Annual State of Our Air Briefing and Press Conference



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Regional Clean Air Campaign, N.C. Division of Air Quality, WNC Regional Air Quality Agency, Land of Sky Clean Vehicles Coalition Thanks to Buncombe County Government TV for their support!

Annual State of Our Air Briefing and Press Conference

9:00 AM to 10:30 AM

AGENDA

Welcome and Introductions – Bill Eaker, Land-of-Sky Regional Council (LOSRC) (3 minutes)

State and Federal Air Quality Issues Update – Mike Abraczinskas, Director, NC Division of Air Quality, NC DEQ (20 minutes)

Local Agency Air Quality Update (Air Quality Conditions/Trends in Buncombe County) – Ashley Featherstone, Director, WNC Regional Air Quality Agency (10 minutes)

Air Quality Forecasting in the Mountains (Overview, Process, Recent changes) – Elliot Tardif, Meteorologist, NC Division of Air Quality, NC DEQ (10 minutes)

A Smarter and Cleaner Energy Future for WNC – Jason Walls, District Manager for WNC, Duke Energy (10 minutes)

Cost Effective Actions to Reduce Energy Demand and Emissions - Sophie Mullinax, Project Manager, Blue Horizons Project (10 minutes)

Efforts to Reduce Emissions from Motor Vehicles in the Region – Bill Eaker, Coordinator, Land of Sky Clean Vehicles Coalition, LOSRC (10 minutes)

Question and Answer Session – The Press (15 minutes)

Closing Remarks – Bill Eaker, LOSRC (2 minutes)

For more Information, Contact: Bill Eaker, LOSRC, 828-734-7434 cell

Working Together We Can Clear The Air!

Virtual Press Conference Housekeeping





Questions will be answered at the end of the webinar or followed up with later



Audience will be kept on mute during the webinar





If you are having technology related issues please put that in the chat box or email Terry Albrecht at terry@landofsky.org



Having sound issues? Try dialing in to the call in number in the invitation



Pathways to a Cleaner Energy Future

Jason A. Walls, District Manager, Asheville Area

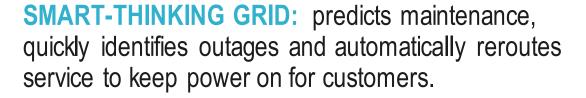


Building a smarter grid for YOU!





IMPROVE RELIABILITY to avoid outages and speed restoration





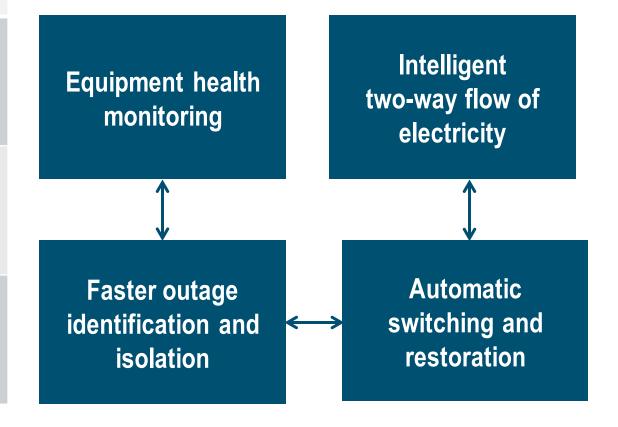
STRENGTHEN THE GRID against physical and cyber impacts



MORE OPTIONS AND CONTROL over energy use and tools to save money



EXPAND SOLAR AND
RENEWABLES across a two-way,
smart-thinking grid



2020 IRP: Pathways to a Cleaner Energy Future

National Leader in Reducing Carbon Emissions



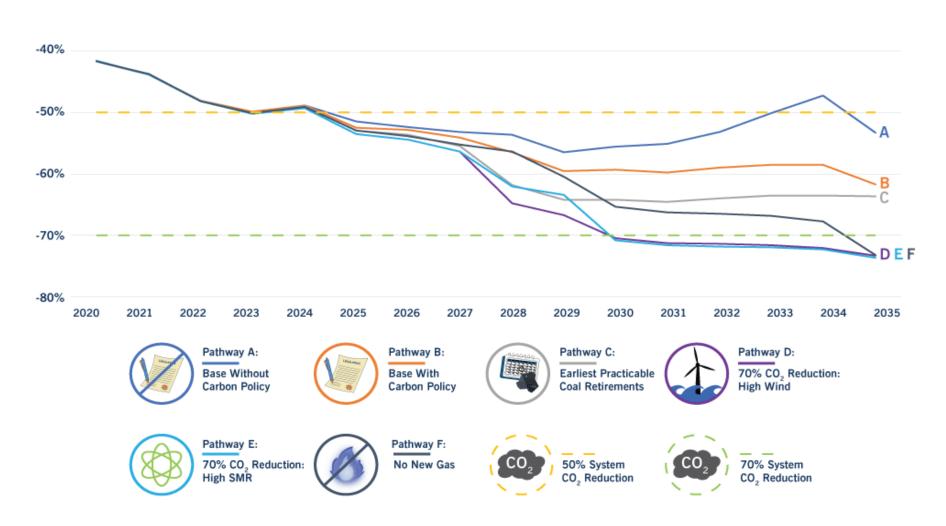
- Upfront, robust stakeholder engagement.
- Multiple generation paths outlined to reduce emissions, including possible options to cut carbon by 70% by 2030.
- Aggressive targets achievable with investments in solar, wind, energy storage, grid, new technologies, policy advancements.
- Significant grid investments necessary to support transition to renewable, storage and zero-emitting resources.



2020 IRP: Pathways to a Cleaner Energy Future – Getting There!



CARBON REDUCTION BY SCENARIO



Investments in the Asheville Area's Energy Future





- 75% more efficient than the now-retired coal plant it replaced
- Because natural gas burns cleaner than coal:
 - a. 60% reduction in carbon dioxide emissions per megawatt-hour.
 - b. 99% reduction in sulfur dioxide.
 - c. 40% reduction in nitrogen oxides.
 - d. Mercury has been eliminated.

Investments in the Asheville Area's Energy Future





- \$600 million in battery projects across the six states.
- Batteries can provide:
 - Backup energy storage
 - Control energy flow inside power lines
 - Multiple applications
- Other local projects:
 - Hot Springs microgrid
 - Riverside storage
 - Asheville plan solar/storage

Working Together: NC Clean Energy Plan



- Duke Energy is an active participant in the stakeholder process
- Seeking common ground with environmental groups, public advocates, electric co-ops, municipalities and other companies
- Ambitious goals for 70% reduction in greenhouse gas emissions by 2030; carbon neutrality by 2050
- Report due to the governor by 2020







