



SIP Development Process Overview

For Triangle Transportation Partners

Requirements, Scenarios and Timelines

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Outline

- **Background on ozone standard**
- **General ozone timeline**
- **What's a SIP?**
- **Scenarios**
 - **Redesignation/Maintenance SIP Requirements**
vs.
 - **Attainment Demonstration SIP Requirements**



Background

- **8-hour ozone standard**
 - **0.08 ppm (84 ppb)**
 - **3-year average annual 4th highest daily maximum 8-hour average greater than 0.08 ppm is a violation of the standard**



Triangle 8-hr Ozone Design Values

<u>Monitor</u>	<u>County</u>	<u>01-03</u>	<u>02-04</u>	<u>2005*</u>	<u># **</u>
Millbrook	Wake	92	88	90 ←	4 of 5
Butner	Granville	94	89	83	1 of 5
Duke St	Durham	89	86	96	4 of 5
Franklinton	Franklin	90	88	90	4 of 5
Bushy Fork	Person	91	85	99	4 of 5
Tower	Wake	85	86	91	4 of 5
W Johnston	Johnston	85	83	100	5 of 5
Fuquay-Varina	Wake	88	87	88	3 of 5
Pittsboro	Chatham	82	79	111	5 of 5

* 4th highest 8-hr max in 2005 can be no higher than this value in order to attain by the end of the 2005 ozone season.

** Number of times the 4th highest has been this value or lower in the last 5 years.



Ozone Nonattainment Timeline

- **Immediate (June 15, 2004)**
 - New source review
- **One year**
 - Transportation conformity
- **Three years**
 - **State Implementation Plan (SIP) – attainment demonstration**
- **Five years (or as expeditiously as practicable)**
 - Attain standard (**Triangle**, RMT, GSMNP)
- **Six years (or as expeditiously as practicable)**
 - Attain standard (Charlotte)



Ozone Nonattainment Timeline

Definitions for Triangle Area

Effective date = June 15, 2004

Transportation conformity date = June 15, 2005

SIP submittal date = June 15, 2007

Attainment date = June 15, 2009*

Data used to determine attainment = 2006-2008

(Modeling) Attainment year = 2008*

Redesignation base years = 2005 or 2006

Maintenance years = TBD

*** Or as early as possible**



State Implementation Plan (SIP)

- **Need a “SIP submittal” to EPA within three years**
 - **Attainment Demonstration that details the State’s plan to bring the area into attainment of the Federal standard**
- **Most significant emission controls are already underway**
 - **Clean Smokestacks Act**
 - **Vehicle emissions testing**
 - **Ultra-Low sulfur fuels**
 - **Cleaner Engines**



Scenario Overviews

- **Attainment Demonstration SIP**
 - Submittal 3 years after effective date (June 2007)
 - Based on comprehensive modeling
 - Requires data for only the attainment year (2008)

- **Redesignation/Maintenance SIP**
 - If area attains standard prior to attainment demonstration submittal date (June 2007)
 - Package containing emissions estimates for the year the area came into attainment and maintenance years
 - Requires data for the year the area came into attainment and maintenance years



Redesignation/Maintenance SIP

Process Overview

- **Area attains standard (2005 or 2006)**
 - **Develop emissions inventory for the year area attains standard**
 - **Develop maintenance emissions inventories for at least 10 years beyond redesignation approval**
 - **Determined through Inter-Agency Consultation Process**
 - **Develop interim/maintenance emissions inventories**
 - **3 to 5 year increments**
 - **Compare maintenance emissions to attaining year's emissions**
 - **Maintenance emissions must be lower than attaining year's emissions... If not, control strategies must be developed**



Redesignation/Maintenance SIP

Process Overview

- **Develop draft SIP package**
 - Emissions comparisons
 - Motor Vehicle Emissions Budgets
 - Contingency measures
- **Take draft SIP to public hearing**
 - 30 day comment period
- **Submit to EPA anytime prior to June 2007**
- **Update plan 8 years after redesignation**
 - Must examine additional 10 years beyond final maintenance year in redesignation package



Attainment Demonstration SIP

Process Overview

- **Modeling Attainment year = 2008**
 - Attainment date June 15, 2009
- **Develop emissions inventory**
 - 2002 inventories
 - 2008 attainment year inventory
- **Comprehensive modeling for 2002 and 2008**
 - Modeling full ozone season (May - Sept)
 - Must pass the USEPA modeled attainment test
 - If not, additional control strategies must be developed and modeled



