EPA Region 4
Air and Radiation Division (ARD) Summary of Modeling and Monitoring Activities

EPA REGION 4 FALL AIR DIRECTORS MEETING
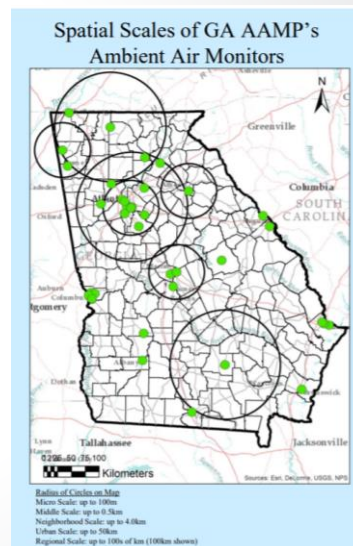**October 16-17, 2019**

Air Data and Analysis Section (ADAS) Staff Changes in 2019

- EPA Realignment in Spring 2019
  - TRI and Risk Assessment functions/staff moved out of ADAS to CATS
- Egide Louis moved from EPA to ATSDR in Region 6
- Richard Wong transferred from ARMS to ADAS in July 2019 as our new EI/MOVES contact
- Njeri Carlton-Carew (Moeller) and Mike Moeller transferred from EPA Region 4 to OAQPS in October 2019
- Todd Rinck – 120-day Detail as Acting Air Planning and Implementation Branch (APIB) Chief (ends November 7, 2019)
- Rick Gillam – 120-day Detail as Acting ADAS Chief (ends November 7, 2019)

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2019 Air Monitoring Network Plans

- On track to respond to all plans within 120 days
- Improved review process this year using EPA's Lean Management System (ELMS)
- Improved our EPA response/approval format to more clearly document how networks are meeting regulatory requirements
- ADAS Staff provided training on how to develop network modification requests at the air monitoring QA training in Athens, GA in September
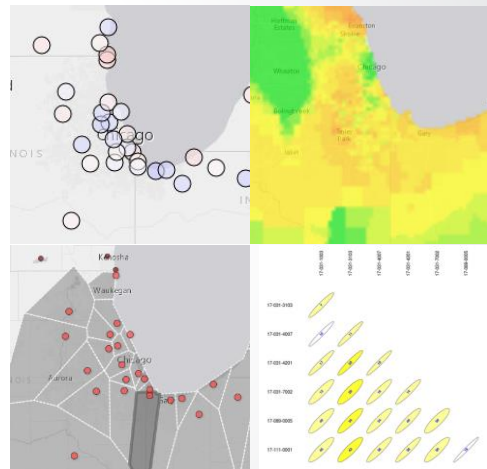
Spatial Scales of GA AAMP's Ambient Air Monitors

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ELMS – EPA Lean Management System

5-Year Air Monitoring Network Assessments

- Required by 40 CFR Part 58.10(d)
- Assessments provide an opportunity to:
  - evaluate how your monitoring networks meet your area's needs (and meet federal requirements),
  - plan for changes over the next five years, and
  - prioritize your resources
- R4 provided training on the assessment process and web-based tools at the Air Monitoring QA Training in September
  - Additional web-based training upcoming
- Last assessments were completed in 2015 and R4 provided comments on them
- Assessment and network plan can be combined into one document
- We ask that agencies renew any waiver requests to air monitoring regulatory requirements in the 5-year assessment
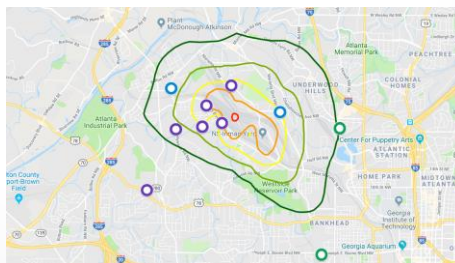

Source: LADCO

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EPA Region 4: Atlanta Rail and Port Sensor (RAPS) Project

- Collaboration between EPA Region 4 and Georgia EPD
- Objectives:
  - Conduct a pilot-scale air quality study in a port-like area, partnering with GA EPD and other stakeholders
  - Evaluate the utility of lower-cost air sensor technology in understanding near-source exposures from a port
- Timeline – Finished deploying sites in August, 2019, continuing sampling for 6 months.
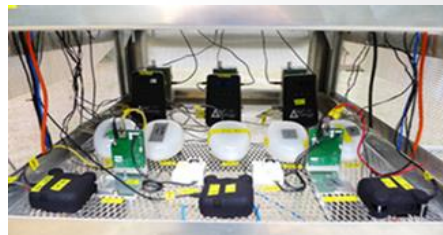 - 1+ month collocation period before and after deployment

