OAQPS Technical Updates

AQAD – Air Quality Assessment Division
Chet Wayland - Presenter

AAPCA Technical Conference Call

April 17, 2020

COVID-19 Response

- During an emergency or Continuity of Operations Plan (COOP), **ambient air monitoring programs are a mission essential function** and should continue unless state, local, or tribal (SLT) directives prohibit their operation
  - *Memo: "Ambient Air Monitoring Programs Continuity of Operations Associated with the COVID-19 Response" (March 18, 2020)*

- However, we recognize that the COVID-19 response is straining many air monitoring agency resources and, in some cases, may limit access to monitoring sites

- In response to questions from SLT agencies concerning monitoring priorities during COVID-19, we provided input to consider when balancing mission essential functions of ambient air monitoring with local orders and the health and safety of employees
  - *Memo: "EPA Input on Ambient Air Monitoring Priorities in the Absence of Monitoring Agency Priorities During the COVID-19 Response" (March 30, 2020)*

Ambient Monitoring Update
AAMG – Ambient Air Monitoring Group
Kristen Benedict - Presenter

AAPCA Technical Conference Call
April 17, 2020

Ambient Air Monitoring Updates

- NAAQS Reviews for PM and Ozone
  - No planned monitoring or QA/QC changes at this time
- Community-Scale Air Toxics Ambient Monitoring (CSATAM) Grants Competition
  - Applications due May 1, 2020
  - https://www.epa.gov/amtic/community-scale-air-toxics-ambient-monitoring-csatam
- Annual Monitoring Network Plans and Network Assessments
  - Due July 1, 2020
  - Work with your Regional Office if there are challenges to submitting on time
- 2020 National Ambient Air Monitoring Conference
  - August 9-13, 2020 in Pittsburgh, Pennsylvania
  - https://www.epa.gov/amtic/2020-national-ambient-air-monitoring-conference
- PAMS Final Rule Change
  - Revision extends start date to June 1, 2021

Near-Road Network

- As of December 2019, there are 74 operational Near-road (NR) monitoring sites.
  - 71 of the sites are measuring multiple pollutants.
  - The network will continue to modestly grow as a handful of states complete required installations and as CBSAs grow into requirements.
  - Listing of sites is maintained online: https://www3.epa.gov/ttn/amtic/nearroad.html

- The network continues to grow as CBSAs grow. The EPA anticipates continuing to directly fund new sites as funding allows.

- Multi-pollutant sites are of increasingly high value. The NR sites are increasingly being leveraged by academia.

- NO_2 – No areas of the country are exceeding the NO_2 NAAQS
  - Near-road sites continue to often have the high NO_2 DV in their respective CBSAs
  Through 2018:
  ❑ NR sites are the high DV for the annual NO_2 standard 94% of the time
  ❑ NR sites are the high DV for the 1-hr Daily Max. standard nearly 60% of the time.
  ❑ The highest NO_2 DVs are at least 20 ppb away from each respective level of the two forms of the NO_2 NAAQS

Near-road (NR) PM$_{2.5}$ 2016-2018 Data Summary

- **PM$_{2.5}$ NAAQS**: Annual: 12 µg/m³; annual mean averaged over 3 years
  Daily: 35 µg/m³; 98th percentile 24-hour average, averaged over 3 years

Notable DVs:

