

# 2010 1-hour Sulfur Dioxide (SO<sub>2</sub>) Standard: December 2020 Designations

## Proposed Area Boundary Recommendations

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Prepared for the Missouri Air Conservation Commission  
Public Hearing  
March 26, 2020

# Overview

- Clean Air Act Designations Process
- Implementation - 2010 SO<sub>2</sub> Standard
- EPA's Round 4 Designations Guidance
- Technical Analysis
- Recommendation Summary
- Timeline

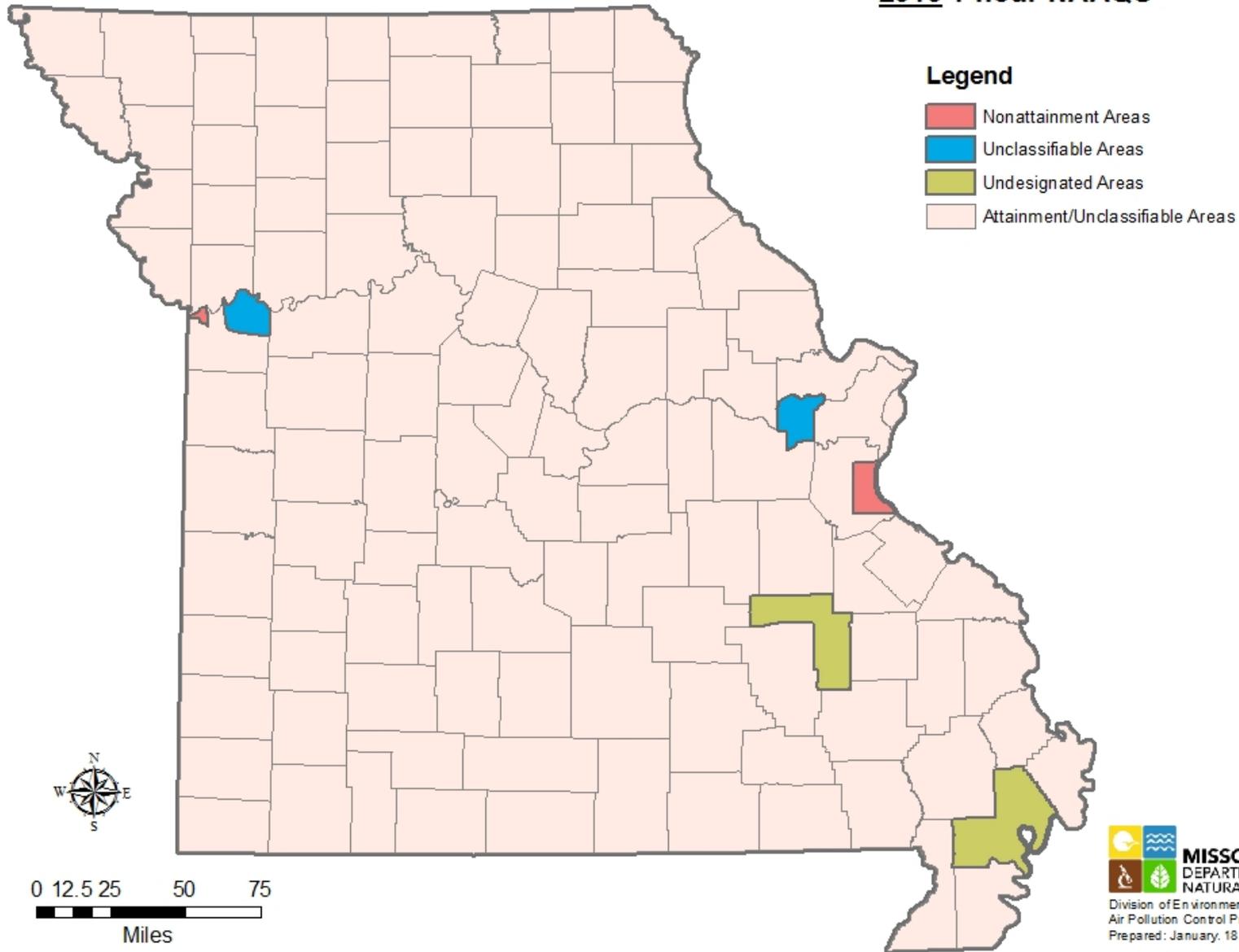
# Clean Air Act Designations Process

- When EPA revises a standard, EPA must identify or "designate" areas as meeting or not meeting the standard
- States provide input to EPA through boundary recommendations based on technical evaluations of available data
- EPA provides feedback to states 120 days prior to final designations, "120-day letters"