Attainment Demonstration SIP

Process Overview

- **Develop draft SIP package**
 - **Motor Vehicle Emissions Budgets for attainment year**
 - **Contingency measures**
- **Take draft SIP to public hearing**
 - **30 day comment period**
- **Submit to EPA by June 2007**



Redesignation/Maintenance SIP

Example Timeline

- **Fall 2005 -> examine ozone data**
 - **If the area attains**
 - 2005 and maintenance years (e.g. 2007, 2010, 2013, 2016) data needed for emissions estimates/comparisons
 - VMT and speeds
 - Contingency measures
 - NCDAQ define triggers and follow-up actions.
 - Set motor vehicle emissions budgets
 - Consultation process... What years?
 - Safety margins?
 - Public hearing
 - Submit to EPA for approval in late 2006
 - Allows alignment with next (2008) Triangle conformity
 - Conformity due 18 months after approval of Redesignation SIP



Redesignation/Maintenance SIP

Example Timeline

- **Fall 2005 -> examine ozone data**
 - **If the area does not attain**
 - **Must start modeled attainment demonstration**
 - **Review 2006 ozone data**
 - **Possibly start redesignation package**



Redesignation/Maintenance SIP

Requirements of transportation partners

- VMT and speeds for attaining year and maintenance years
- Participate in stakeholder meetings
- Provide input on additional strategies (if needed) and contingency measures
- Decision on how Motor Vehicle Emissions Budgets are set...
 - Input on which years to set budgets
 - County by County (NCDAQ's position)
 - Area wide (Need unanimous agreement with strong justification as to why)
- Review package during public comment period



Attainment Demonstration SIP

Example Timeline

- **Base year modeling underway**
 - **Collected (in 2004) VMT and speed data for 2002**
- **Future year modeling will start Spring '05**
 - **2008 VMT and speed data needed**
- **Future year emissions and air quality modeling**



Attainment Demonstration SIP

Example Timeline

- **Must pass the USEPA modeled attainment test**
 - If not, additional control strategies must be developed and modeled
- **Develop draft SIP package**
 - Motor Vehicle Emissions Budgets for attainment year
 - Contingency measures
- **Take draft SIP to public hearing**
 - 30 day comment period
- **Submit to EPA by June 2007**



Attainment Demonstration SIP

Requirements of transportation partners

- VMT and speeds for modeled attainment year
- Participate in stakeholder meetings
- Provide input on additional strategies (if needed) and contingency measures
- Decision on how Motor Vehicle Emissions Budgets are set...
 - County by County (NCDAQ's position)
 - Area wide (Need unanimous agreement with strong justification as to why)
 - No safety margins
- Review package during public comment period



VMT and Speeds

- **Attainment Demonstration (2008)**
 - **March 2005**

- **Redesignation (2005/2006 & maintenance years)**
 - **October 2005 or October 2006**



Stakeholder Meetings

- **NCDAQ will host periodic technical updates on process**
 - **Spring and Fall 2005 at minimum**
- **NCDAQ will host consultation meeting(s) on control strategy development (if needed)**



Motor Vehicle Emission Budgets (MVEBs)

- **If area wide budget**
 - **Need unanimous agreement with strong justification as to why by February 2006**
- **Otherwise, county by county (sub-area budgets)**



Sub-Area vs Area-Wide

- **Basis of assumptions in future attainment modeling is compromised when doing area-wide budgets**
 - **It's inconsistent with the State's Plan!**

Example:

