

# **NAAQS SIP Stakeholders Modeling Subgroup Meeting March 19, 2015**

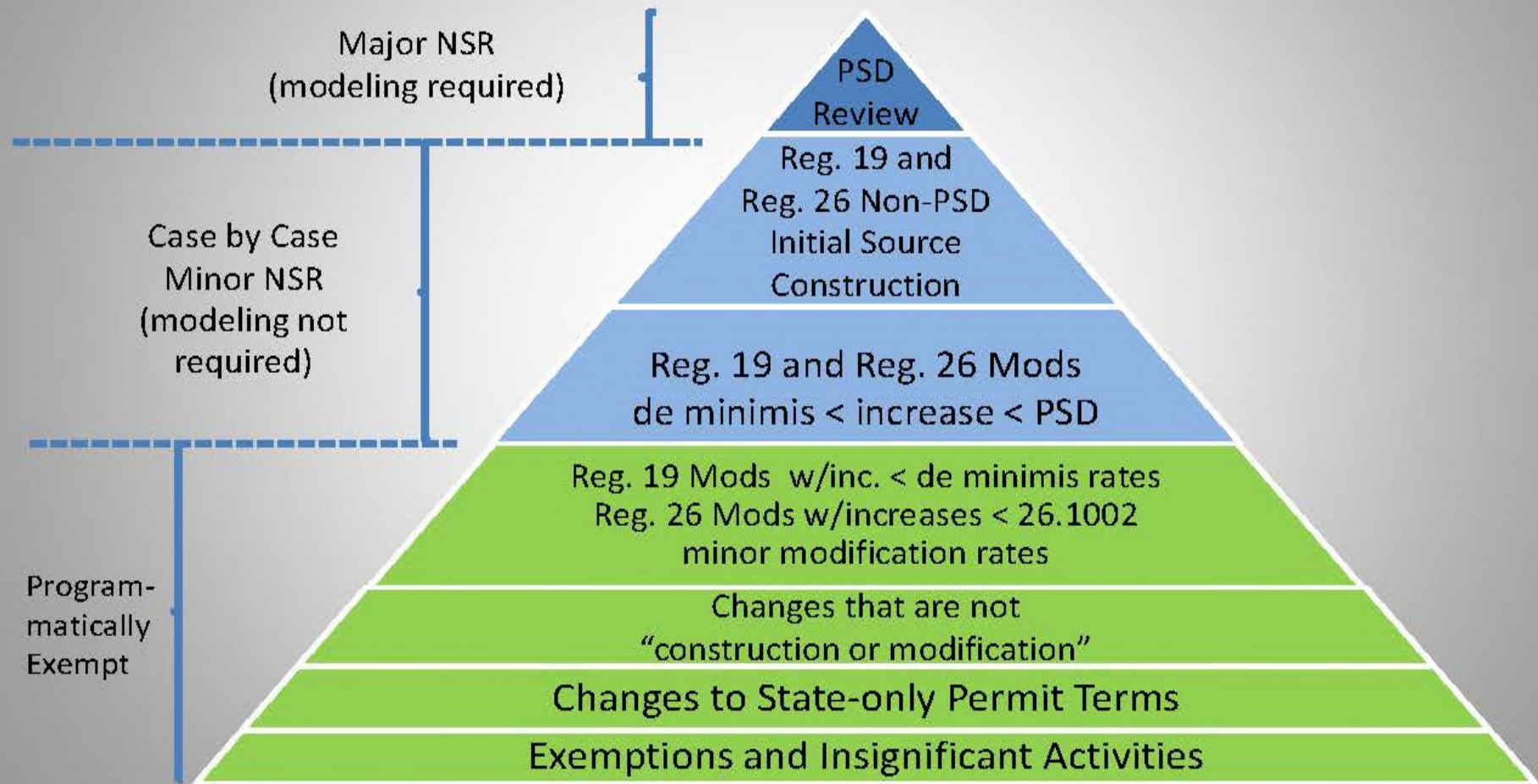
**Tony Davis**

**Air Division Planning Branch Manager  
Arkansas Department of Environmental Quality**

# Qualitative Analysis in the Absence of Modeling

- Factors in Minor NSR NAAQS Review
- South Carolina Guidance
- Proposed Flowchart
- ADEQ Responsibilities
- Multistate Considerations

