May 19, 2022

Advance Program
c/o Mia South
U.S. Environmental Protection Agency
Office of Air Quality Planning and Standards
South.Mia@epa.gov

RE: Ozone Advance Path Forward for the Charlotte Region – Progress Report

Dear Ms. South:

Mecklenburg County Air Quality (MCAQ) is pleased to provide a progress report on work related to the Ozone Advance program, an effort known locally as “Breathing Room.” MCAQ has made progress on high priority emission reduction strategies and remains in compliance with the health-based standard for ground-level ozone.

On August 11, 2017, MCAQ joined Ozone Advance and began working with community stakeholders and county leaders to develop a plan to improve local air quality beyond the health standard. Between May 2018 and April 2019, MCAQ gathered input from over 500 community members to help prioritize strategies to reduce air pollution. The input from the community helped create the Breathing Room Path Forward. On September 17, 2019, the Mecklenburg Board of County Commissioners adopted the Breathing Room Path Forward shown below.

**Breathing Room Path Forward**

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Updated Implementation Plans for each of the “Now” and “Next” strategies are attached, along with a snapshot of the Breathing Room website (airquality.mecknc.gov/breathingroom), which serves as our Path Forward. If you have any questions about Breathing Room or the Path Forward, please contact Megan Green of my staff at 980-314-3368 or Megan.Green@MecklenburgCountyNC.gov.
Thank you for your support as we continue developing new ways to improve air quality in the Charlotte region and across North Carolina.

Sincerely,

Leslie Rhodes  
Director

MEG:isp

Attachments:
Breathing Room Website Snapshot – May 19, 2022  
Transit Expansion Advocacy Implementation Plan – January 2022  
School Bus Electrification Implementation Plan – January 2022  
Greenway Expansion Advocacy Implementation Plan – January 2022  
Airport Shuttle Electrification Implementation Plan – January 2022  
Ground-Support Equipment Electrification Implementation Plan – January 2022  
Complete Streets Implementation Plan – January 2022  
Community Solar Implementation Plan – January 2022  
PACE Implementation Plan – January 2022

C: Megan Green, MCAQ  
Robin Barrows, NCDAQ  
Jonathan Navarro, NCDAQ  
Rich Damberg, USEPA  
Kelly Sheckler, USEPA  
Brad Akers, USEPA
Despite dramatic improvements in local air quality over the last decade, Mecklenburg County and the entire Charlotte region only narrowly meet the health-based standard for ground-level ozone. Mecklenburg County Air Quality and the North Carolina Division of Air Quality want to partner with you to put some "breathing room" between our local data and the health standard for ozone.
The Plan to Create Breathing Room

The Breathing Room Path Forward is a plan to continue the positive trend of improving air quality in our region.

On September 17, 2019, the Mecklenburg Board of County Commissions approved the Breathing Room Path Forward, after it was reviewed and endorsed by the Environmental Stewardship Committee and the Air Quality Commission. The strategies and timeline below, which are part of the Path Forward, were developed based on community input, policy priorities, and available funding.

NOW (2019-2021)
- Transit Expansion Advocacy
- School Bus Electrification
- Greenway Expansion Advocacy
- Airport Shuttle Electrification
- Ground-support Equipment Electrification

NEXT (2021-2022)
- Complete Streets
- Community Solar
- Property Assessed Clean Energy Program

FUTURE (2023+)
- Energy Audit Program
- Zoning: EV Charging Infrastructure

Air Quality Commission members presented at the Environmental Stewardship Committee meeting.
On Hold (may be added as time and resources allow)

- Cash for Clunkers
- Eco-driving Training
- Zoning Eliminate Parking Minimum
- Gas Cap and Tire Pressure Check Outreach
- Taxi Electrification

Because the Charlotte region has a history of poor air quality, a number of programs are already in place to reduce air pollution. These successful strategies will continue in the region:

- Industrial source permitting and compliance assistance
- GRADE (Grants to Replace Aging Diesel Engines)
- Air Awareness education and outreach services
- Smoking vehicle program
- Idle reduction resources
Get Involved

Thank you to the almost 500 community members who helped shape the region’s plan to create Breathing Room! The stakeholders came from across the region, ranging from high school youth and college students, to elected officials and city planners, to business and manufacturing leaders and non-governmental organizations.

Using your input, Mecklenburg County Air Quality and the North Carolina Division of Air Quality created a “path forward,” a list of actions we will pursue now, next, and in the future to improve local air quality.