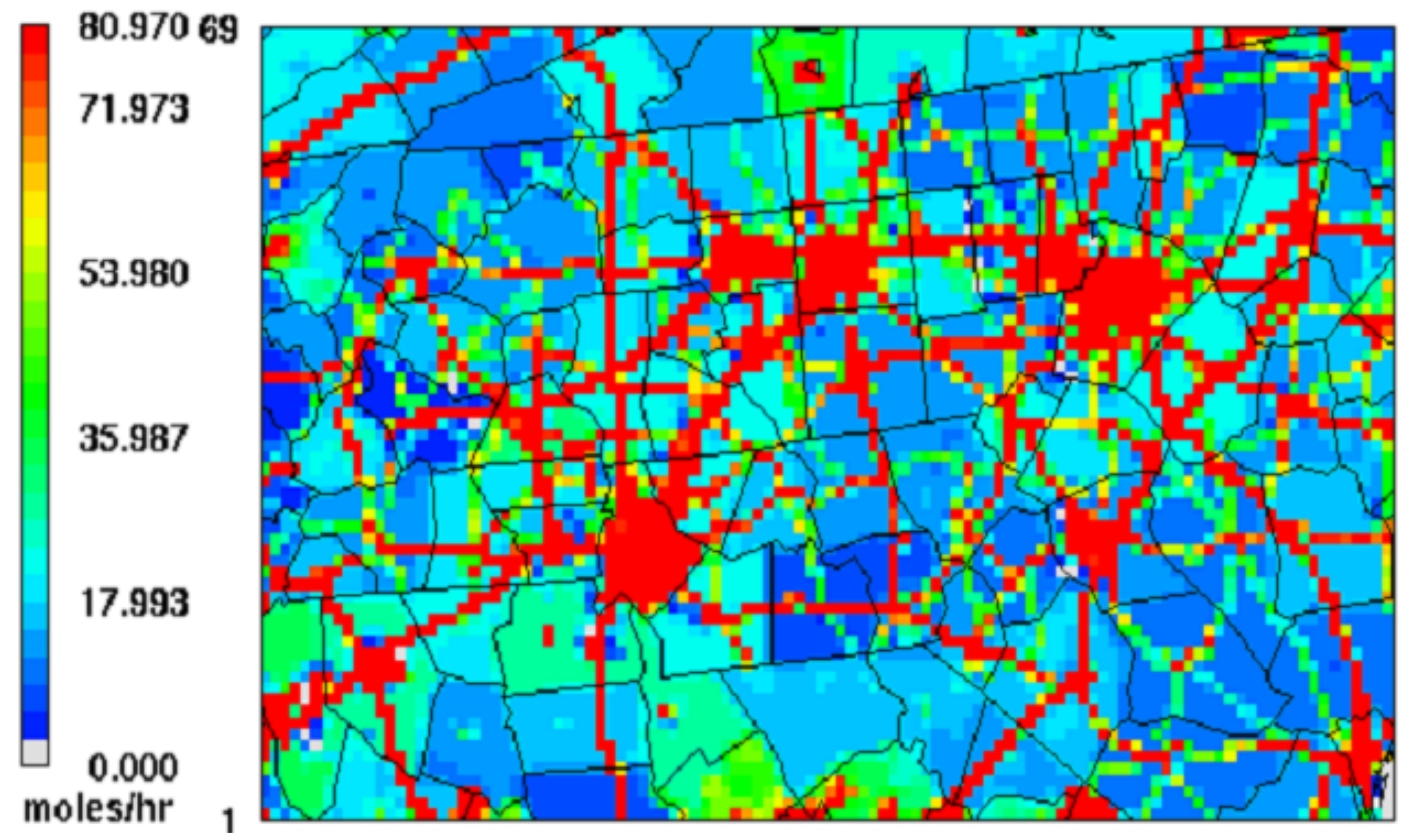
In attainment demonstration SIP modeling:

- **Monitor X in Wake County *just* shows attainment of 8-hr ozone std in 2008 with Wake County mobile NO_x emissions of 35 tons/day.**
- **If area-wide budgets are set... Then Wake County could use NO_x emissions allowances from other counties in the nonattainment area... Hypothetically, if 5 tons/day of NO_x are added to the Wake budget, this could potentially jeopardize future ozone attainment projections.**



