

Air Pollution Control Program Air Quality Planning Update

November 6, 2024

Mark Leath, P.E.

Air Pollution Control Program

Air Quality Planning Section

Overview

- Boundary Designation Process for the 2024 PM_{2.5} Standard
- Bump Up to Serious Classification for the St. Louis Ozone Nonattainment Area
- Status on Missouri's Good Neighbor Plans/Obligations for the 2015 Ozone Standard

2024 PM_{2.5} Boundary Designations

2024 PM_{2.5} Boundary Designations

Final Rule Actions

- EPA revised the primary (health-based) annual standard for fine particles (PM_{2.5}) – signed February 7, 2024 (published March 6, 2024)
 - Lowered from 12.0 to 9.0 micrograms per cubic meter (µg/m³)
 - Based on a design value calculated using three-year annual average
- EPA retained all other existing PM standards:
 - Primary and secondary 24-hr PM_{2.5}
 - Secondary annual PM_{2.5}
 - Primary and secondary 24-hr PM₁₀

2024 PM_{2.5} Boundary Designations

Clean Air Act Timeline – Section 107(d)

- Within one year after a new or revised standard is promulgated states submit recommendations to EPA for all areas of the state
- EPA provides states intended designations 120-days prior to promulgating final designations (120-day letters)
- States have 60 days to respond to 120-day letters
- EPA must finalize designations within 2 years after promulgating a new or revised standard (can be extended 1 year if insufficient data is available)

2024 PM_{2.5} Boundary Designations

Designation Options

- Missouri designations codified at 40 CFR 81.326 for all standards
- Nonattainment – areas not meeting the standard and nearby areas contributing to the violation
- Attainment – areas meeting the standard and not contributing to a nearby violation
- Unclassifiable – areas where insufficient information is available to determine if an area is meeting or not meeting the standard

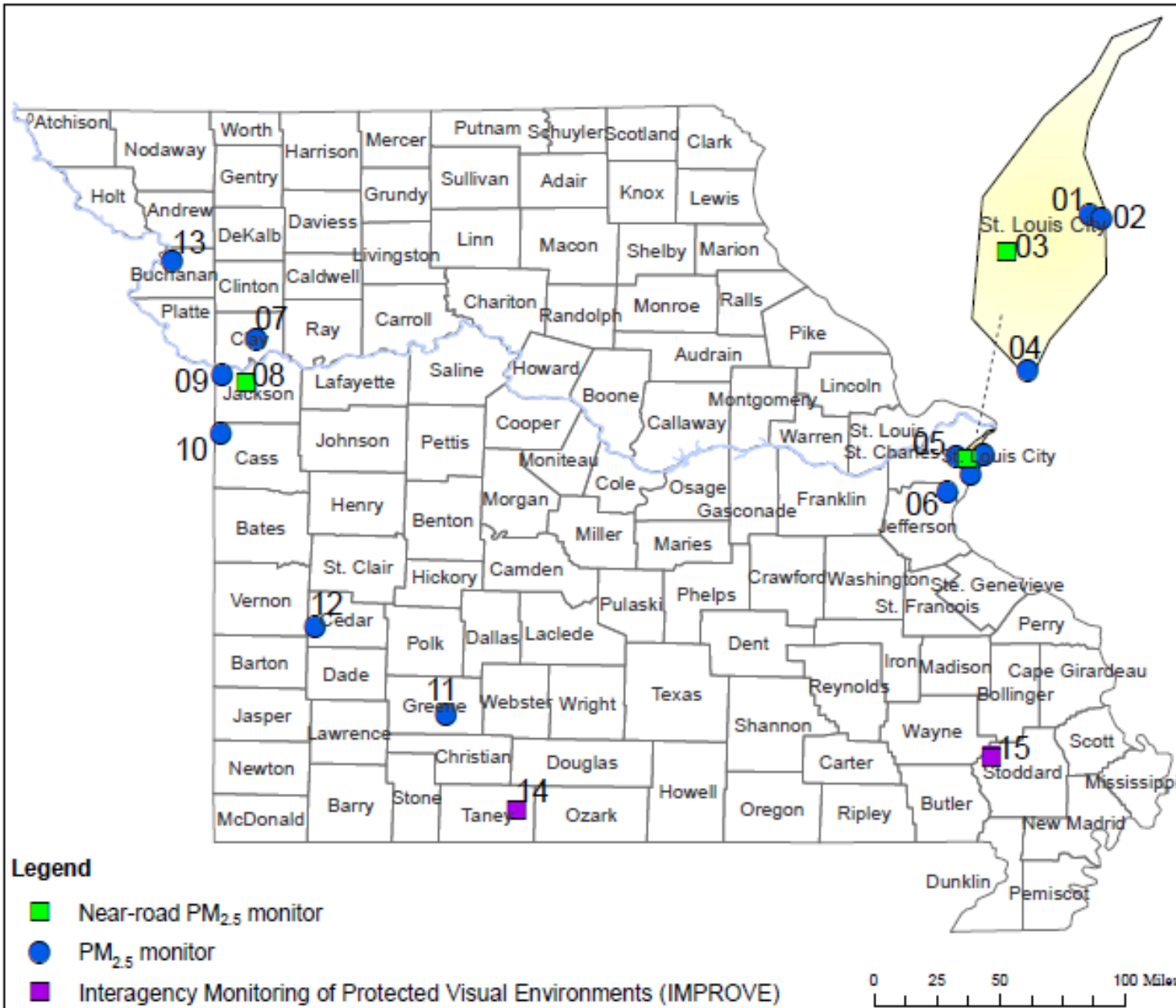
(In practice, for initial designations EPA traditionally designates areas either nonattainment, attainment/unclassifiable, or unclassifiable, and it only uses the attainment designation for areas that have been redesignated from nonattainment to attainment - A.K.A. maintenance areas.)

