2018

Ambient Monitoring Update

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Office of Air Quality Planning and Standards
AAPCA Fall Meeting
Raleigh, NC

Accessibility and Communications are our Priority

- Monthly calls with EPA Regional offices
- Regularly scheduled calls with AAPCA and NACAA Monitoring Committees
- Attendance at monitoring meetings, e.g., Reg 4, Reg 6, MARAMA, NESCAUM, IMPROVE, Regional Grant Coordinators
- Ongoing calls with workgroups for QA, PAMS, CSN/DART, PM, etc.
- Monitoring List-serve
  - mailto:join-airmonitoring@lists.epa.gov

Emphasis on Training

- Multi-year effort to completely update APTI 470 course - Quality Assurance for Air Pollution Measurement Systems
  - Led by Mike Papp and Stephanie McCarthy; originally coordinated through MARAMA
  - eLearning module coming 2019
  - Slide material could be made available
- New course on the TSA Guidance Document and process – posted online
- Need for more basic curriculum and reaching less experienced target audiences
  - Monitoring Basics and Network Planning at conferences
  - Multiple regional training workshops

Selected Programmatic Highlights

PAMS Network Update (1 of 2)

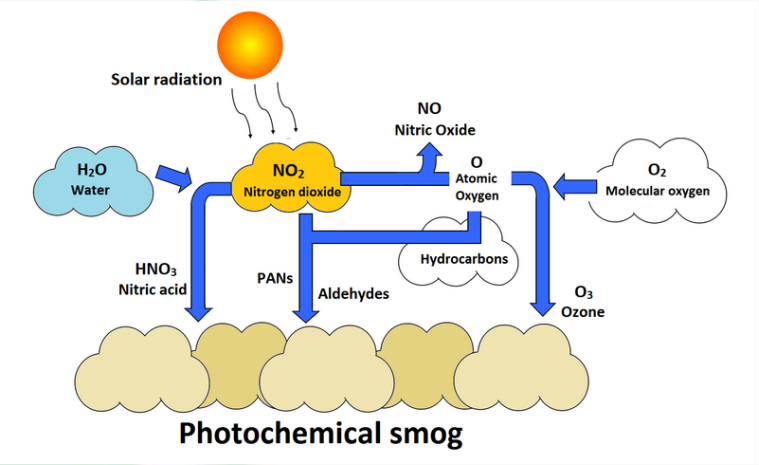
- Funds were distributed in FY17 for early adopting agencies to procure equipment (auto-GC's, true NO_2, ceilometers)

- National (GSA) contract establishment:
  - Marks-Agilent auto-GC established and being delivered
  - CAS equipment contract in progress, expect by Spring '19
  - Next step (FY19) to establish national contracts for NO_2 and ceilometer equipment

- National model QAPP
  - Making final edits based on regional and state/local PAMS participant comments
  - Expect final version Feb/March 2019

PAMS Network Update (2 of 2)

- We are also completing work on an updated Technical Assistance Document, instrument SOP's, and Enhanced Monitoring Plan (EMP) Guidance
  - Handling of ceilometer (mixing height) data will be an issue
- Continuing to work with all stakeholders on STAG funding questions



https://energyeducation.ca/encyclopedia/Photochemical_smog#cite_ref-5

QA Challenges – 2018 version

- Ambient signal is diminishing – challenging procedures and metrics like collocation results and low level audit points
- Recognize need for continued investment in newer calibration/audit equipment
- Ramping up QA on PAMS
- Balancing “shall’s” and “should’s” for NATTS
- Completing the *Leaning* of our audit programs
  - Restructure NPAP and PEP programs

QA Lessons learned from OIG Exercise

- The vast majority of ozone data being collected easily meets QA requirements
- The following issues are to be addressed:
  - QAPP's not meeting CFR requirements or QA Handbook critical criteria
  - QAPP's not always reviewed/approved on regular cycle
  - Inconsistent agency actions when QC checks exceeded criteria
  - Occasional deviations from recommended data validating procedures (zero adjustments)
  - Better linkage needed between TSA's and critical criteria
- All commitments expected to be met in FY19

Near-road Network Status

- There are currently 78 required near-road sites.
  - 54 are multi-pollutant (NO_2, CO, $PM_{2.5}$) sites in CBSAs over 1 million persons.
  - 24 are NO_2 -only "second" sites required in CBSAs over 2.5 million persons and/or because the CBSA has one or more very heavily trafficked road segments ($\geq$250,000 AADT).
- There are 70 operational near-road sites.
  - 1 operational site is technically not required yet (Fresno, CA).
  - 5 sites are delinquent and 4 missing sites are relatively newly required due to population growth
- We anticipate 5 more sites to become officially required in the next two years, based on census data and growth trends.