- Highest 2016-2018 Annual PM2.5 DV: 17.8 µg/m³ (Bakersfield, CA – not NR)
- Highest 2016-2018 Annual Near-road PM2.5 DV: 14.7 µg/m³ (Riverside - Ontario NR)
- 2nd Highest 2016-2018 Annual Near-road PM2.5 DV: 12.7 µg/m³ (LA – I-710 NR)
- Highest 2016-2018 24-hr PM2.5 DV: 75 µg/m³ (Klamath Falls, OR – not NR)
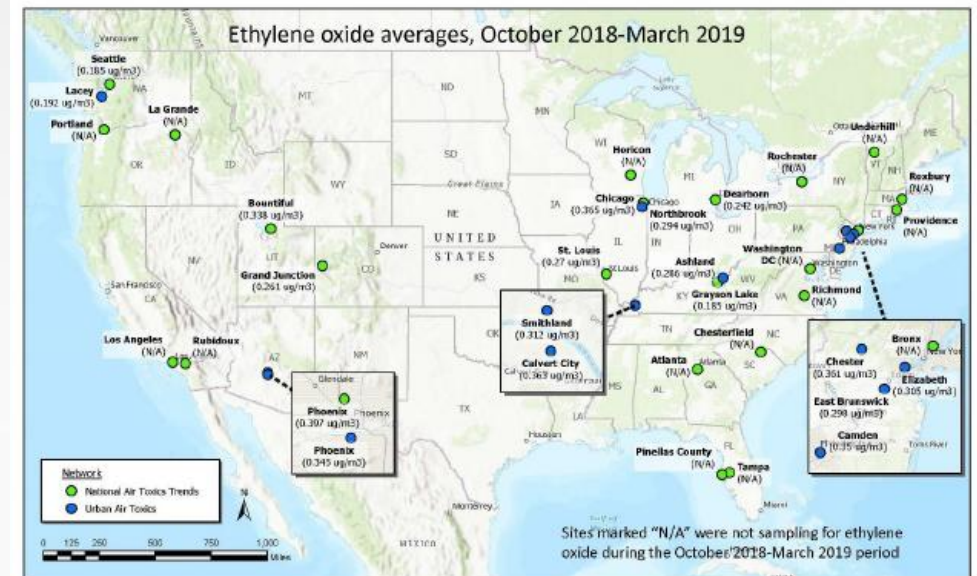- Highest 2016-2018 24-hr Near-road PM2.5 DV : 45 µg/m³ (SFO – Laney College NR)

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)
2016 – 2018	27/30	~56% (15 of 27)	~33% (10 of 30)

- Note: The near-road sites in LA, Riverside, and San Francisco noted above have the high DVs for their respective CBSAs, but are not the only sites in their CBSA with a DV above the levels of the respective standard.

Air Toxics Monitoring Update

- Reported initial ethylene oxide (EtO) ambient data from NATTS through March 2019 – additional data being validated for reporting this spring

- Current work to train additional state and local NATTS labs on EtO analytical methods

- Ongoing research to improve EtO methods for source, near-source, and ambient applications. Looking for improved sensitivity and real-time measurements.

- Working with state and local partners to add two new sites to NATTS – replacing sites discontinued in 2018

- Community Scale Air Monitoring Grant competition currently open for applications through May 1,2020.
  - https://www.epa.gov/grants/community-scale-air-toxics-ambient-monitoring

National Air Toxics Trends and Urban Air Toxics monitoring sites

https://www.epa.gov/hazardous-air-pollutants-ethylene-oxide/ethylene-oxide-data-summary-national-air-toxics-trends

Sensors – Data Quality

- Data Quality: O_3 and $PM_{2.5}$
  - Evaluation protocols and performance targets for O_3 and $PM_{2.5}$ are drafted and in review.

- Data Quality: NO_2, SO_2, PM_{10}, and CO
  - Completed a July 16, 2019 workshop to discuss performance targets for NO_2, SO_2, PM_{10}, and CO with various stakeholders and subject matter experts.
  - Literature review report and workshop summary has been drafted and is being submitted for peer reviewed journal publication.
  - Development of documents for additional pollutants (NO_2, SO_2, CO, and PM_{10}) has begun.

Sensors (cont.)

- Data Interpretation
  - Kickoff meetings on updating sensors best practices document have begun

- Data Management
  - Actively working with State organizations and private companies on communication of air quality information
    - Air Quality information Exchange Workgroup: planning
    - An intensive two month project to capture screen shots of various public facing air quality websites for analysis has been completed and analysis and summary of results are being developed

- Air Sensors International Conference (ASIC) 2021
  - Rescheduled for April 27-30, 2021 at the Pasadena Convention Center
  - A virtual series of presentations will be offered this summer – one hour long each with 15 minute presentations

Regulatory Modeling Update

AQMG – Dispersion Modeling Team
George Bridgers - Presenter

AAPCA Technical Conference Call

April 17, 2020

AERMOD Development: Short Term

- Updates to AERMOD/AERMET v19191
  - Tentative late summer/fall 2020
  - Primarily bug fixes

- No planned updates to AERMAP

- AERSURFACE v20060 released on April 7th
  - Replaces all previous versions, 13016 and 19039_DRFT
  - https://www.epa.gov/scram/air-quality-dispersion-modeling-related-model-support-programs#aersurface