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Air Sensor Collocation Shelters
Regional/State/Tribal Innovations Grant

- Working with tribal, state, and local governments to install air sensor collocation shelters at several existing air monitoring sites
- Goal is to increase communication and collaboration with external stakeholders, and produce air sensor data that all parties have confidence in
- Project partners:
  - Catawba Indian Nation
  - Eastern Band of Cherokee Indians
  - Seminole Tribe of Florida
  - Mecklenburg County, NC
  - Broward County, FL
  - US EPA Region 4 and ORD
  - Other R4 agencies to be announced
- Currently reviewing monitoring site proposals from partner agencies
- Project will also produce publicly-available plans for a collocation shelter, and guidance on best practices

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Ethylene Oxide (EtO) Monitoring

- National Air Toxics Trends Sites (NATTS) are adding EtO to the standard list of VOC measurements

- Beginning in October 2018, the national contract lab (ERG) started analyzing for EtO in cannisters from agencies utilizing the national contract for VOC analysis

- Region 4 labs are developing experience with EtO identification and quantification

- Timeline:

September 2019	Updated QAPPs were due to EPA
January 2020	Canister samples from NATTS sites analyzed
July 2020	EtO data should be reported to AQS

Ethylene Oxide (EtO) Special Study

- GAEPD Designed and Implemented Ambient Monitoring Study around 2 Sterilization Facilities in Atlanta Metro Area
- Joint GAEPD-EPA Public Meetings in Smyrna and Covington GA
- Collaboration between GAEPD, LSASD and ARD to get an approved QAPP in place very quickly
- Ambient Monitoring began September 21, 2019
  - Additional information available:
    https://www.epa.gov/smyrna-eto
    https://www.epa.gov/covington-eto
    https://epd.georgia.gov/ethylene-oxide-information

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Per- and Polyfluoroalkyl Substances (PFAS)

EPA

- EPA STAR Grants
  - EPA announced the award of 8 research grants to universities, focused on PFAS analysis and treatment for solid waste, landfills, wastewater, leachates, soil and groundwater
  - $6M awarded to fund 8 different collaborative projects
  - Winning teams are from NC, NY, FL, SC, IN, TX, ND, IL, and OR
  - R4 recipients:
    - NC State - Characterization and Quantification of per- and polyfluoroalkyl substances in landfill gas and estimate of emissions from U.S. Landfills
    - Univ of Florida - A systems-based approach to understand the role of waste type, management strategies and treatment methods on the occurrence, source, and fate of PFAS in landfills
    - Clemson - The BOHP/UV Process for Destruction of PFAS in Leachate and Groundwater: Tandem mechanistic advancement and pilot demonstration

- Collaboration
  - Region 4/State PFAS Workgroup – Sara Waterson is ADAS Contact

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FY 2019 Significant Modeling Activities

- PSD Permit Applications and Modeling Protocols
- SO_2 Attainment Demonstration and Re-designation SIPs
- DRR SO_2 On-Going Verification Annual Reports and Transport iSIPs
- Regional Haze Modeling
- 2019 EPA Regions, States and Locals Modelers Workshop in Seattle, Washington from May 6-9, 2019
- EPA's 12th Conference on Air Quality Modeling, in RTP, NC, from October 2-3, 2019
- **Thank You for allowing your modeling staff to attend these beneficial workshops!**

12th Conference on Air Quality Modeling

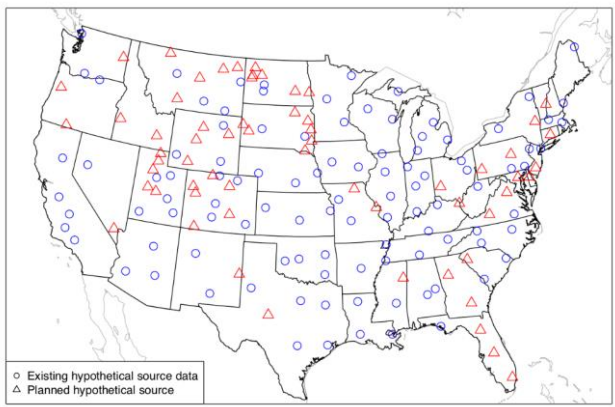EPA RTP, NC Campus – October 2-3, 2019

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PSD/NSR Permit Modeling

- Reviewed and Commented on 20 PSD Permit Applications and 11 PSD Modeling Protocols in FY 2019
- 7 PSD Permit Application Modeling Projects received so far in FY 2020 since October 1, 2019
- 2 PSD Modeling Protocols reviewed so far in FY 2020
- Outlook is for continued high volume of PSD modeling activity