# Implementation – 2010 SO<sub>2</sub> Standard

- 2010 1-hour Standard set at 75 ppb
- State submitted recommendations for entire state in April 2013
  - EPA completed first round based on existing monitoring data on August 5, 2013
- March 2015 Federal Consent Decree
  - EPA completed second round on June 30, 2016;
  - EPA completed third round on December 31, 2017; and
  - EPA plans to complete fourth round by December 31, 2020.

# SO<sub>2</sub> NAAQS Area Designations (2010 1-hour) 2010 1-hour NAAQS



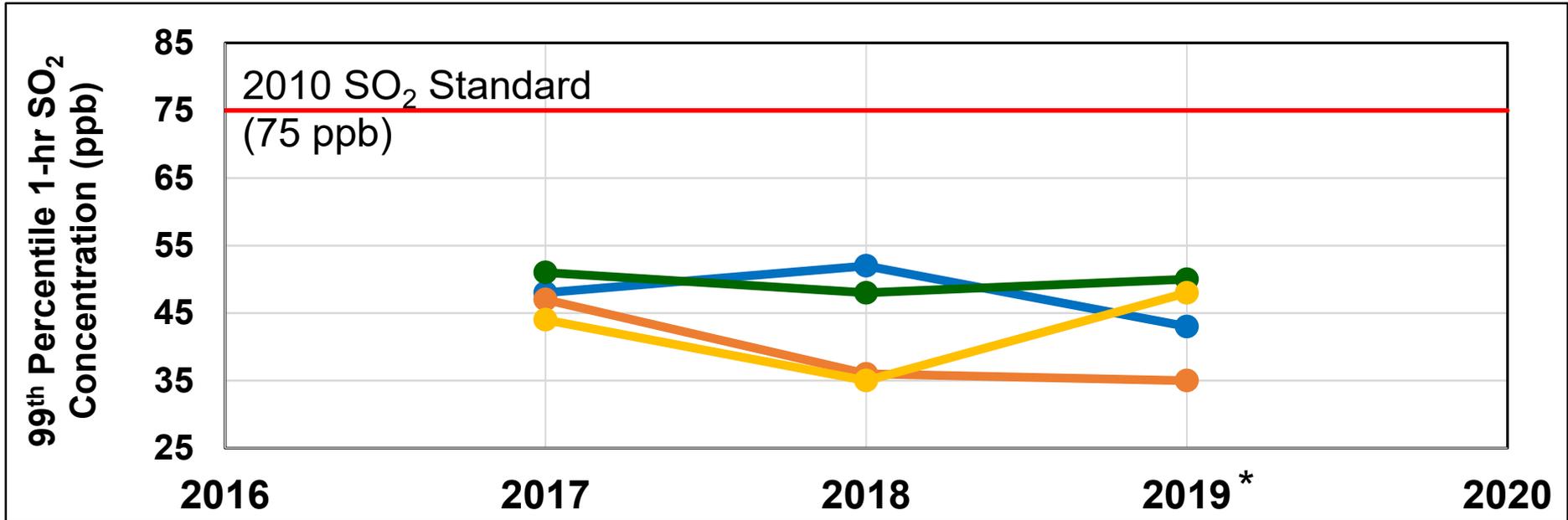
# EPA's Round 4 Designations Guidance

- Designations based on 2017-2019 monitoring data at newly installed SO<sub>2</sub> monitors (80 FR 51052)
- For violating monitors, states may use modeling to evaluate boundaries as part of a 5-factor technical analysis:
  1. Monitoring/Modeling data
  2. Emissions information
  3. Meteorology
  4. Topography
  5. Jurisdictional boundaries