2024 PM_{2.5} Boundary Designation

PM_{2.5} Boundary Designation Guidance

- Air program will utilize EPA's February 7, 2024, document "Memorandum on the Area Designations for the 2024 Revised Annual PM_{2.5} NAAQS"
- Core based statistical area (CBSA) is starting point for evaluation but no presumptive nonattainment boundary
- Five-Factor Analysis
 - Air quality (monitoring) data
 - Emissions and emissions-related data
 - Meteorological data
 - Geography/Topography
 - Jurisdictional boundaries

Missouri's PM_{2.5} Monitoring Network, 2024



Site # Site Name

St. Louis Area

- 01 Blair Street
- 02 Branch Street**
- 03 Forest Park
- 04 South Broadway
- 05 Ladue

Kansas City Area

- 07 Liberty
- 08 Blue Ridge, I-70+
- 09 Troost
- 10 Richard Gebaur-South

Springfield Area

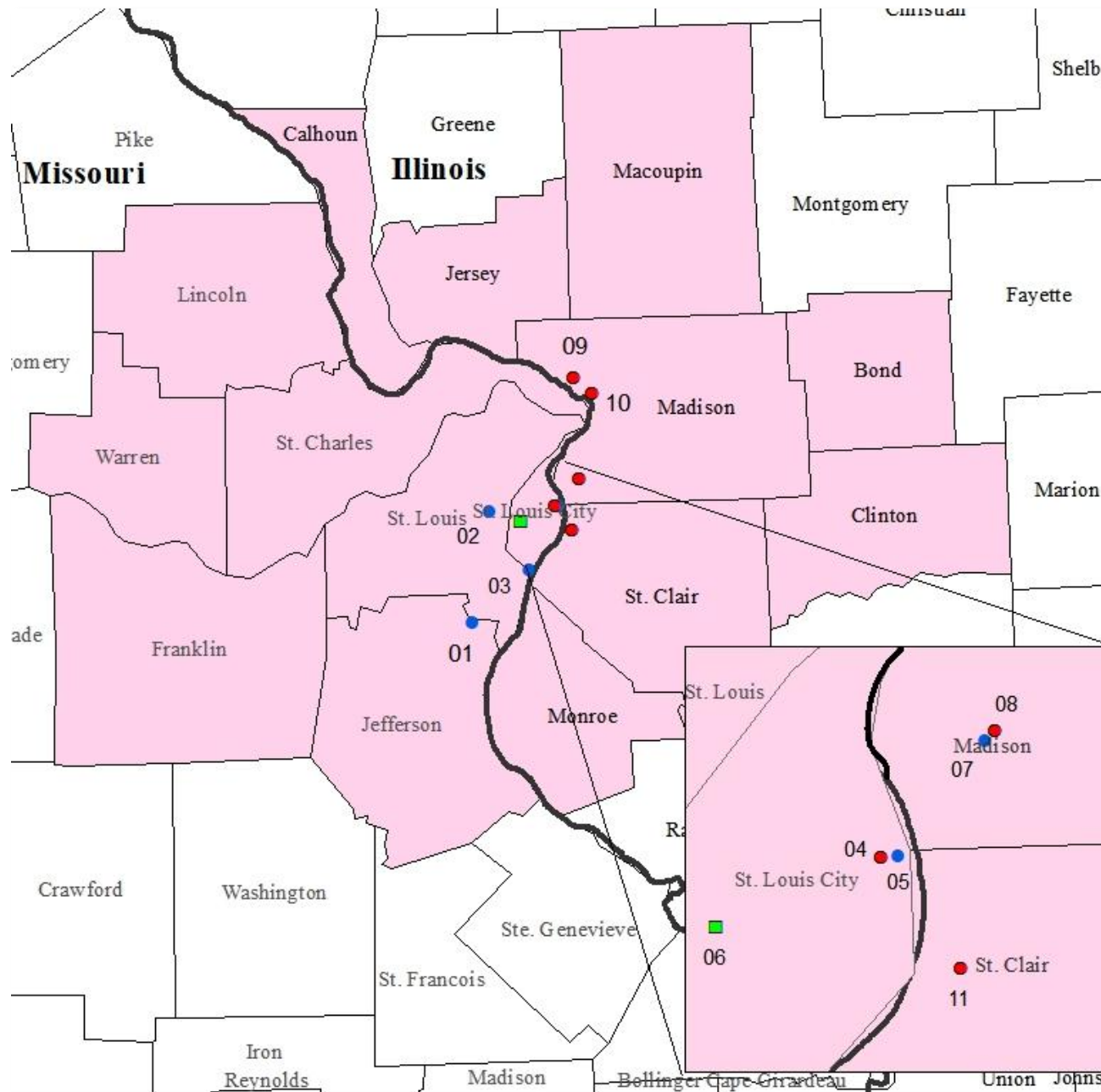
- 11 Hillcrest High School

Outstate Area

- 12 El Dorado Springs
- 13 St. Joseph Pump Station
- 14 Hercules Glades
- 15 Mingo

**Middle Scale (100 meters to 0.5 kilometers);
 Not to be compared to the annual standard
 +Discontinued monitor to be relocated

St. Louis MO/IL PM_{2.5} Monitors



Legend

- 2021-2023 Design Value PM_{2.5} Violating Monitor
- PM_{2.5} Monitor
- Near Road PM_{2.5} Monitor

Site # Site Name

St. Louis CBSA (MO-IL)

- 01. Arnold West
- 02. Ladue
- 03. South Broadway
- 04. Blair Street
- 05. Branch Street**
- 06. Forest Park

- 07. Gateway**, IL
- 08. Granite City, IL
- 09. Alton, IL
- 10. Wood River, IL
- 11. East St. Louis, IL

**** Middle Scale; Not to be compared to the annual standard
Value in red indicates violation of the annual standard**

St. Louis MO/IL PM_{2.5} Monitors

Monitor Name	County	2021	2022	2023	2021-2023 D.V.	2024 YTD *	2022-2024 YTD D.V. *
Arnold West	Jefferson	8.0	8.3	8.2	8.2	6.8 *	7.8 *
Blair Street	St. Louis City	9.2	8.2	11.3	9.6	8.1 *	9.2 *
Forest Park, I-64	St. Louis City	9.4	8.2	9.3	9.0	7.6 *	8.4 *
Ladue	St. Louis	7.0	6.7	7.9	7.2	6.2 *	6.9 *
South Broadway	St. Louis City	7.5	6.9	7.3	7.2	6.7 *	7.0 *

