

# Status of National Ambient Air Quality Standards in Louisiana

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Baton Rouge New Orleans Lake Charles Plaquemines

# EPA is Engaged in a Demanding Schedule of NAAQS Activity

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- Recently final
  - 11/08 revised Lead NAAQS with new monitor requirements
  - 02/10 revised NO<sub>x</sub> short-term NAAQS with new monitor requirements
  
- To become final this year
  - 06/10 revised SO<sub>2</sub> 1-hr NAAQS with new monitor requirements
  - 08/10 revised O<sub>3</sub> primary and secondary NAAQS
  
- To be proposed this year, final next
  - 10/10 proposed revision of CO primary NAAQS, final 5/11
  - 11/10 proposed revision of PM<sub>2.5</sub> primary NAAQS, final 7/11
  
- Future
  - 5/11 proposed revision of SO<sub>2</sub>/NO<sub>x</sub> secondary standard, final 3/12

# NAAQS Review Major Milestones and Status for Each Criteria Pollutant

As of 3/9/10



Pollutant/ Standard	IRP	ISA	REA	PA	Proposed NAAQS	Final NAAQS
Ozone – Reconsideration <sup>1, 2</sup>					FR 1/19/10	8/31/10
Ozone – New review cycle <sup>2</sup>	12/09	12/11	9/12	10/12	5/13	2/14
PM – Accelerated schedule <sup>2</sup>	3/08	12/09	4/10	7/10	11/10	7/11
NO <sub>2</sub> – Primary	8/07	7/08	11/08	N/A <sup>3</sup>	FR 7/15/09	FR 2/9/10
SO <sub>2</sub> – Primary	9/07	9/08	9/09	N/A <sup>3</sup>	FR 12/8/09	6/10
NO <sub>2</sub> /SO <sub>2</sub> – Secondary	12/07	12/08	12/09	11/10	7/11	3/12
CO	8/08	1/10	5/10	5/10	10/10	5/11
Lead (Pb)	N/A <sup>3</sup>	N/A <sup>3</sup>	N/A <sup>3</sup>	N/A <sup>3</sup>	FR 5/20/08	FR 11/12/08

1. Reconsideration is based on previous assessments. No new ISA, REA, and PA are developed.
2. EPA is considering secondary standards for ozone and PM that are different from their primary standards.
3. These documents were not required or were referred to as other documents under previous review process.

# Current Status of Ozone NAAQS

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- All areas of the state are in actual attainment of the old 1-hour (0.12) and the 1997 8-hour (0.08) standards
- All areas are “designated” under the Clean Air Act as attainment or unclassifiable with the 1997 8-hour standard, except the Baton Rouge Area
- Baton Rouge Area (Asc, EBR, Ibv, Liv, WBR)
  - Achieved attainment with the 1-hr and 8-hr for the 2006-2008 period and continued attainment through 2009
  - LDEQ submitted request for full “redesignation” to attainment 08/09
  - EPA issued Clean Data Determination under 1-hr for area 02/10
  - EPA anticipated to propose full redesignation by 05/10
  - Final redesignation to attainment expected ?

# Status of 1-hr Anti-Backsliding Issues – Baton Rouge Area

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- **CAA 185 Penalty Fees**
  - Not included in redesignation SIP
  - LEAN sued EPA to require
  - EPA 01/10 Guidance supports no program once area achieves 1 hour or 8 hour
  - LDEQ has a pending “termination determination” request - hearing and comment closing 03/30/10
  
- **Severe Area NSR**
  - Not included in redesignation SIP
  - Part of LEAN litigation
  
- **Major Source Thresholds for RACT**
  - LDEQ VOC and NOx RACT rules incorporated severe area 25 TPY threshold in 2005
  - Included in pending reconsideration SIP
  
- **Reformulated Gasoline**
  - US 5<sup>th</sup> Circuit stayed requirement 08/04
  - EPA agreed to voluntary reconsideration
  - Likely to determine not required as a result of attainment of 1-hr and 8-hr

# EPA Reconsideration and Proposal for Primary Ozone Standard

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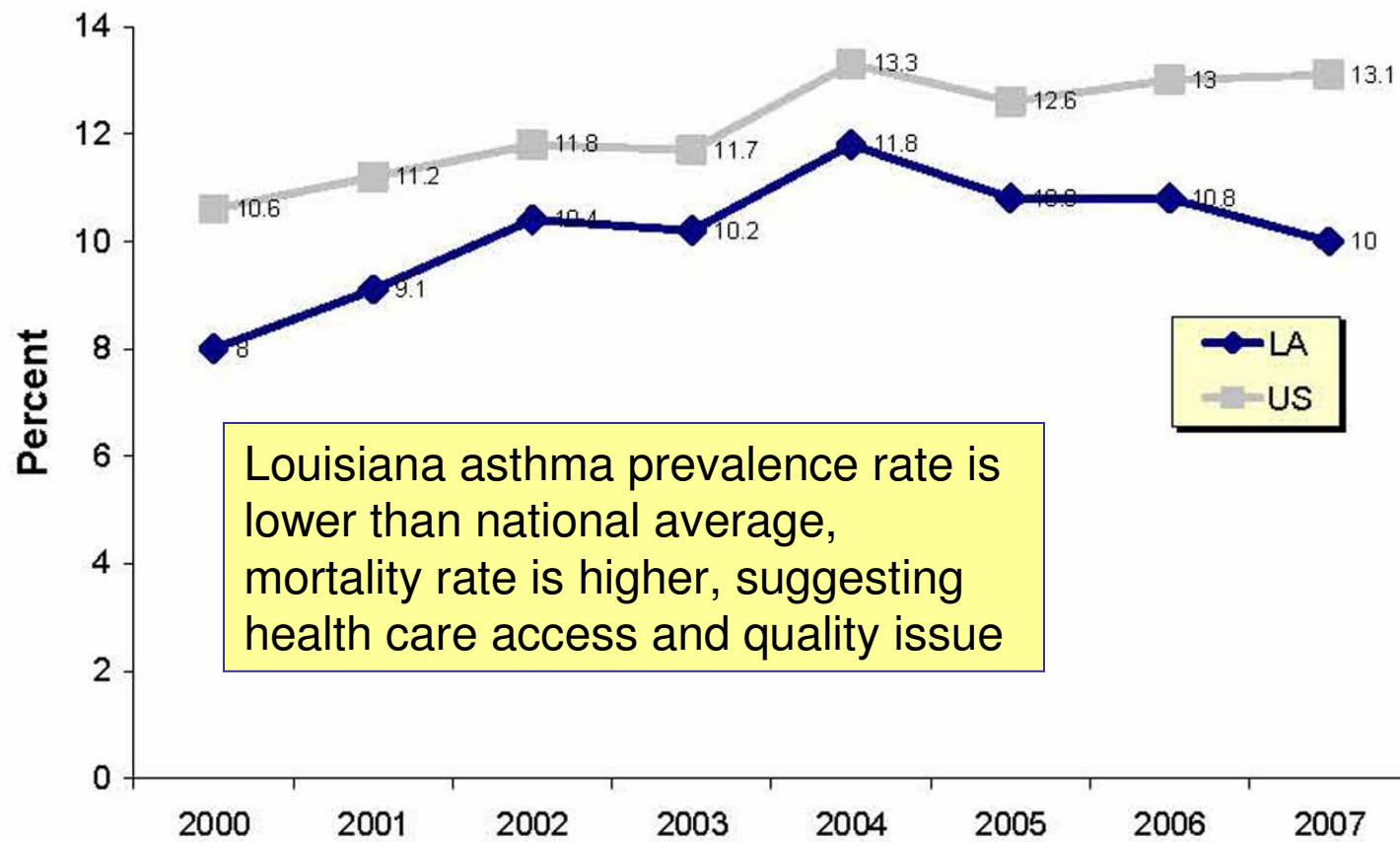
- EPA established a lower primary NAAQS for ozone at a level of 75 ppb (8 hour average) in 2008
- New EPA administration decided to reconsider and is now proposing to lower to a level somewhere between 60 and 70 ppb.
  - 75 Fed. Reg. 2939, January 19, 2010
  - **Comments are due by March 22, 2010**
- Impact to Louisiana is **extensive** – impacts entire state, well beyond projected nonattainment areas
- Stakeholders Should Submit Comments