# Technical Analysis – Areas Evaluated

- Iron County
  - ✓ Doe Run – Buick
- New Madrid County
  - ✓ Magnitude 7 Metals
  - ✓ Associated Electric Cooperative Inc. (AECI) –  
New Madrid Power Plant

# Technical Analysis – Monitoring Data (Iron County)



Monitoring Site	Graph Legend	3-Year Design Value (2017-2019*)
Buick Northeast (state site)		48
County Road 75		39
Hwy 32 Northeast		50
West Entrance		42

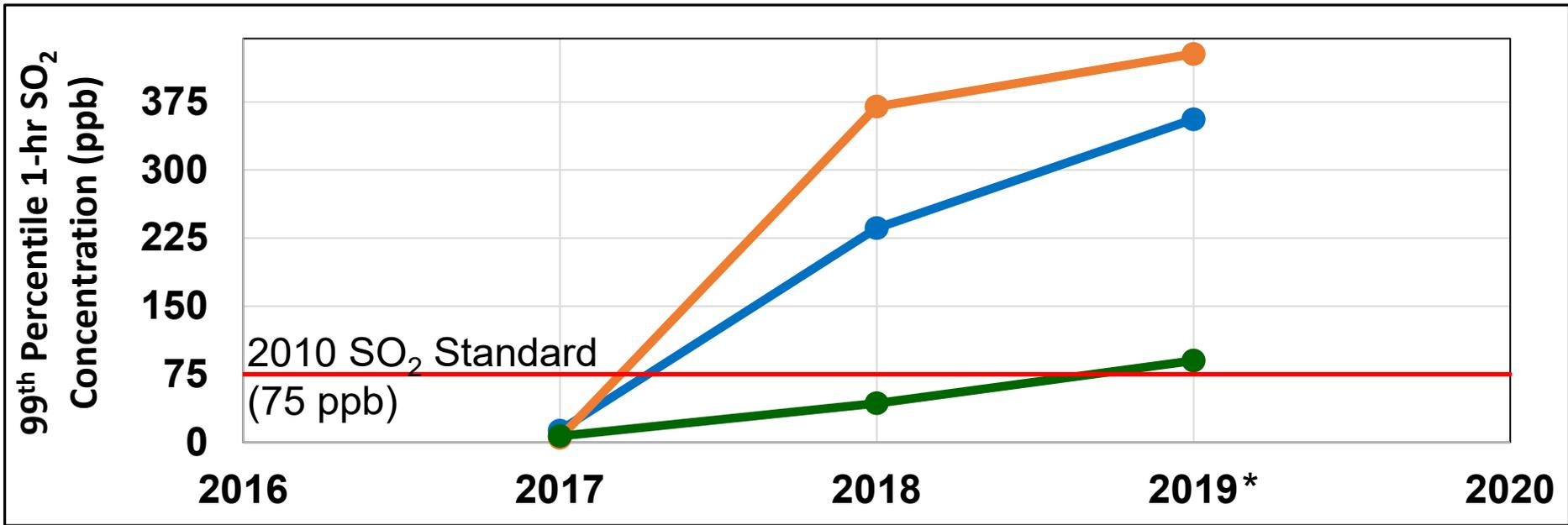
\*2019 monitoring data is preliminary, and has not yet been quality assured or certified

# Technical Analysis – Proposed Recommendation (Iron County)

- Monitors all in compliance with SO<sub>2</sub> standard
- No further 5-factor evaluation needed
- All of Iron County is recommended for attainment/unclassifiable