# The Arkansas NSR NAAQS Review Pyramid



Chad Woods Presentation: [http://www.adeq.state.ar.us/air/planning/naaqs\\_sip/pdfs/concepts\\_for\\_minor\\_nsr\\_evaluations\\_2-24-2015.pdf](http://www.adeq.state.ar.us/air/planning/naaqs_sip/pdfs/concepts_for_minor_nsr_evaluations_2-24-2015.pdf)

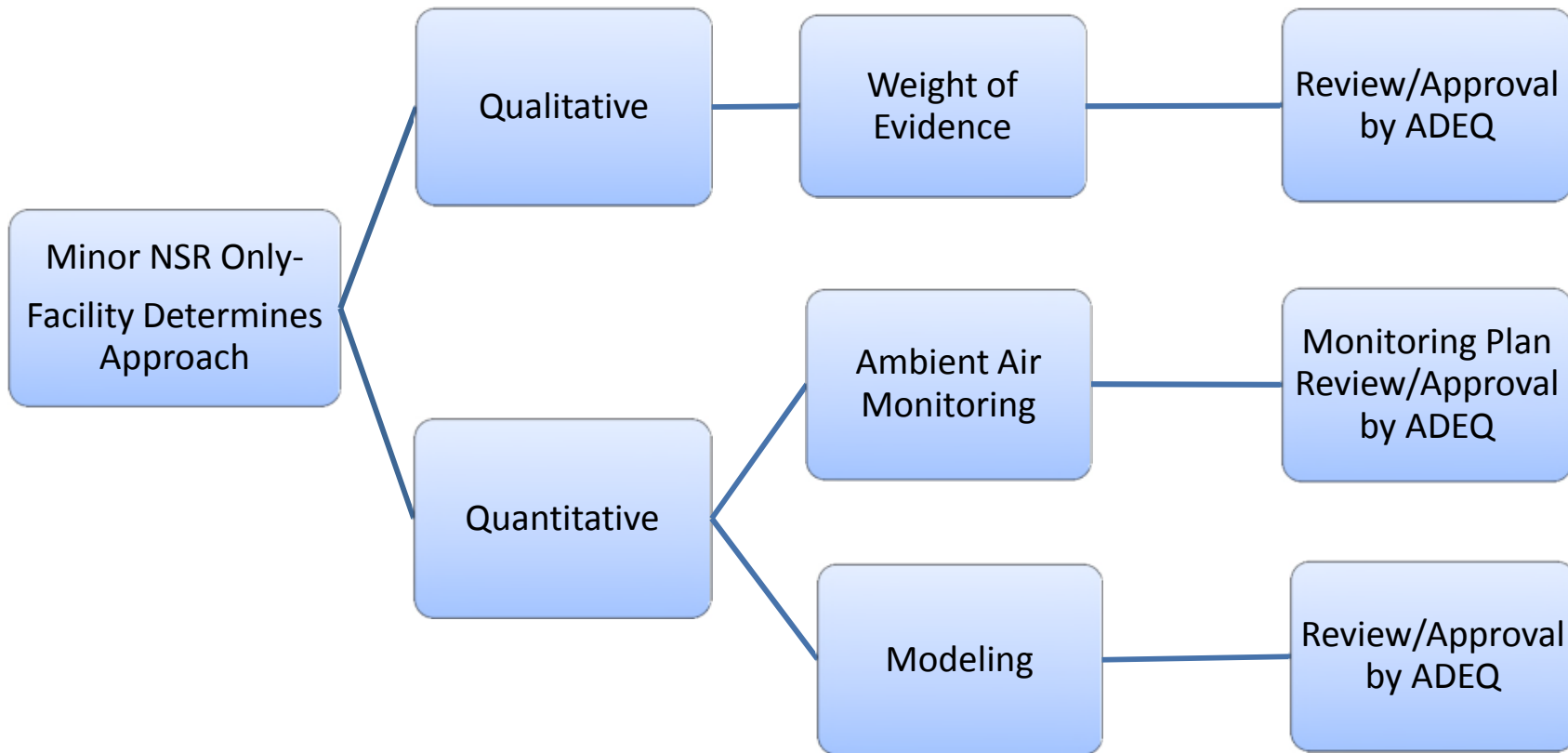
# Factors in Minor NSR NAAQS Review

The NAAQS review can be satisfied by consideration of several factors, such as:

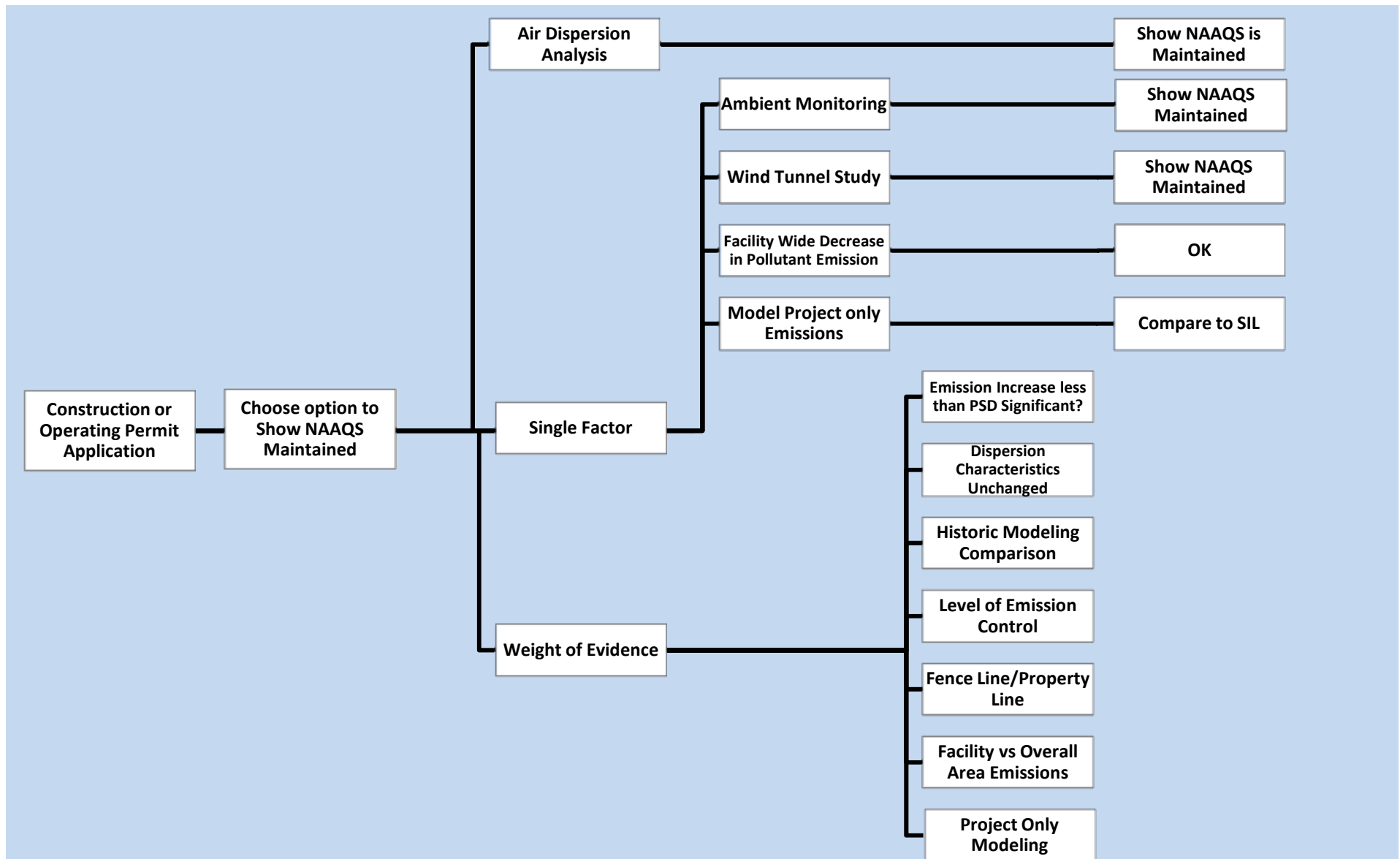
- The level of the emissions increase
  - in comparison to the de minimis thresholds or PSD significance thresholds,
  - in comparison to the facility PTE or area-wide emissions inventory, and/or
  - in comparison to previous NAAQS evaluations.
- The location of the construction or modification
  - in an attainment or unclassifiable area,
  - in relation to other pollutant-emitting activities or industrial sources,
  - in relation to ambient monitoring stations, and/or
  - in relation to potentially sensitive receptors.
- The nature of the source or emissions unit

