

Proposed Ozone Rule and the Possible Impacts on the Metrolina Area

CRAFT Meeting

September 21, 2010

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Good News!

- Air Quality is getting better in NC.
- At the end of the 2010 ozone season, the Metrolina Area will be able to show attainment to the 1987 Ozone Standard (0.08 ppm).

Ozone

What was proposed?

What areas may be affected ?

Severity and Nonattainment Consequences

Final Rule (Anticipated): October 31, 2010



Ozone Proposal

- On January 6, 2010, EPA proposed revisions to the National Ambient Air Quality Standards (NAAQS) for ground-level ozone.
- The proposed revisions are based on scientific evidence about ozone and its effects on people and sensitive trees and plants.



Ozone Proposal

- Primary standard
 - established to protect public health
 - range of 0.060-0.070 parts per million (ppm)
- Secondary standard
 - protects public welfare and the environment
 - range of 7-15 ppm-hours

Proposed Accelerated Ozone Implementation Timeline

Milestone	Date
Signature – Final rule	October 31, 2010
State Designation Recommendations to EPA	January 2011
Final Designations	Effective no later than August 2011
Attainment Demonstrations SIPs Due	December 2013
Attainment Dates	2014 – 2031 * (depends on severity of problem)

EPA is planning to propose an implementation rule in spring 2010 and issue a final rule as quickly as possible after the final ozone NAAQS.

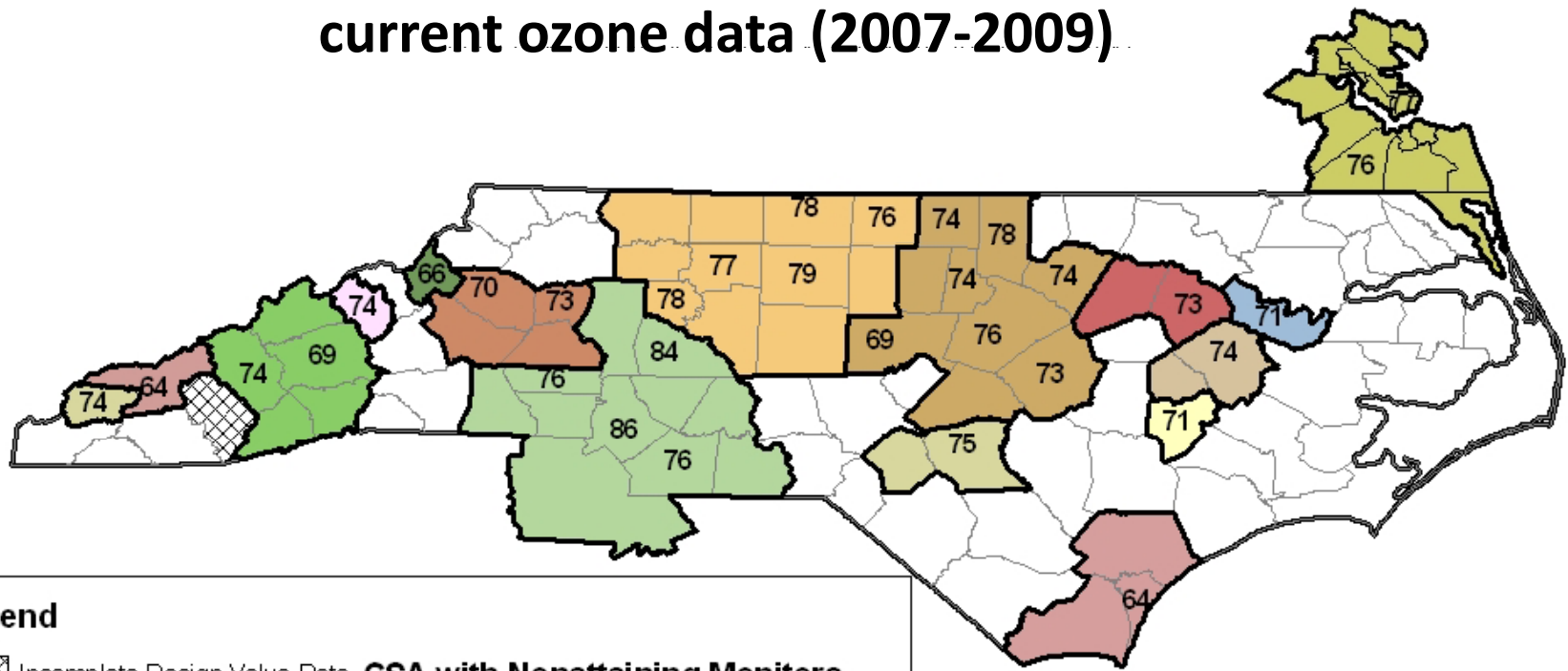
* Most areas in NC will have attainment dates between 2014 & 2020

Primary Standard

What areas may be affected ?