- Issues and Questions:
  - Single-source secondary ozone and PM2.5 analyses (MERPs Guidance)
    - Challenging to apply MERPs for Class I area increment SILs assessment
    - Continued use of CALPUFF for screening assessments
  - Ambient Air/Fence-line issues

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Development of MERPs Assessment Tool – 'MERPs View'

- EPA Region 4 and OAQPS are developing an online tool to assist in Tier 1 demonstrations based on MERPs analyses

- The tool is based on the 'Qlik App' software which provides greater interactivity and visualization of the available MERPs data

- The tool will combine existing MERPs data with more detailed, refined assessments (i.e. air quality impacts as a function of distance from a modeled source)

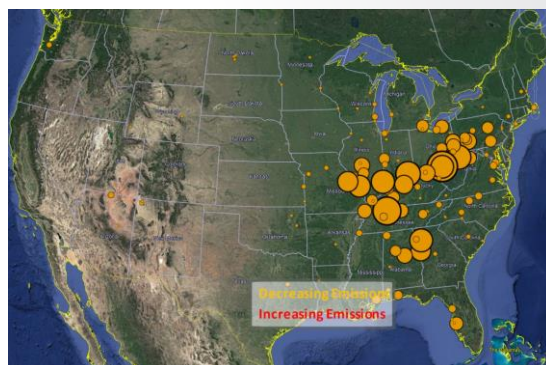- This tool will allow end-users to view and extract MERPs data that is most useful to them

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SO$_2$ Attainment Demonstration and Redesignation SIPs

- Round 1 Attainment Demonstration SIPs
  - Jefferson County, Kentucky
    - Final rule effective July 29, 2019.
  - Sullivan County, Tennessee (Eastman Chemical Company)
    - Newly deployed monitors showing exceedances of the NAAQS – Eastman evaluating additional controls
- Redesignation SIPs
  - 2 Round 1 Areas in Florida (Hillsborough and Nassau Counties)
    - Nassau County Redesignation Approved in April 2019
    - Hillsborough County Redesignation Approval signed on October 11, 2019
  - Round 3 Hillsborough-Polk NAA
    - Controls were installed by August 2019 – Comment Period on the Proposed Rule closed on 10/9/19
  - Round 1 Louisville NAA
    - Pre-heating SIP currently out for public review – Louisville plans to submit to EPA soon

Sulfur Dioxide Emissions Changes, 1990-2018
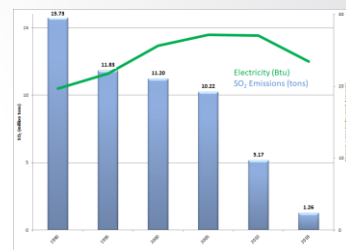

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DRR SO$_2$ On-Going Verification

- Annual reports were due by July 1, 2019, for areas designation A/U in Round 2 and 3 Designations
- 33 Areas in Region 4 had reports due
- Georgia, Kentucky, Florida, Mississippi, North Carolina, and Tennessee submitted draft reports.
  - EPA Region 4 reviewed submittals and provided comments
- Final reports have been received for 7 out of 8 states
  - The public comment for the remaining report closed on 10/11/19 and we expect the final soon
- Georgia requested termination of reporting requirement for 2 areas
  - Provided modeling for both areas showing max modeled values below 50% of the NAAQS using recent emissions
  - Region 4 reviewed modeling and has approved termination for both areas
  - Approval consists of a letter signed by the RA accompanied by a brief TSD
- Florida requested termination of reporting requirements for 2 areas
  - Provided allowables-based modeling for one area, showing max modeled value below the NAAQS, and referenced the Round 3 DRR modeling for the other area, showing max modeled values below 50% of the NAAQS
  - Region 4 is reviewing the modeling and request