Sub-Area vs Area-Wide

Gridded Mobile Emissions

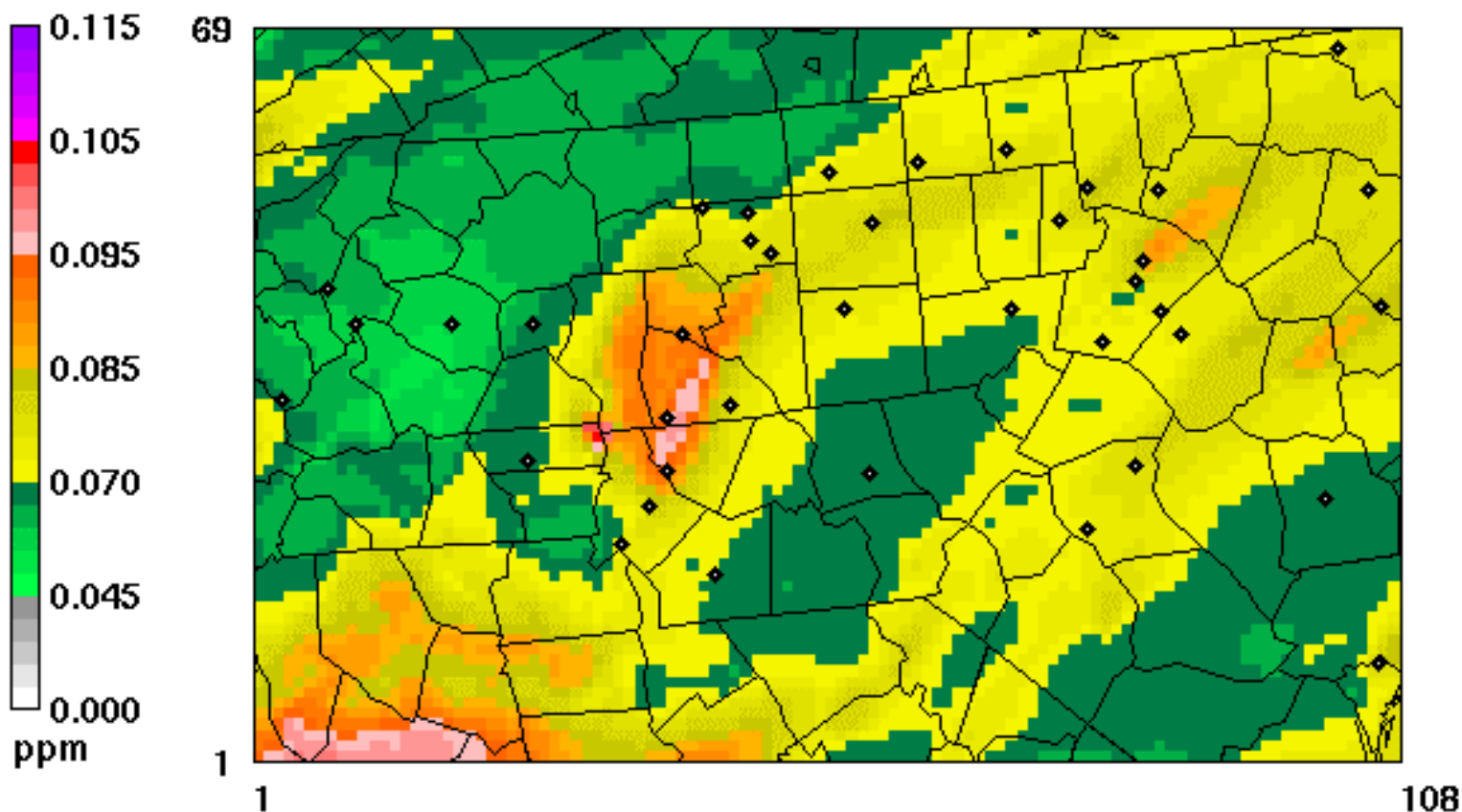




Sub-Area vs Area-Wide

Daily Max 8-h Ozone