Severity and Nonattainment Consequences

Potential Non-attainment areas with current ozone data (2007-2009)



Legend



Incomplete Design Value Data

Counties outside CSA*

- Avery
- Graham
- Lenoir
- Martin
- Swain
- Yancey

CSA with Nonattaining Monitors

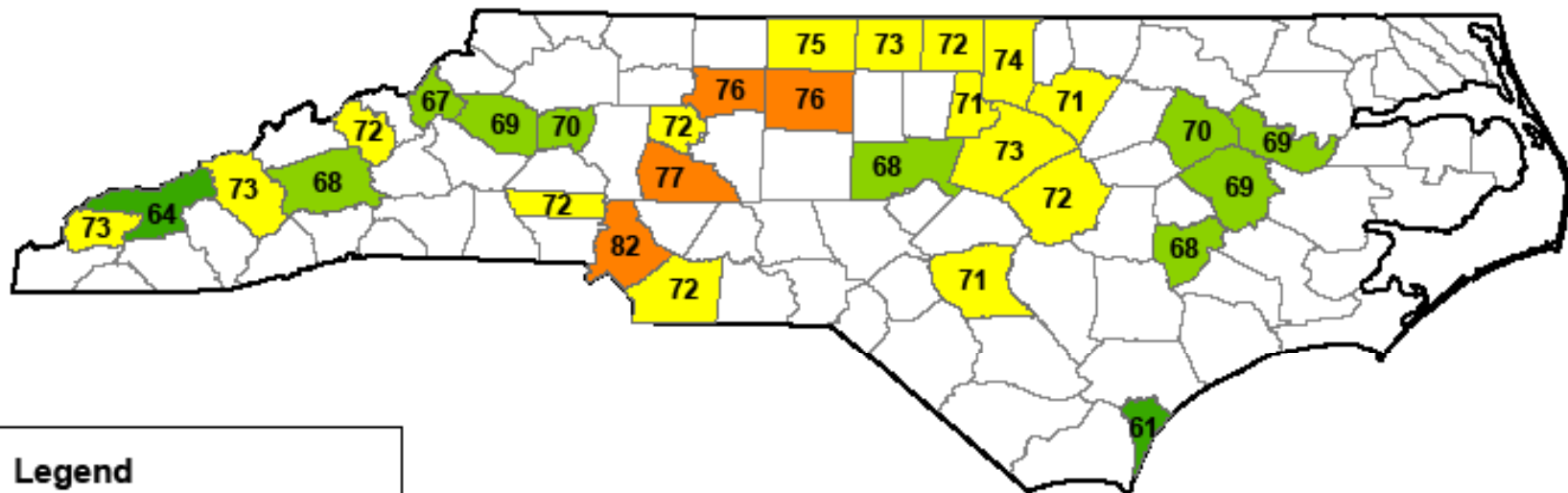
- Asheville-Brevard, NC
- Charlotte-Gastonia-Salisbury, NC-SC
- Fayetteville, NC
- Greensboro-Winston Salem-High Point,
- Greenville, NC
- Hickory, NC
- Raleigh-Durham_Cary, NC
- Rocky Mount, NC
- Wilmington, NC
- Virginia Beach - Norfolk - New Port News

* Includes counties with nonattaining monitors and counties included in previously designated Ozone nonattainment areas

DRAFT

NC DENR - DAQ
Attainment Planning
Map Created
11/04/2009 (BD)

Current 3-Year Ozone Design Values (Maximum Value per County)



Legend

Ozone Design Values

2008-2010*

- < 66ppb
- 66 - 70ppb
- 71 - 75ppb
- 76 - 84ppb
- > 84ppb

NC DENR - DAQ
Attainment Planning
Map Created
09/09/2010 (GMB)



Nonattainment Severity

- When the rule is promulgated, the breaks for level of severity will also be revised.
- Depending on how EPA elects to calculate the severity breaks, there is the possibility that with a standard of .060 ppm (60 ppb) NC could have areas classified as Serious .



Consequences of Nonattainment

- Transportation and General Conformity
- Nonattainment New Source Review (stationary point sources)
 - 50-100 ton per year new sources
 - 25-40 tons per year modifications
 - Emissions offsets
- RACM (Reasonably Available Control Measures)
- RACT (Reasonably Available Control Technology)
- 15%+ emission reduction plans
- Inspection and Maintenance Program for vehicles

Secondary Standard

Why is there a need for a secondary standard?

What is W₁₂₆?

What areas could possibly be affected?



