Permitting Challenges Related to the $PM_{2.5}$ NAAQS Reconsideration

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Roadmap

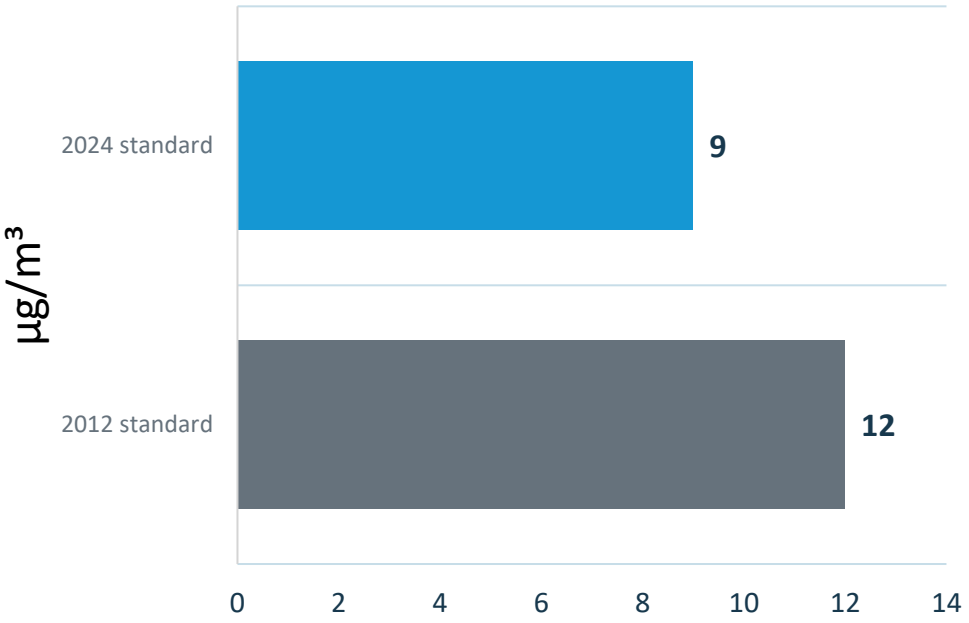
01 The regulatory standard and current status

02 PSD and nonattainment NSR consequences

03 How to prepare

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The 2024 $PM_{2.5}$ Standard

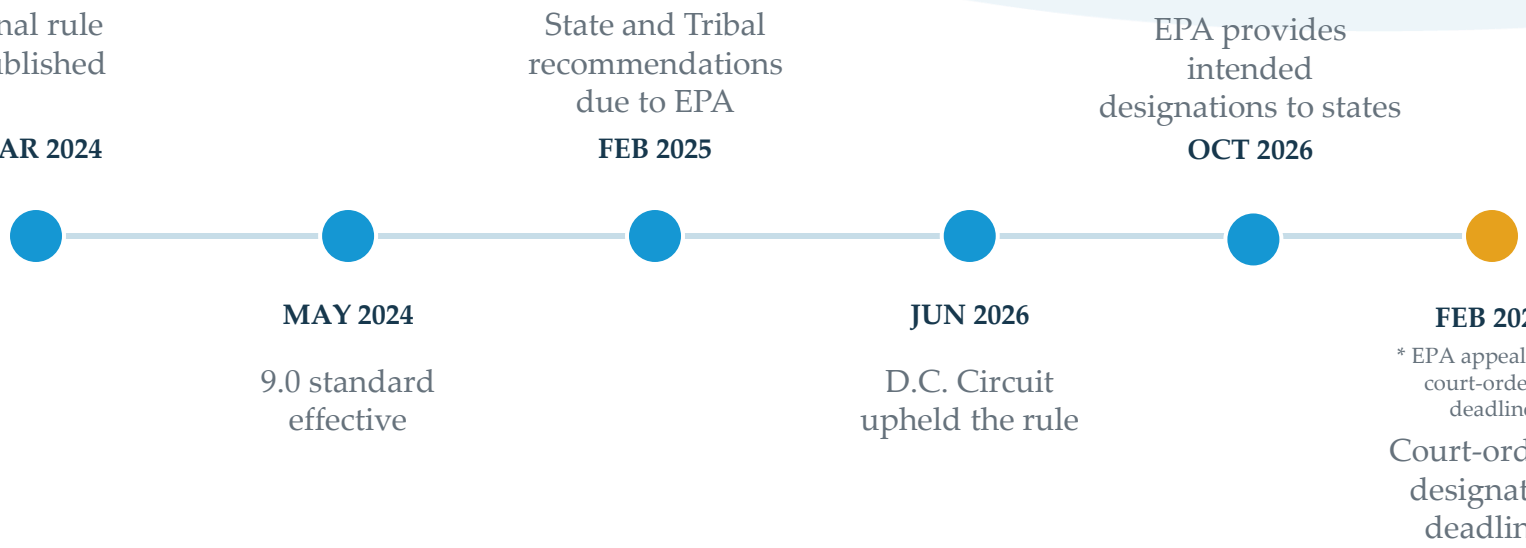


Standards retained

- Primary 24-hour $PM_{2.5}$: 35 µg/m³
- Secondary annual $PM_{2.5}$: 15 µg/m³
- Secondary 24-hour $PM_{2.5}$: 35 µg/m³
- Primary and secondary PM_{10} standards

Effective May 6, 2024

Regulatory Status as of October 2026



As of Oct 2026, the 9.0 µg/m³ standard remains in effect. Intended attainment designations have been provided by EPA but are not finalized.