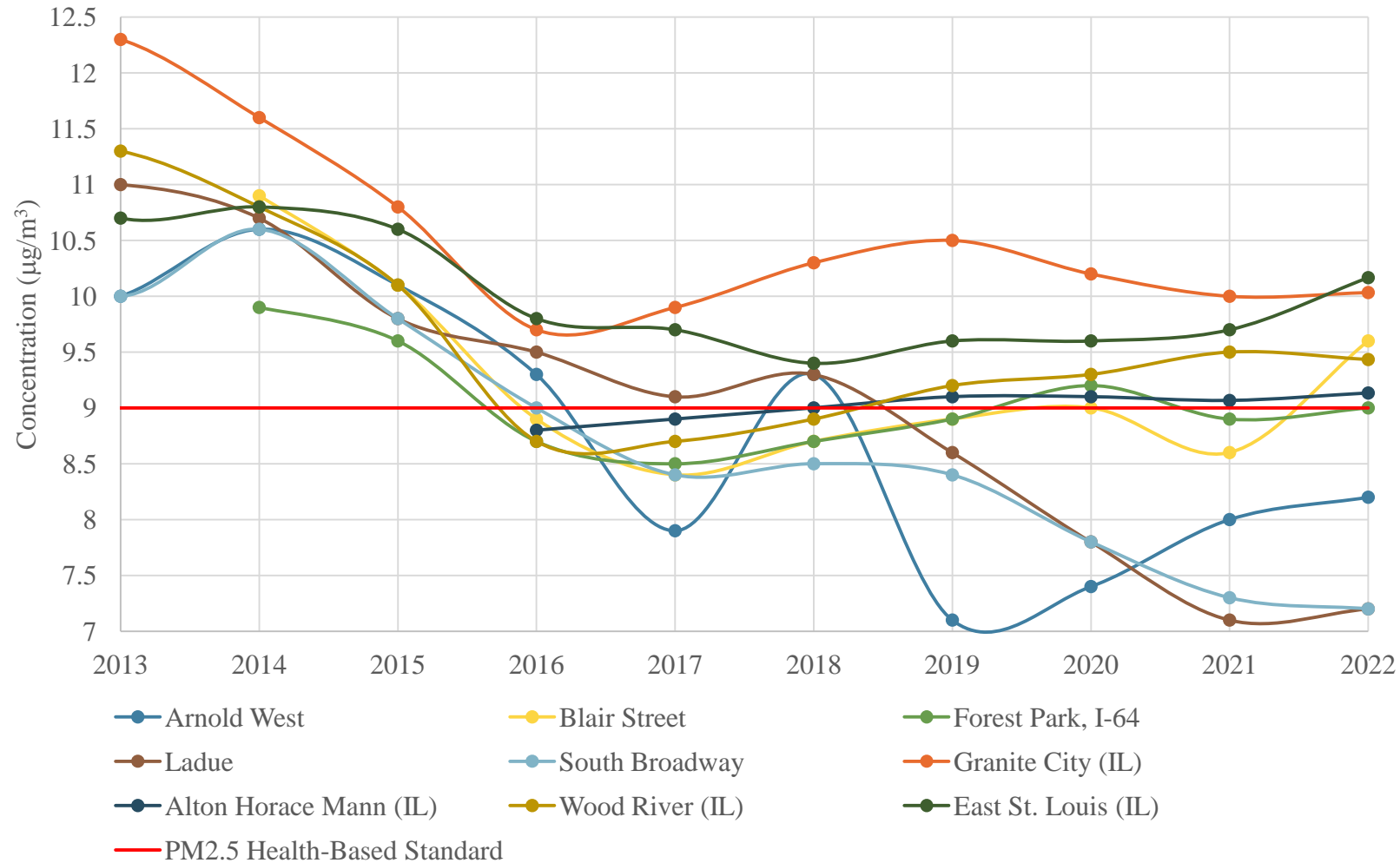
* 2024 is preliminary YTD through 10/27/24

Monitor Name	County	2021	2022	2023	2021-2023 D.V.	2024 YTD *	2022-2024 YTD D.V. *
Alton Horace Mann	Madison	9.3	8.9	9.2	9.1	6.5 *	8.2 *
Wood River	Madison	9.7	9.6	9.0	9.4	7.1 *	8.8 *
East St. Louis	St. Clair	10.2	9.3	10.8	10.1	9.1 *	9.7 *
Fire Station #1	Madison	10.0	10.1	10.4	10.2	9.1 *	9.9 *