Ozone and the Environment

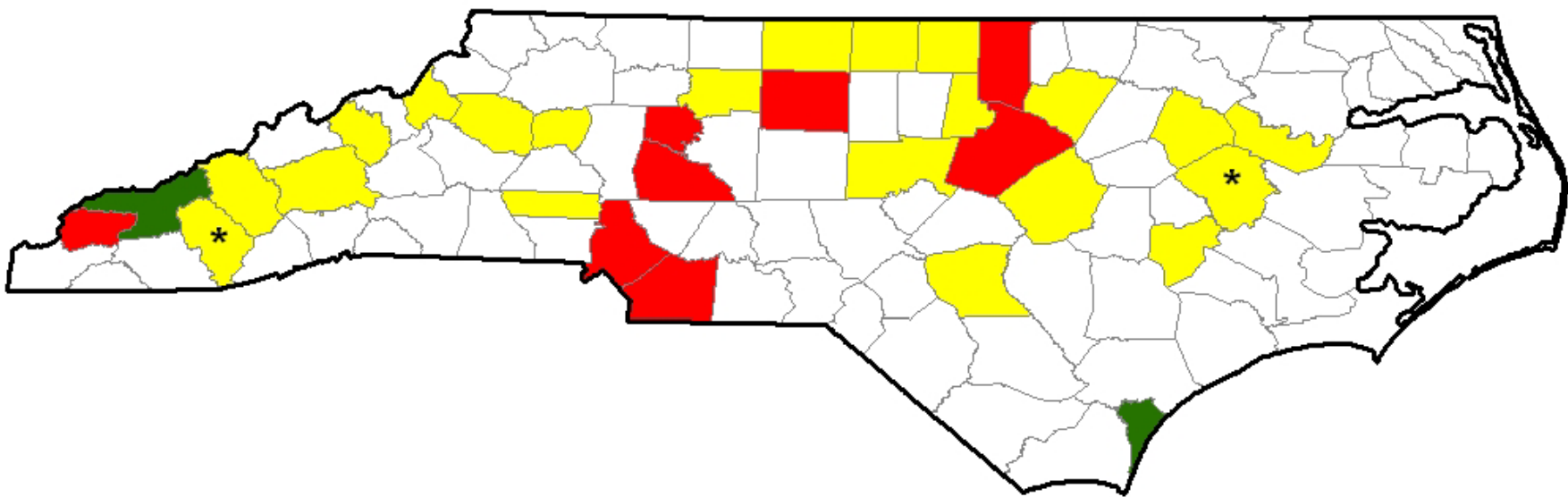
- Ground-level ozone is absorbed by the leaves of plants, where it can:
 - Interfere with the ability of sensitive plants to produce and store food
 - This can lead to reduced growth, biomass production and/or yields.
 - Make sensitive plants more susceptible to certain diseases, insects, other pollutants, competition and harsh weather.
 - Reduce or change species diversity
 - This can lead to damage to ecosystems dependent on those species.
 - Visibly injure the leaves of plants, harming the appearance of vegetation in national parks, recreation areas and cities.

Proposed Revisions to the

Secondary Ozone Standard

- EPA is proposing to establish a distinct cumulative, seasonal secondary standard at a level in the range of **7-15 ppm-hours**.
 - This cumulative standard would add weighted hourly ozone concentrations across all days in a three-month period.
- The Administrator asserted in the proposed rule that a seasonal secondary standard identical to the primary standard, as was set in 2008, is inadequate to provide the requisite level of protection for vegetation and ecosystems.
- The new secondary standard, also called W₁₂₆, is designed to account for the cumulative effects of repeated ozone exposures on sensitive vegetation during the three months of the year when ozone concentrations are highest.

W126 (2007 - 2009)



Legend

W126 (2007 - 2009)

- 6.56 - 7.00
- 7.01 - 15.00
- 15.01 - 23.00

* Based on 2 years of data

Contact Information

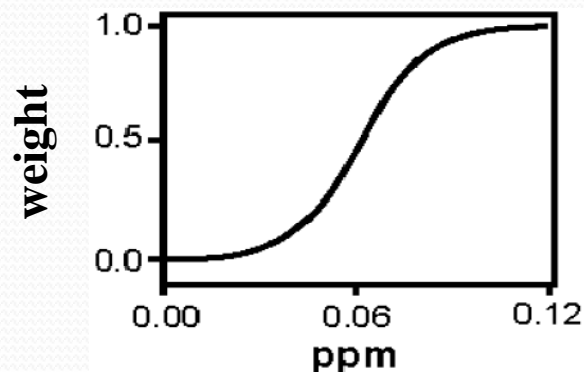
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Additional Information

Understanding the Proposed W126 Secondary Standard

Steps in calculating W₁₂₆ value for a particular site:

1. Measure hourly ozone (O₃) concentrations for each hour within the 12 hour daylight period (8am-8pm).
2. Assign a weight to each hourly value based on concentration: lower concentrations receive less weight than higher concentrations.
3. Sum the 12 weighted hourly values to calculate a daily W₁₂₆ value.
4. Repeat steps 1-3 for each day within the ozone season and then sum the daily values to calculate the monthly W₁₂₆ value.
5. Identify the consecutive 3-month period whose monthly W₁₂₆ values produce the highest total.
6. This total becomes the seasonal W₁₂₆ for this site.



Example of weighting over 5-hour period:

Hourly O ₃ (ppm)	Weight	W ₁₂₆ (ppm-hrs)
0.03	0.01	0.00
0.05	0.11	0.01
0.06	0.30	0.02
0.08	0.84	0.07
0.10	1.0	0.10
	SUM:	0.20

Daily value = Sum of values over 12 daylight hours