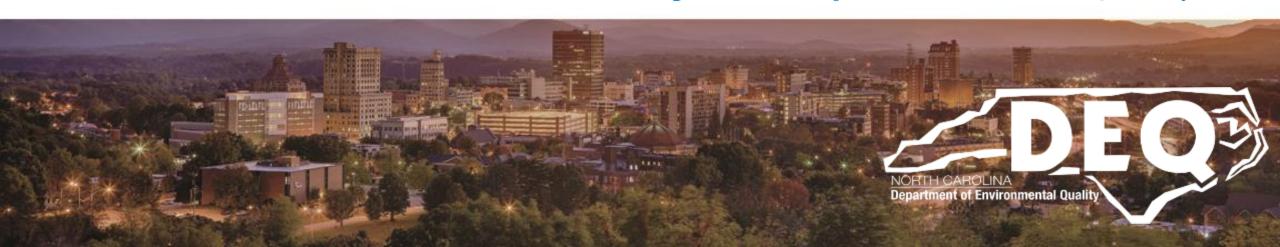
NC Air Quality Update

October 30, 2020

Annual WNC State of Our Air Briefing

Mike Abraczinskas, Director, NC Division of Air Quality

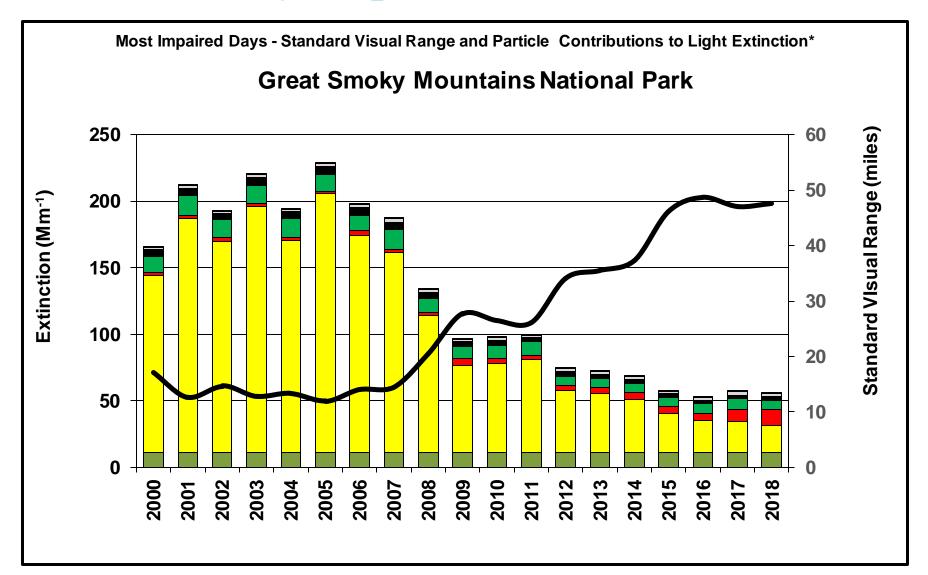
Department of Environmental Quality

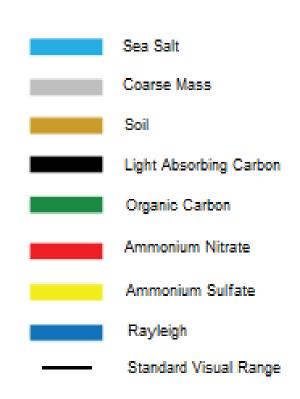


State of the Air - NC



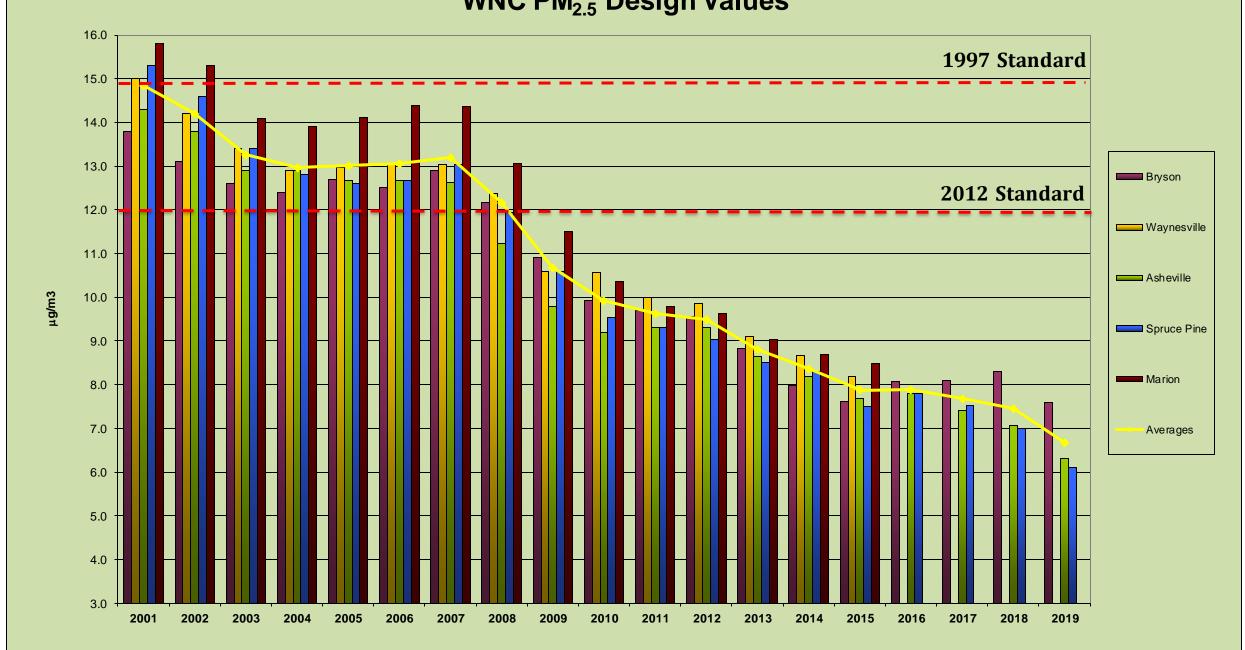
Visibility Improvements - You can see the progress!



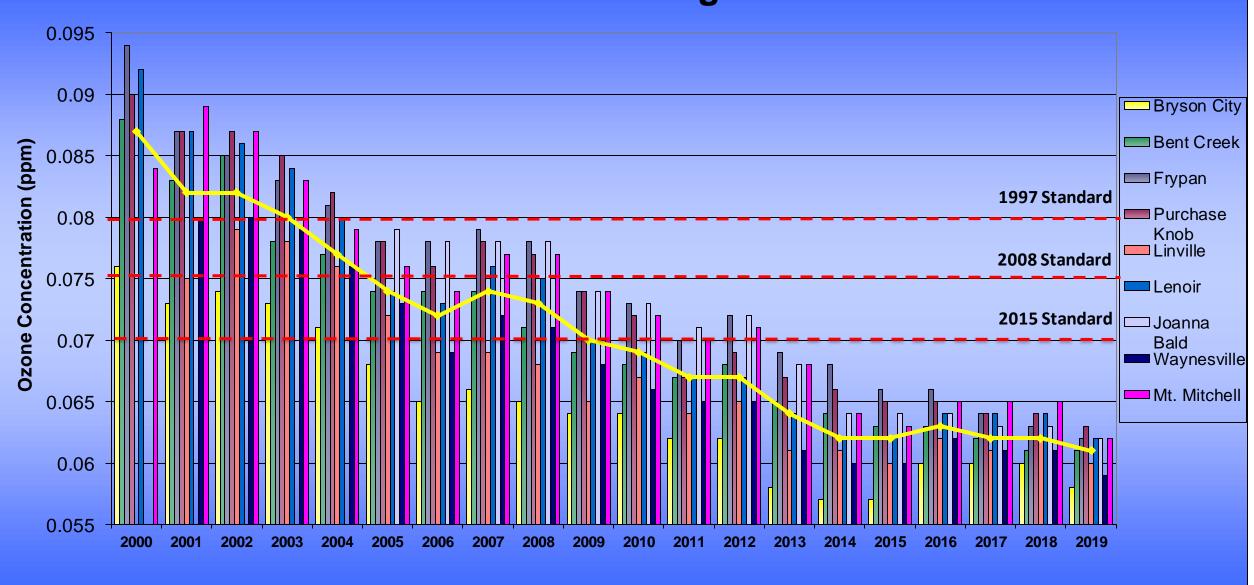








WNC Ozone Design Values



2020 Ozone Season

- Monitoring data show statewide attainment (no violations) to date
- No exceedances at any monitor in 2020
- Charlotte Area:
 - Design values will decline for 2018-2020

Charlotte Area Monitor Sites	2020 4 th high for violation ('18-'20 Design Value)	2021 4 th high for violation ('19-'21 Design Value)*
Garinger	69 ppb	80 ppb
Monroe	73 ppb	92 ppb
University Meadows	72 ppb	81 ppb

^{*} Projected value based on data through 10/12/2020.



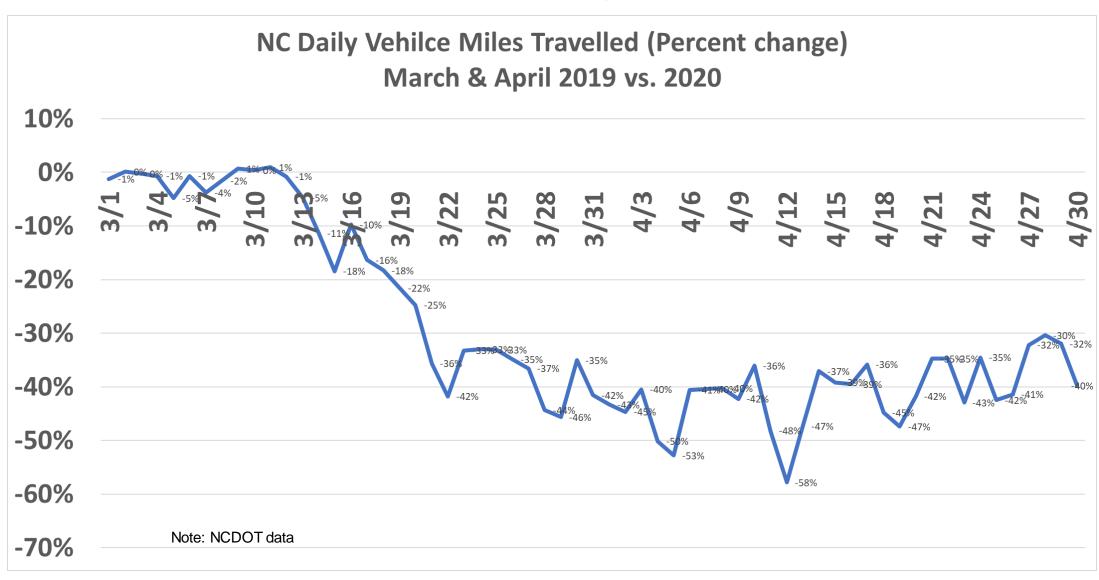
2019/20 Ozone Season Comparison (Charlotte Area)