AERMOD Development: Long Term

- Model development over next 2-3 years is focused on several key areas as defined by AERMOD White Papers and focus of expert panels as 12th Conference on Air Quality Models:

  - Building downwash
    - ORD, AWMA ALPHA options in v19191

  - Overwater modeling
    - Replace Offshore and Coastal Dispersion (OCD) model with AERMOD

  - Low wind conditions
    - ALPHA options introduced in AERMOD v18081; Adjusted u* in v16216

  - NO2 modeling techniques
    - New Tier 2 and Tier 3 method developments

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AERMOD Development: Long Term *(Cont)*

- Model development over next 2-3 years is focused on several key areas as defined by AERMOD White Papers and focus of expert panels as 12th Conference on Air Quality Models:

  – Mobile source Modeling

    - Introduced RLINE into AERMOD v19191 as BETA option with ALPHA option for urban environments, single solid barriers, and depressed roadways

  – Deposition

    - While not a White Paper, deposition is also an area of focus for model development given interest in PFAS

  – 12th Conference on Air Quality Models

    - https://www.epa.gov/scram/12th-conference-air-quality-modeling

  – AERMOD Modeling System Development / White Papers

    - https://www.epa.gov/scram/aermod-modeling-system-development

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Guidance Updates

- DRAFT Guidance on Ozone and $PM_{2.5}$ Permit Modeling
  - Released on February 10th for informal public comment
    - https://www3.epa.gov/ttn/scram/guidance/guide/Draft_Guidance_for_O3_PM25_Permit_Modeling.pdf
    - Original comment deadline was March 27th
    - Extended to April 17th given COVID-19 pandemic and RSL Modelers' Workshop cancellation
  - Update that replaces the 2014 *Guidance on $PM_{2.5}$ Permit Modeling*
  - Major additions / updates to be consistent with 2017 *Guideline* revision
    - Pollutant "Applicability" in Section II.2
    - Ozone NAAQS assessment
    - Overhaul of Section V on $PM_{2.5}$ PSD Increment
  - More questions… check out the March 12th webinar presentation
    - https://www3.epa.gov/ttn/scram/guidance/guide/Draft_O3_PM25_Modeling_Guidance_Webinar.pdf

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2020 RSL Modelers' Workshop

- Originally scheduled for May 5th through 7th in Minneapolis, MN

- Day 1 was to be an "External Stakeholder Day"
  - Focus was to be on AERMOD / Model Development following expert panel discussion and feedback from the 12th Conference on Air Quality Models
  - In addition to EPA presentations, focused model development stakeholder presentations were being lined up to update / continue the dialogue started at the 12th Modeling Conference.

- Day 2 and 3 were going to follow typical "Co-regulator Days"
  - Was soliciting feedback from states/locals/tribes for co-regulator breakouts and focused presentation at the point that we had to change course on this year's workshop

- Obviously, we had to cancel the meeting given the COVID-19 pandemic
  - Some had asked about a virtual workshop, but the primary benefit of the annual RSL Modelers' Workshop is the in-person interactions during breakouts, between sessions, etc.

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Looking Forward

- We will shift the plan of action for the 2020 RSL Modelers' Workshop to next year
  - 2021 RSL Modelers' Workshop – Minneapolis, MN in late Spring (May/June timeframe)
  - We will keep the Day 1 / External Stakeholder Day approach, but focus may shift
- In the interim, we are looking to establish a series of topical webinar sessions based on the feedback that we were receiving from co-regulatory agencies
  - Model Development
    - AERSURFACE
    - AERMOD Modeling System v20??? release update
  - O3 & PM2.5 Permit Modeling
    - Practical applications / examples (e.g., combination primary & precursor assessments)
    - Final guidance update
  - TBD based on your feedback

Modeling/Guidance Questions

- Questions on model development, guidance, or our annual workshop?

- Reminders
  - April 17th is recommended deadline for comments on the *DRAFT Guidance for Ozone and Fine Particulate Matter Permit Modeling*
  - We welcome feedback from the AAPCA states on potential topical modeling webinars across mid and latter 2020 in lieu of our annual RSL Modelers' Workshop
  - Please reach out to Regional Offices on all potential regulatory alternative modeling situations such that we can schedule a "Big Call" as early in the process as possible.