# EPA's Stated Purpose of Standard Reconsideration

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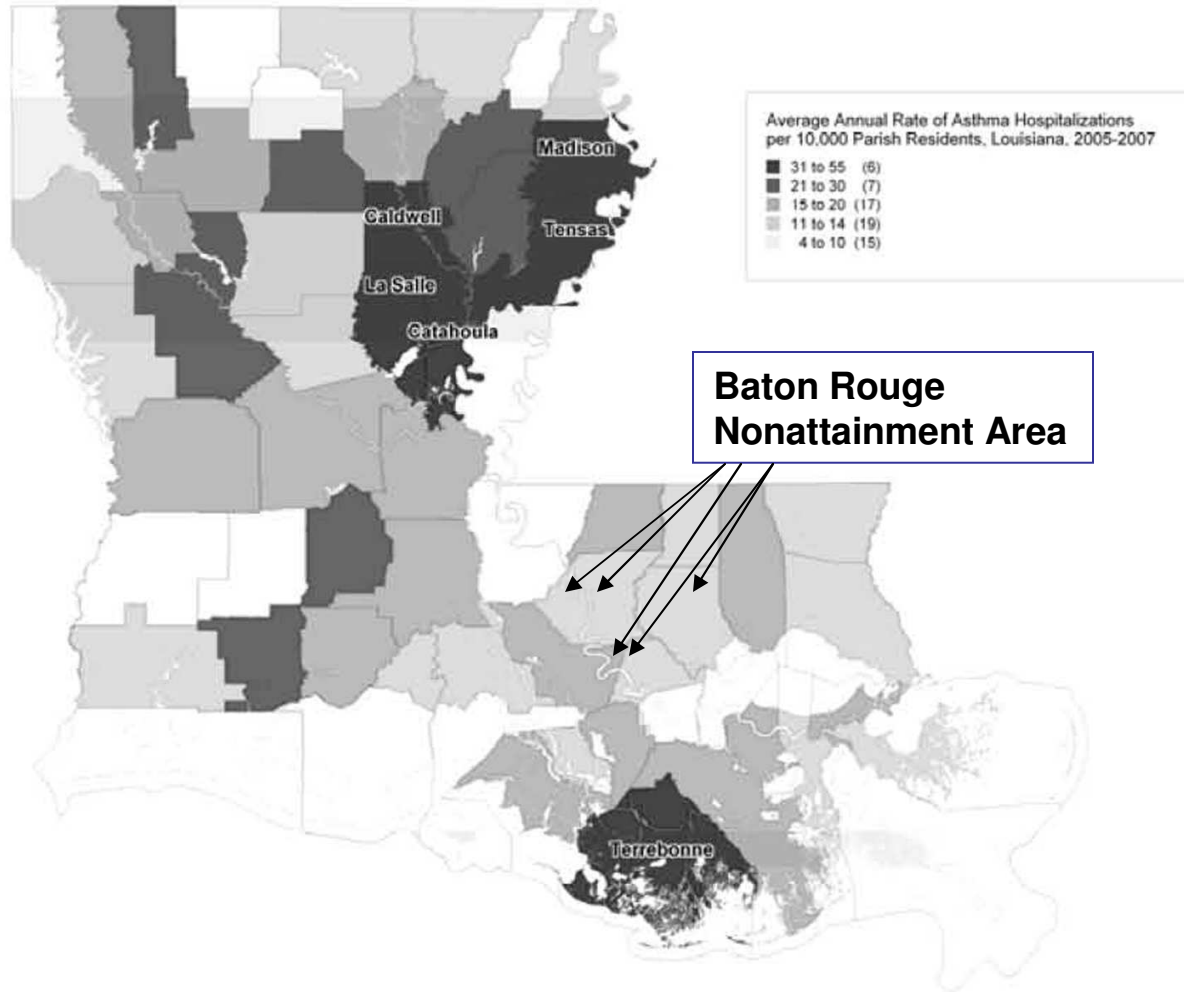
- There is uncertainty in the point at which ozone is known to cause health impairment
- Lowering the standard will increase the margin of safety in the current 75 ppb primary ozone NAAQS
- This will provide greater margin of safety for asthmatics and those with heart disease, particularly children and the elderly

