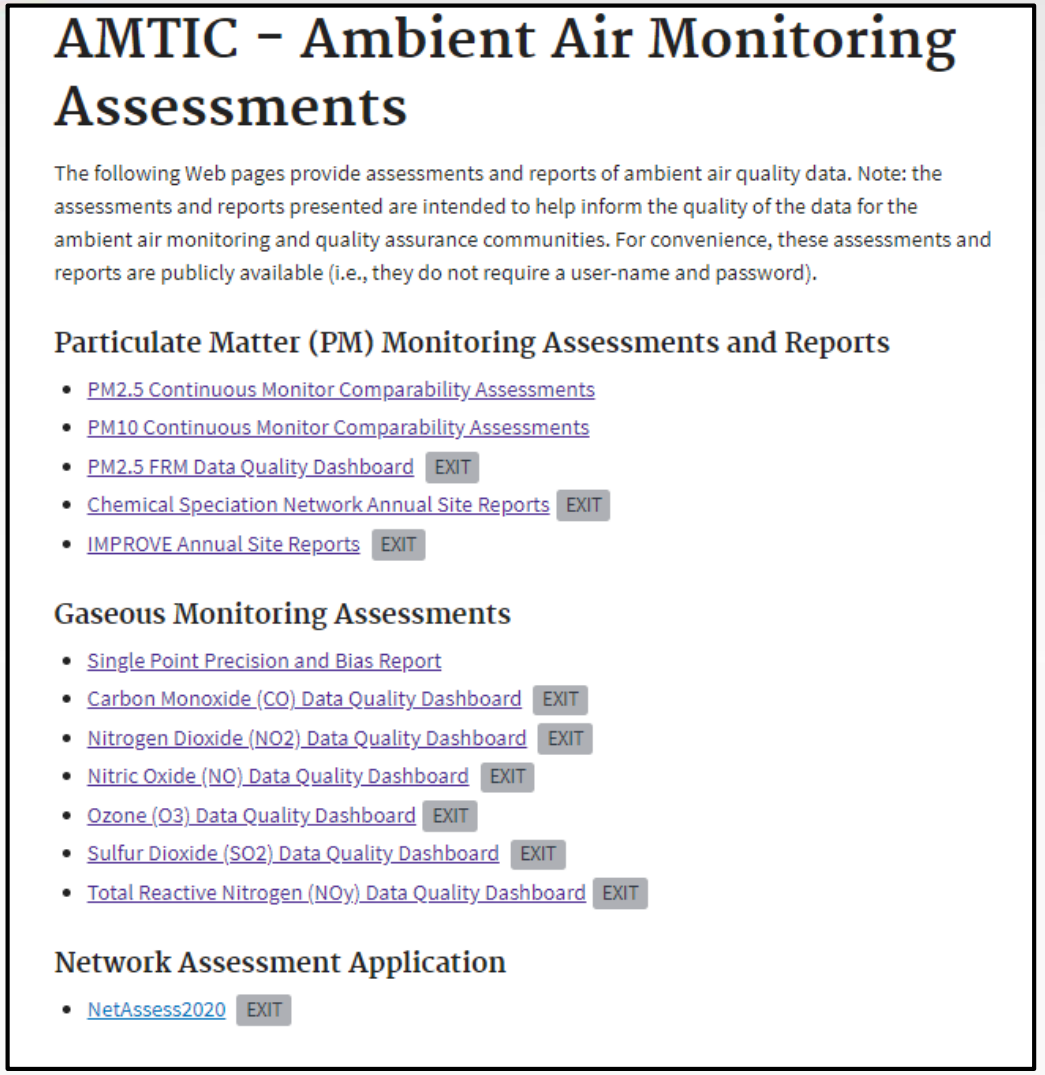
Air Toxics Monitoring

- National Air Toxics Trends Site (NATTS) Network
  - Total number of active NATTS sites: 26, including 2 new sites
    - Tulsa, OK
    - Pittsburgh, PA
  - Underway: 3rd NATTS network assessment
    - Include 2015-2018 new data to cover 2003-2018
    - Determine air toxics trends and data quality
    - Includes individual site evaluation and report
- Ethylene Oxide (EtO)
  - Added as a required analyte to NATTS in 2019
  - Improve ability to measure EtO
  - Method TO-15A - Develop and test new method; communicate via webinar
  - OIG report