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Emissions Inventory Update

EIAG – Emissions Inventory & Analysis Group

Marc Houyoux - Presenter

AAPCA Technical Conference Call

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2017 National Emissions Inventory

Release	Includes	Notes
August 2019	Point sources	Includes airports
February 2020	Point update Nonroad mobile Wildfires and Rx burning	Added rail yards, offshore, and other to point
April 2020 (Complete)	Point update (minor) Fires update (minor) Onroad mobile Nonpoint	Nonpoint includes biogenics, commercial marine, and rail lines
TBD	Point update	Ethylene oxide update

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Combined Air Emissions Reporting

- February: Completed Minimal Viable Product (MVP) features
- March: MVP testing and documentation review
  - By EPA, Georgia staff, and pilot facilities
  - Fixing any problems found before deployment
- April: Production release to report 2019 emissions
  - Help desk deployed
  - About 125 facilities in Georgia
  - Supports NEI and TRI workflows
- May and beyond
  - Additional co-regulator features
  - Additional emissions programs
  - Additional states, locals, and tribes

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2016 Platform Updates

- The platform is available on the IWDW:
http://views.cira.colostate.edu/wiki/wiki/10202

- Commercial marine vessel (CMV) inventories updated in January, 2020 for stationary ships (i.e., "hoteling") and days of the week

- Summary reports and the new CMV emissions are available on the EPA emissions modeling FTP site:
ftp://newftp.epa.gov/air/emismod/2016/v1/

- EPA reviewed WRAP oil and gas base and future inventories and prepared a "plug-in" package for the IWDW

- January 2020 Power Sector Modeling IPM reference case available, including inventories:
https://www.epa.gov/airmarkets/clean-air-markets-power-sector-modeling

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SIP Emissions Issues

- State emissions reporting rules
  - CBI issues
  - PM2.5 reporting requirements (for SIPs and AERR)

- Regional Haze SIPs – emissions inventory requirements
  - Is using the 2016 emissions platform enough to meet all of the requirements?

- Do startup/shutdown/malfunction emissions need to be included in 2015 ozone base year inventories?

2020 as an Emissions Inventory Year

- Competing interests for 2020 as an inventory year
  - Not a good "planning year" for SIPs
  - Science stakeholders interested in modeling this "natural experiment"
- OAQPS is discussing how best to take input on these concerns from stakeholders
- For now, 2020 inventory year is regulatory requirement as per the Air Emissions Reporting Rule (40 CFR 51, Subpart A)
  - State, local, and tribal air agencies should be prepared to comply with the AERR for 2020

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Recent Wood Heat Rulemaking and Test Method Update

MTG – Method Development Team

Stef Johnson - Presenter

AAPCA Technical Conference Call

April 17, 2020

Notice of Proposed Rulemaking (NRPM)

- November 2018

- Proposed the addition of a "sell-through" period for Step 1 compliant hydronic heaters and forced-air furnaces manufactured before May 2020.

- Solicited comment on whether a "sell through" period is appropriate for wood heaters (wood stoves and pellet stoves) manufactured before May 2020.

- Solicited comment on whether the minimum pellet fuel requirements should be retained, revised, or eliminated.

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Advance Notice of Proposed Rulemaking (ANPR)

Took comment on:

- Feasibility of Step 2 compliance date of May 15, 2020
- Step 2 emission limits for forced-air furnaces, hydronic heaters and wood heaters
- Step 2 emission limit based on weighted averages versus individual burn rates for hydronic heaters and forced-air furnaces
- Test methods – transition to cordwood
- EPA compliance audit testing
- ISO-accredited third-party review
- Electronic Reporting Tool (ERT)
- Warranty requirements for certified appliances

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Current Status of the NPRM

- Notice of Proposed Rulemaking

  - On March 11th the Administrator signed the final amendments to the 2015 NSPS. These amendments were published in the Federal Register on April 2, 2020 (85 FR 18448)

  - In this final action the EPA:

    - Deleted the pellet fuel minimum requirements, but retained the prohibited fuels list in the regulation for clarity and continuity;

    - Clarified that the determination of moisture content is made at the end of the manufacturing process, and the prohibition on unseasoned wood does not prohibit the use of unseasoned wood earlier in the pellet fuel manufacturing process; and

    - Decided to not provide a sell-through period, which would have allowed retailers additional time to sell certain wood heating devices beyond the May 2020 compliance date.

    - On March 24th 2020 the Hearth, Patio and Barbeque Association (HPBA) petitioned the Agency for relief from the May 15th date due to impact from COVID-19, and this is currently under review by the Agency.