# Technical Analysis – Monitoring Data

## (New Madrid County)



Monitoring Site	Graph Legend	3-Year Design Value (2017-2019*)
AECI Water Tower		202
East Graveyard		268
West Entrance		47

\*2019 monitoring data is preliminary, and has not yet been quality assured or certified

# Technical Analysis – Modeling (New Madrid County)

- The analysis specifically modeled two sources -
  - New Madrid Power Plant
  - Magnitude 7 Metals
- New Madrid Power Plant emissions based on continuous emissions monitoring system (CEMS) data
- Magnitude 7 Metals emissions based on mass balance worksheets

# Technical Analysis (Modeling Scenarios)

The air program modeled six scenarios to inform the recommended nonattainment boundary

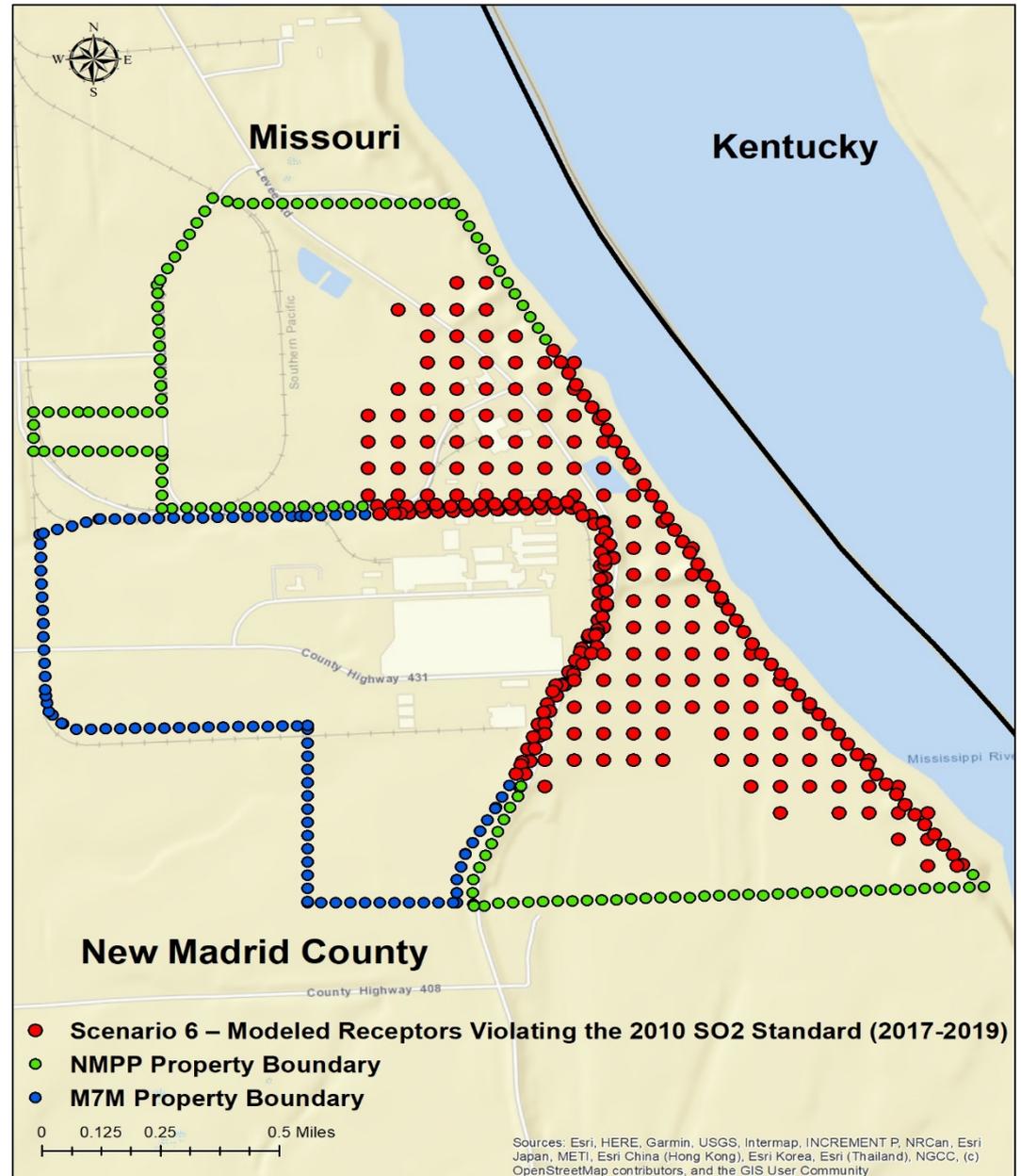
Modeling Scenarios	Purpose
Scenarios 1-3	Determine best way to characterize Magnitude 7 Metals emissions in 2018
Scenarios 4-5	Determine best way to characterize Magnitude 7 Metals emissions in 2019
Scenario 6*	Model 2017-2019 area design values to inform the recommended boundary