Chad Woods Presentation: [http://www.adeg.state.ar.us/air/planning/naaqs\\_sip/pdfs/concepts\\_for\\_minor\\_nsr\\_evaluations\\_2-24-2015.pdf](http://www.adeg.state.ar.us/air/planning/naaqs_sip/pdfs/concepts_for_minor_nsr_evaluations_2-24-2015.pdf)

# Facility Determines Approach



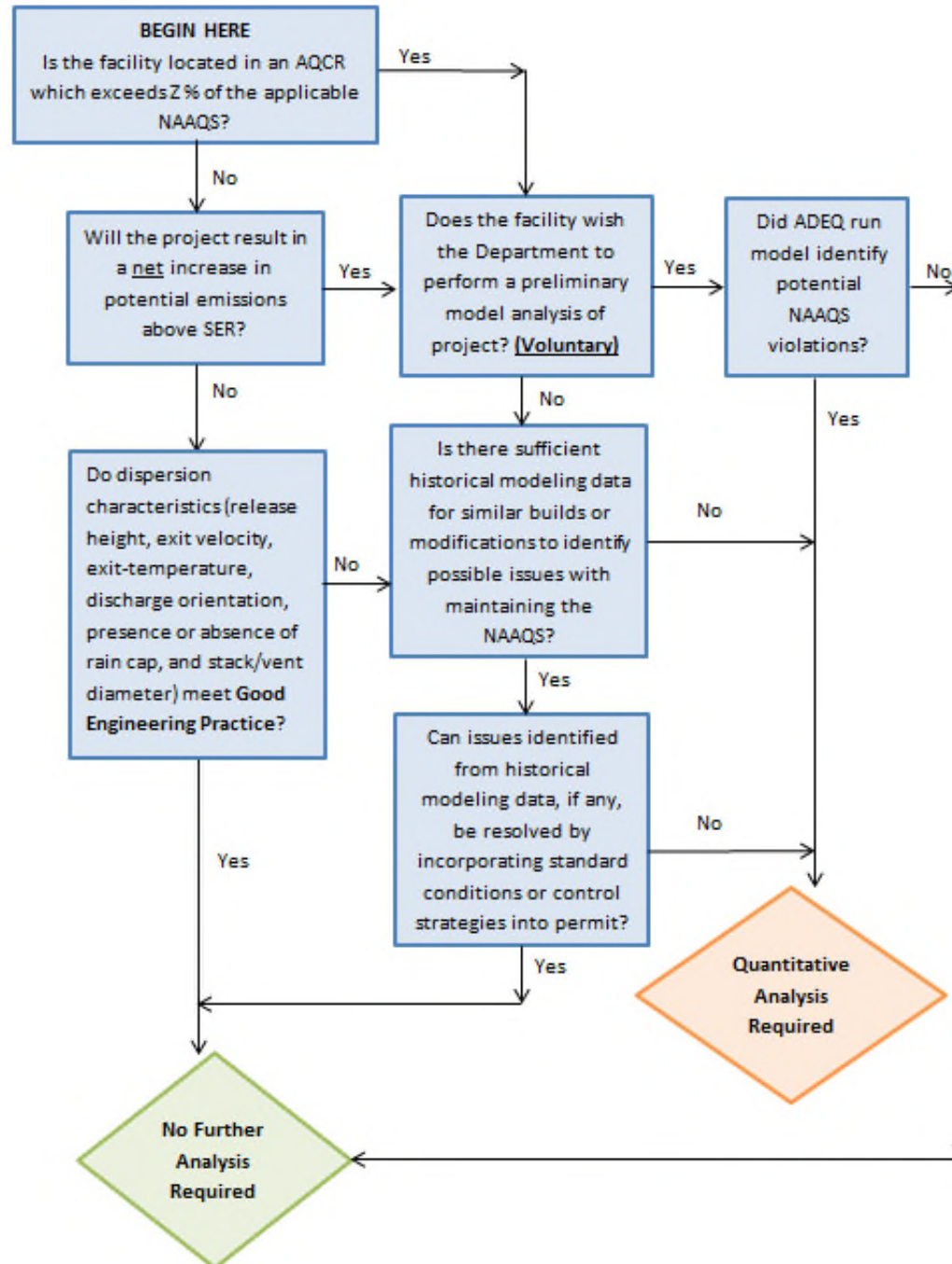
# Review of South Carolina Guidance



# XYZ Approach

- For a significant overall emission increase:
  - emissions greater than **X** tons per year of a Criteria Pollutant,
  - at a location where the background monitored design value is greater than **Z**% of the NAAQS,
  - ADEQ would conduct **Y**, a more robust NAAQS NSR which may include:
    - an evaluation of design value trends,
    - proximity of the proposed emissions increase to other significant sources of the specified pollutant,
    - and/or facility air dispersion modeling.