Current Status of the ANPRM

- Advanced Notice of Proposed Rulemaking

  - EPA is reviewing the comments received on the ANPR and intends to address those comments, and associated issues, when we undertake the next NSPS review which is due in 2023. EPA is also:

  - Continuing to work with stakeholders to develop a cordwood test method and fueling protocol;

  - Collecting sufficient test data for this method/protocol; and

  - Continuing to incorporate the Electronic Reporting Tool (ERT) for test report submittals.

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2018/2020 Tracking of Step 2 Compliant Models

March 2018: Appliances compliant with Step 2 emission limits

- Wood & pellet stoves – 77 models
- Hydronic heaters – 9 models
- Forced-air furnaces – 1 model

March 2020: Appliances compliant with Step 2 emissions limits

- Wood & pellet stoves – 196 models
- Hydronic heaters – 13 models
- Forced-air furnaces – 2 models

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Test Method Development

- EPA Reviewed ANPR comments and convened a round table of stakeholders in January, 2020.
  - Discussion focused on EPA program needs for future compliance scenarios.
  - A review of existing compliance approach:
    - ASTM and EPA test methods
    - Traditional PM measurement with dilution tunnel
    - High variability and test result uncertainty
  - A review of work underway at NYSERDA/NESCAUM
    - Integrated Duty Cycle appliance operation
    - TEOM based PM measurement for real-time PM data
    - Expected tighter precision, less variability, less measurement uncertainty.

Method Development Timeline

- Characterize variability of TEOM PM measurement (6 months)

- Characterize variability of Duty Cycle Protocol with various fuels (~18 months)

  – Wood stoves/heaters, Hydronic heaters, Forced-air furnaces

  – Can be done concurrent with TEOM PM characterization work.

- Method Proposal /Promulgation (~18 months)

  – Public comment /response

- Data collection for new emissions standard development (~12 months)

  – New test method will be used to collect data

- New emissions standard proposal /promulgation (~18 months)

  – New test method then used for compliance determination

AIRNow & Training Updates
Chet Wayland - Presenter

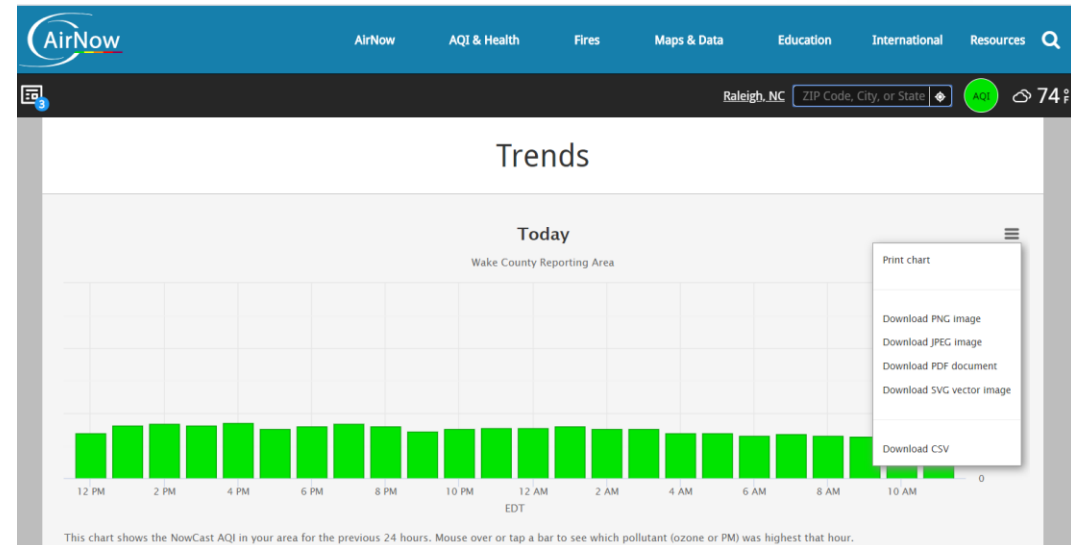AAPCA Technical Conference Call

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AirNow.gov – Updated Website