**Figure 1. Prevalence of Residents that have been Diagnosed with Asthma, LA & US 2000-2007 BRFSS**



Data from "2007 Louisiana Asthma Surveillance Report," La. Dept. of Health and Hospitals

Figure 7. Average Annual Rates of Asthma Hospitalizations / 10,000 residents by parish, Louisiana 2005-2007



Greater asthma prevalence is not shown in parishes with higher ozone. High asthma prevalence is primarily in Delta region and areas of significant poverty

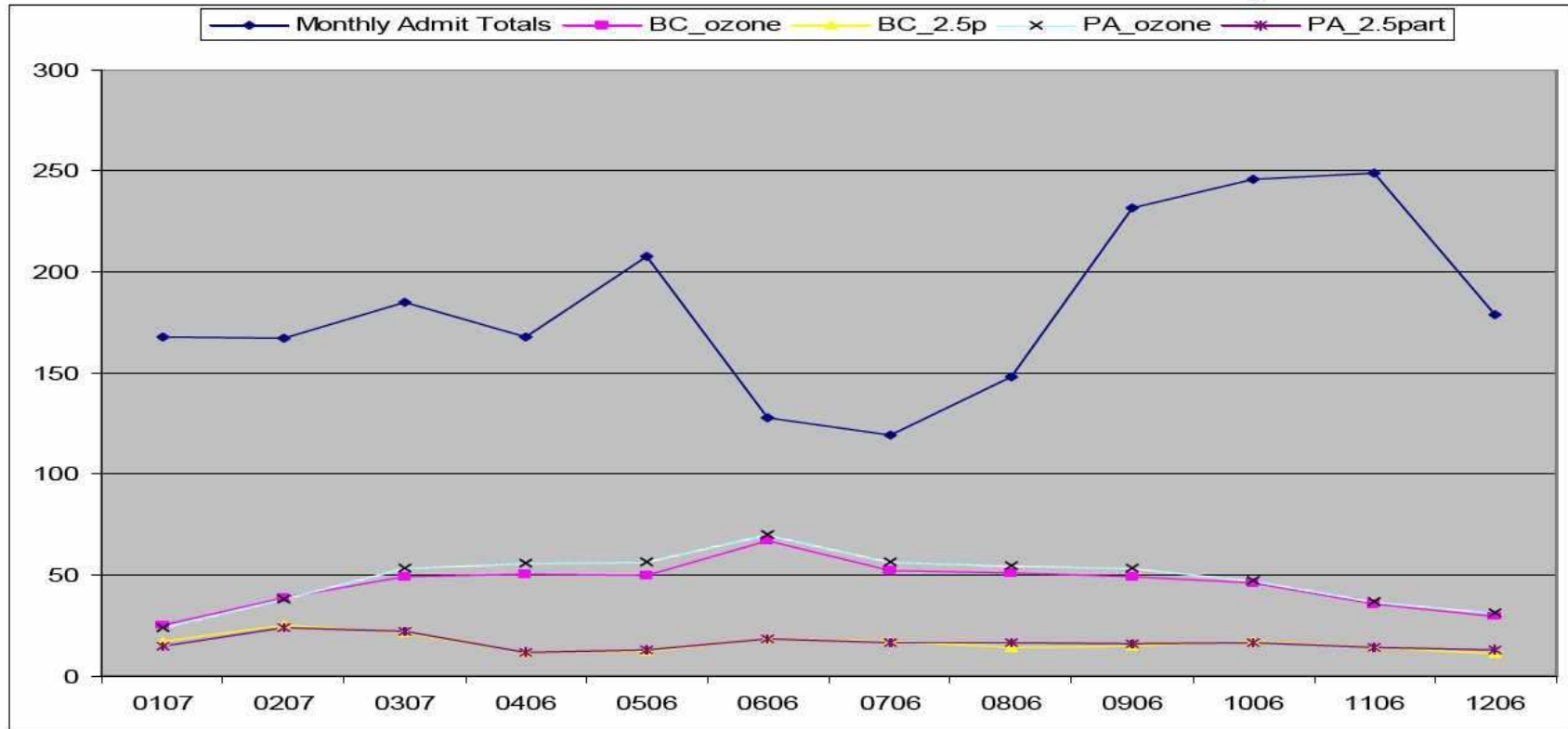
Data from "2007 Louisiana Asthma Surveillance Report," La. Dept. of Health and Hospitals

# LDHH Asthma Study

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- 2005 Grant from EPA to study potential relationship between asthma hospital visits and ozone levels in East Baton Rouge and Pointe Coupee Parishes
- East Baton Rouge Parish was in an ozone nonattainment area at the time and is primarily urban. Pointe Coupee is an adjoining upwind rural parish classified in attainment
- LDEQ provided data on ozone and particulates from April 2006 through March 2007
- Two Baton Rouge emergency rooms and Pointe Coupee hospital emergency rooms, federally qualified health clinics, and the parish's urgent care weekend clinic provided data on asthma visits