Can you help us create Breathing Room? Here are a few ways you can get involved:

- Be a champion for one or all of the strategies in the [Path Forward](#).
- Request a presentation to your organization or community group.
- [Join the Charlotte Air Awareness Business Coalition](#) to access free, turn-key emission reduction program for your worksite.
- Explore ways you can reduce air pollution in your day-to-day life.

What to discuss other ways to get involved? Contact [Megan Green](#) at 980-314-3368
Background

As a local air quality agency, Mecklenburg County Air Quality's (MCAQ) goal is not just to maintain compliance with air quality standards, but to continue the positive trend of improving air quality and put some "breathing room" between our local data and the health-based standard. Therefore, MCAQ and the North Carolina Division of Air Quality (NCDAQ) are partnering through the U.S. Environmental Protection Agency’s (EPA) Advance Program to take proactive steps to reduce ozone-forming air pollution and maintain healthy air quality in the Charlotte region. This is good for public health and decreases the likelihood that our region will violate the health-based standard in the future.

To create Breathing Room, the region must reduce ozone-forming nitrogen oxide (NOx) emissions. The pie chart below shows that most of the region’s NOx emissions come from Mobile Sources like cars, trucks, tractors, and other types of vehicles and equipment. So, reducing pollution from vehicles and equipment is especially important to improve local air quality.

MCAQ leads the Charlotte region’s participation in Advance and works with NCDAQ, EPA, stakeholders, and the public to implement the region’s Path Forward. The Path Forward is a plan that will improve air quality while maintaining existing programs that effectively reduce ozone-forming emissions. This plan was provided to the EPA as a demonstration of the Charlotte region’s continued commitment to improving air quality.

Progress Reports:

- [August 2018](#)
- [September 2019](#)
- [September 2020](#)
Transit Expansion Advocacy

A regional, interconnected mass transit system will give citizens, especially commuters, ways to reach their destination without the use of a single-occupancy vehicle.

Path Forward Priority: Now (2019-2022)

Status: In-progress

Accomplishments to Date:

- 2018: Charlotte Gateway Station, a multimodal transit hub, breaks ground for construction.
- 2019: Charlotte City Council approved a $50 million contract to begin preliminary design of the 26-mile Silver Line light rail expansion project, which will extend from Matthews, NC to Belmont, NC.
- 2020: Centralina Regional Council, in partnership with the Metropolitan Transit Commission (MTC) launched Connect Beyond, a two-state, 12-county mobility initiative to define a single, coordinated transit vision for the region.
- 2020: I-77 North Corridor Bus Rapid Transit from Iredell County to Charlotte begins service.
- 2021: City LYNX Gold Line Phase 2 Expansion nears completion.
- 2021: CATs conduct public meetings for review and comment on the LYNX Silver Line Project recommended Locally Preferred Alternative plan.
- 2021: Mecklenburg County Air Quality (MCAQ) staff and Air Quality Commissioner briefed Mecklenburg County’s MTC representative, Commissioner Leigh Altman, on the Air Quality benefits of transit expansion.
- 2021: MCAQ prompted CATS to apply for $850K in Federal Transit Administration grant funding for Areas of Persistent Poverty within Mecklenburg County. If approved, the project would establish Mobility Hubs and On Demand transit service programs in the City of Charlotte’s West Side, specifically West Boulevard and Freedom Drive.
2021: Centralina Regional Council, in partnership with the Metropolitan Transit Commission (MTC) completed the Connect Beyond Regional Mobility Plan, which will guide and coordinate mobility investments for the next two decades. MCAQ reviewed the draft CONNECT Beyond plan and provide input through stakeholder process.

Next Steps:

- Support implementation of the CONNECT Beyond Regional Mobility Plan.
- Advocate for CATS and City of Charlotte transit expansion plan(s) to emphasize affordable housing and anti-displacement action items in support of racial equity.
  - Incorporate affordable housing and anti-displacement into staff-to-staff discussions.
  - Review required equity impact analysis and provide comments to staff.
  - Follow UDO-TOD development/implementation and provide input in staff-to-staff discussions.
- Provide Air Quality analysis support, as needed.