- Updated site live April 15th
- Mobile friendly
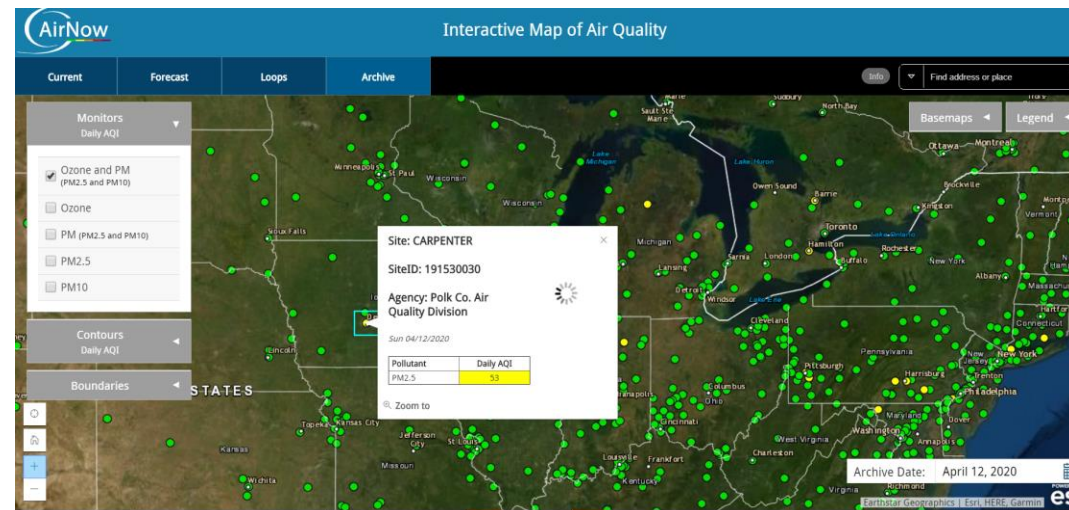- Users have been able to preview the site since February
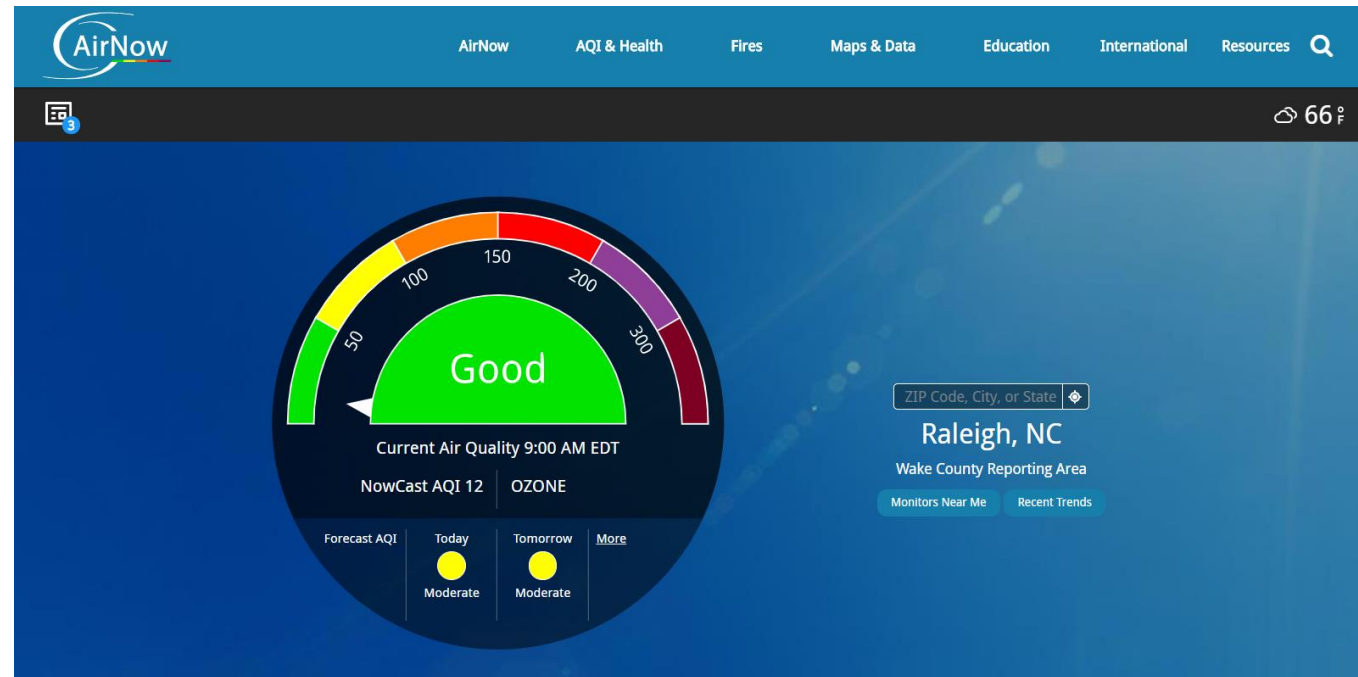
AirNow –Updated Website Features