* 2024 is preliminary YTD through 10/27/24

All values presented are $\mu\text{g}/\text{m}^3$

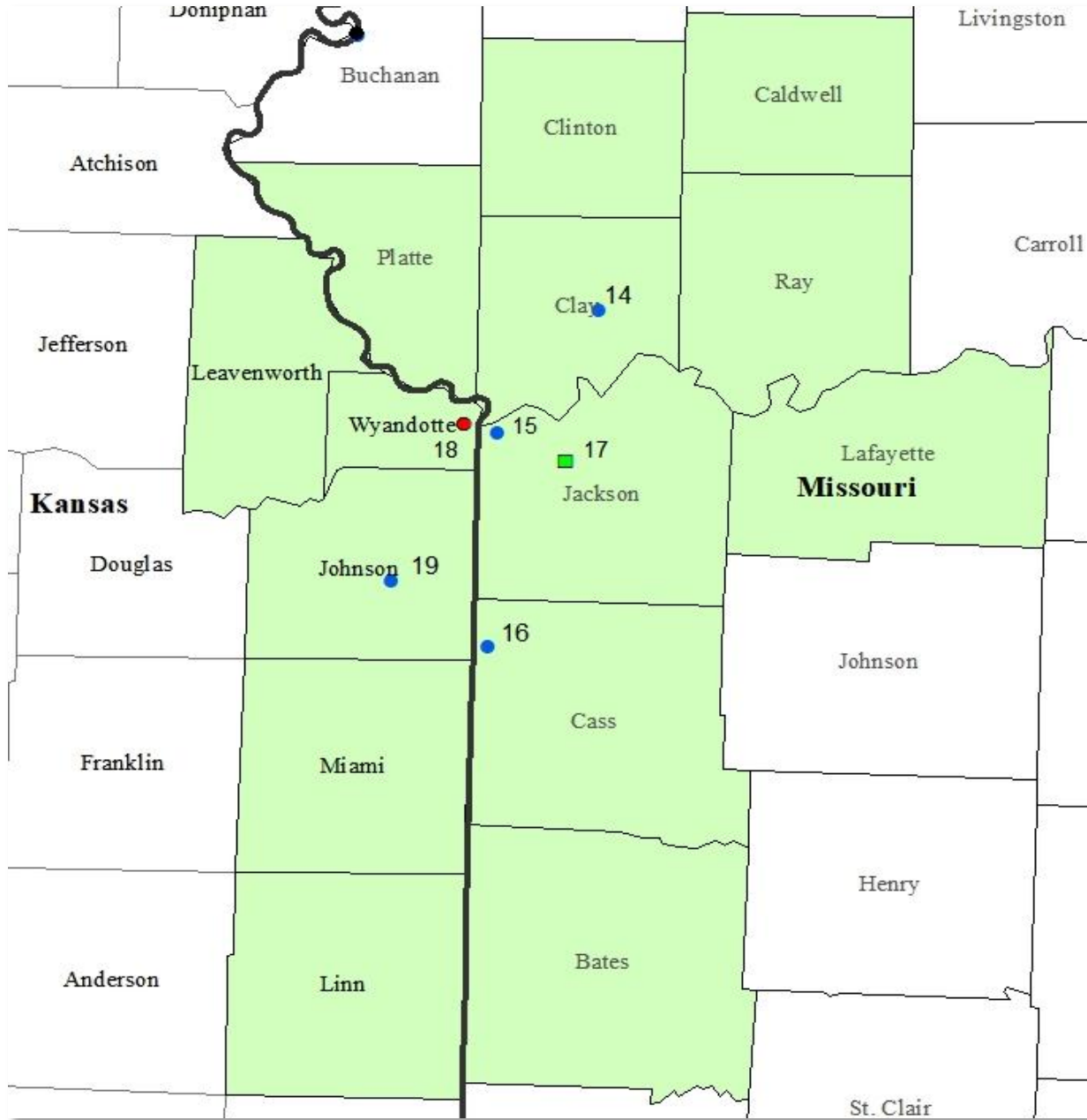
St. Louis (MO/IL) PM_{2.5} Design Value Monitor Trends



St. Louis Boundary Designation Analysis

- Blair Street violation based on 2021-2023 design value dictates St. Louis City to be recommended nonattainment
- Exceptional event preliminary feasibility analysis showed no regulatory significance for Blair Street violation
- Five-Factor analysis ongoing to determine nearby areas contributing to violations at Blair Street and the violating monitors in Illinois – starting point is the St. Louis CBSA

Kansas City MO/KS PM_{2.5} Monitors



Legend

- 2021-2023 Design Value PM_{2.5} Violating Monitor
- PM_{2.5} Monitor
- Near Road PM_{2.5} Monitor

Site # Site Name

Kansas City CBSA (MO-KS)

- 14. Liberty
- 15. Troost
- 16. Richards Gebaur- South
- 17. Blue Ridge, I-70+
- 18. JFK, KS
- 19. Heritage Park, KS

+ Site discontinued, to be relocated by 1/1/2024
Value in red indicates violation of the annual standard

Kansas City MO/KS PM_{2.5} Monitors

Monitor Name	County	2021	2022	2023	2021-2023 D.V.
Liberty	Clay	6.3	5.5	6.2	6.1
Richards Gebaur South	Cass	7.0	5.8	6.3	6.3
Troost	Jackson	7.7	6.9	8.2	7.6
Blue Ridge, I-70	Jackson	8.6	7.6	6.8 *	7.7 *

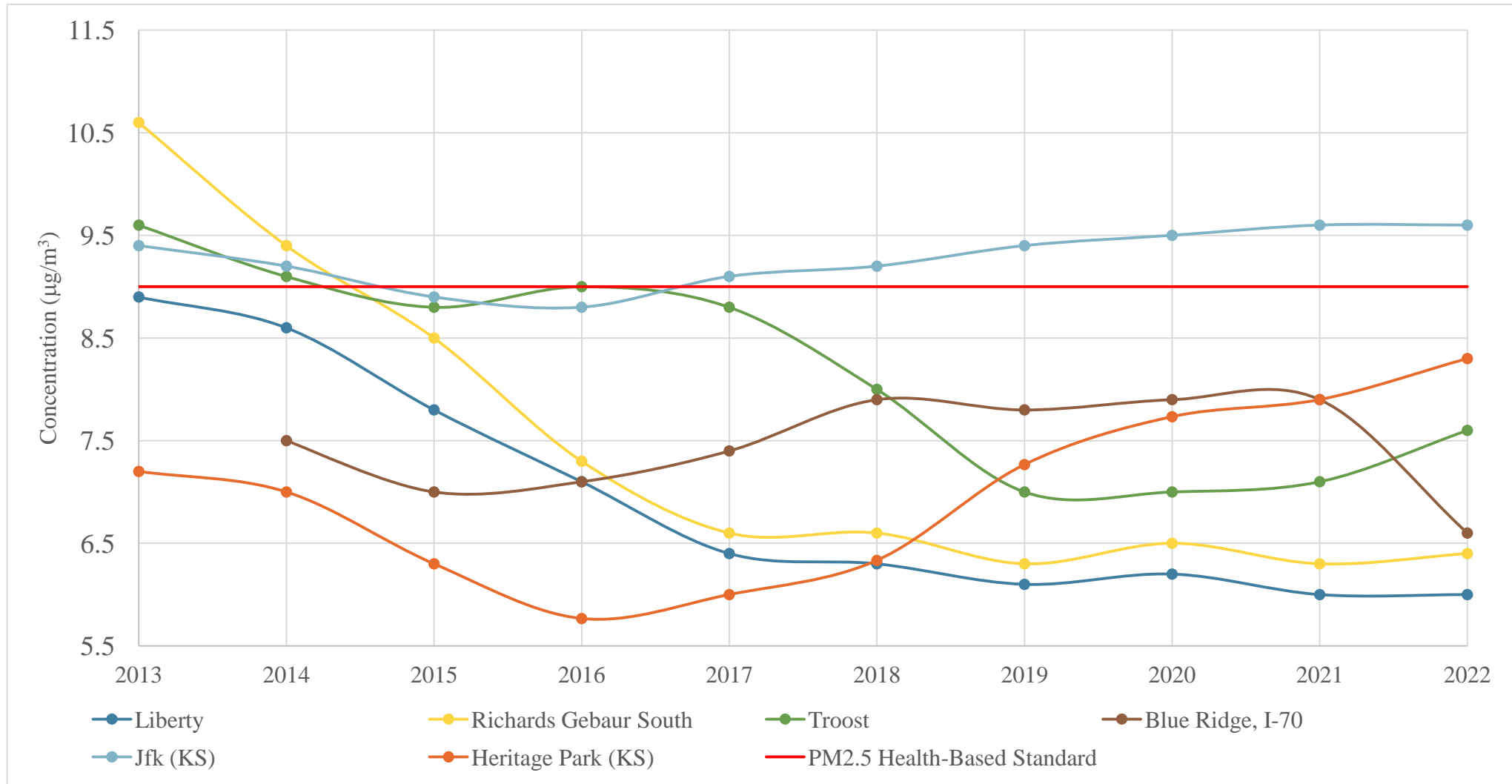
* Blue Ridge, I-70 monitor discontinued in 2023 due to vandalism. 2023 data does not meet completeness criteria. Monitor is being re-located.