**Table 5.0: EBR Asthma Related ED Admits and Environmental Indicators by Month**



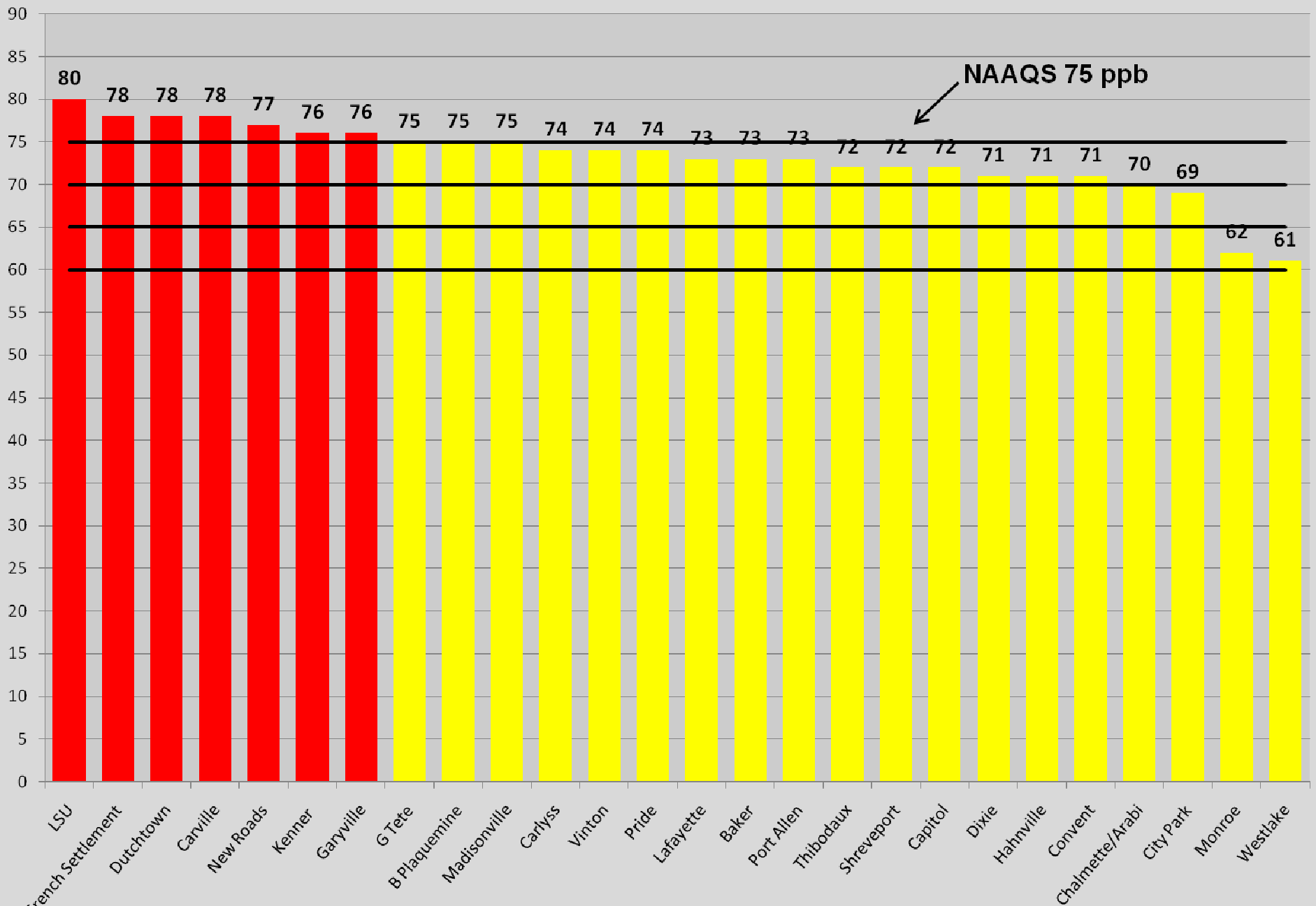
The LDHH report states “there was no direct correlation between ozone readings measured and problems associated with asthma in the emergency department” (Louisiana’s Report on Establishing a Childhood Asthma Surveillance System, Summary Report, LDHH 2008)

# Designation of Ozone Nonattainment Areas

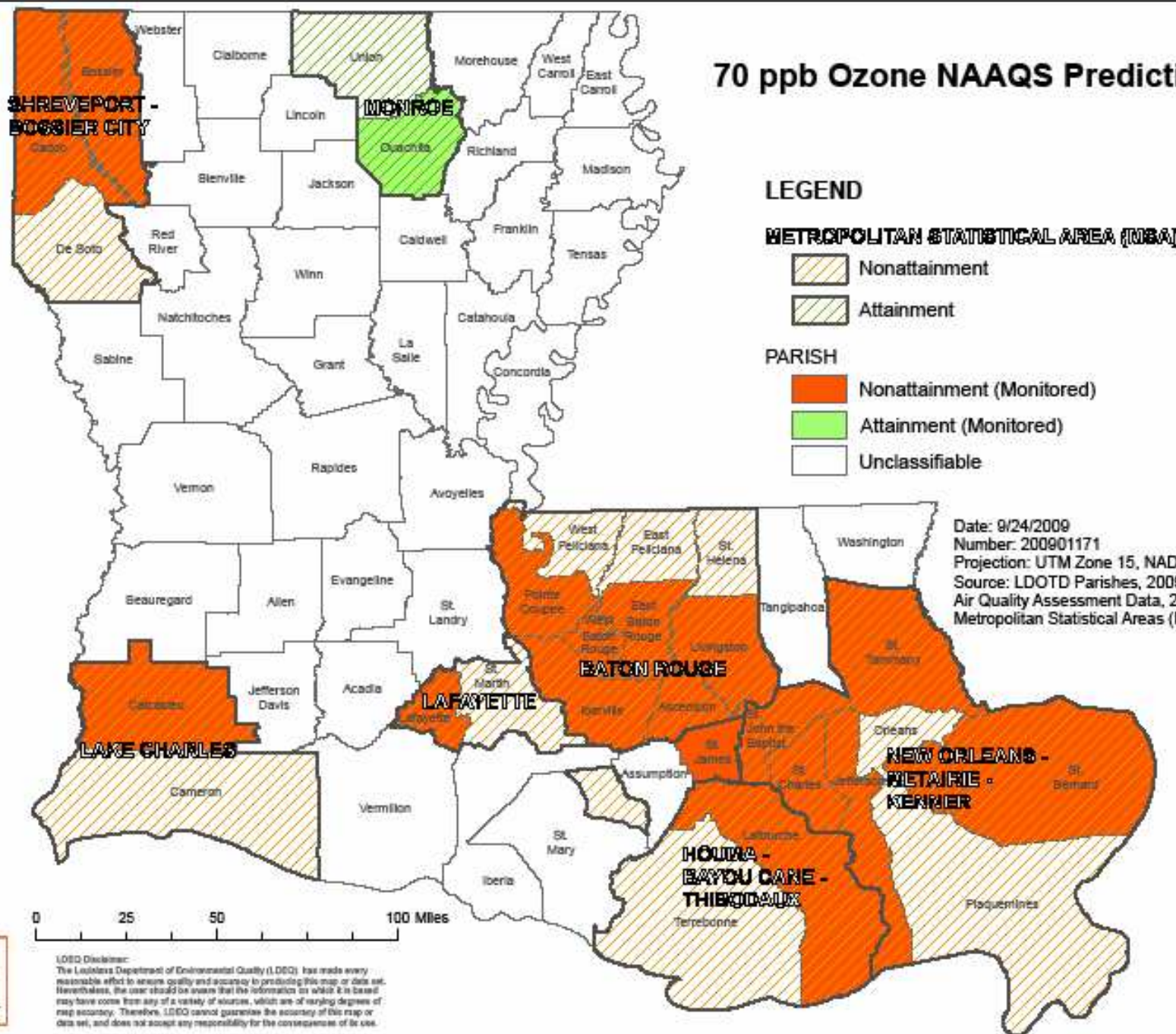
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- EPA Policy – Entire MSA is the default
- State must provide justification according to a number of factors to exclude
- Basis – Clean Air Act prohibits attainment counties from significantly contributing to downwind nonattainment
- Initial state designations under new standard – accelerated schedule – 129 days after effective date (likely January 11, 2011)
- Designations may be based on 2008-2010 data or 2009-2011 if state certifies 2011 data fast enough
- EPA may provide some additional time to assert “exceptional events”