\* Scenario 6 – Conservative case, assumes continuous operation at Magnitude 7 Metals during each of the three years (2017-2019).

# Technical Analysis - Modeled Design Values (New Madrid County)

2017-2019  
Modeled Design  
Value: 425 ppb

Based on conservative  
(worst case) scenario -  
assumes three full years  
of continuous operation  
at Magnitude 7 Metals



# Technical Analysis - Other Factors (New Madrid County)

## Second Factor: Emissions-related data

- Determine all nearby sources contributing to the violation

## Third Factor: Meteorological Data

- Nearby airport data used in modeling

## Fourth Factor: Geography/topography

- Consider any unusual terrain in area

# Technical Analysis - Other Factors, cont'd (New Madrid County)

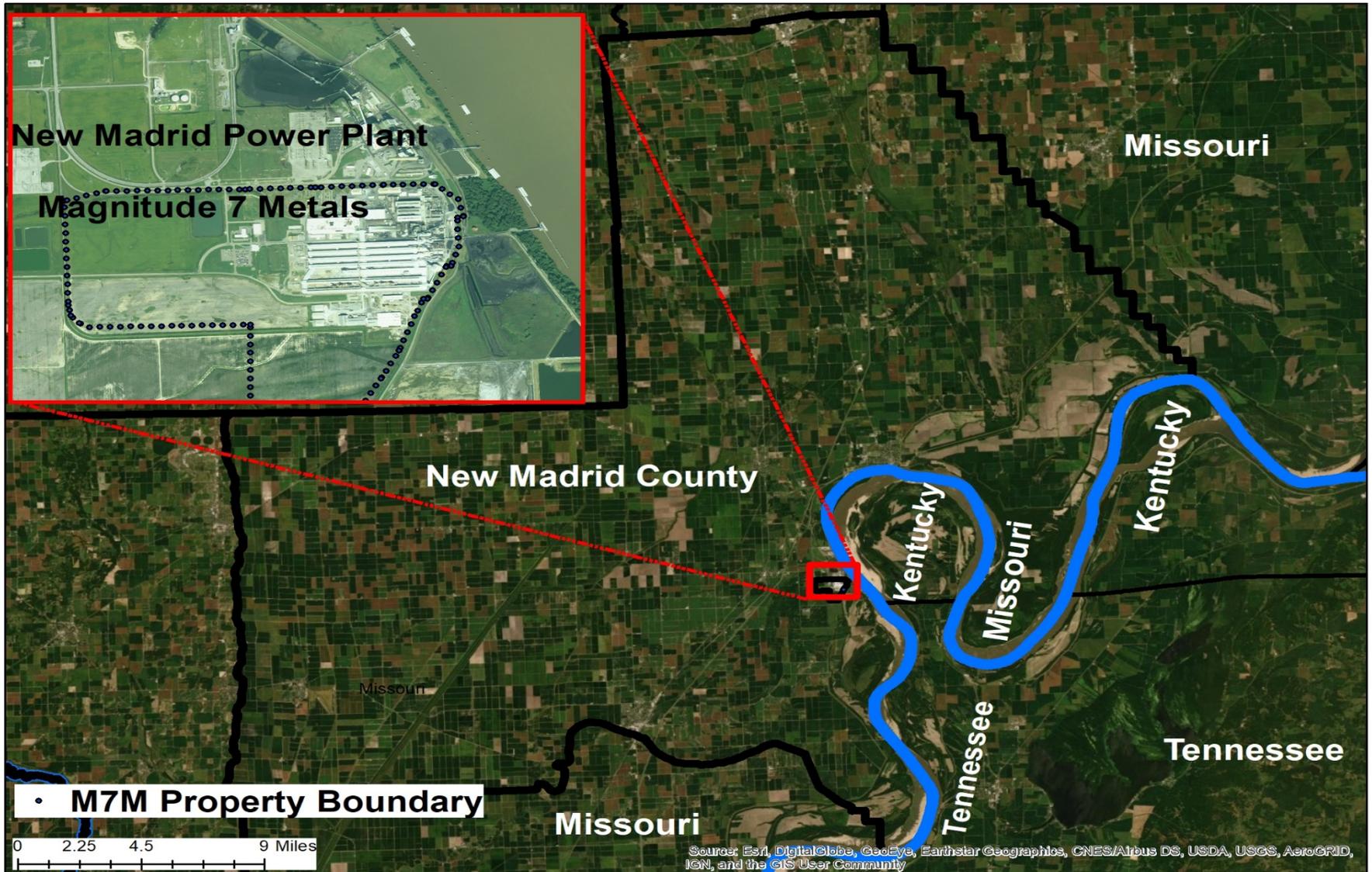
## Emissions data (New Madrid County)