# ADEQ Potential Minor NSR Flowchart





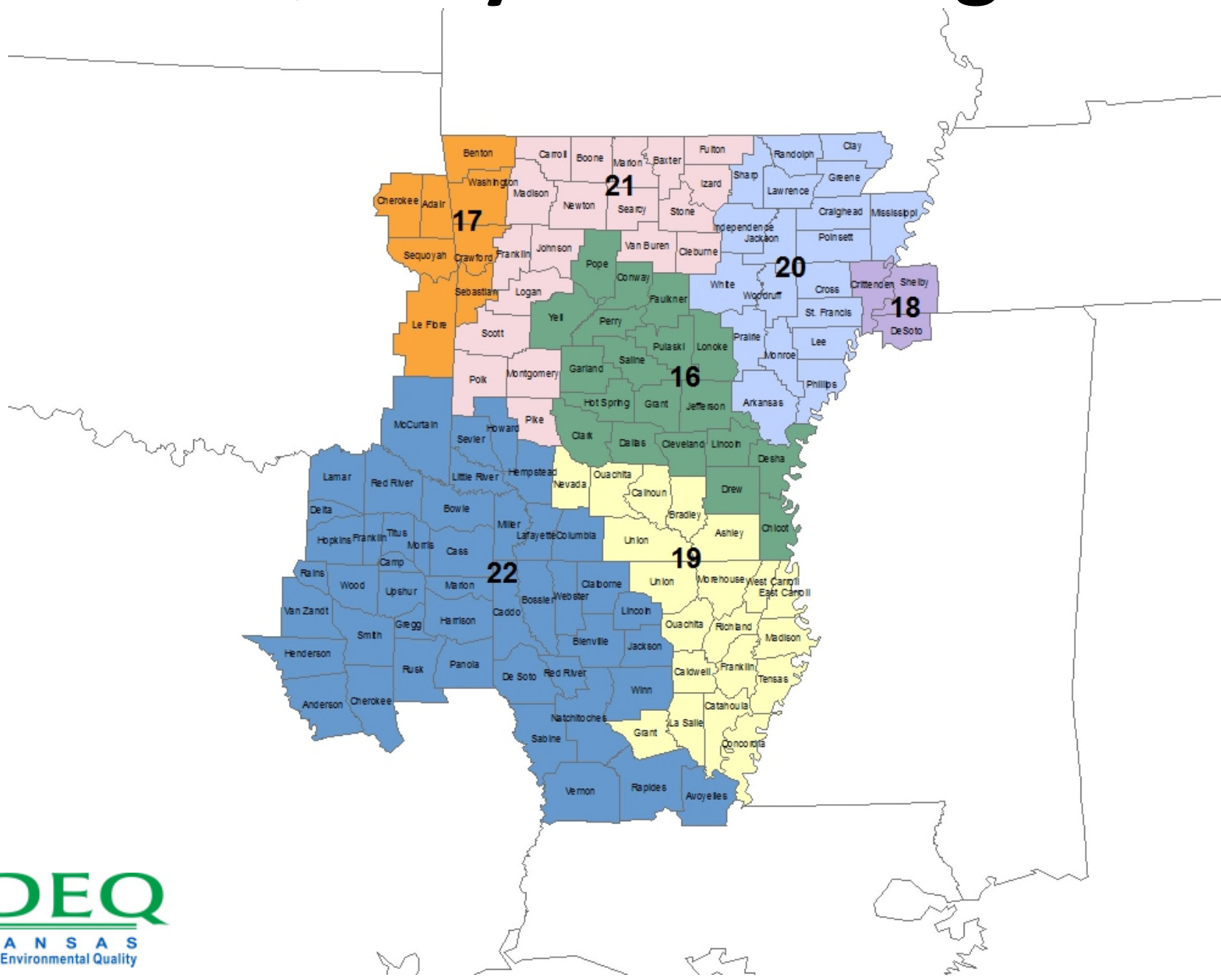
# Additional Considerations

- How should X be determined?
  - SER?
  - Other?
- How should Z be determined?
  - Should it be different for each Criteria Pollutant?
  - How to incorporate multiple monitors in an AQCR?

# ADEQ Responsibilities

- Regional modeling on 3-year continuous basis
- Emission inventory updates as available
  - Type A:  $\geq 2500$  tpy  $\text{SO}_x$ ,  $\text{NO}_x$ , or CO, 250 tpy VOC's,  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$  or  $\text{NH}_3$
  - Type A: File every year
  - Type B:  $\geq 1000$  tpy CO, 100 tpy  $\text{SO}_x$ ,  $\text{NO}_x$ , VOC's,  $\text{PM}_{10}$ ,  $\text{PM}_{2.5}$  or  $\text{NH}_3$ ,  
or  $\geq 5$  tpy Pb
  - Type B: File every 3 years starting 2005
- NAAQS SIP updates
- Maintain electronic data by county & AQCR

# Air Quality Control Regions



# Multistate Considerations

- AQCR 16: N/A
- AQCR 17: Oklahoma
- AQCR 18: Mississippi, Tennessee
- AQCR 19: Louisiana
- AQCR 20: N/A
- AQCR 21: N/A
- AQCR 22: Louisiana, Oklahoma, Texas