Monitor Sites	2019 Code Yellow Days	2020 Code Yellow Days*	2019 Code Orange Days	2020 Code Orange Days*
North Carolina				
Garinger	62	14	7	0
Monroe	60	0	3	0
University Meadows	67	22	6	0
South Carolina				
York Landfill	72	2	9	0
Catawba Indian Nation	44	2	2	0

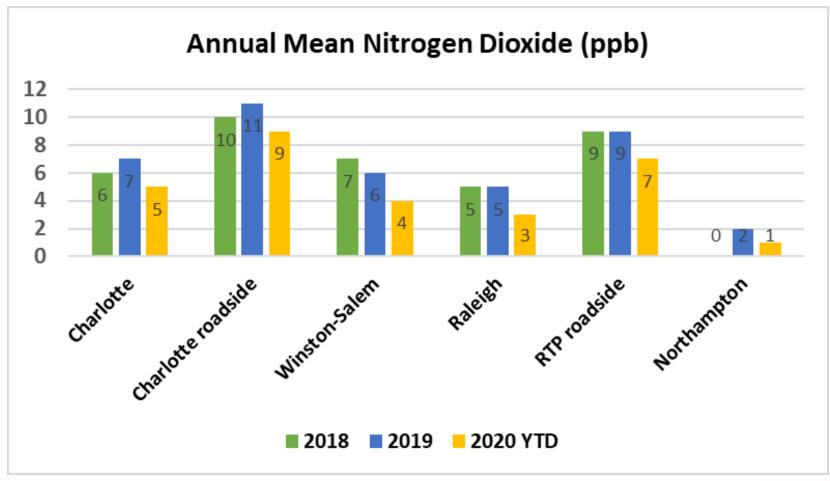


^{*} Based on data through: 10/12/2020.

Impacts of Pandemic on Air Quality A Preliminary Look



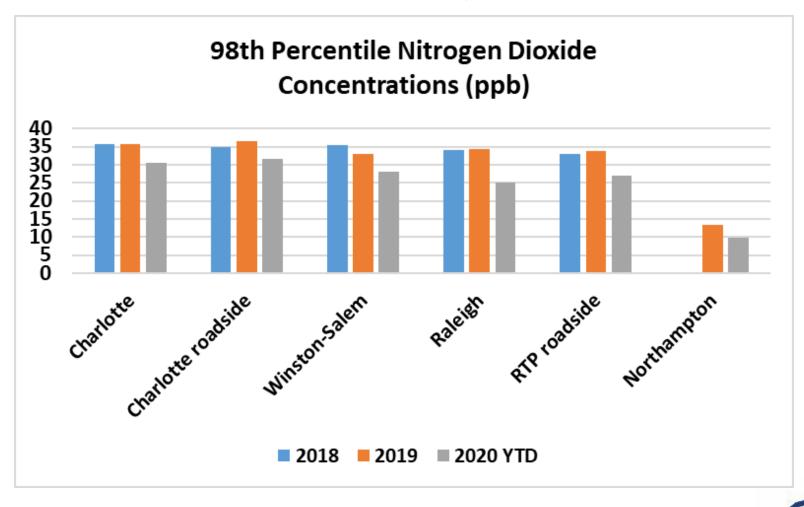
Impacts of Pandemic on Air Quality A Preliminary Look



*2020 data through Sept 30, 2020

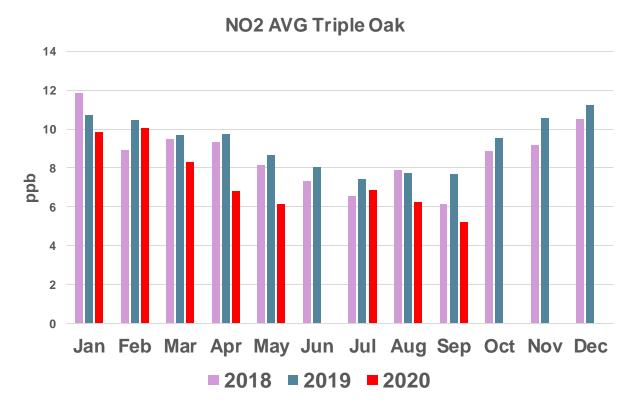


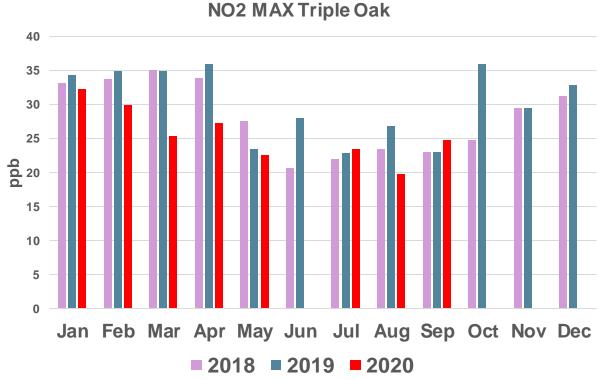
Impacts of Pandemic on Air Quality A Preliminary Look



*2020 data through Sept 30, 2020

Triple Oak – Roadside NO2 monitor in RTP







Impacts of the Pandemic on DAQ Operations



Pandemic's Impact on... DAQ Operations

Teleworking is... working



- Software productivity tools were in place
- Hardware limitations remain for some



Pandemic's Impact on... DAQ Operations

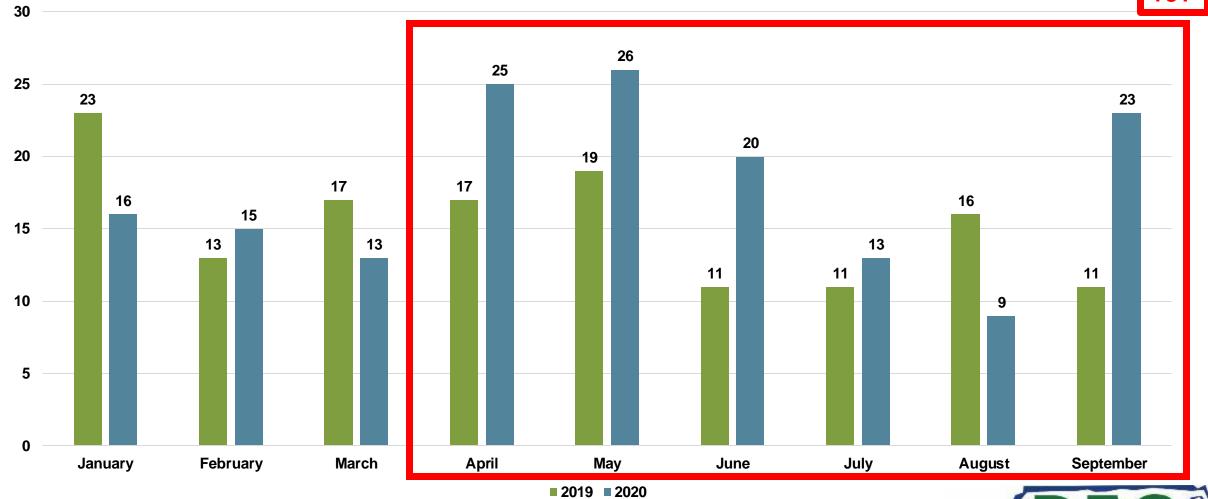
Workload high... so is productivity



- Ambient monitoring no data gaps!
 - Lab open
 - Network assessments submitted to EPA
 - Upgraded data stream data to EPA's AirNow 5 minutes past hour
- Compliance strategies in place
- Permitting productivity metrics are up since teleworking started