Monitor Name	County	2021	2022	2023	2021-2023 D.V.
JFK	Wyandotte	10.0	9.2	9.6	9.6
Heritage Park	Johnson	8.3	7.9	8.7	8.3

Monitor Name	County	2021 -2023 Pre-Correction D.V.	2021 -2023 Post-Correction D.V.
JFK	Wyandotte	10.6	9.6
Heritage Park	Johnson	9.3	8.3

All values presented are $\mu\text{g}/\text{m}^3$

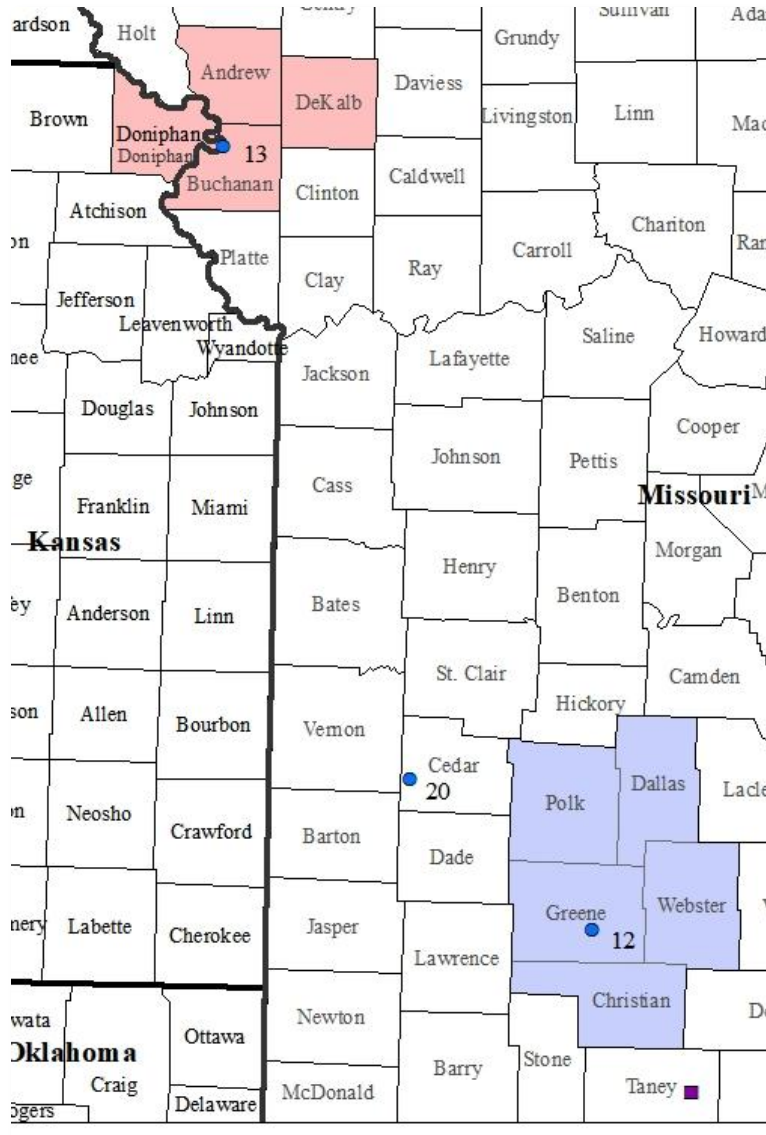
Kansas City (MO/KS) PM_{2.5} Design Value Monitor Trends



Kansas City Boundary Designation Analysis

- All Missouri monitors 2021-2023 design values in compliance with the standard.
- Five-Factor analysis ongoing to determine nearby areas contributing to violation at JFK site in Kansas – starting point is the Kansas City CBSA

Rest of State PM_{2.5} Monitors



Legend

● PM_{2.5} Air Monitor

■ IMPROVE

CBSA, Population Estimate 2022

■ St. Joseph-CBSA (MO-KS), 119,690

■ Springfield-CBSA, 487,061

Site # Site Name

St. Joseph CBSA (MO-KS)
13. St. Joseph Pump Station

Springfield CBSA
12. Hillcrest High School

Outstate Area MO
20. El Dorado Springs

Rest of State PM_{2.5} Monitors

Springfield

Monitor Name	County	2021 *	2022 *	2023 *	2021-2023 D.V. *
Hillcrest Highschool	Greene	6.0 *	7.1	7.5	6.9 *

* data does not meet completeness criteria.