Ambient Air Monitoring Assessments on AMTIC

- Why use AMTIC?
  - Easy to find
  - Need home for new assessments being created
  - Assessments are designed for our monitoring and quality assurance communities.
  - Note: URL works. Plan is to link to main page of AMTIC

- Additional notes on Assessments:
  - Publicly available
  - Several assessments have been around for a number of years
  - Other assessments are new and would have been launched at our conference



AMTIC – Ambient Air Monitoring Assessments

The following Web pages provide assessments and reports of ambient air quality data. Note: the assessments and reports presented are intended to help inform the quality of the data for the ambient air monitoring and quality assurance communities. For convenience, these assessments and reports are publicly available (i.e., they do not require a user-name and password).

Particulate Matter (PM) Monitoring Assessments and Reports

- PM2.5 Continuous Monitor Comparability Assessments
- PM10 Continuous Monitor Comparability Assessments
- PM2.5 FRM Data Quality Dashboard EXIT
- Chemical Speciation Network Annual Site Reports EXIT
- IMPROVE Annual Site Reports EXIT

Gaseous Monitoring Assessments

- Single Point Precision and Bias Report
- Carbon Monoxide (CO) Data Quality Dashboard EXIT
- Nitrogen Dioxide (NO2) Data Quality Dashboard EXIT
- Nitric Oxide (NO) Data Quality Dashboard EXIT
- Ozone (O3) Data Quality Dashboard EXIT
- Sulfur Dioxide (SO2) Data Quality Dashboard EXIT
- Total Reactive Nitrogen (NOy) Data Quality Dashboard EXIT

Network Assessment Application

- NetAssess2020 EXIT

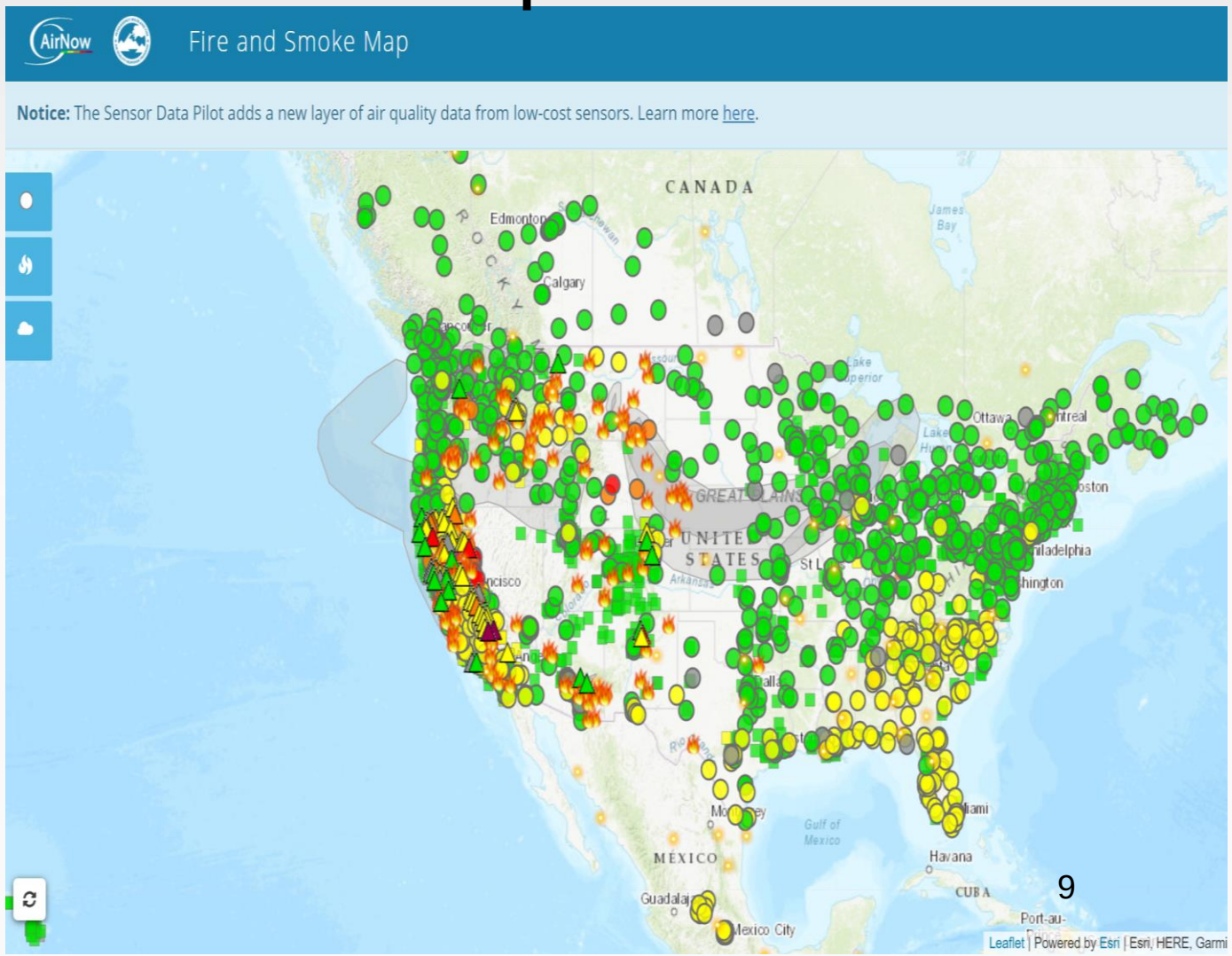
https://www.epa.gov/amtic/amtic-ambient-air-monitoring-assessments