Permitting Stats – Title V Final Actions

+31

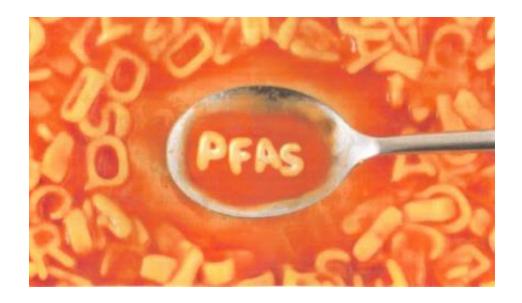


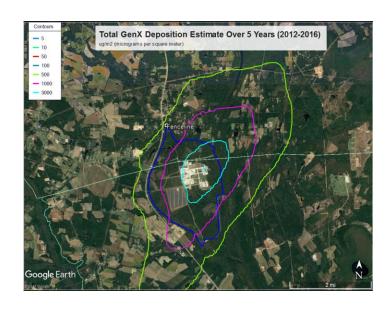
Pandemic's Impact on... DAQ Operations

Public participation process

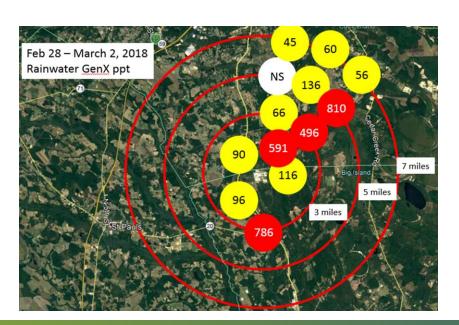
- Critical to rule-making and permitting
- Pandemic = Shift to virtual public hearings and meetings
- Challenges exist
 - Public's access to technology
 - Internet connections in rural areas
- Expanding ways to participate







Emerging Compounds

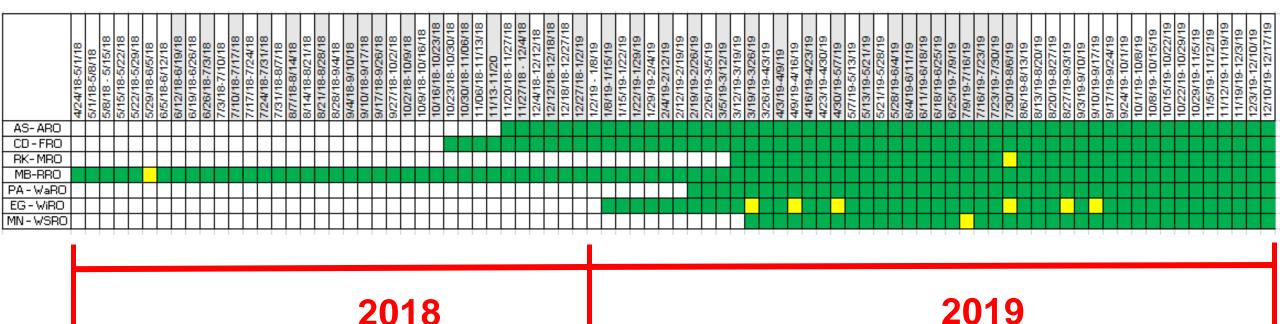






Background Atmospheric Deposition Network PFAS in North Carolina

Each block is a week-long sample



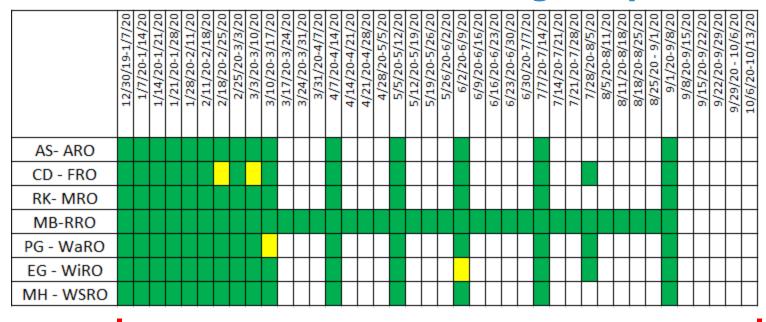
= PFAS not detected

= PFAS detected



Background Atmospheric Deposition Network PFAS in North Carolina

Each block is a week-long sample



2020

= PFAS not detected



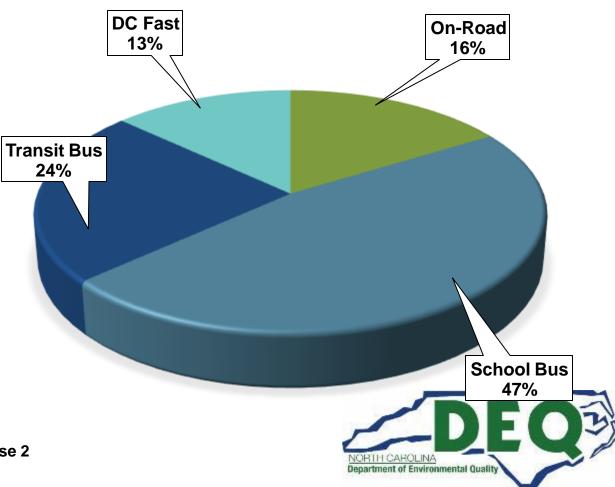
= PFAS detected



VW Awards by Program

Program	Number of Vehicles/Stations Funded	Program Total Funded
School Bus	111	\$12,289,900
Transit Bus	16	\$6,136,377
Off-Road*	0	\$0.00
On-Road	45	\$4,240,409
ZEV Infrastructure**	33 DC Fast stations	\$3,415,748
Total	172 vehicles and 33 stations	\$26,082,434





^{*} Off-Road project award was declined by awardee. Funds to be applied to Phase 2

^{**}An additional \$1,150,571 allocated for ZEV Level 2 RFP.

Thank you!

Mike Abraczinskas, EIT, CPM Director NC Division of Air Quality 919-707-8447

Michael.Abraczinskas@ncdenr.gov





Overview

The Western North Carolina Regional Air Quality Agency (WNCRAQA) is one of three state certified local air pollution control programs in NC that is responsible for monitoring and regulating air quality.

What does the WNC Regional Air Quality Agency do?

- Monitor Air Quality for compliance with National Ambient Air Quality Standards (NAAQS)
- Responsible for implementing federal, state, and local air quality regulations
 - Permitting of industrial and area sources
 - Compliance and Enforcement
 - Asbestos Removal and Open Burning
- Education and Outreach
 - Pollution Prevention Projects and Outreach
 - Indoor Air Quality radon awareness, IAQ webpage
 - Website www.wncairquality.org, social media

Air Pollution in WNC

- ► Temperature Inversions
 - Trap air pollution near surface, rather than dispersing it
- "Bowl" Effect associated with topography
- Any locally-generated pollution exacerbates the problem



History

- City of Asheville SmokeAbatement Program 1947-1967
- Multi-County Agency
 - ► 1967-1970 Buncombe, Haywood, Henderson, Transylvania
 - ▶ 1970-2000 Buncombe and Haywood
 - 2000-Buncombe County and City of Asheville



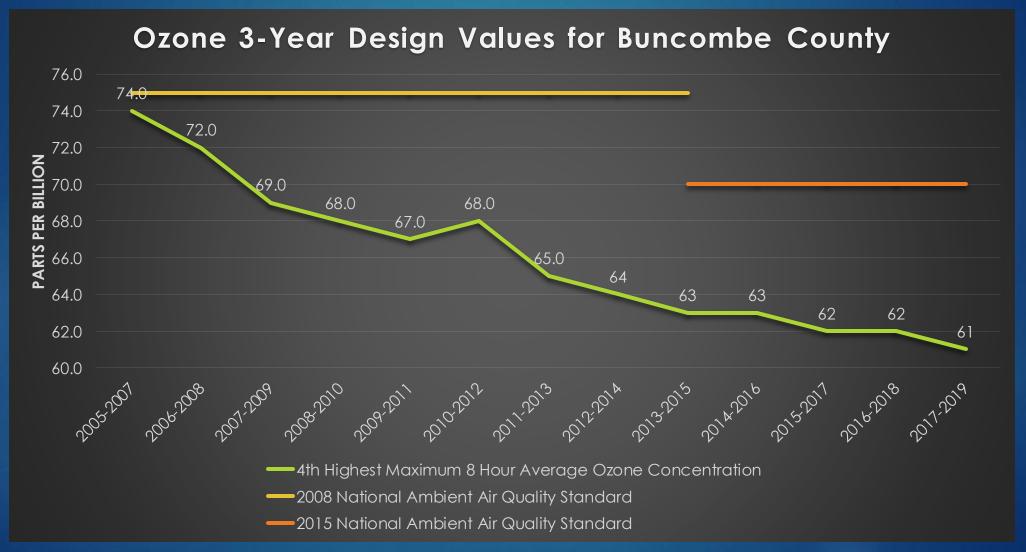
WNCRAQA - Overview

- Inter-local Agreement (Pursuant to NCGS 143-215.112 Local Air Pollution Control Programs)
- Governed by an Independent 5 Member Board
 - 3 members are appointed by Buncombe County Commission
 - 2 members are appointed by Asheville City Council
- Advisory Council
 - Several members of the community from diverse backgrounds
 - Citizens may apply and are appointed by the board