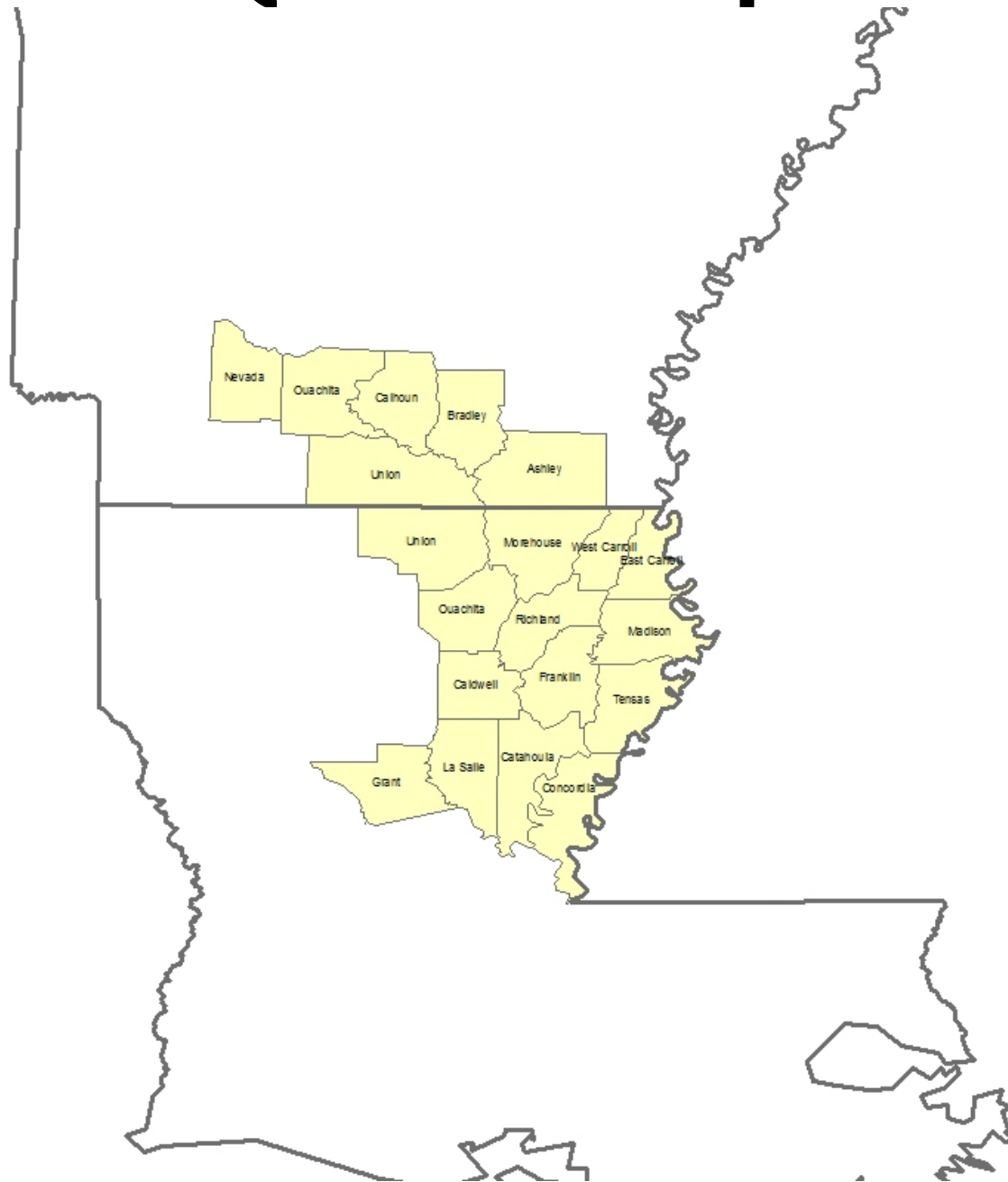
# Weight of Evidence

- Air quality data
- Emissions and emissions-related data
- Emissions controls
- Economic trends/urban growth patterns
- Meteorology/transport
- Geography/topography/jurisdictional

# Pollutant-Specific Example

- Pollutant: NO<sub>x</sub>
- Location: AQCR 19
  - Arkansas: Ashley, Bradley, Calhoun, Nevada, Ouachita, & Union counties
  - Louisiana: 14 parishes including most of the Monroe-Ruston-Bastrop Combined Statistical Area (Ruston/Lincoln Parish is in AQCR 22)

# AQCR 19 Map



# Population Trends for Arkansas Counties Within AQCR 19

	2010 Population	2013 Estimated Population	Change
State of Arkansas	2,915,958	2,958,765	+1.5%
Ashley County	21,853	21,283	-2.6%
Bradley County	11,508	11,249	-2.3%
Calhoun County	5,368	5,241	-2.4%
Nevada County	8,997	8,799	-2.2%
Ouachita County	26,121	25,002	-4.3%
Union County	41,639	40,694	-2.3%

U.S. Census Bureau: [Quickfacts.census.gov/qfd/index/html](https://www.census.gov/quickfacts/census.gov/qfd/index/html)