Near-road (NR) NO_2 2013-2017 Data Summary

- NO_2 NAAQS:
  - Annual Mean: 53 ppb
  - 98th percentile 1-hour daily maximum averaged over 3 years: 100 ppb

➢ Currently, no area of the country is violating the NO_2 NAAQS
  - ➢ Highest 2017 overall annual average design value: 32 ppb (Riverside - Ontario NR)
  - ➢ Highest 1-hr (2015-2017) *overall* design value: 75 ppb (Riverside - Ontario NR)
  - ➢ Highest 98th percentile 1-hr daily max value of 2017: 83 ppb (LA - I-710 NR)

***Near-road NO_2 Data* Year**	**NR Sites Reporting Any Data**	**CBSAs Where Top Annual Design Value Was a Near-road Site**	**CBSAs Where Top 98th %-ile 1Hr Daily Max Value Was a Near-road Site***
2013	10	~100% (4 of 4)	~75% (3 of 4)*
2014	42	~86% (19 of 22)	~50% (21 of 42)*
2015	60	~84% (36 of 43)^	~65% (31 of 48)^*
2016	69	~91% (41 of 45)^	~52% (25 of 48)^*
2017	69	~91% (41 of 45)^	~66% (33 of 50)^*

➢ Comparing valid 1-hr Design values, in CBSAs with near-road sites the a near-road site was the high monitor 56% of the time (19 of 34).

^Some CBSAs have two near-road sites, *These data reflect all hourly data, regardless of completeness

Near-road (NR) $PM_{2.5}$ 2015-2017 Data Summary

- $PM_{2.5}$ NAAQS:
  - Annual: 12 µg/m^3; annual mean averaged over 3 years
  - Daily: 35 µg/m^3; 98th percentile 24-hour average, averaged over 3 years

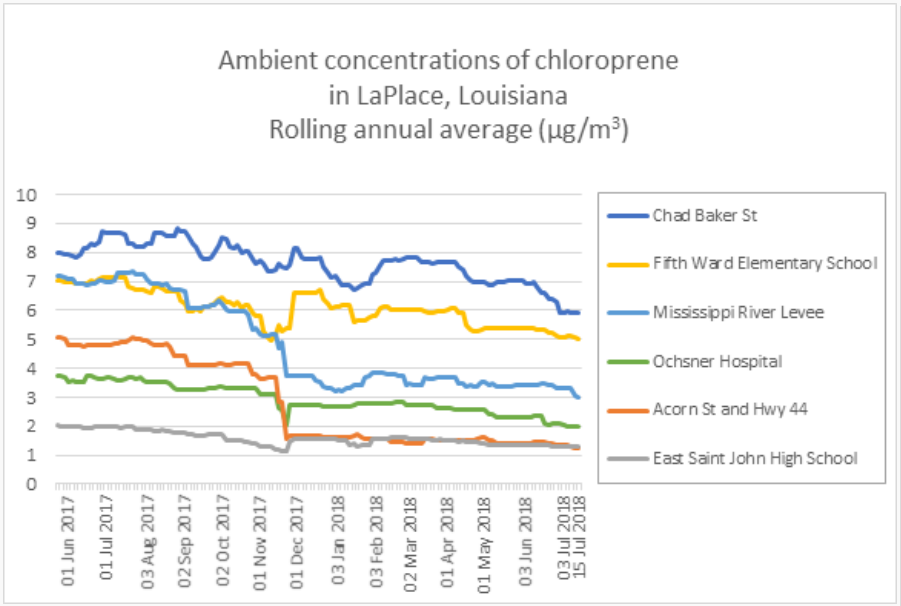
Notable DVs:

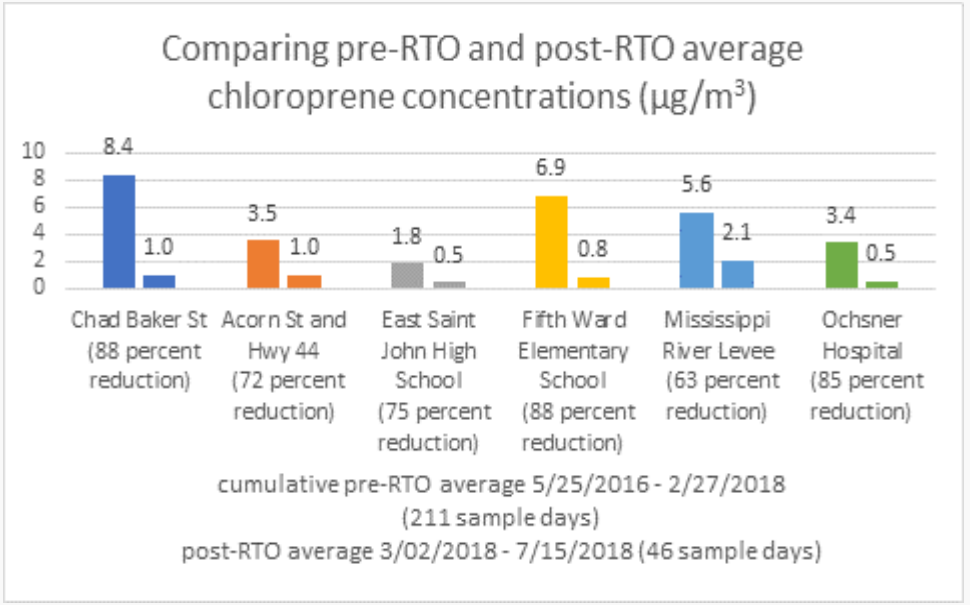
- Highest 2015-2017 Annual PM2.5 DV: 22.2 µg/m^3 (Corcoran, CA – not near-road)
- Highest 2015-2017 Annual Near-road PM2.5 DV: 14.6 µg/m^3 (Riverside - Ontario NR)
- 2nd Highest 2015-2017 Annual Near-road PM2.5 DV: 12.6 µg/m^3 (LA – I-710 NR)
- Highest 2015-2017 24-hr PM2.5 DV: 85 µg/m^3 (Fairbanks – not near-road)
- Highest 2015-2017 24-hr Near-road PM2.5 DV : 38 µg/m^3 (Riverside - Ontario NR)