Future Year Scenario: ecb97_fe07
4km Domain



PAVE
by
MCNC

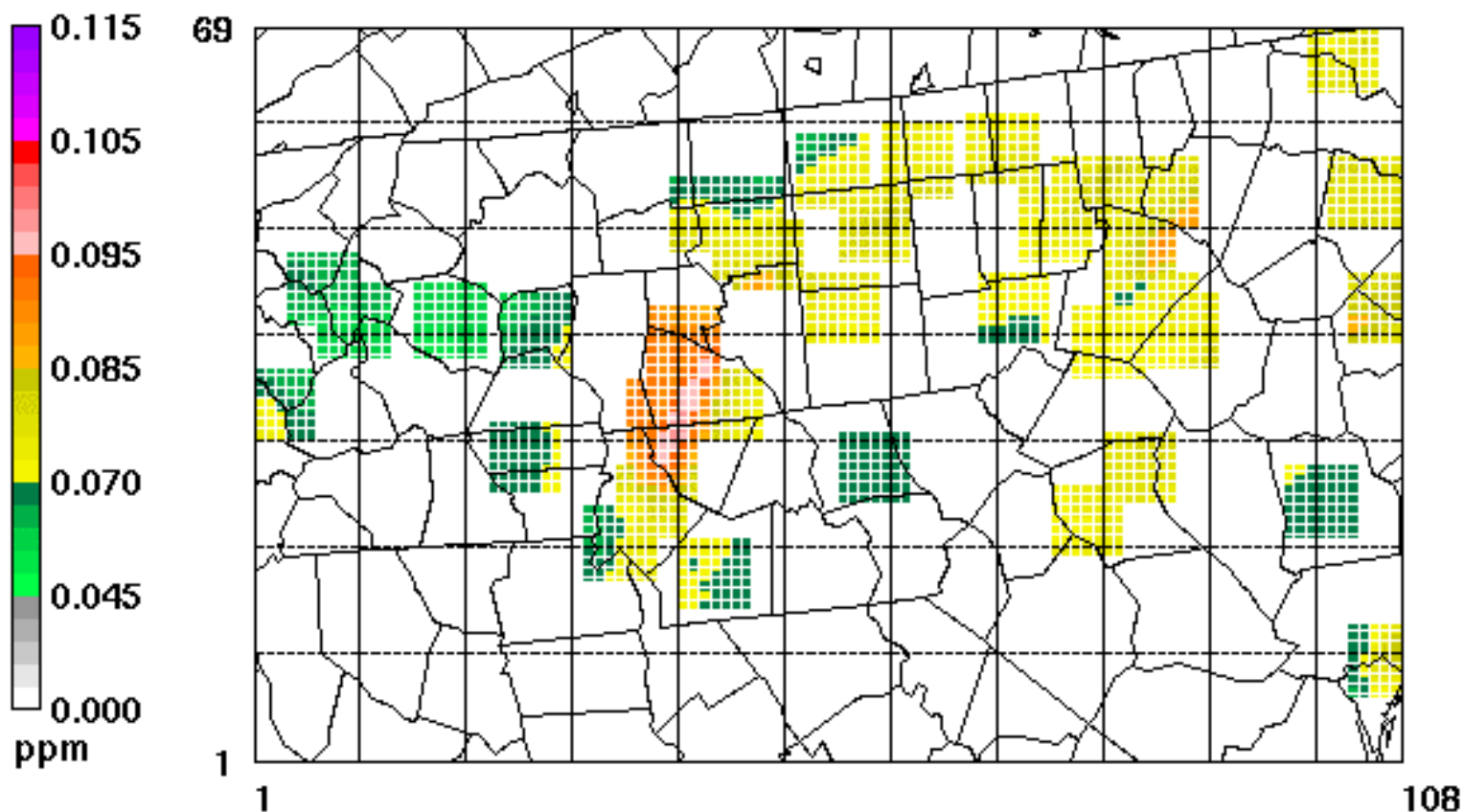
July 15, 1997 0:00:00
Min=0.054 at (15,36), Max=0.104 at (33,31)