- **Trends information available for each reporting area**

- **New interactive map lets users explore monitors nearest them**

Updated AirNow App Coming Soon

Current, outdated app

- Analytics show that the public is choosing air quality apps over websites

- Having updated app will help divert traffic load from the AirNow website during peak events, such as wildfires

- Current app very outdated

- Updated app will have more features
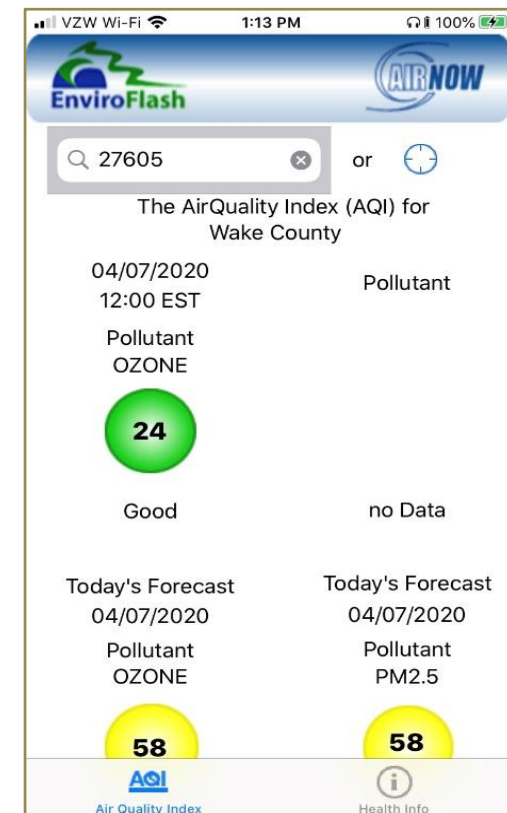
Updated AirNow App

New App Features

- Will be added in phases starting this Spring and into late summer/ early Fall

Spring Update

- New look and feel experience
- Air quality for the most recent hour at user-customized location
- Ability to save multiple locations
- Daily forecasts
- Actions and "plan your day" messages
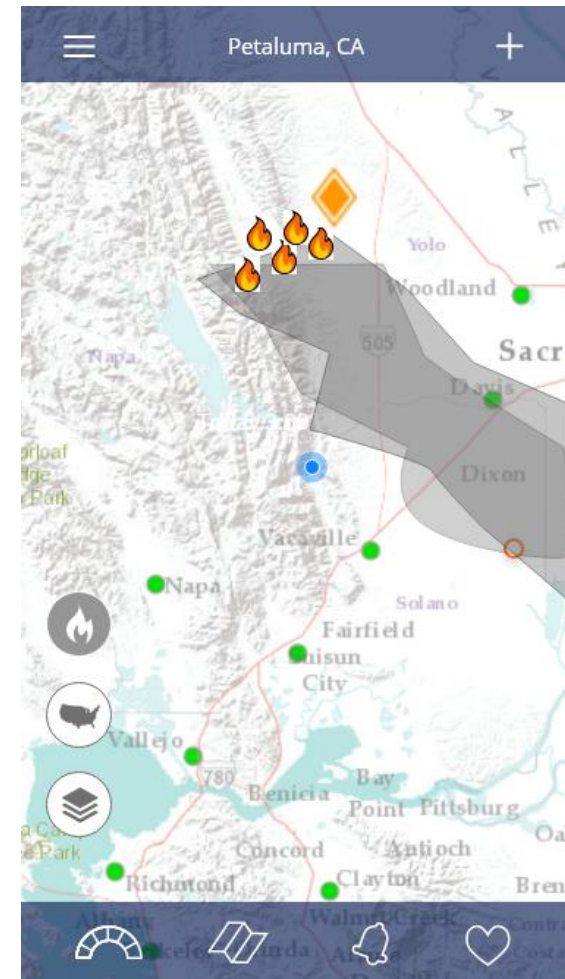- Help and definitions for air quality information
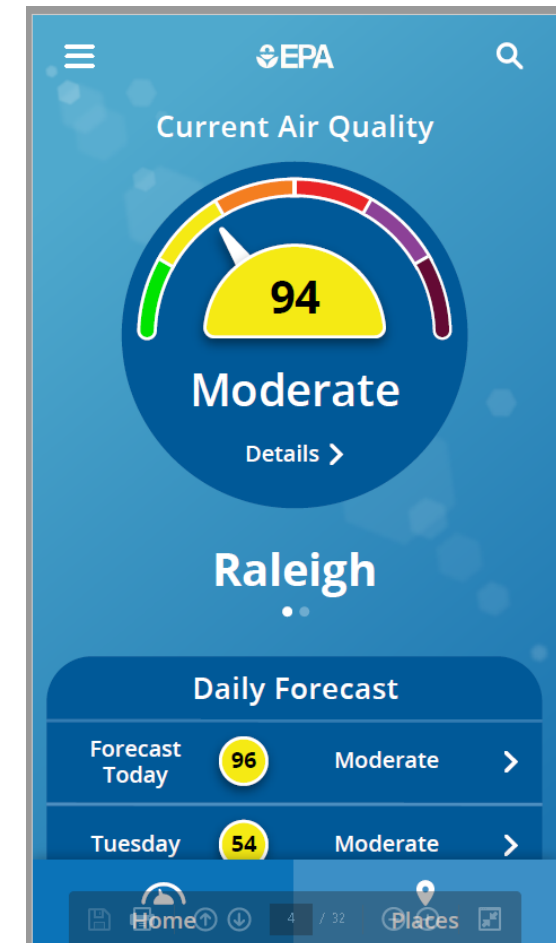
Updated AirNow App Features, cont.