# 8-hr Design Value as of December 31, 2009



# 70 ppb Ozone NAAQS Predictions



Date: 9/24/2009  
 Number: 200901171  
 Projection: UTM Zone 15, NAD 83  
 Source: LDOTD Parishes, 2009 LDEQ OEA  
 Air Quality Assessment Data, 2009 EPA  
 Metropolitan Statistical Areas (MSA)

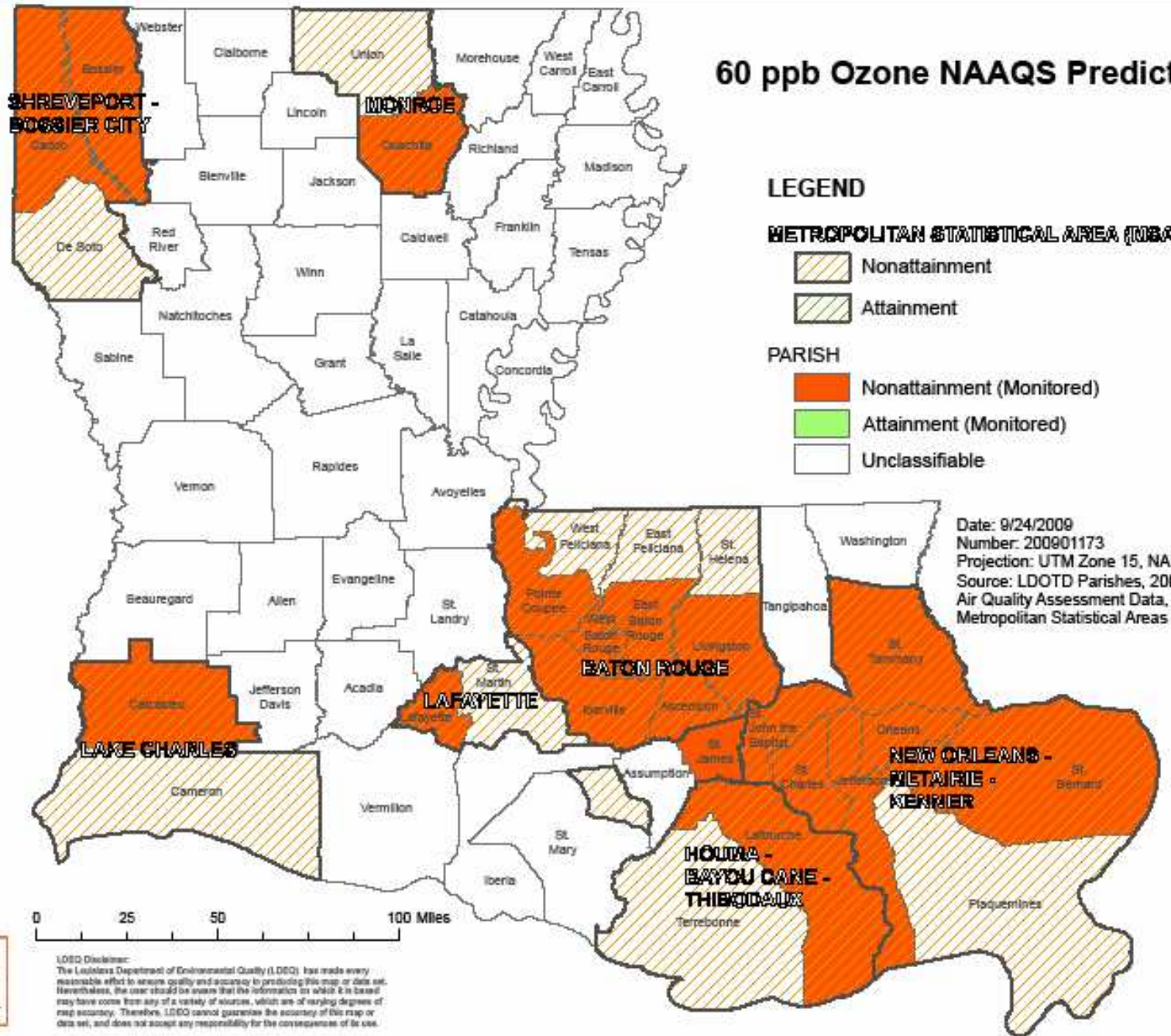


0 25 50 100 Miles



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# 60 ppb Ozone NAAQS Predictions



Date: 9/24/2009  
 Number: 200901173  
 Projection: UTM Zone 15, NAD 83  
 Source: LDOTD Parishes, 2009 LDEQ OEA  
 Air Quality Assessment Data, 2009 EPA  
 Metropolitan Statistical Areas (MSA)