Source ID	Source Name	2018 SO <sub>2</sub> Emissions (ton)
143-0004	New Madrid Power Plant	14,866
143-0008	Magnitude 7 Metals	1,772
143-0015	SRG Global Coatings, Inc.	0.03
143-0025	Heartland Asphalt Materials New Madrid	0.44
143-0062	Bunge North America Inc. Linda Elevator	0.32
143-0078	Nutrien, Inc.	0.01
143-0083	Southeast Missouri Crematory	0.01
143-0074	ADM Grain Company	0.003
143-0066	Riceland Food Inc.	0.003

# Technical Analysis - Other Factors, cont'd

(New Madrid County)

Geography/Topography

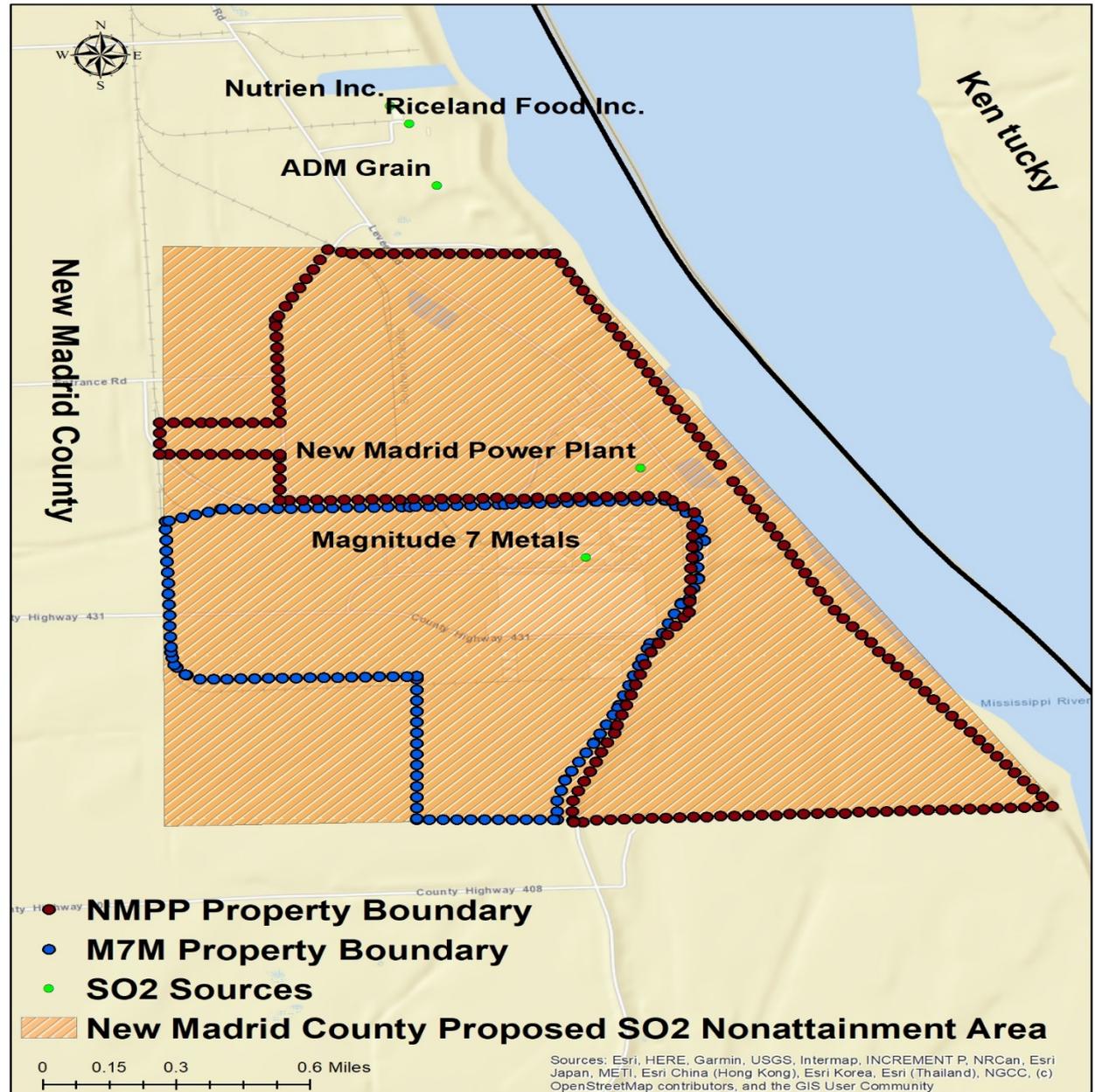


# Technical Analysis - Other Factors, cont'd (New Madrid County)

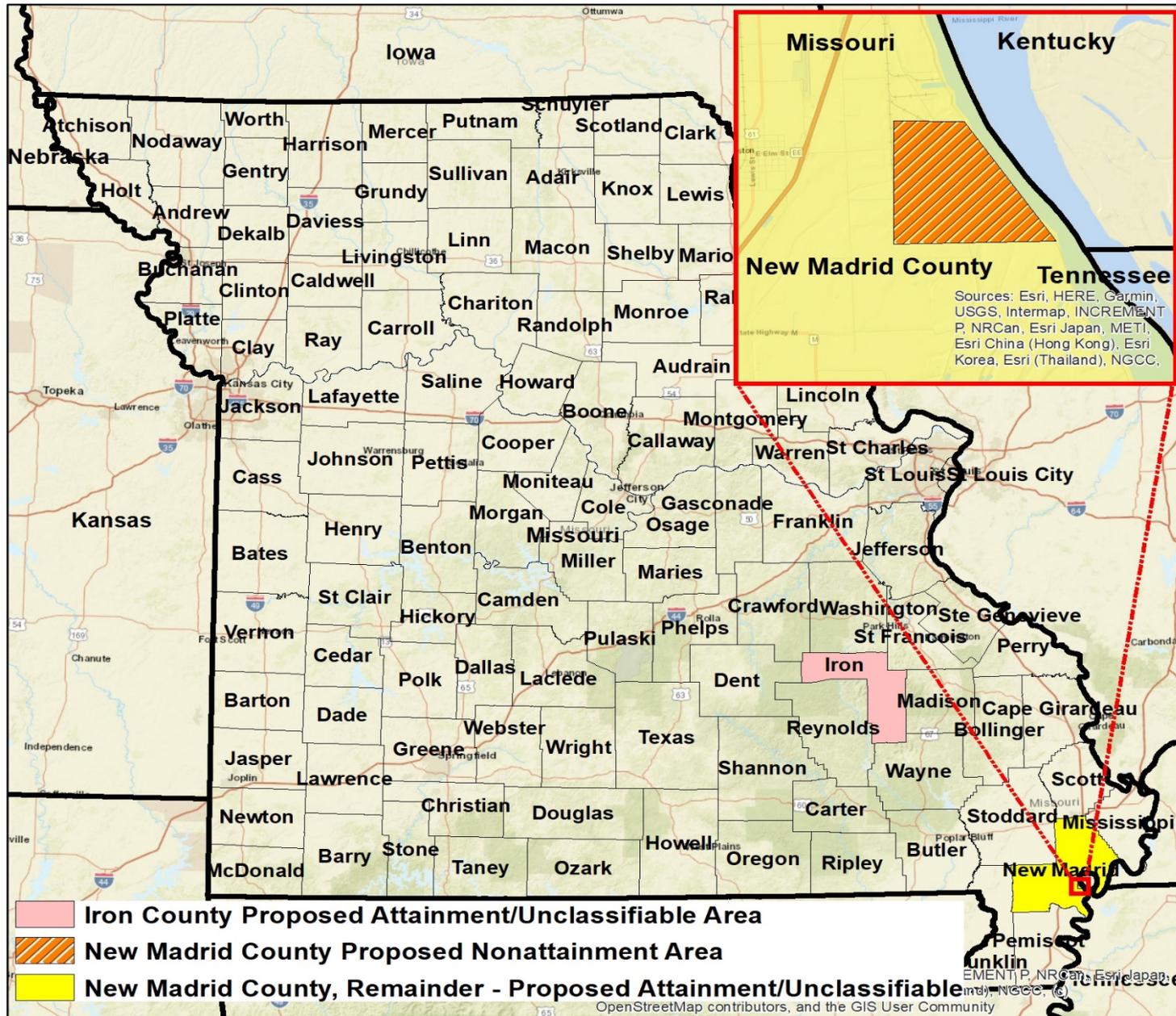