St. Joseph

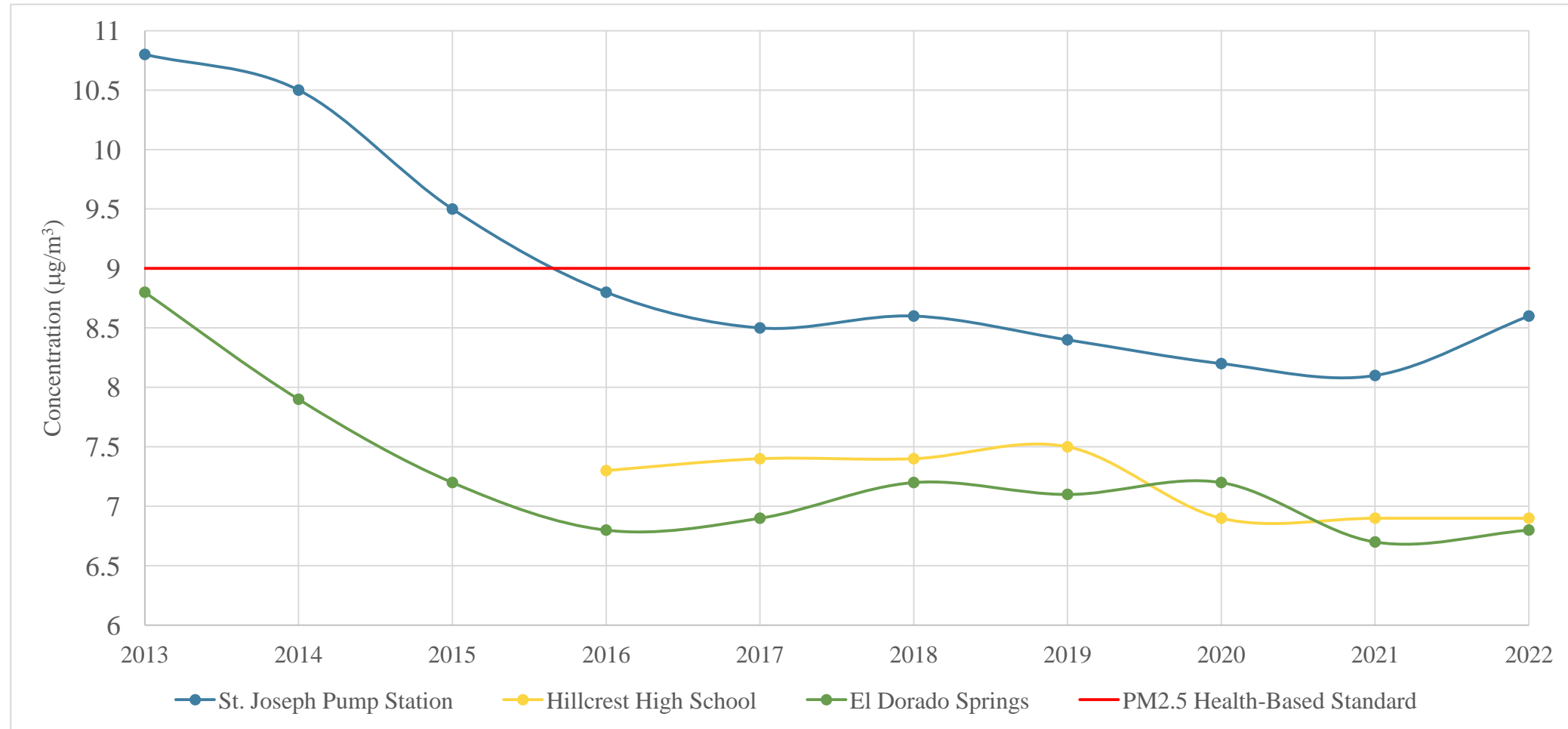
Monitor Name	County	2021	2022	2023	2021-2023 D.V.
St. Joseph Pump Station	Buchanan	8.4	7.9	9.5	8.6

Outstate

Monitor Name	County	2021	2022	2023	2021-2023 D.V.
El Dorado Springs	Cedar	7.6	5.9	6.8	6.8

All values presented are $\mu\text{g}/\text{m}^3$

Rest of State MO PM_{2.5} Design Value Monitor Trends



Rest of State Boundary Designation Analysis

- All Missouri monitors 2021-2023 design values in compliance with the standard.
- No nearby monitors in violation
- Intended recommendation – attainment/unclassifiable

2024 PM_{2.5} Boundary Designation Timeline (Tentative)

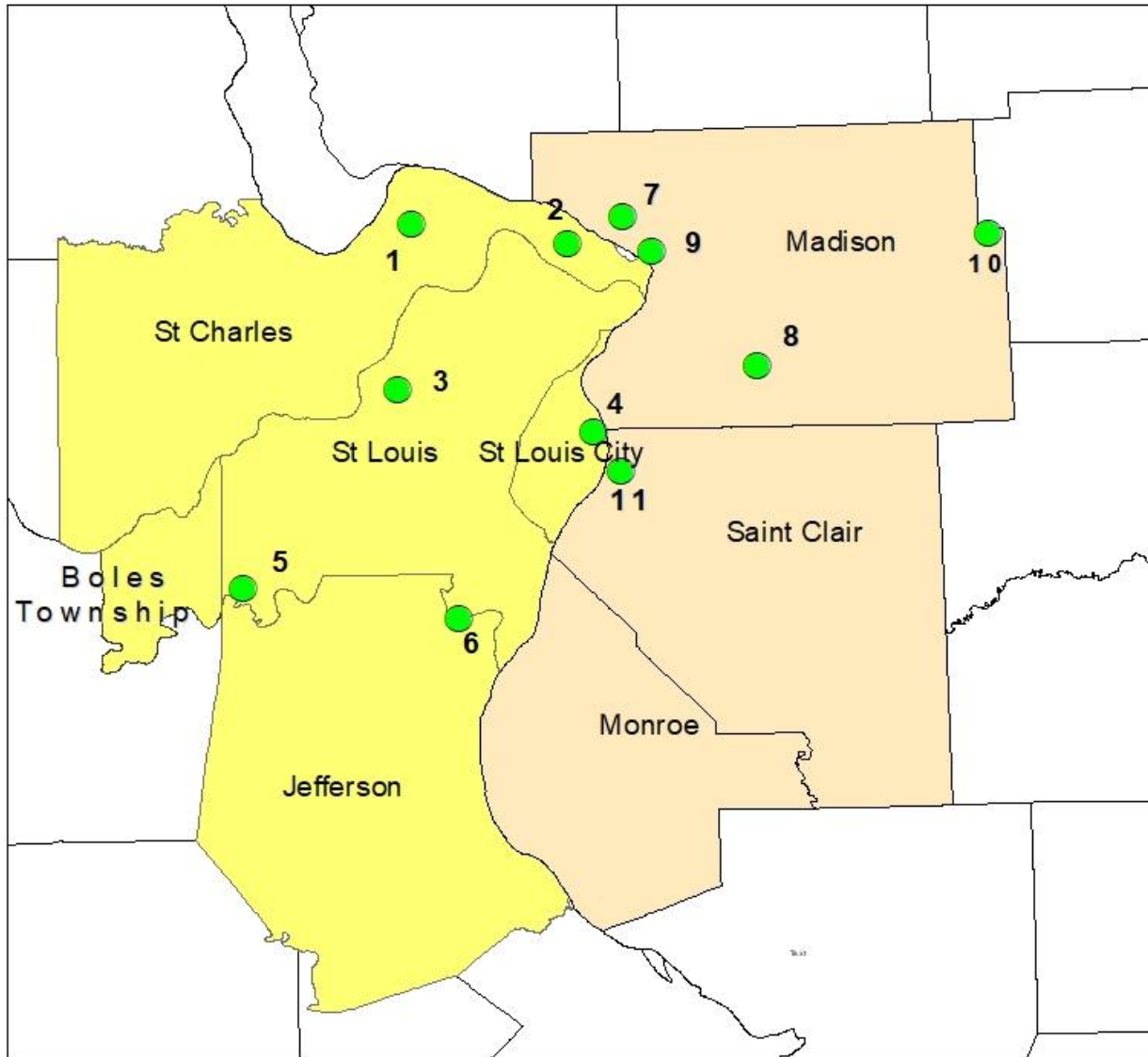
Milestone	Tentative Date
Post proposed boundary recommendations for public notice and comment	December 30, 2024
Public hearing on proposed boundary recommendations	January 30, 2025
Propose boundary recommendations for MACC adoption	March 27, 2025
Submit Boundary Recommendations to EPA	Late-March 2025
EPA sends 120-day letters to states	October 2025
State option to respond to 120-day letters	December 2025
EPA promulgates final boundary designations	February 2026

