NAAQS SIP
Stakeholder Meeting

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Arkansas Department of Environmental Quality

January 28, 2015
Presentation Topics

- Comparison of Recent Monitor Design Values to NAAQS
- SIP Process & Control Measures Requirements
- Review Stakeholder Suggested Control Measures
## Arkansas Metropolitan Statistical Areas US Census Data 2000 -2010

<table>
<thead>
<tr>
<th>Title</th>
<th>Population</th>
<th>Change, 2000 to 2010</th>
<th>Number</th>
<th>Percent</th>
</tr>
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<tbody>
<tr>
<td><strong>UNITED STATES</strong></td>
<td></td>
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<tr>
<td>Metropolitan statistical area</td>
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<tr>
<td>Arkadelphia, AR</td>
<td>23,546</td>
<td>22,995</td>
<td>-551</td>
<td>-2.3</td>
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<tr>
<td>Batesville, AR</td>
<td>34,233</td>
<td>36,647</td>
<td>2,414</td>
<td>7.1</td>
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<tr>
<td>Blytheville, AR</td>
<td>51,979</td>
<td>46,480</td>
<td>-5,499</td>
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<td>Camden, AR</td>
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<td>El Dorado, AR</td>
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<td>41,639</td>
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<tr>
<td>Fayetteville-Springdale-Rogers, AR-MO</td>
<td>347,045</td>
<td>463,204</td>
<td>116,159</td>
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<td>Forrest City, AR</td>
<td>29,329</td>
<td>28,258</td>
<td>-1,071</td>
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<tr>
<td>Fort Smith, AR-OK</td>
<td>255,399</td>
<td>280,467</td>
<td>25,068</td>
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<tr>
<td>Harrison, AR</td>
<td>42,556</td>
<td>45,233</td>
<td>2,677</td>
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<td>Helena-West Helena, AR</td>
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<td>21,757</td>
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<td>Jonesboro, AR</td>
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<tr>
<td>Little Rock-North Little Rock-Conway, AR</td>
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<td>Magnolia, AR</td>
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<td>Malvern, AR</td>
<td>30,353</td>
<td>32,923</td>
<td>2,570</td>
<td>8.5</td>
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<tr>
<td>Crittenden County (Part of Memphis MSA)</td>
<td>50,866</td>
<td>50,902</td>
<td>36</td>
<td>0.07</td>
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<tr>
<td>Memphis, TN-MS-AR</td>
<td>1,213,230</td>
<td>1,324,829</td>
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<tr>
<td>Mountain Home, AR</td>
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<tr>
<td>Paragould, AR</td>
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<td>4,759</td>
<td>12.7</td>
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<tr>
<td>Pine Bluff, AR</td>
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<td>100,258</td>
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<td>-6.6</td>
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<tr>
<td>Russellville, AR</td>
<td>75,608</td>
<td>83,939</td>
<td>8,331</td>
<td>11.0</td>
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<tr>
<td>Searcy, AR</td>
<td>67,165</td>
<td>77,076</td>
<td>9,911</td>
<td>14.8</td>
</tr>
<tr>
<td>Texarkana, TX-AR</td>
<td>143,377</td>
<td>149,198</td>
<td>5,821</td>
<td>4.1</td>
</tr>
</tbody>
</table>
Arkansas Ambient Air Monitoring Network
2008 8-Hour Ozone NAAQS of 0.075 ppm

2013 Design Values

Preliminary 2014 Design Values

Crittenden County currently nonattainment for the 2008 8-hour Ozone NAAQS

NOTE: 2014 DVs are not certified and are subject to change.
Five-Year Trend in 8-hour Ozone Design Values

Ozone 8-Hour Design Values (2010–2014)

- Current NAAQS
- Proposed NAAQS

Design Value Year:
- 2010
- 2011
- 2012
- 2013
- 2014

Parts Per Million:
- 0.000
- 0.005
- 0.010
- 0.015
- 0.020
- 0.025
- 0.030
- 0.035
- 0.040
- 0.045
- 0.050
- 0.055
- 0.060
- 0.065
- 0.070
- 0.075
- 0.080
- 0.085
2012 Annual PM$_{2.5}$ NAAQS of 12 $\mu$g/m$^3$

2013 Design Values

Preliminary 2014 Design Values

All counties currently attainment/unclassifiable for the 2012 PM$_{2.5}$ Annual Standard

NOTE: 2014 DVs are not certified and are subject to change.
Five-Year Trend in Annual PM$_{2.5}$ Design Values

PM$_{2.5}$ Annual Design Values (2010–2014)

Current NAAQS
Some of the Major Types of SIPs

- Attainment Plans: nonattainment areas
- Maintenance Plans: attainment and former nonattainment areas
- Program SIPs
- Infrastructure SIPs: 110(a)
- NAAQS SIP: Act 1302 of 2013
Typical Stages of SIP Development

- EPA updates federal rules
- ADEQ proposes revisions to APC&EC Regulations
  - Public Comment & Response
- Legislative review
- APC&EC adopts Regulations
- ADEQ prepares SIP package
  - Public Comment & Response
- ADEQ provides written notice of finalized SIP
- Governor submits SIP to EPA for approval
- EPA reviews & publishes proposed approval status
  - Public Comment & Response
- EPA publishes final decision
Control Strategies Definition

- A set of specific measures identified and implemented to achieve reductions in air pollution
  - These measures may vary by:
    - Source type
    - Pollutant targeted
  - Costs and benefits to be assessed in the development of the control strategy
Control Strategy Development

- The process of assessing specific abatement measures, management practices, or control technologies,
- to determine the best combination of approaches to provide the emission reductions necessary,
- so the air quality standard or goal is achieved
Control Strategy in a SIP