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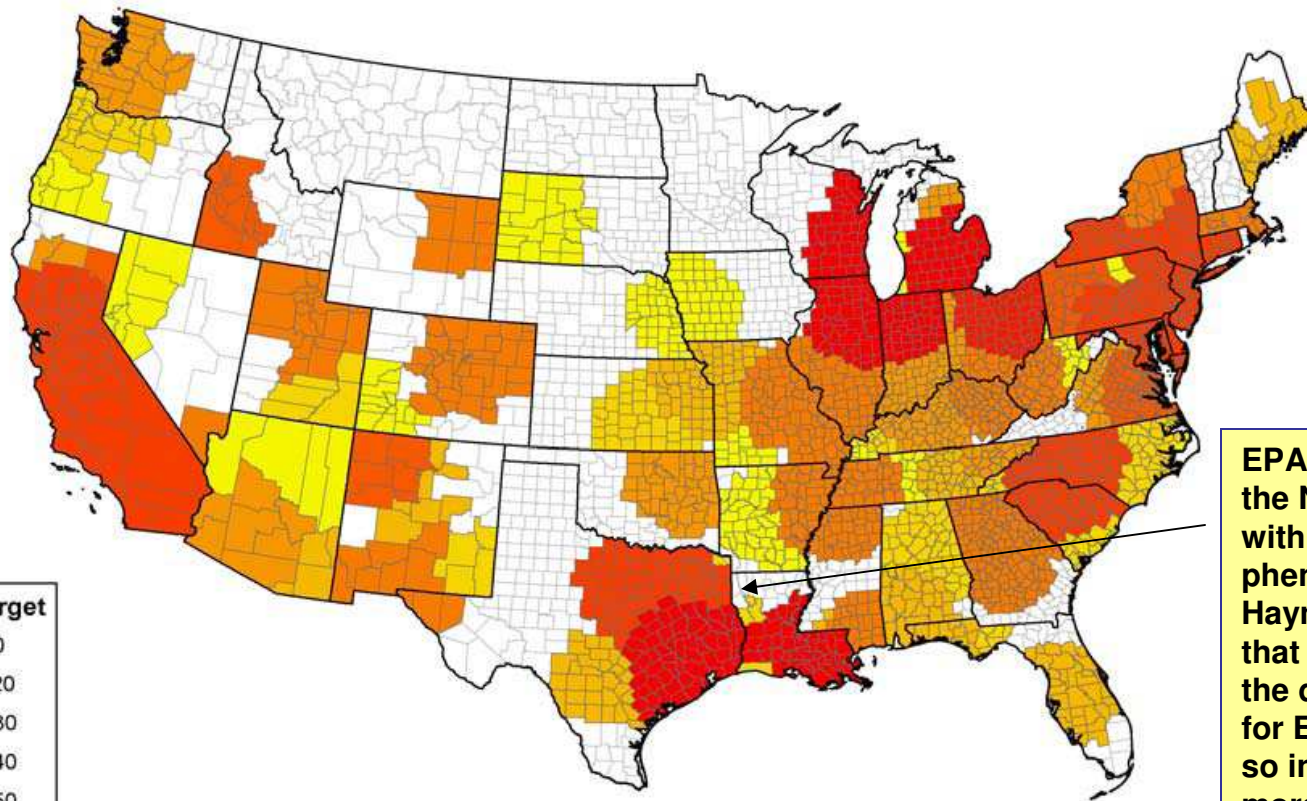
# EPA Projected Impacts to Louisiana from Supplement to Regulatory Impact Analysis

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- To allow the Baton Rouge Area to meet the primary standard reductions will be required in areas outside of the Baton Rouge Area
  - To meet 70 ppb – **250,000** TPY NOx reduction primarily within a 40 parish area, plus some VOC reductions within smaller area at a cost of between **\$3.1 and \$3.6 Billion**
  - To meet 65 ppb – **337,000** TPY NOx reductions within the same 40 parish area at a cost of between **\$5.1 - \$7.4 Billion**
  - To meet 60 ppb – **427,000** TPY NOx reductions from a 45 parish area and additional NOx reductions from 4 other parishes at a cost of between **\$6.4 and \$10.2 Billion.**
- Entire 2009 state emissions inventory is only **415,000** TPY for all 64 parishes, point sources, area sources, nonroad mobile and on-road mobile sources



## Extrapolated Cost Counties for 060 Standard



# Required Reductions to Meet Primary Standard

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- Prior figures are based on what EPA projects – through modeling – to be required
- States are free to substitute their own control measures in other areas – but will have to demonstrate the impact of what they propose
  - For example, LDEQ could require greater NO<sub>x</sub> reductions in Caddo, Bossier, DeSoto parishes rather than parishes in the 200 km zone, if LDEQ modeling shows these would be more effective
- Timeline for implementing reductions would depend upon severity of ozone...

■ Marginal – 3 yrs	Moderate -6 yrs
■ Serious – 9 yrs	Severe 15 – 15 yrs
■ Severe 17 – 17 yrs	Extreme -20 yrs

# Classification Thresholds for each Option at 0.070 ppm Example NAAQS

	% above Standard Method	Ratio of Thresholds Method	Modified Ratio of Thresholds Method
Marginal	0.071 to <0.081	0.071 to <0.076	0.071 to <0.075
Moderate	0.081 to <0.093	0.076 to <0.083	0.075 to <0.080
Serious	0.093 to <0.105	0.083 to <0.089	0.080 to <0.084
Severe 15	0.105 to <0.111	0.089 to <0.092	0.084 to <0.086
Severe 17	0.111 to <0.163	0.092 to <0.119	0.086 to <0.106
Extreme	0.163 and greater	0.119 and greater	0.106 and greater

**EPA “Pre-decisional material do not quote or cite”**

# Major Source Definitions and Offset Requirements for Nonattainment Areas

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- Marginal: 100 tpy offsets 1.1 to 1
- Moderate: 100 tpy offsets 1.15 to 1
- Serious: 50 tpy offsets 1.2 to 1
- Severe: 25 tpy offsets 1.3 to 1
- Extreme: 10 tpy offsets 1.5 to 1