AirNow Sensor Data Pilot

Approach and Current Status:

- New sensor data layer added to existing Wildfire and Smoke Map on Airnow.gov that integrates publicly available $PM_{2.5}$ data from the PurpleAir sensors
- Provide the public with additional air quality information they can use to protect their health during wildfires
- Improve coverage where monitors do not exist
- New map layer released on August 14th and coincided with a large number of fires in the West
- Millions of page views since became live
- Receiving numerous helpful suggestions and positive comments from the public and air agencies

Fire and Smoke Map



Sensor Project Updates

- General Updates
  - EPA's Office of Research and Development (ORD) continues to evaluate new sensors in RTP, NC and is analyzing data from a field study to better understand the long-term performance of various sensors across regions and environmental conditions
  - A presentation providing an overview of sensor performance testing protocols and targets for ozone and $PM_{2.5}$ is available at https://asic.aqrc.ucdavis.edu/events/virtual-fall-session-4
  - An overview of EPA communication and interpretation activities (e.g. animated short videos, AQ Exchange updates, etc.) can also be found through the link above
  - EPA's Office of Air and Radiation addressed questions from state and local air agencies regarding EPA's position on the use of air sensor data for National Ambient Air Quality Standard (NAAQS) compliance
    - Released a memo on June 22, 2020
    - Describes steps Agency is taking to better understand the data quality, interpretation, and management of sensor data in the ambient environment

On The Horizon:

- Government Accountability Office (GAO) engagement on ambient air monitoring
  - 2018 - Project began after receiving a request from
    - Ranking Member Thomas Carper, Senate Committee on Environment and Public Works;
    - Ranking Member Sheldon Whitehouse, Subcommittee on Clean Air and Nuclear Safety, Senate Committee on Environment and Public Works; and
    - Senator Susan Collins
  - GAO staff have communicated extensively with EPA HQ staff, regional offices, 14 state and local air agencies, as well as AAPCA, NACAA, and most of the MJO's
  - Final report expected in winter 2020
- OAQPS Air Toxics Strategy
  - Under development - A comprehensive strategy that recognizes the central role that air toxics plays in air quality management activities
  - Late fall/winter – Likely timeframe for beginning outreach to the states, after the strategy receives a thorough regional review and OAR management approval