Stakeholders: Mecklenburg County Air Quality (MCAQ), Metropolitan Transit Commission; Charlotte Area Transit System; Centralina Regional Council; Charlotte City Council; Mecklenburg Board of County Commissioners; Charlotte Regional Transportation & Planning Organization; Regional Transit Commissions/Providers/Elected Officials

Funding Opportunity: Federal Transit Administration – Capital Investment Grants, North Carolina Transportation Improvement Program

Staff Contact: Sheldon Turner, Sheldon.Turner@MeckNC.gov, 980-314-3362
School Bus Electrification

Replace diesel school buses with electric school buses, which have zero tailpipe emissions.

Path Forward Priority: Now (2019-2022)

Status: Partially Complete

Accomplishments to Date

- 2019: Mecklenburg County Air Quality (MCAQ) staff organized an electric bus information session for local school district fleet managers. At the event, Thomas Built Buses (of High Point, NC) demonstrated their new, fully-electric “Jouley” school bus (pictured above), including capabilities of a cleaner, quieter electric school bus.
- 2019 – 2021: Air Quality staff have worked with local school districts and the NCDPI to gauge interest in, and identify funding for, electric school buses in the Charlotte region. North Carolina Department of Public Instruction (NCDPI) has embraced replacement of diesel school buses in each of the 100 counties in North Carolina with electric school buses as funding allows.
- 2020: NCDPI secured funding from Phase 1 of the VW Settlement Funds to purchase 2 electric school buses in the Charlotte region (Rowan and Cabarrus counties) which are planned for service in 2022.
- 2021: NCDPI has applied for additional VW Settlement Funds to purchase 2 electric school buses for Mecklenburg County.
Next Steps:

- Continue discussions with regional and state school district staff to determine timelines and additional funding sources for incorporation of electric school buses into their fleets.
- Identify and promote funding to defray the cost of new electric school buses and charging infrastructure.
  - Phase 2 of the NC DEQ’s VW Settlement funds will open in March 2022. NCDPI will apply for additional electric school buses within the Charlotte Region.
- Work with local school districts and the NCDPI to create a school bus replacement schedule that prioritizes the highest emission bus(es) for replacement first.
- Map areas with higher than stage-average diesel PM emissions and provide that summary to decision makers.
- Request decision makers target prioritize electrification projects that operate in/serve area identified in above.

Stakeholders: Regional School Districts, N.C. Department of Public Instruction, N.C. Division of Air Quality

Funding Opportunity: VW Settlement Funds, EPA-DERA Funding

Staff Contact: PJ McKenzie, Paul.McKenzie@MeckNC.gov, 980-314-3374
Greenway Expansion Advocacy

Advocate for using and continuing to develop greenways throughout the Charlotte Region and prioritizing construction of greenways that connect people with activity centers. Work to actively communicate the air quality benefits of greenway use as an alternative to driving.

Path Forward Priority: Now (2019-2021)

Status: In Progress

Accomplishments to Date:

- 2020: Presented Air Quality 101 to the Greenway Advisory Council.
- 2021: Final Meck-Playbook was published.

Next Steps:

- As Implementation for the Meck-Playbook begins, MCAQ will actively communicate the benefits of and promote the new greenways as an alternative to driving. MCAQ will continue to promote the use of existing greenways for recreation and transportation.
- The City of Charlotte is now in the design phase for the Charlotte Future 2040 Comprehensive Plan projects which incorporates greenway expansion and park distribution. MCAQ will continue to act as Air Quality advisors for the plan.
- Incorporate racial equity into staff-to-staff discussions. Research existing racial equity efforts at Mecklenburg County Park and Recreation.
- Act as a bridge for our partners at Charlotte Area Transit and Mecklenburg County Park and Recreation, integrating the Breathing Room strategy of “Transit Expansion Advocacy” into greenway expansion efforts.

Stakeholders: City of Charlotte, Mecklenburg County Park and Recreation, Mecklenburg County Health Department, Carolina Thread Trail

Funding: [Mecklenburg County Capital Improvement Program](https://www.mecklenburgcounty.org/capitalimprovement); N. C. Transportation Improvement Program, FHWA Congestions Mitigation and Air Quality funding, proposed local sales tax

Staff Contact: Victoria Jercich, [Victoria.Jercich@MecklenburgCountyNC.gov](mailto:Victoria.Jercich@MecklenburgCountyNC.gov), 980-314-3373

January 2022
Airport Shuttle Electrification

Replace diesel and gas shuttle buses with electric shuttles at regional airports like Charlotte-Douglas International Airport. Electric shuttles will have zero tailpipe emissions.