- The SIP must contain an enforceable control strategy to ensure attainment and maintenance of all the National Ambient Air Quality Standards (NAAQS)

- 40 CFR 51.112 (a) “Each plan must demonstrate that measures, rules, and regulations in it are adequate to provide for the timely attainment and maintenance of the national standard it implements”
EPA Requirements of Control Strategies

- Enforceable
  - State/permitting authority
  - EPA

- Measurable/Quantifiable
  - Adequate monitoring and reporting requirements to assess effectiveness of control measures and aid enforcement
  - Monitoring
  - Modeling

- Permanent
  - "Anti-Backsliding" - If an air pollution requirement is dropped, it must be replaced with an alternative control strategy to make up for lost reductions

- Authority
  - State Law or Regulation
Example

- Modeling before Permit Issuance (Options for when to model)
  - All sources
  - Based on PSD increments
  - Near nonattainment areas (when a % of NAAQS is reached)
  - Permit Limits
- Adapt a similar idea as the example Permit Modelling Flow Chart?
Example Permit Modeling Flowchart

BEGIN HERE
Has facility-wide modeling been conducted for this facility previously?

Yes

Were the most recently modeled facility-wide impacts\* within one significant impact level (SIL) of the NAAQS for the pollutants being evaluated in this project?

No

Conduct significant impact modeling of the new project for the affected pollutant(s) only.

Yes

Will the project result in a net increase in potential emissions equal to or greater than the Significant Emission Rate for the pollutant being evaluated in this project?

No

Do the modeled impacts from this project exceed any Significant Impact Level?

Yes

Conduct facility-wide modeling of the affected pollutant(s).

No

EVALUATION COMPLETE
No further modeling is required

<table>
<thead>
<tr>
<th>Pollutants</th>
<th>Significant Emission Rates (lb/hr)</th>
</tr>
</thead>
<tbody>
<tr>
<td>CO</td>
<td>22.83</td>
</tr>
<tr>
<td>NOx</td>
<td>9.13</td>
</tr>
<tr>
<td>SO2</td>
<td>9.13</td>
</tr>
<tr>
<td>PM</td>
<td>5.71</td>
</tr>
<tr>
<td>PM10</td>
<td>3.42</td>
</tr>
<tr>
<td>PM2.5</td>
<td>2.28 (direct), 9.13 (SO2), 9.13 (NOx)</td>
</tr>
<tr>
<td>Ozone</td>
<td>9.13 VOC or NOx</td>
</tr>
<tr>
<td>Lead</td>
<td>0.14</td>
</tr>
</tbody>
</table>
Expand Programs Like Go Red! (DERA)

- Voluntary Control Measures
  - Pursue additional money through grants or local venue funding
  - Legislature create Arkansas Emission Reduction Program
    - provide financial incentives to eligible individuals, businesses, or local governments to reduce emissions from polluting vehicles and equipment.
    - Encourages the use of alternative fuel vehicles
    - Encourages more efficient fleets

- Enforceable Control Measure
  - Required phase out of older, less efficient vehicles/equipment
Transportation

- Voluntary
  - Expansion of Clean Cities Program
    - Replace petroleum with alternative and renewable fuels
    - Reduce petroleum consumption through smarter driving practices and fuel economy improvements
    - Eliminate petroleum use through idle reduction and other fuel-saving technologies and practices.
  - Create a Clean Arkansas Program
    - Encourage the use of alternative fuel vehicles
    - Encourage more efficient fleets
    - Encourage rideshare alternatives
    - Encourage flex schedules
    - Encourage telecommuting
    - Encourage idle reduction
Transportation

- Voluntary
  - Plan for more efficient vehicle movement
  - Decrease the number of vehicles on the road
    - Raise the fuel tax, which could be rolled back into transportation planning

- Enforceable
  - Mandate traffic flow standards
State Government

- Voluntary
  - Lead by example
    - Encourage efficient commuting policies
    - Rideshare options
    - Flex schedules
    - Telecommuting
  - More efficient fleets
    - Increase alternative fuel vehicles
    - Most efficient vehicle for the job
  - Idling Reduction
- Enforceable
  - Require agencies to participate (legislation/governor’s order)
eTrip: San Joaquin Valley Air District

Enforceable

- Employer Trip Reduction Implementation Plan
- Require businesses with 100 or more employees to offer alternatives to encourage employees at the worksite to use alternative transportation and ridesharing for their morning and evening commutes
  - Promote the use of alternative fuel vehicles
  - Promote more efficient fleets
  - Promote rideshare/vanpool alternatives
  - Promote flex schedules
  - Promote telecommuting
  - Promote idle reduction
Area Sources

- Enforceable
  - Greater enforcement of current state & federal regulations, i.e.: Area MACTS
Prescribed Burns

- Voluntary
  - Smoke Management Plan
  - Expand the use to include all types of burns
  - Additional focus on sensitive areas
  - Try to schedule burns outside of ozone season
  - Continued education
  - Continue to improve and enhance

- Enforceable
  - Require all burns to utilize the plan
  - Permit burns
Unpaved Roads

- Voluntary
  - Pave more county roads
    - Update Arkansas Unpaved Roads Program to include dust as well as water quality
  - Study road usages
    - Identify areas of concern with heavy use
    - Obtain a better understanding of road dust impact
    - Improve traffic counts
    - Understand weight impact
  - Incentivize dust suppression water trucks
    - Seasonal or short-term periods of heavy traffic

- Enforceable
  - Require paving or suppression
Debris Removal

- Alternative to burning
  - Wood waste chipping program
    - Provide as mulch
    - Supply wood fired boilers
- Voluntary or Enforceable
For Additional Information:

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