Sub-Area vs Area-Wide

Daily Max 8-h Ozone

Future Year Scenario: ecb97_fe07
4km Domain



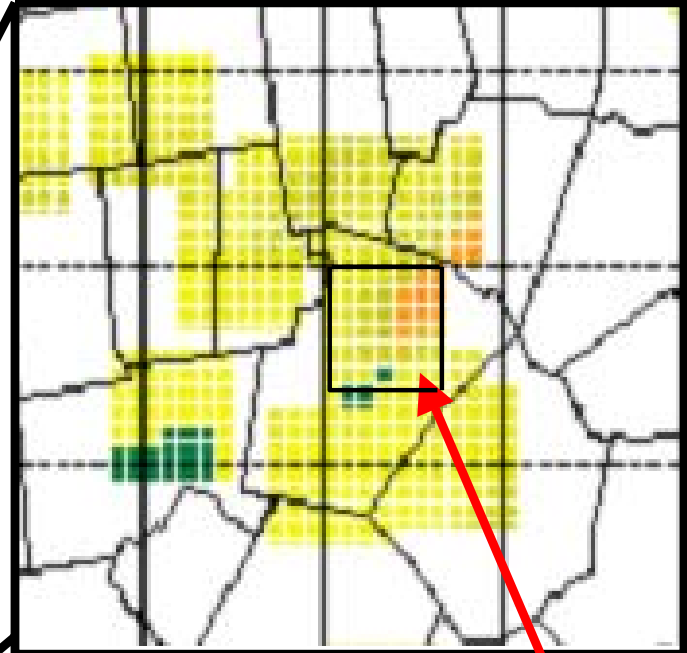
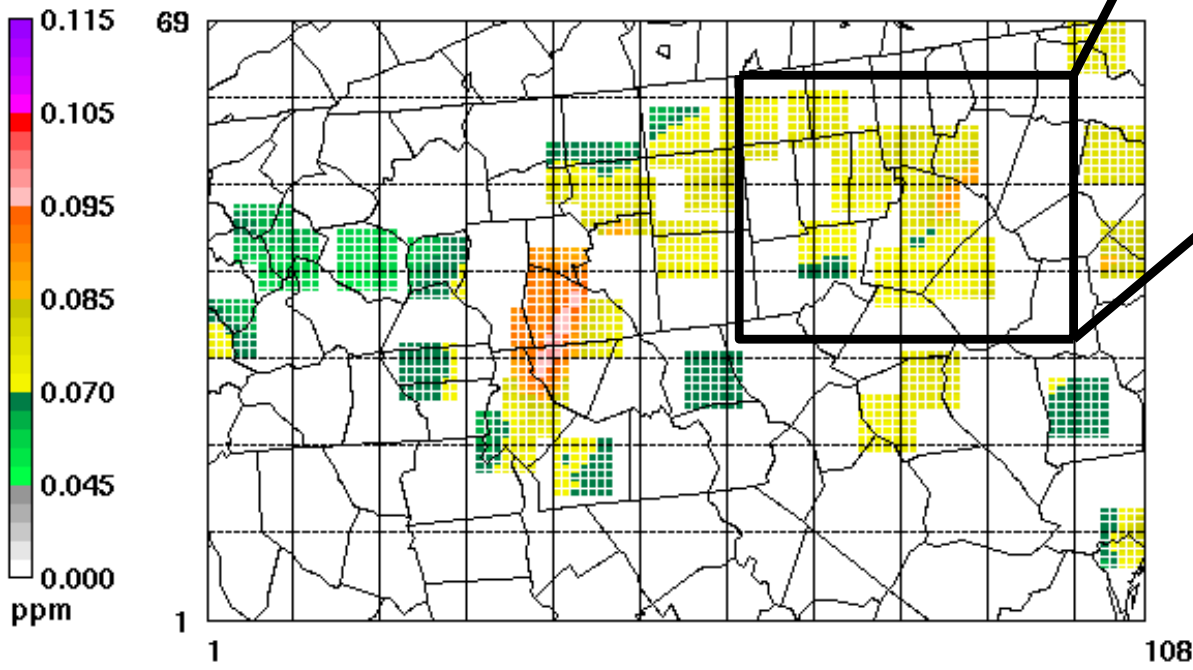
PAVE
by
MCNC

July 15, 1997 0:00:00
Min=0.054 at (17,39), Max=0.098 at (40,31)



Sub-Area vs Area-Wide

Daily Max 8-h Ozone
Future Year Scenario: ecb97_fe07
4km Domain



**What happens here...
...If emissions from
Franklin County are
borrowed by Wake
County?**

July 15, 1997 0:00:00
Min=0.054 at (17,39), Max=0.098 at (40,31)



Area-Wide

- **Advantages**
 - **Budgets can be shared (if the SIP language allows this)**
- **Disadvantages**
 - **MPOs/RPOs must collectively make a conformity determination**
 - **One MPO/RPO in the non-attainment area (NA) lapses, everyone lapses (assuming more than one MPO/RPO in the NA area)**



Sub-Area

- **Advantages**
 - **Once conformity is established for entire NA area.....**
 - **Conformity determinations can be made for specific MPOs/RPOs (without impacting the entire NA area)**
 - **If one MPO/RPO within the NA lapses it does not impact remaining areas until their next conformity determination**



Sub-Area (continued)

Disadvantages

- Budgets cannot be shared**



Review of SIP Package

- **30-45 days once package is made public**
- **Will announce @ SICM meetings**



Questions/Comments

<http://ncair.org>

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