# Population Trends for Louisiana Parishes Within AQCR 19

	2010 Population	2013 Estimated Population	Change
State of Louisiana	4,533,479	4,629,284	+2.1%
Caldwell Parish	10,132	9,989	-1.4%
Catahoula Parish	10,407	10,238	-1.6%
Concordia Parish	20,822	20,442	-1.8%
East Carroll Parish	7,759	7,529	-3.0%
Franklin Parish	20,767	20,571	-0.9%
Grant Parish	22,309	22,03	-1.3%
LaSalle Parish	14,890	14,777	-0.8%
Madison Parish	12,093	11,927	-1.4%
Morehouse Parish	27,979	27,057	-3.3%
Ouachita Parish	153,720	156,220	+1.6%
Richland Parish	20,725	20,857	+0.6%
Tensas Parish	5,252	4,908	-6.5%
Union Parish	22,721	22,344	-1.7%
West Carroll Parish	11,604	11,465	-1.2%

U.S. Census Bureau: [Quickfacts.census.gov/qfd/index/html](http://Quickfacts.census.gov/qfd/index/html)

# Daily Vehicle Miles of Travel 2008-2014: Arkansas Within AQCR 19

Arkansas State Average	+4.82%
Ashley County	+3.41%
Bradley County	+1.03%
Calhoun County	-1.02%
Nevada County	-2.13%
Ouachita County	-2.99%
Union County	+1.09%

Arkansas Highway and Transportation Department:

[http://www.arkansashighways.com/planning\\_research/technical\\_services/technical\\_services.aspx](http://www.arkansashighways.com/planning_research/technical_services/technical_services.aspx)

# Traffic Counts on State Maintained Highways for the Two Most Recent Data Sets Available: Louisiana Within AQCR 19

Caldwell Parish	+5.84
Catahoula Parish	-9.95%
Concordia Parish	+12.06%
East Carroll Parish	-0.23%
Franklin Parish	-5.73%
Grant Parish	+11.60%
LaSalle Parish	+17.93%
Madison Parish	+13.07%
Morehouse Parish	-14.43%
Ouachita Parish	-2.68%
Richland Parish	+32.92%
Tensas Parish	+6.43%
Union Parish	-21.71%
West Carroll Parish	+5.86%

Louisiana Department of Transportation and Development:

[http://wwwsp.dotd.la.gov/Inside\\_LaDOTD/Divisions/Multimodal/Data\\_Collection/Pages/Traffic-Monitoring.aspx](http://wwwsp.dotd.la.gov/Inside_LaDOTD/Divisions/Multimodal/Data_Collection/Pages/Traffic-Monitoring.aspx)

# Manufacturing Job Growth 2000-2009: Arkansas Within AQCR 19

Ashley County	-4.8%
Bradley County	-1.7%
Calhoun County	-3.0%
Nevada County	+2.2%
Ouachita County	-10.7%
Union County	-5.5%
<b>State Average</b>	<b>-4.6%</b>

University of Arkansas at Little Rock College of Business – Institute for Economic Advancement:

[http://www.aiea.ualr.edu/pubs/10\\_05\\_10\\_StateNCounty\\_NWayman.pdf](http://www.aiea.ualr.edu/pubs/10_05_10_StateNCounty_NWayman.pdf)

# Average Covered Total Employment Growth 2000-2009: Arkansas Within AQCR 19

Ashley County	-2.6%
Bradley County	-0.1%
Calhoun County	-0.5%
Nevada County	-0.8%
Ouachita County	-0.5%
Union County	-1.7%

University of Arkansas at Little Rock College of Business – Institute for Economic Advancement:  
[http://www.aiea.ualr.edu/pubs/10\\_05\\_10\\_StateNCounty\\_NWayman.pdf](http://www.aiea.ualr.edu/pubs/10_05_10_StateNCounty_NWayman.pdf)

Covered employment is employment subject to Arkansas Employment Security Law when an employer has one or more employees in each of 10 days during the current or preceding calendar year. Employment excluded from coverage includes agriculture, self-employed, unpaid family workers, interstate railroads, domestics, insurance and real estate agents who are on commission only, and employees of churches and religious organizations, except schools.

# For Additional Information Contact:

**Tony Davis**

Air Planning Branch Manager

Arkansas Department of Environmental Quality

(501) 682-0728

[davisa@adeq.state.ar.us](mailto:davisa@adeq.state.ar.us)