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EPA **Round 4 SO$_2$ Designations and SO$_2$ Transport iSIPs**

- SO$_2$ Round 4 Designations – Required by December 31, 2020
  - September 5, 2019, Memorandum: Area Designations for the 2010 Primary Sulfur Dioxide National Ambient Air Quality Standard – Round 4 (PDF)
  - 7 areas in Region 4 where monitors were deployed in 2017, 54 Areas nationally
  - EPA may consider, on a case-by-case basis, a designation other than nonattainment for areas where a source-oriented monitor has a design value above the NAAQS
    - Modeling of new federally enforceable allowable emissions

- SO$_2$ Transport iSIPs
  - Currently working with ARMS Staff on transport component of iSIPs
  - Modeling being used to show that large SO2 sources within 50 km from state border are not causing NAAQS violations in nearby states
    - NC performed additional modeling for a Round 4 source located within 50 km of border
    - TN performed additional modeling for large sources near border
    - AL provided supplemental information including additional modeling for a Round 3 source within 8 km of FL
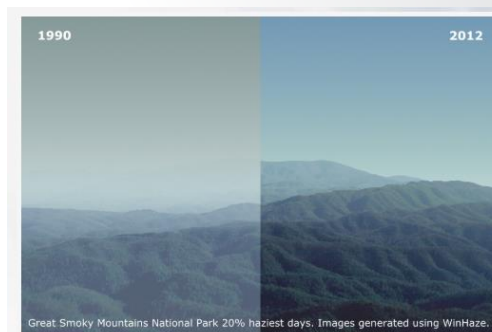
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Regional Haze Modeling

- Working with Mississippi to re-evaluate BART Modeling (sources that originally relied on "CAIR/CSAPR better than BART"
- 2nd Round of Regional Haze SIPs
  - Reviewed and approved VISTAS Modeling QAPP
  - Reviewed and provided comments on Modeling Protocol (CAMx)
  - Work with VISTAS to review modeling results and assist states as they prepare their Round 2 Regional Haze SIPs
  - EPA Released Updated 2028 Visibility Modeling on September 19, 2019
    - EPA is holding a public webinar to discuss the recently released 2028 regional haze modeling
    - The webinar will be held October 15th from 2-3:30 EDT

1990

2012

Great Smoky Mountains National Park 20% haziest days. Images generated using WinHaze.
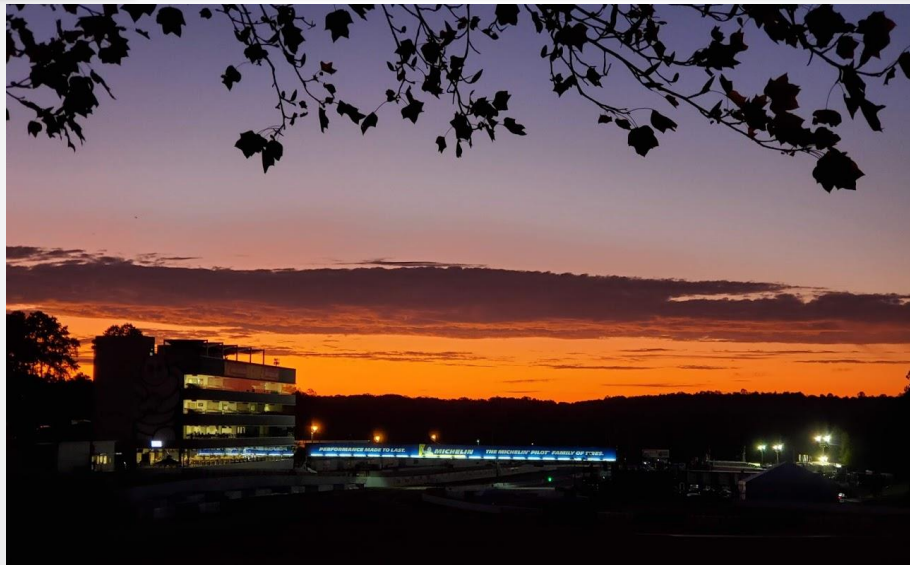
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Prescribed Fire Webinars - Save the Date!

- Air Quality 101 Webinar for
  Prescribed Fire Practioners –
  January 30, 2020, 1:00 PM

- Prescribed Fire 101 Webinar for
  Air Quality Staff is also being
  planned for February/March 2020

EPA

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