# EPA Proposed Revision to Ozone NAAQS Secondary Standard

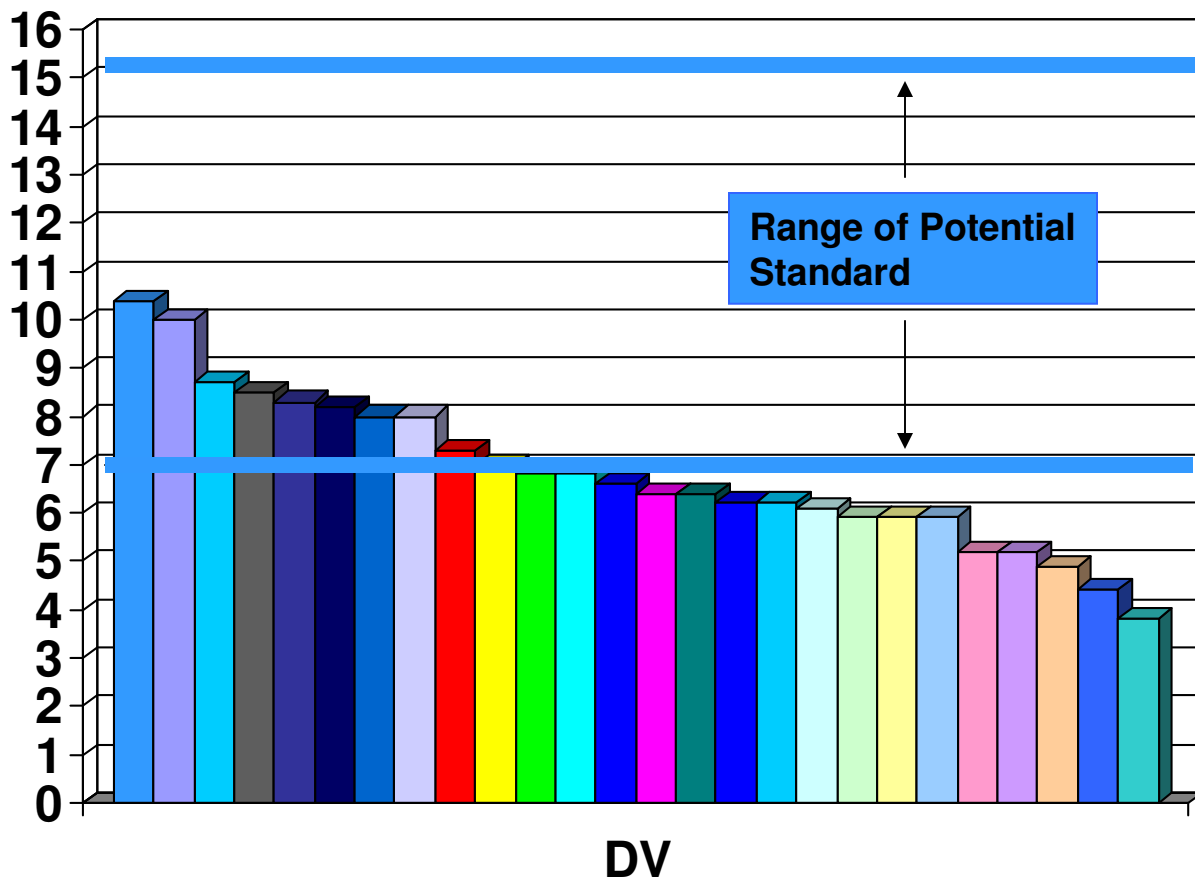
- EPA proposes to set a separate “**secondary**” ozone standard to protect “public welfare” which is considered to include agriculture and the environment, especially plants and trees
- In 2008, EPA set secondary standard same as the primary standard but decided to reconsider that standard as it did not agree with CASAC recommendation to adopt a cumulative index value
- EPA in January 2010 proposed a revision to the secondary standard. The proposed design value is:
  - The **3-year average** of the **annual maximum consecutive 3-month sum of adjusted monthly W126 index values** expressed in **ppm-hours**
  - The monthly W126 index is the sum of the daily index values over one calendar month
- Current EPA proposal - the secondary standard is met at an ambient air quality monitoring site when:
  - the annual maximum consecutive index value is **less than or equal to 7 to 15 ppm-hours**
  - **EPA is taking comment on where the level should be set within this range**

## Areas for EPA Comment

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- Is the 75 ppb standard protective enough without going to a cumulative standard
- Where should the level be (7 to 15 ppm hours)
- Should the averaging period be 1 year or 3 years
- Should states be required to designate nonattainment areas by 01/11/11 [same as primary] or 8/31/12 [full time allowed by CAA]

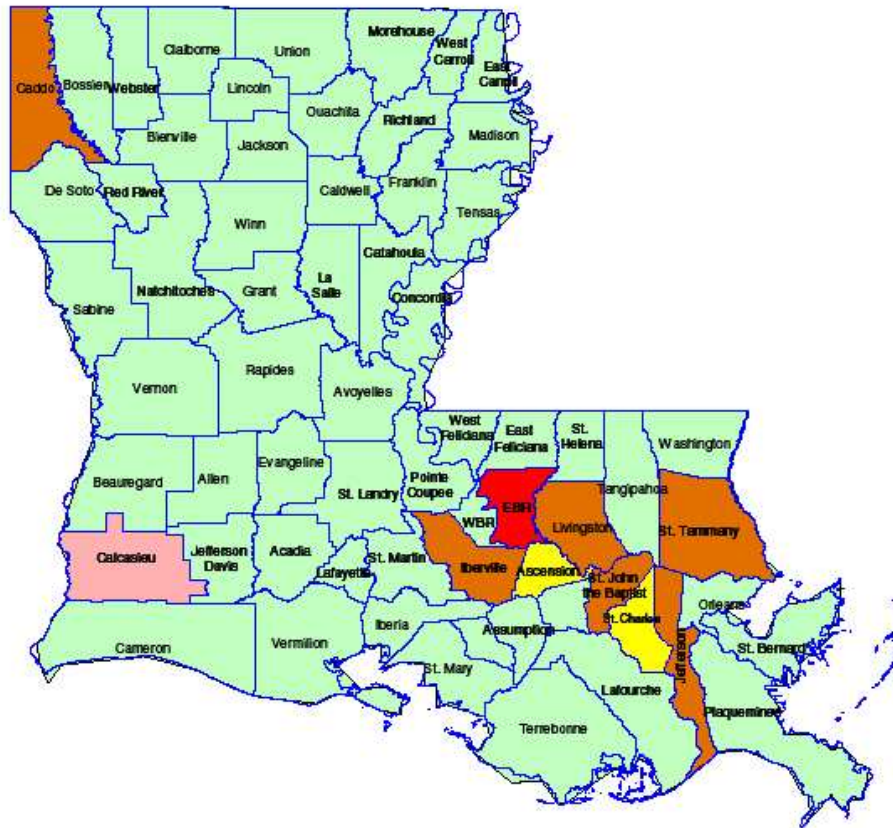
# 2008 – 1-Yr Only Values at Louisiana Monitors Compared to Proposed Secondary Standard