Air Pollution in WNC

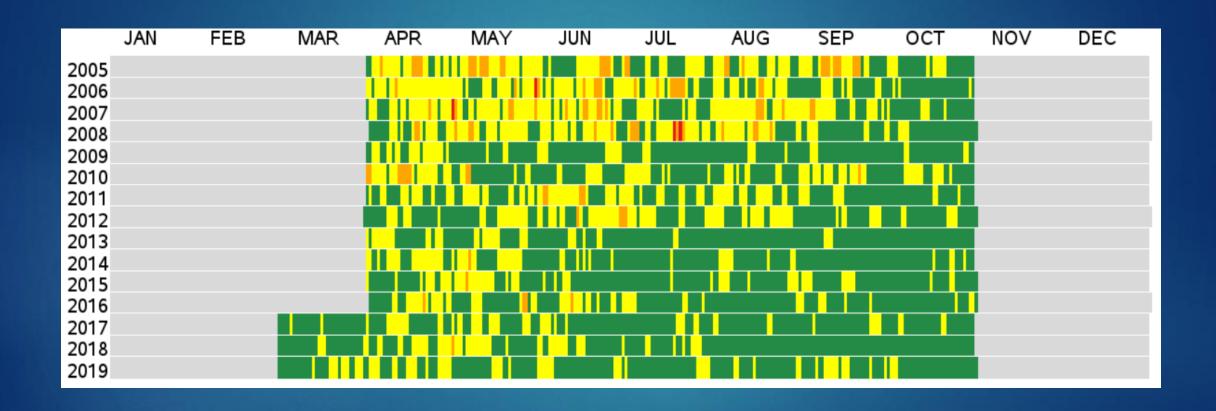
- Volatile organic compounds (VOC) and Nitrogen Oxides (NOx) react with heat and sunlight to make ozone
 - Ozone formation depends mostly on NOx
 - ▶ NOx is emitted by cars, trucks, Duke Energy Progress Skyland Plant
- Most Particulate Matter (PM2.5) forms as a result of chemical reactions involving sulfur dioxide and nitrogen oxides that are emitted from power plants, industries and automobiles. Also results from open burning, road dust, land clearing, etc.
 - Very small particles, less than 2.5 microns
 - Causes haze (reduced visibility)
- Health effects-heart and respiratory illness
- Weather and geography are important factors

Ozone Levels in Buncombe County

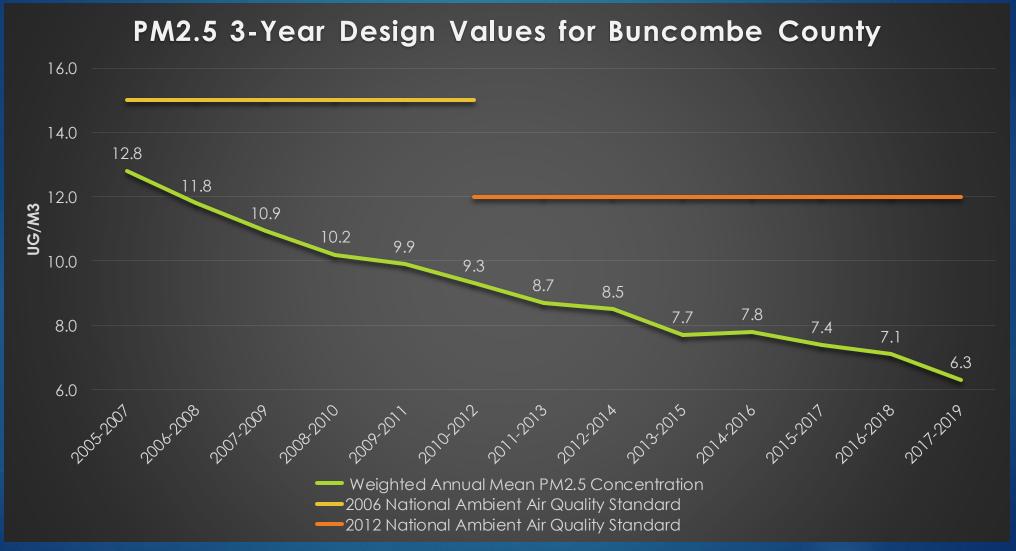


WESTERN NORTH CAROLINA REGIONAL AIR QUALITY AGENCY

Ozone Daily AQI Values 2005-2019

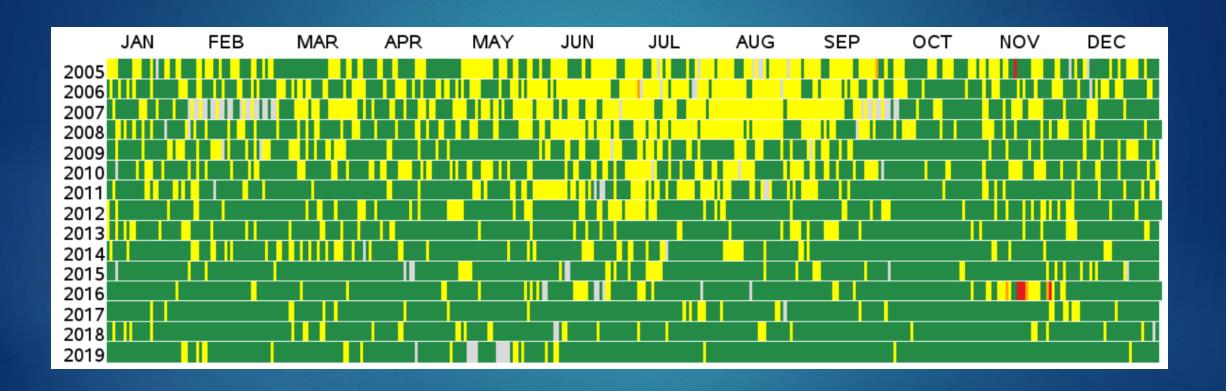


PM_{2.5} Levels in Buncombe County



WESTERN NORTH CAROLINA REGIONAL AIR QUALITY AGENCY

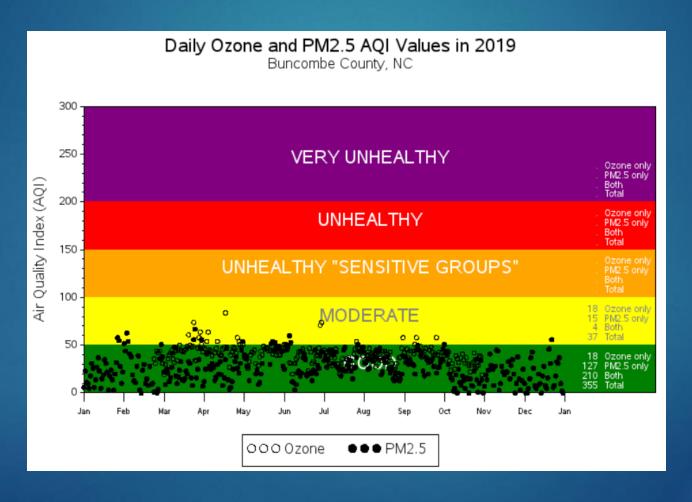
PM_{2.5} Daily AQI Values 2005-2019



Air Quality Index for Buncombe County

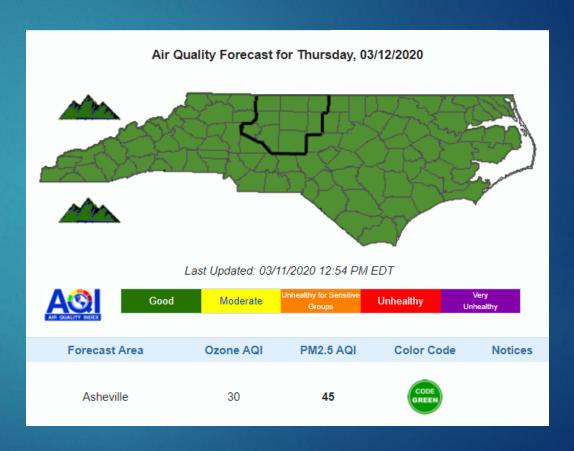
Year	Number of Days with an AQI	Number of Days the AQI was:			
		Good	Moderate	Unhealthy for Sensitive Groups	Unhealthy
2019	365	328	37	0	0
2018	365	318	47	0	0
2017	365	325	40	0	0
2016	366*	300	58	4*	4*
2015	363	329	34	0	0
2014	365	311	54	0	0