St. Louis Ozone Non-Attainment Area Bump-Up to “Serious”

St. Louis Ozone Non-Attainment Area Bump-Up to “Serious”

- The St. Louis area is currently classified as a moderate non-attainment area for the 2015 ozone standard
- Monitoring data (2021-2023) did not comply by attainment deadline August 3, 2024
- Anticipate direct final action to be finalized in November 2024 for St. Louis
- Anticipate effective date of January 1, 2025

St. Louis Ozone Non-Attainment Area and Monitoring Locations



Missouri

- 1 Orchard Farm
- 2 West Alton
- 3 Maryland Heights
- 4 Blair Street
- 5 Pacific
- 6 Arnold West

Illinois

- 7 Alton
- 8 Maryville
- 9 Wood River
- 10 Alhambra
- 11 East Saint Louis

St. Louis Ozone Nonattainment Area Monitors

Monitor Name	County	2019-2021 D.V.	2020-2022 D.V.	2021-2023 D.V.	2022-2024 YTD D.V. *
Arnold West	Jefferson	68	68	72	68 *
Pacific	St. Louis	64	63	67	67 *
Orchard Farm	St. Charles	66	65	68	69 *
Maryland Heights	St. Louis	69	68	71	71 *
Blair Street	St. Louis City	65	67	71	70 *
West Alton	St. Charles	68	69	72	73 *

All values presented are parts per billion (ppb)

* 2024 is preliminary YTD through 10/27/24

Monitor Name	County	2019-2021 D.V.	2020-2022 D.V.	2021-2023 D.V.	2022-2024 YTD D.V. *
Alton Horace Mann	Madison	68	71	74	74 *
Maryville	Madison	67	68	72	71 *
Wood River	Madison	69	70	73	72 *
Alhambra	Madison	65	66	**	**
East St. Louis	St. Clair	65	67	70	69 *

**EPA CASTNET Site, Temporarily shutdown

St. Louis Ozone Non-Attainment Area Bump-Up to “Serious”

Serious Area SIP Requirement	Statutory/Regulatory Citation
Enhanced Monitoring	CAA 182(c)(1)
Updated Reasonable Further Progress Demo	CAA 182(c)(2)(B) and 40 CFR 51.1310
Updated Attainment Demo and RACM Demo	CAA 182(c)(2)(A), 40 CFR 51.1308, and 40 CFR 51.1312(c)
Updated RACT Demo	CAA 182(b)(2) and 40 CFR 51.1312
Serious Nonattainment NSR Permitting Demo	CAA 173, CAA 182(c)(6), (7), (8), and (10), 40 CFR 51.1314, and 40 CFR 51.165
Enhanced Inspection/Maintenance Program	CAA 182(c)(3) and 40 CFR 51 Subpart S
Updated Contingency Plan w/Milestones	CAA 172(c)(9) and CAA 182(c)(9)
Clean Fuels Vehicle Program Demo	CAA 182(c)(4)
Transportation Control Measures Demo	CAA 182(c)(5) and CAA 108(f)

St. Louis Ozone Non-Attainment Area Bump-Up to “Serious”

- October 4, 2024 - EPA publishes proposed rule to establish submittal and implementation deadlines for areas reclassified as Serious nonattainment areas
- Serious Nonattainment SIP submissions due January 1, 2026
- Attainment deadline: August 3, 2027 (based on 2024-2026 data)
- Implementation deadlines vary by requirement:
 - Serious NSR Permitting: Effective date of reclassification - January 2025
 - RACT: as expeditious as practicable, but no later than May 2026
 - Enhanced I/M: as expeditious as practicable, but no later than January 2029

St. Louis Ozone Nonattainment Area Bump-Up to “Serious”

Serious Nonattainment NSR Permitting Impacts:

- The permitting major source threshold for stationary sources decreases from 100 tons/year for VOC or NO_x to 50 tons/year
 - Will require numerous new Operating permits and amendments
- Significance level decreases to 25 tons based on any changes over last five (5) consecutive years (for modifications at existing major sources)
- General offset requirements will become more stringent (at least 1.2 to 1)

St. Louis Ozone Nonattainment Area Bump-Up to “Serious”