- LSU
- Pride
- Kenner
- Madisonville
- Fr. Settlement
- Carville
- Garyville
- Dixie
- Hahnville
- Dutchtown
- Vinton
- Westlake
- Carlyss

### Impact of Proposed Secondary Ozone NAAQS

- Nonattainment @ 7-10 ppm
- Nonattainment @ 7-8 ppm
- Nonattainment @ 7 ppm
- Borderline nonattainment (DV = 6.8 ppm)



# How to Comment on Ozone NAAQS Reconsideration Proposal

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- See How to Comment in the Federal Register Notice <http://www.epa.gov/air/ozonepollution/fr/20100119.pdf>
  - Comments Can be submitted electronically, by mail, or by fax
  - Check procedures carefully
- Support Materials
  - Supplement to the Regulatory Impact Analysis
    - [http://www.epa.gov/ttn/ecas/regdata/RIAs/s1-supplemental\\_analysis\\_full.pdf](http://www.epa.gov/ttn/ecas/regdata/RIAs/s1-supplemental_analysis_full.pdf)

# SO<sub>2</sub> Primary NAAQS

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- Current standard
  - **0.03 ppm annual**
  - **0.14 ppm 24- hr**
  
- Proposed Standard 12/09
  - Delete 24-hr
  - Add 1-hr at a level between 50-100 ppb
  
- Comment period closed, final expected by June 2, 2010 – court deadline
  
- Proposed rule will require additional ambient monitors in the state –
  - Likely minimum of 2 or 3 depending on option EPA selects
  - Proposed rule gives EPA Region 6 great discretion to require additional ambient monitors

## Status of Louisiana Parishes Under Proposed SO<sub>2</sub> 1-hr NAAQS

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- **West Baton Rouge** monitored design value is 131 ppb – so nonattainment at any level (parishes in MSA = EBR, Ascension, Iberville, Pointe Coupee, E and W Feliciana, St. Helena)
- **St. Bernard** has design value likely over 130 ppb (parishes in MSA = Orleans, Jefferson, St. Charles, St. John the Baptist, St. Tammany)
- **East Baton Rouge** – design value is 61 ppb (may be included in MSA approach above with WBR)

# Nitrogen Oxides (NO<sub>x</sub>) Primary Standard

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- Current standard
  - 0.053 ppm annual
  - 0.100 ppm 1-hour
- Just became effective February 9, 2010 for new 1-hour
- All areas of Louisiana currently attainment or unclassifiable
- Additional ambient monitors will be required and may result in nonattainment for some parishes

# PM2.5 NAAQS Status

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- Current Primary standard
  - 15  $\mu\text{g}/\text{m}^3$  annual
  - 35  $\mu\text{g}/\text{m}^3$  24 hr
  
- EPA First External Review Draft Policy Analysis released March 2010
  - Lower the annual to 10-13  $\mu\text{g}/\text{m}^3$
  - Lower the 24-hr to 25  $\mu\text{g}/\text{m}^3$

See [http://www.epa.gov/ttn/naaqs/standards/pm/s\\_pm\\_2007\\_pa.html](http://www.epa.gov/ttn/naaqs/standards/pm/s_pm_2007_pa.html)

# Status of Louisiana Parishes

(Based on 2008 Data Only – Actual Designations will be 2008-2010 or 2009-2011)

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- Annual standard potential nonattainment areas
  - **At 12** – **Caddo** DV 12.6 (MSA Bossier, DeSoto); **EBR** (DV 12.4) and **WBR** (DV 12.9), **Ascension** (DV 12.2 (MSA Iberville, Livingston, Pointe Coupee, E and W Feliciana, St. Helena)
  - **At 11** – same as 12 plus **Jefferson** DV 11.5 (MSA Orleans, St. Bernard, St. Charles, St. John the Baptist, St. Tammany) and **Tangipahoa** DV 11.3
  - **At 10** – same as 11 plus **Lafayette** DV 10.1 (MSA St. Martin), **Ouachita** DV 10.9 (MSA Union), **Rapides** DV 10.1
  
- 24-hr Standard potential nonattainment areas @ level of 25
  - **Caddo** (MSA Bossier, DeSoto)
  - **E and W Baton Rouge, Ascension** (MSA Iberville, Livingston, Pointe Coupee, E. and W Feliciana, St. Helena)
  - **Ouachita** (MSA Union)

# Additional Considerations

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- New NOx standard in effect as of February 9, 2010
- SO2 1-hour standard (between 50 and 100 ppm) will likely go into effect in June 2010
- Applicants for PSD permits or modifications will need to demonstrate compliance with these new ambient standards
- Applicants for new, renewed, or modified Title V permit may be required to demonstrate compliance with new short term ambient standards

## Schedules for Implementation Primary NAAQS

	NOx 100 ppb 1-hr	SO2 50-100 ppb 1-hr	O3 60-70 ppb 8-hr	PM2.5 10-13 $\mu\text{g}/\text{m}^3$ annual 25 $\mu\text{g}/\text{m}^3$ 24-hr
Expected final date	<b>2/9/10</b>	<b>6/2/10</b>	<b>8/31/10</b>	<b>4/11</b>
EPA Designations of nonattainment areas	<b>1/2012</b> <b>[none in LA]</b>	<b>6/2012</b>	<b>8/2011</b>	<b>4/2013</b>
Attainment SIPs due	<b>7/2013</b>	<b>Winter 2014</b>	<b>12/2013</b>	<b>9/2014</b>
Expected Attainment Dates	<b>1/2017</b>	<b>Summer 2017</b>	<b>8/2014 - 8/2031</b>	<b>4/2018</b>