AQI Values for 2019



Air Quality Index

- Know the Code, check the NC DAQ's Forecasting Page: https://xapps.ncdenr.org/aq/ForecastCenterEnvista
- Forecasts are now done by county
- High elevation forecasts are now split between North Ridges and South Ridges



Know the Code

Air Quality Index Levels of Health Concern	Meaning		
Good	Air quality is considered satisfactory, and air pollution poses little or no risk.		
Moderate	Air quality is acceptable; however, for some pollutants there may be a moderate health concern for a very small number of people who are unusually sensitive to air pollution.		
Unhealthy for Sensitive Groups	Members of sensitive groups may experience health effects. The general public is not likely to be affected.		
Unhealthy	Everyone may begin to experience health effects; members of sensitive groups may experience more serious health effects.		
Very Unhealthy	Health alert: everyone may experience more serious health effects.		
Hazardous	Health warnings of emergency conditions. The entire population is more likely to be affected.		

What's New

- Duke Energy Progress Western Carolinas Modernization Project
 - ▶ 2 new natural gas/fuel oil fired combined cycle are operational.
 - ▶ Coal fired units retired on January 29, 2020
- Voluntary Hangtag Guidelines for Manufacturers of Wood-Burning Devices (Wood stoves and heaters that meet new 2015 standards that go into effect in 2020)

Revised Sulfur Dioxide (SO2) Standard

- SO2 monitor near the Duke Energy Progress Plant in Skyland
 - Began operation in January 2017
 - EPA approved the shutdown of the monitor on July 1st, 2020
 - ► EPA announced on August 13th, 2020 that they intend to designate the Limestone Township portion of Buncombe County as Attainment/Unclassifiable
- NAAQS: 75 ppb (99th percentile of 1-hour daily maximum concentrations)
 - 2017 Data: 16.6 ppb
 - 2018 Data: 9.8 ppb
 - 2019 Data: 8.0 ppb
 - 3 Year Design Value of 11.5 ppb



Recognizing Voluntary Initiatives

- Clean Air Excellence Award-2020
- Eaton Corporation's Arden Plant
 - Energy Efficiency Upgrades include roofing, insulation, HVAC systems
 - Projected Annual GHG Reduction = 544,513 pounds per year
 - Projected cost savings = \$17,239 per year





Questions?

Ashley Featherstone

Director, Western North Carolina Regional Air Quality Agency

828-250-2677

ashley.featherstone@buncombecounty.org



October 2020

Updates to the NCDAQ Forecast Program

Department of Environmental Quality

Elliot Tardif



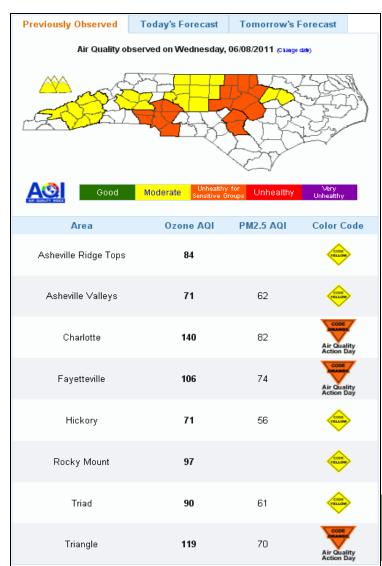
County-Level Forecast Update



Air Quality Forecasting Overview Our old forecast process

Prior to 2020, the air quality forecast was provided for six regions within North Carolina:

- Asheville Valleys and Ridge Tops
- Hickory
- Charlotte
- The Triangle
 - Including: Raleigh/Durham/Chapel Hill
- Rocky Mount
- Fayetteville
- The Triad area is handled by the Forsyth County Office of Environmental Assistance and Protection





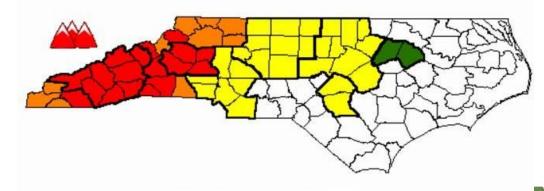
Air Quality Forecasting Overview Improvements to forecast process were inspired by 2016 wildfires

Multiple large, dynamic fires burned across the Appalachians, fall 2016.

- Forecast regions too broad spatially
- Code red conditions were expected to be far more localized than old forecast process allowed.
- Learned that county-based forecasting was needed statewide.



Air Quality Forecast for Thursday, 11/24/2016



Last Updated: Thursday, November 24 at 10:00 AM EST



Good

Moderate

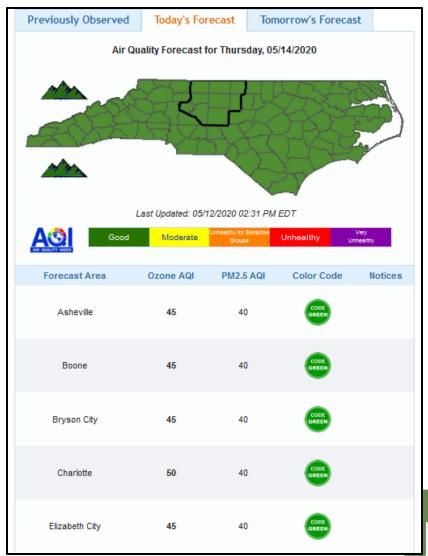
Sensitive Groups

Unhealthy

Air Quality Forecasting Overview Our new forecast process

NCDAQ meteorologists now prepare air quality forecasts at a county level for all counties of North Carolina

- The Triad area is still handled by the Forsyth County Office of Environmental Assistance and Protection
- The remaining 91 counties are covered by NCDAQ
- Two areas for the western ridgetops:
 - North Ridges, including Mount Mitchell
 - South Ridges, including Fryingpan, Purchase Knob, and Joanna Bald





Additional Updates from the NCDAQ Forecast Program



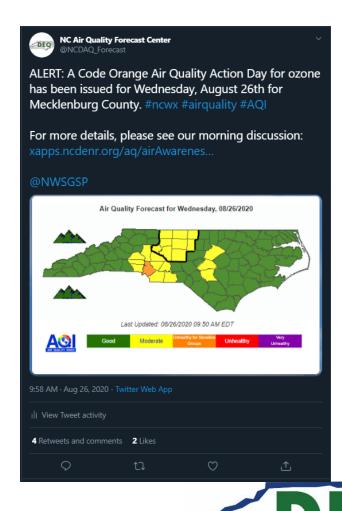
NC Climate Office (SCO)-DAQ Air Quality Partnership

- Collaboration is centered around web hosting and development, a strength for SCO, which has successfully worked with many state and federal agencies on similar projects
 - Ozone Design Value Predictor (<u>http://airquality.climate.ncsu.edu/dv/</u>)
 - Air Quality Forecast Model Output (http://airquality.climate.ncsu.edu/models/)
 - Future: Ambient Monitoring Tool



New Social Media Initiative

- NCDAQ has recently joined twitter, and sends out automated daily forecast tweets
 - Additional (manual) updates & content provided during significant air quality episodes
 - Follow us! @NCDAQ_Forecast
 - Also share updates on NC Air Quality Forecast Center Facebook page





Questions?