Late Summer/Early Fall update

- Air Quality Map

- Fire and Smoke information

- Notifications
  - Real-time alerts based on user-saved location and/or actual location
  - Potentially replace EnviroFlash emails in the future

Coming soon: AirNow Sensor Data Pilot

- Partnership between EPA and the US Forest Service (USFS)
- Interactive map layer that integrates publicly available PM 2.5 data from Purple Air sensors with AirNow monitoring data and (during wildfires), USFS temporary monitor data and smoke information
  - Goal to provide broader coverage during wildfires,
  - Adjustment factor and NowCast will be applied
- Expect to have password-protected national map for state evaluation this summer
- Plan to make publicly available on AirNow for states that agree to have the sensor data included for their state
- Will be scheduling webinars shortly to walk you through the pilot, answer questions and get your feedback

OAQPS National Air Quality Training Center

Rebuilding a stakeholder-driven training program

Contact: Adam Baumgart-Getz

baumgart-getz.adam@epa.gov

Rebuilding the National Air Quality Training Program

- Stakeholders include state, local, and tribal air agencies
  - State and local government input through the Joint Training Committee (JTC)
    - AAPCA & NAACA
    - ECOS
    - MJOs (WESTAR, CenSARA, LADCO, MARAMA, NESCAUM, Metro 4-SESARM)
  - Tribal input through NTAA and ITEP
- Redesigning the curricula
  - Oriented around job functions
  - Expected completion May 2020; and will be incorporated into the program with the launching of the new LMS (next slide)

Current APTI-Learn Issues

- Procure, configure and deploy a new learning management system
  - Stakeholders provided criteria for new LM
  - Will configure and customize the LMS with targeted stakeholder groups
  - New LMS will go online spring 2021

- APTI-Learn Issues
  - APTI-Learn is an older system and was scheduled to be replaced in spring 2021
  - Traffic has greatly increased recently and is creating issues for APTI-Learn
  - Please use APTI-Learn's Help Desk and we appreciate your patience

Current Training Material Updates

- Develop eLearning of APTI 470 QA/QC for Monitoring – Spring 2020

- Update AERMOD APTI 423 classroom course – Spring 2020

- Update APTI 474 CEMS classroom course (3.5 day) – Spring 2020

- Update NACT 221 CEMS classroom course (1 day)– Summer 2020

- Update NACT 350 Basic Inspector classroom course– Fall 2020

- Update NACT 355 Advanced Inspector classroom course – Fall 2020

- Working to provide topics from our course library as distance learning offerings