## Fifth Factor: Jurisdictional Boundaries

- County boundary is easily identifiable
- Guidance allows for smaller boundaries based on five-factor analysis –
  - e.g. Townships, ranges, rivers, highways, or geographical coordinates

# Technical Analysis – Proposed Recommendation (New Madrid County)



# Recommendation Summary (cont'd)



# Recommendation Summary

Affected Sources	Area Boundary	Area Designation Recommendation
Magnitude 7 Metals and New Madrid Power Plant	Area encompassing the property boundaries of these two facilities	Nonattainment
	Remainder of New Madrid County	Attainment/unclassifiable
Doe Run – Buick Resource Recycling Facility	Iron County	Attainment/unclassifiable

# Timeline

Mar. 26, 2020

- Public hearing before the commission

Apr. 2, 2020

- Close of public comment period

Apr. 29, 2020

- Propose for adoption by commission

May. 1, 2020

- Submit recommendation to EPA

Aug. 13, 2020

- EPA sends “120-day” letters to states

Oct. 16, 2020

- States respond to “120-day” letters

Dec. 31, 2020

- Final round of designations

# Questions?

**Reminder:** Close of public comment is on April 2, 2020

Air Pollution Control Program

Air Quality Planning Section

Email: [apcpsip@dnr.mo.gov](mailto:apcpsip@dnr.mo.gov)

Phone: 573-751-4817