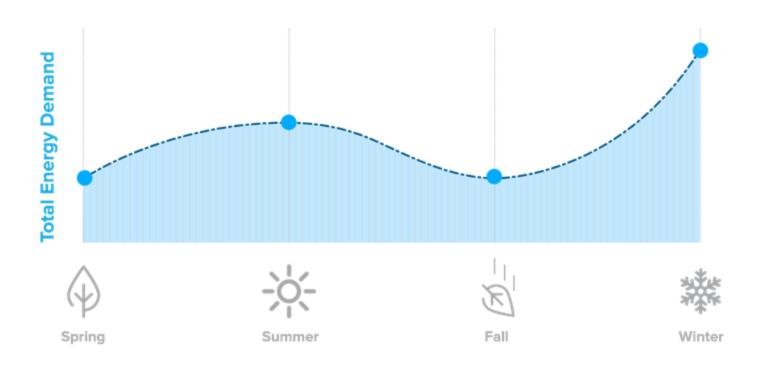
Our goal

Enlist public support and provide easy access to resources designed to make new and existing homes and buildings more energy efficient and support the adoption of more renewable energy





The Peak Demand Challenge

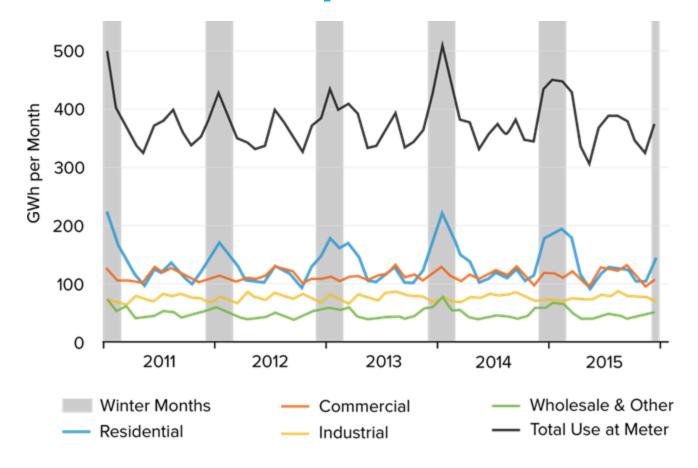


Winter peak = **30% higher** than in the summer.





Residential sector is a significant driver of winter peak



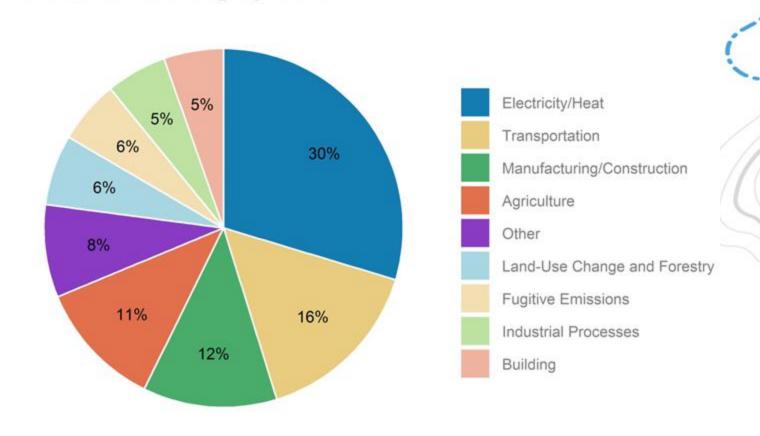






Greenhouse gas emissions by sector

In billions of tonnes of CO₂ -equivalent



Source: CAIT Climate Data Explorer



For your home...

1) Join Duke Energy's EnergyWise Home program

Lower peak demand by having Duke Energy install smart equipment on your home to cycle certain equipment (heat pump/HVAC and water heater), and get up to \$175 per year in bill credits.

2) Get a free in-home energy assessment

Discover how energy efficient your home is (or isn't). Eligible homeowners also get free LEDs, a free showerhead and more.

3) Find energy savings for low-income households

While there are many no- and low-cost things you can do to lower your energy use, some can be costly. Energy Savers Network can help lower your bills and keep you more comfortable.

4) Make changes in your home to reduce energy

Install energy-efficient appliances and lighting; air seal and increase your insulation; turn off electronics when not in use; use low-flow water fixtures; use cold water for laundry and hang-dry; lower water heater temperature, and more - see handout!





For your business...

1) Make your facility more energy efficient & earn big rebates to offset improvement costs

Duke's Small Business Energy Saver program pays up to 80% of costs to make energy efficiency improvements to businesses. On average, 60% of project costs are covered.

2) Join Duke Energy's EnergyWise Business program

Duke's EnergyWise program for businesses provides free equipment, free installation and annual bill credits that can result in significant

3) Get a free energy audit

Land of Sky Waste Reduction Partners helps organizations improve environmental and energy management through efficiency techniques that save money. The WRP team conducts free on-site assessments and provides consulting services to businesses and public facilities throughout North Carolina.





What are we doing?

- Blue Horizons Project: Promoting residential and targeted business energy efficiency programs and renewable energy through community engagement and education
- City/County: new investments in city/county buildings,
 Blue Horizons Project, solar installations forthcoming on
 47 county and city properties, funding Blue Horizons
 Project
- Duke Energy: 19 MW battery storage, 15 MW solar, micro-grids, solar rebate, AMI, low-income weatherization pilot program, multi-family DSM/EE programs
- All: Partnership to help cities reach RE goals





Energy Savers Network

- Income-qualified Buncombe County residents can receive free weatherization, energy-efficiency upgrades, and an energy consultation with recommendations and referrals to resources to perform or help pay for improvements
- Air sealing and insulation upgrades have helped reduce air leakage by up to 40% and helped improve comfort and durability in 500+ homes since 2016.
- Plan to increase the number of homes we serve every year







Be a part of the solution.

Visit **bluehorizonsproject.com** to get involved today. Spread the word to others interested in creating a cleaner energy future, preserving our skies and waters for future generations.

Sophie@bluehorizonsproject.com / 828-484-6585









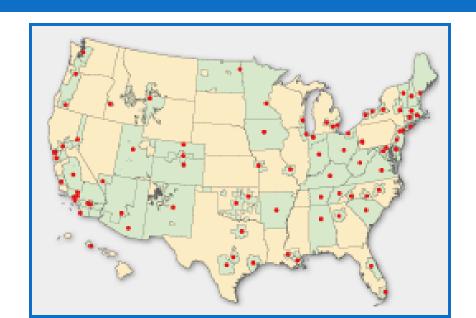
EFFORTS TO REDUCE EMISSIONS FROM MOTOR VEHICLES IN THE REGION

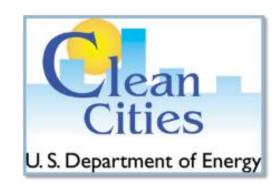
AIR QUALITY BRIEFING OCTOBER 30, 2020 LOSRC

Bill Eaker – Coordinator Chris Dobbins – Fleet Advisor Sara Nichols – Co-Coordinator

Clean Cities Program







- LOS Clean Vehicles Coalition Designated on July 27, 2012
- Clean Cities Program Goal: support local partnerships to reduce petroleum use and GHG emissions in US transportation sector, primarily by promoting cleaner, domestic, alternative fuels and vehicles
- Support: Networking, Funding Opportunities, Technical Assistance

Coalition Services



- Education, Outreach and Training
- Forum for Discussions and Networking
- Fleet Assessments &Technical Assistance
- ☐ Funding for Stakeholder Projects
- Stakeholder Recognition (Awards; Media including Motor Week TV)

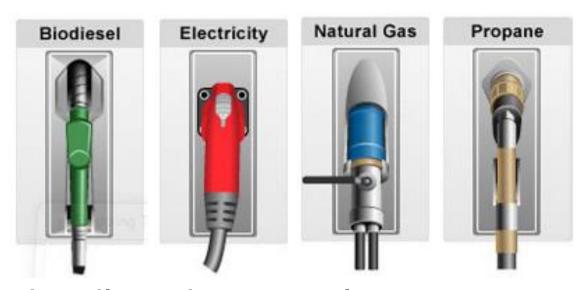


Clean Cities Alternative Fuels Portfolio



Alternative Fuels Promoted by CVC

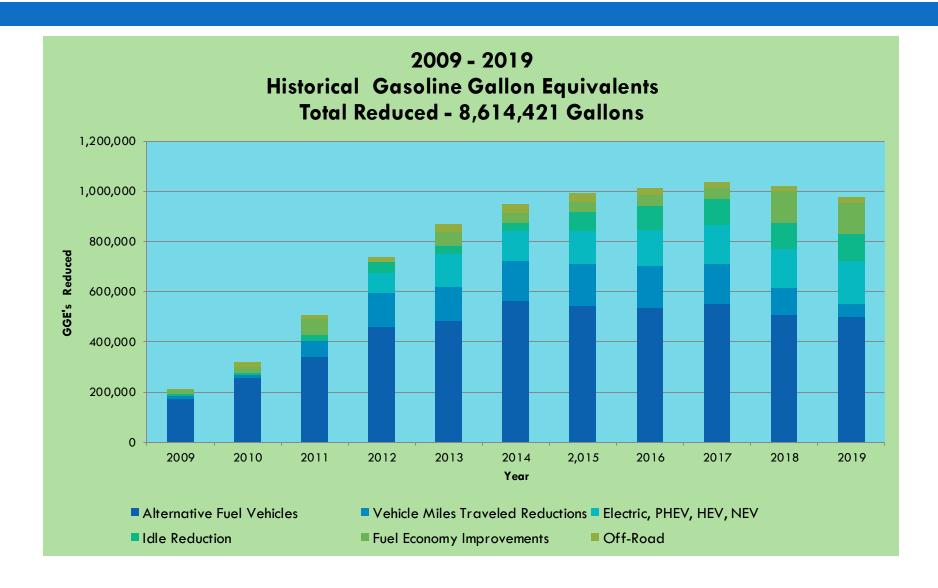
- □ Biodiesel
- Electricity
- Natural gas
- Propane
- Ethanol (E85)
- Hydrogen