Path Forward Priority: Now (2019-2022)

Status: Partially Complete

Accomplishments to Date

- 2019: Charlotte-Douglas International Airport (CLT) staff have committed to converting their transit bus fleet of 70 diesel-hybrid buses to 50 fully electric models within the next 8 years using their current budgeting.
- 2019: Concord Regional Airport staff are interested in purchasing electric transit buses.
- 2020: CLT placed 5 Proterra fully-electric buses into service (picture below).
- 2021: CLT placed 5 New Flyer fully-electric buses into service.

Next Steps:

- Continue to seek grant funding to accelerate adoption of election transit buses at CLT and Concord Regional Airport. Assist with applications as necessary.
- Continue discussions with CLT and Concord Regional Airport staff to determine timelines and additional funding sources for incorporation of electric transit buses into their fleets.

January 2022
• Push for investments in electrification projects at CLT, which is surrounded by communities with environmental justice concerns.
• Identify and secure funding to defray the cost of new electric shuttles and charging infrastructure.
• Work with local airports to create a shuttle replacement schedule that prioritizes the highest emission shuttle(s) for replacement first.

**Stakeholders:** CLT Airport, Charlotte City Council, Concord Regional Airport, N.C. Division of Air Quality

**Funding Opportunity:** VW Settlement Funds, EPA-DERA Funding, Duke Energy partnership

**Staff Contact:** PJ McKenzie, Paul.McKenzie@MeckNC.gov, 980-314-3374
Ground Support Equipment Electrification

Replace diesel ground support equipment (GSE) with electric GSE (eGSE), which have zero tailpipe emissions, at airports in the region.

Path Forward Priority: Now (2019-2022)

Status: Partially Complete

Accomplishments to Date

- 2008 – 2021: Piedmont Airlines and US Airways have replaced 101 pieces of older, dirtier diesel GSE with newer, cleaner electric GSE (pictured right). These conversions were made possible by funding from Mecklenburg County Air Quality’s Grants to Replace Aging Diesel Engines (GRADE) program.
- 2019: the U.S. Environmental Protection Agency (EPA) awarded $1.2 million to help replace up to 120 pieces of diesel GSE with electric-GSE through MCAQ’s AeroGRADE program.
- 2021: Piedmont Airlines applied to GRADE to replace 10 additional diesel-powered baggage tractors with fully-electric models. These conversions should be completed in 2022.

Next Steps:

- Advocate for CLT Airport and airlines to install the charging infrastructure required for eGSE.
- Work with airlines to create a GSE replacement schedule that prioritizes the highest emission GSE for replacement first as operations return to normal post-pandemic.
- Continue to push for investments in electrification projects at CLT, which is surrounded by communities with environmental justice concerns.
- Assist stakeholders with grant applications.

Stakeholders: Piedmont Airlines, American Airlines, other local carriers, CLT Airport, EPA, Federal Aviation Administration (FAA)

Funding Opportunity: EPA - Diesel Emission Reduction Act, FAA – Voluntary Airport Low Emission

Staff Contact: PJ McKenzie, Paul.Mckenzie@MeckNC.gov, 980-314-3374
Local Complete Streets Policies

Promote and support adoption of complete street policies by local municipalities that do not already have a policy. Advocate for pedestrian and bike accommodations on roadway projects.

Path Forward Priority: Next (2021-2022)

Status: In Progress

Existing Efforts:

- Previous Complete Streets style projects have been completed in Charlotte, NC.
- 2019: North Carolina Department of Transportation has a Complete Streets Policy (established in 2009 and updated in 2019) that requires consideration and incorporation of alternative modes of transportation (i.e. biking, walking, and public transit) when constructing or improving roads.
- 2020: Local nonprofits, Sustain Charlotte and RAO Community Health hosted a Complete Streets, Complete Communities virtual workshop series in partnership with Smart Growth America for local stakeholders, Mecklenburg County Air Quality (MCAQ) had a representative attend.
- 2021: The Charlotte Future 2040 Comprehensive Plan includes the goal to create “Complete Communities.” This includes pedestrian and bike friendly roadways and neighborhoods for residents.