Primary Differences between Basic and Enhanced I/M Programs

- Performance Standard modeling demonstration against EPA default enhanced program (includes light duty trucks, annual testing, and model years prior to 1996)
- Mandatory on-road testing component
- Waiver cost threshold must increase based on CPI increases dating back to 1989 (currently over \$1,100) compared to MO current level of \$450

St. Louis Ozone Nonattainment Area Bump-Up to “Serious”

Clean Fuel Vehicle Program

- The Clean Fuel Vehicle Program provisions require the state to reduce vehicle fleet emissions
- The Air Program must address this requirement but does not anticipate significant impacts

Transportation Control Measures

- State must submit an evaluation determining if the current aggregate vehicle mileage, aggregate vehicle emissions, congestion levels, and other relevant parameters are consistent with those used for the area’s attainment demonstration

St. Louis Ozone Nonattainment Area Bump-Up to “Serious”

Other SIP Requirements:

- The state must submit an updated attainment demonstration showing the area will attain by the new attainment deadline
- There are additional reasonable further progress (RFP) requirements (NO_x or VOC reductions of 3% per year from 2017 through attainment year)
- Contingency provisions that kick in automatically if the area does not attain by deadline or if area is not meeting RFP milestones
- Updated Reasonably Available Control Technology (RACT) demonstration

St. Louis Ozone Non-Attainment Area Bump-Up to “Serious”

Tentative Timeline for Serious St. Louis Nonattainment SIP

Milestone	Tentative Timeframe
Initial Stakeholder Meeting (Section 640.090 RSMo)	Jan/Feb 2025
Initial development rule(s) and SIP elements	December 2024 – July 2025
Post plan for public notice and comment	August 2025
Public Hearing	September 2025
Adoption	December 2025
Submit plan to EPA	December 2025
RACT implementation deadline	May 2026
Attainment deadline	August 2027 (based on 2024-2026 data)
Enhanced I/M implementation deadline	January 2029

Status Update – Missouri Good Neighbor Plan for 2015 Ozone Standard

Status Update – Ozone Good Neighbor Plan

Dates	Milestones
October 26, 2015	EPA promulgates 2015 ozone standard (70 ppb)
March – October 2018	EPA releases three guidance documents to states for developing good neighbor plans for 2015 ozone standard
June 10, 2019	Air Program submits good neighbor plan for 2015 ozone standard to EPA (Missouri’s 2019 good neighbor plan)
January 12, 2022	EPA finalizes Consent Decree with deadlines for acting on good neighbor plans in many states where it failed to act
February 2, 2022	EPA proposes to disapprove Missouri’s 2019 Good Neighbor Plan
April 6, 2022	EPA proposes federal good neighbor plan for Missouri and 25 other states
July 28, 2022	Air Program holds public hearing on Missouri Good Neighbor Supplement to the 2019 Plan
November 1, 2022	Air Program submits Good Neighbor Supplement to the 2019 Plan to EPA

Status Update – Ozone Good Neighbor Plan

Dates	Milestones
February 13, 2023	EPA promulgates final disapproval of Missouri’s 2019 Good Neighbor Plan, but does not act on the Nov. 2022 Supplement
April 13, 2023	Missouri Attorney General files with 8 th Circuit - petition for judicial review and motion for stay of the EPA disapproval of Missouri’s plan
May 26, 2023	The 8 th Circuit enters an order denying EPA’s motion to transfer the case to the D.C. Circuit and grant’s Missouri’s request to stay EPA’s disapproval of Missouri’s plan until litigation is resolved
June 5, 2023	EPA publishes final federal good neighbor plan for 23 states, including Missouri
July 31, 2023	EPA publishes interim final rule staying the federal good neighbor plan for Missouri and five other states that received judicial stays on EPA disapprovals of their good neighbor SIPs
September 26, 2023	D.C. Circuit denies motion to stay the federal good neighbor plan
October 16, 2023	Ohio, Indiana, West Virginia and industry groups file a petition with the Supreme Court to request an emergency stay of the federal good neighbor plan

Status Update – Ozone Good Neighbor Plan

Dates	Milestones
February 21, 2024	Supreme Court hears oral arguments on emergency petitions to stay the federal good neighbor plan requirements while litigation plays out.
February 27, 2024	Tenth Circuit issues order granting EPA petition to transfer Oklahoma and Utah SIP disapprovals to the D.C. Circuit Court
June 27, 2024	Supreme Court grants the emergency stay petitions on the federal good neighbor plan for the applicants
August 5, 2024	EPA issues a memo to respond to the Supreme Court stay orders on the federal good neighbor plan, which will stay requirements for all states and sources subject to the rule.
August 6, 2024	EPA proposes to disapprove Missouri’s Good Neighbor Supplement submitted in November 2022.
October 18, 2024	Air Program submits comments to the docket opposing EPA’s proposed disapproval of the Good Neighbor Supplement.

Status Update – Ozone Good Neighbor Plan

Dates	Milestones
October 21, 2024	Supreme Court agrees to take case to determine the appropriate venue to decide on challenges to EPA's SIP disapprovals for good neighbor plans
October 22, 2024	Eighth Circuit hears oral arguments EPA SIP disapprovals for Missouri, Arkansas, and Minnesota. Eighth Circuit likely to wait until venue decided by SCOTUS before issuing decision
October 22, 2024	D.C. Circuit grants voluntary remand to EPA to update rulemaking record in response to Supreme Court criticisms in the stay order on the federal good neighbor plan
October 29, 2024	EPA signs interim final rule to stay federal good neighbor plan requirements for all states and sources in response to Supreme Court stay order
TBD	D.C. Circuit hears arguments and decides on federal good neighbor plan challenges, and potential appeal of decision to Supreme Court
TBD	Supreme Court briefings, arguments, and decision on question of venue for SIP disapprovals
TBD ???	??? EPA final action on Missouri Good Neighbor Supplement ???
TBD ???	??? Eighth Circuit decision on Missouri SIP disapproval or transfer to D.C. Circuit ???
TBD ???	??? Federal good neighbor plan goes into effect or is remanded with or without vacatur ???

Contact Information

Thank you for your time and attention.

Missouri Department of Natural Resources
Air Pollution Control Program
State Implementation Plan Team

573-751-4817

apcpsip@dnr.mo.gov