 Portfolio now includes Idle Reduction, Fuel Efficient Vehicles (Hybrids) and VMT Reduction

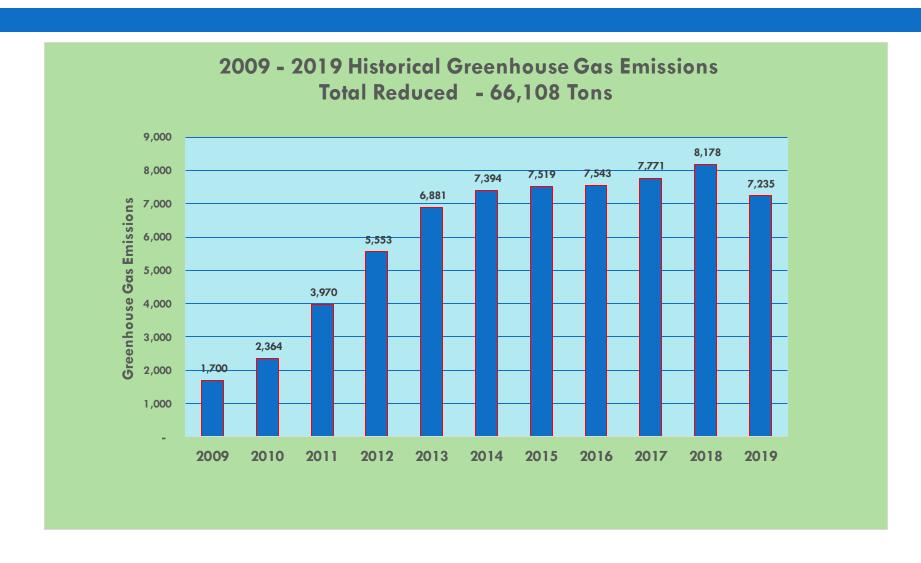
Coalition Accomplishments: Petroleum Reduction





Greenhouse Gas Reductions





Drive Less, Smarter, Cleaner



- Walk, Bike or Ride Transit
- Live Close to Work or School
- □ Telecommute (Work at Home/Outdoors)
- Car/Vanpool to work, school, meetings
 - Park and Ride Lots
 - Trans. Demand Management Program
- Combine Errands to Reduce Trips
- Green Driving (Reduce Speed and Idling)
- Engines Tuned Up
- Purchase Fuel Efficient Low Emission Vehicle (www.FuelEconomy.gov)





Biodiesel



- Used in any Diesel Vehicle without Modification
- Blue Ridge Biofuels local Producer <u>Moved Production but</u>
 Distribution Center Here
- Users include MSD, Asheville, NC DOT, Great Smoky Mountains National Park; Waynesville
- Cherokee Boys Club (Harrah's Casino Oil) and Biltmore Estate (Canola Oil) produce own biodiesel
- Lost Most Commercial Pumps but Fleet Use Steady





Propane Auto-gas



Propane is the most used alternative transportation fuel in the world



- Current Success Stories
 - Mountain Mobility, Haywood, Jackson and Macon Co. Transit Systems
 - Biltmore Estate 10 shuttle buses/2 SUVs and onsite fueling
 - Town of Waynesville 20 police cruisers and 8 trucks
 - Carl Sandburg Home Historic Site trucks, shuttle, mower, fueling site
 - Warren Wilson College and MB Haynes Electric Co
- Blossman Research and Technology Center & Fueling Station
- New Blossman Public Access Fueling Station in Flat Rock
- Nov 17 Autogas Answers Webinar



Compressed Natural Gas



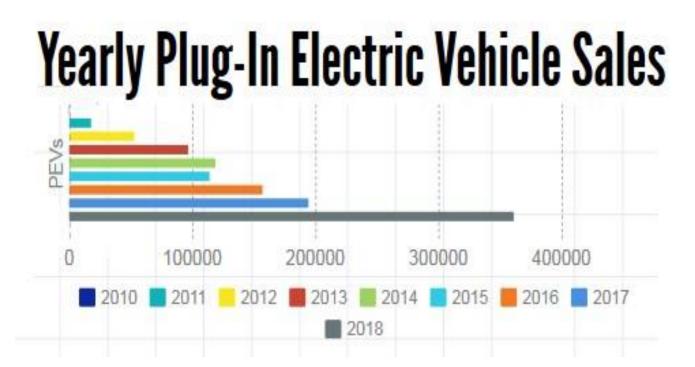
- 5 Public CNG stations
 - □ City of Asheville (2005)
 - □ Altech-Eco (2007)
 - □ Henderson Co. (2012)
 - Dominion Energy (2013 & 2015)
- Henderson Co Upgraded
 CNG Fueling Station (2018)
- Altech-Eco Energy NGV Conversion Facility
- City of Hendersonville Virtual Facility Tour





Plug In Electric Vehicles





Electric Vehicle Deployment



Policies re Zero Emission Vehicles

- Gov. EO 80 80K ZEVs by 2025
- NC Zero Emission Vehicles Plan
- 15 State MOU re M/HD ZEVs
- Asheville/Buncombe
 Co. Sustainability Plan Goals



Chevy Bolt Over 900 electric vehicles in the Asheville region and 15,000 in NC



Asheville Transit Electric. Bus

Charging Station Deployment



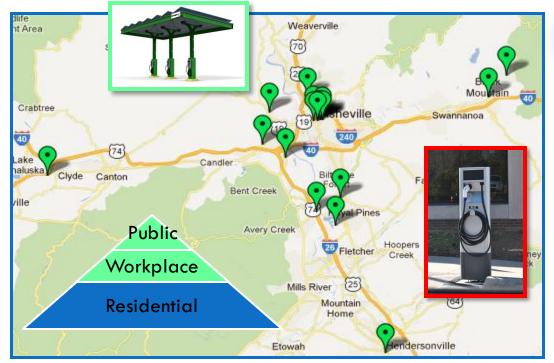
Public Access Charging
Outlets
at 94 locations in the
Asheville region (10-20)

























Charging Station Deployment



- 11 DC Fast Chargers installed at AB Tech., Asheville Public Works, Aloft Hotel, Asheville Outlets, Waynesville, Biltmore Park Town Square and Great Smoky Mountains National Park and Electrify America at Sams Club Asheville
- 8 Tesla Super Chargers installed at Asheville Outlets
- New Level IIs Ingles in Weaverville & West Asheville and , Lake Toxaway CC, HEMC HQs
- VW and CFAT Grant Opportunities



VW Settlement



VW Settlement

- North Carolina \$92 Million for Environmental Mitigation Trust (DEQ lead)
- Replace 1992-2009 Diesel Vehicles w new Clean Diesel, Propane, CNG, Hybrid, Electric or Hydrogen
- Old Diesel Vehicles must be Scrapped (3 inch hole in engine block & cut frame rails in half)
- Medium and Heavy Duty Transit, Shuttle and School Buses
- Medium and HD Local Freight Trucks
- EV Charging Stations (State can allocate up to 15% of Mitigation funds)

□ Phase 1 Awards in WNC (July 29, 2020):

- Cleaner Diesel/Alt Fuel Trucks (NC Arboretum CNG, Mars Hill, Bk Mtn., Spindale)
- Cleaner Diesel School Buses, Elect. School Buses (EBCI, Trans Co.)
- ASU Applecart Elect. Transit Bus, UNCA Bi-fuel Propane Shuttles
- DC Fast Chargers (Henderson Co., HEMC, Morganton)
- Level 2 EV Charger RFP out Very Soon!
- Phase 2&3 Planning Underway (\$60 Million available)

Thank You



□ For more information

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- Website Cleanvehiclescoalition.org
- □ Facebook Land of Sky Clean Vehicles Coalition

Closing Remarks



- Thanks to all our Presenters Today
- And to All of You for Participating
- Thanks again to our Sponsors: CAC, NC DAQ,
 WNCAQA and LOS CVC
- Special Thanks to Terry Albrecht of WRP
- What we Learned today is that if we all work together we can make a real difference!