Near-road $PM_{2.5}$ Data **Years**	**CBSAs with valid Near-road and Non-Near-Road DVs**	**CBSAs Where the Top Annual Design Value Was a Near-road Site**	**CBSAs Where the Top 24-hr DV was a Near-road Site**
2014-2016	9	~22% (2 of 9)	~11% (1 of 9)
2015-2017	25/24	~36% (9 of 25)	~58% (14 of 24)

- Notably, the near-road sites in Riverside and LA noted above have the highest DV for their respective CBSAs for the Annual standard, but are not the only sites in their CBSA with a DV above the standard.

Special Air Toxics Monitoring Projects

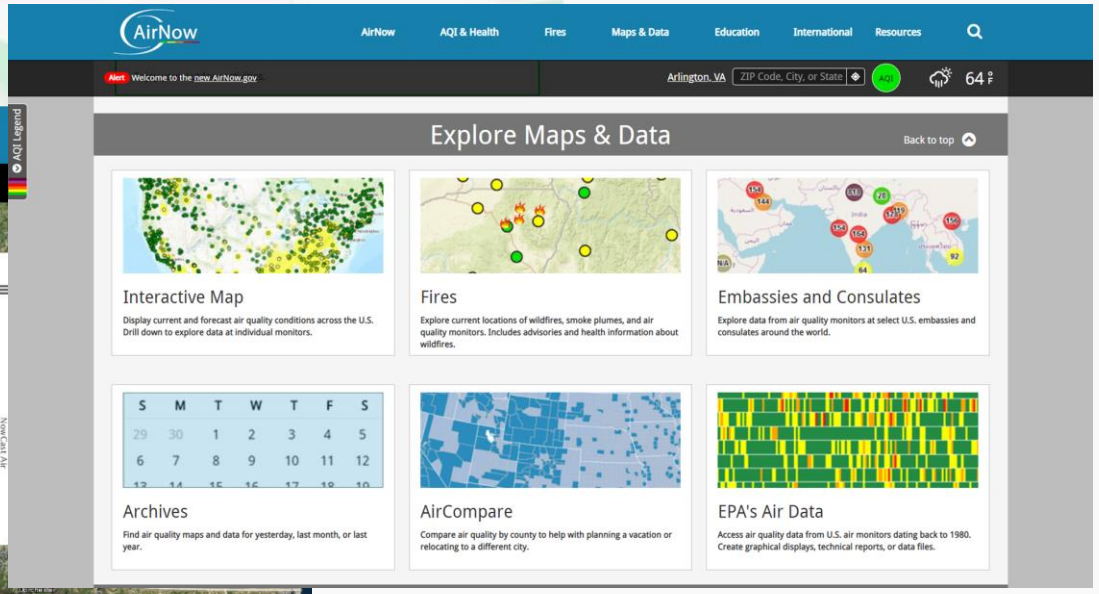




- New technical lead in the ambient monitoring group – Doris Chen
- Chloroprene surveillance – LaPlace, LA – 3 years running, continuing into 2019
- Art Glass facility characterization – Kokomo IN, Pittsburgh PA, Paden City WV
  - Report is nearing completion
- Cr+6 and total metals – Wylam AL - ongoing

AIRNow Update

- Update went live on September 12
- Represents a start-from-scratch “re-imagining” of the entire site
  - Used 11 personas to represent our user base
  - Consulted Google Analytics to see how the former site was used



Other Notable Projects/Accomplishments

- Working to improve data visualizations for QA, PM2.5 method comparisons, etc
- Big increase in the percentage of CSN sites that are using DART and validating their data. Most recent batch had 80% of the sites reviewed.
- Five projects approved and funded for Community-Scale Air Toxics Ambient Monitoring Grants
- State Dept. PM2.5 monitoring project in Sarajevo – supported jointly with ORD

(L to R) *US Deputy Chief of Mission Paul Horowitz; Italian Ambassador Nicola Mansi; EU Delegation Ambassador Lars Gunnar-Wigemark; Swiss Ambassador Andrea Rauber Saxer; Tim Hanley, US EPA; US Ambassador Maureen Cormack; German Ambassador Christine Hohmann; Norwegian Ambassador Guri Rusten; Japanese Ambassador Hiroyuki Sakamoto; Swedish Ambassador Anders Hagelberg*

Questions?