Stakeholders: City of Charlotte, Mecklenburg County Public Health Department, North Carolina and Charlotte Departments of Transportation, RAO Community Health, and Sustain Charlotte

Funding: City of Charlotte Neighborhood Improvement Bond, The Charlotte Future 2040 Comprehensive Plan Bonds (if approved). Sustain Charlotte REACH grant from the Centers for Disease Control and Prevention

Next Steps:

- Continue to share the Air Quality benefits of Complete Streets when asked for input on Complete Community projects or policies and roadway projects.
- Incorporate equity into staff-to-staff discussions.
- Research which other local municipalities have adopted complete streets policies.

Staff Contact: Victoria Jercich, Victoria.Jercich@MecklenburgCountyNC.gov, 980-314-3373

January 2022
Community Solar

Community Solar allows for a community to share the benefits of solar energy and subscribe to renewable energy without having to install solar on their property. Community Solar facilities can be owned by the community members, utilities, co-ops, or other community organizations.

Path Forward Priority: Next (2021-2022)

Existing Efforts:

- Community solar is allowed in North Carolina, but projects are not widespread.
- Duke Energy defines “community solar” as a solar installation that is less than 75 miles away from subscribers. Currently, there are no community solar projects in the Charlotte region.
- During the 2021 N.C. Legislative Session, stakeholders were planning to renew efforts to address community solar program inefficiencies and model after successful programs like the state of Florida or Virginia. Community solar was not prioritized during the 2021 legislative session; no progress was made to address program inefficiencies.
- On November 17, 2021, MCAQ signed up for the Department of Energy’s National Community Solar Partnership (NCSP), to stay up to date on latest research and partnerships to promote community solar in the Charlotte Region.

Roadblocks:

- In Mecklenburg County, the cost to retrofit a building to install solar panels and/or to purchase land to develop a solar installation does not leave economic benefits to subscribers.  
- Incentives are needed for solar developers to make community solar cost effective.

Next Steps:

- Follow 2022 N.C. Legislative Session to see if new incentives are passed to attract solar developers to the Charlotte region.
- Reach out to NC Clean Energy Technology Center Community Solar Program (NCCETC) for an update about their partnerships in the Charlotte region to find opportunities to collaborate.

NCCETC encourages low to moderate income community outreach and education about solar benefits and supports access to solar programs.

- Provide input during stakeholder process, like advocating for a low-income subsidy in future programs.

**Stakeholders:** Duke Energy, solar developers, North Carolina Department of Environmental Quality, NC Clean Energy Technology Center Community Solar Program

**Funding:** Duke Energy pays the developer and the money is recuperated through subscribers

**Staff Contact:** Ivonne Hernandez, Ivonne.Hernandez@MeckNC.Gov, 980-314-3369
PACE (Property Assessed Clean Energy)

Property assessed clean energy (PACE) is a tool to finance energy efficiency and renewable energy improvements through a property lien and special assessment. PACE allows for sustained reductions in energy demand that can decrease production (and pollution) by power plants.

Path Forward Priority: Next (2021-2022)

Status: Pending Legislation

Roadblocks:

- 2017: Senate Bill 493 was introduced on March 29, 2017 to enable Commercial PACE (C-PACE) at the state level. The bill would allow municipalities to opt-in to PACE programs for commercial properties. The bill was flagged by the NC Treasurer’s offices as unconstitutional, because the program enables a local government to serve as a “go-between” for the property tax assessment/lien that is used by a tax paying entity to finance energy efficiency, renewable energy or other property upgrades.  

- 2020: North Carolina held a short legislative session in July of 2020; no progress was made to enable C-PACE. The NC Treasurer’s Office maintained their opposition to the enabling legislation.  

- 2021: In February, the North Carolina Department of Environmental Quality renewed efforts to address concerns by the NC Treasurer’s Office in the proposed C-PACE enabling legislation. However, the General Assembly did not prioritize C-PACE and legislation was not enabled.

- 2022: C-PACE will be brought up again during the general assembly with hopes of making progress.

- There is currently no proposed legislation for Residential PACE.

Next Steps:

- Follow C-PACE legislation and determine additional steps as needed. Provide input during stakeholder process.
  - Request a Diversity Equity and Inclusion (DEI) impact study that investigates unintended consequences like rent increases and who’s benefitting from the C-PACE program.
  - Research existing studies that could provide lessons learned.
- Determine role of Mecklenburg County Government in local implementation.
- Assist with creating awareness and support from local municipalities in the Charlotte region.
Stakeholders: NC Legislature, NC Department of Environmental Quality, and NC Building Performance Association.

Staff Contact: Ivonne Hernandez, Ivonne.Hernandez@MeckNC.gov, 980-314-3694