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October 2026 EPA 120-Day Letter Debrief

- EPA plans to issue designations by February 6, 2027 even though they are appealing the deadline
- EPA plans to use 2023-2025 monitor data for designations
- Requests states provide additional information by November 1, 2026 to refute EPA expected nonattainment designations
- No expected nonattainment parishes in Louisiana
- Expected nonattainment Texas counties:
  - El Paso
  - Dallas
  - Tarrant
  - Bowie
  - Jefferson
  - Harris
  - Montgomery
  - Travis
  - Atascosa
  - Bexar
  - Nueces
  - Webb
  - Hidalgo
  - Cameron

What do the Designations Mean?

Designation	Meaning	Permitting consequence
Attainment	Area meets the NAAQS	PSD remains the major NSR program
Nonattainment	Area violates or contributes to a violation	NNSR applies to qualifying new major sources and major modifications
Unclassifiable	Insufficient information	Program treatment depends on the final designation action

All $PM_{2.5}$ nonattainment areas start as Moderate. The statutory attainment date is 6 years after designation. Areas that fail to attain can become Serious, with a 10-year date and tighter thresholds.

Permitting Impacts from Nonattainment Designation

Question	Before final designations	After a nonattainment designation
Major NSR program	PSD	NNSR for $PM_{2.5}$ and applicable precursors
Air-quality demonstration	No cause or contribution to a violation of 9.0 $\mu g/m^3$	Nonattainment permitting plus applicable analyses
Control standard	BACT	LAER
Offsets	Possible mitigation tool in a PSD demonstration	Required for qualifying NNSR emissions increases
Pending permits	Continue under PSD while area remains undesignated	May need NNSR review if designation occurs before issuance

Program outcome depends on project timing, source status, pollutant, and final area designation

Federal Review & Air Quality Analysis

1	**NNSR & PSD Applicability**	Confirm source status, project emissions, and pollutants subject to review.
2	**AQA: Project impact**	Compare modeled project impact with the permitting authority's accepted SIL.
3	**AQA: Cumulative analysis**	If needed, combine the project and facility impacts with representative background and selected nearby sources.
4	**Permit design refinement & finalization**	Refine inputs, add enforceable limits or controls, or evaluate mitigation and offsets.

NNSR & PSD Applicability

Definition	Threshold	Moderate NNSR	Serious NNSR
Major Source	Direct $PM_{2.5}$	100 tpy	70 tpy
	Each $PM_{2.5}$ Precursor	100 tpy	70 tpy
Major Modification	Direct $PM_{2.5}$	10 tpy	10 tpy
	SO_2*	40 tpy	40 tpy
	NO_x*	40 tpy	40 tpy
	VOC*	40 tpy	40 tpy
	NH_3*	TBD	TBD

* Where the pollutant is regulated as a $PM_{2.5}$ precursor in the applicable nonattainment program.

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$PM_{2.5}$ precursors expand the applicability screen

Presumed precursors

SO_2

Evaluate separately

NO_x

Evaluate separately

Area-specific precursors

VOC

State may demonstrate controls are unnecessary

NH_3

State may demonstrate controls are unnecessary

A project can face $PM_{2.5}$ NNSR because of precursor emissions even when direct $PM_{2.5}$ does not increase.

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LAER and Offsets are Critical Constraints for Industry

LAER

The permit must reflect the lowest achievable emission rate. Cost does not provide the same off-ramp available in a BACT analysis.

Offsets

Qualifying emissions increases require creditable reductions at the applicable ratio. Moderate-area offsets are at least 1:1.

Availability

$PM_{2.5}$ offset markets may be thin. Direct $PM_{2.5}$ and precursor trades require an approved interprecursor framework.

Offset strategy belongs in early project planning, before emissions and schedule become fixed.

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Title V Exposure for Current Minor Sources

A non-named source with sitewide $PM_{2.5}$ potential to emit above 100 tpy may become a Title V major source when its area becomes Moderate nonattainment.

1. Recalculate sitewide direct $PM_{2.5}$ PTE using current permits and enforceable limits.
2. Separate filterable and condensable PM and document particle-size assumptions.
3. Identify practical limits that could keep PTE below the applicable threshold.
4. If major-source status changes, plan for a Title V application within 12 months.

Evaluating your $PM_{2.5}$ Emissions

Common failure	Better evidence
Assume PM = PM_{10} = $PM_{2.5}$	Use source-specific particle-size fractions
Rely only on old AP-42 factors	Use representative testing or peer data where available
Ignore condensable PM	Evaluate filterable and condensable components separately
Carry inconsistent inventories	Reconcile permit, annual inventory, modeling, and Title V calculations

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AQA Evaluations & Refinements for Consideration

Temporal profiles

Use representative hourly, weekly, or seasonal emissions when enforceable and technically supported.

Operating scenarios

Model mutually exclusive equipment separately. Avoid assuming every source operates at its maximum simultaneously.

Monitoring data validity

Exceptional events and representativeness of monitoring data must be considered when relying upon the data for permitting.

Dispersion and access

Evaluate stack orientation, height, velocity, source location, building downwash, and the ambient-air boundary.

Agency agreement and enforceable permit conditions determine whether a refinement is usable.

Actions to take in preparation for designations

Pending permits	Confirm the 9.0 μg/m³ demonstration and discuss transition risk with the permitting agency.
Source status	Verify direct $PM_{2.5}$ and precursor PTE. Identify minor sources close to a future major-source threshold.
Project pipeline	Sequence or redesign projects that add $PM_{2.5}$ or precursors. Avoid unnecessary emissions in the netting window.
Inventory and models	Resolve particle-size assumptions, background data, nearby-source inventories, and agency modeling conventions.
Offsets	Identify internal and external reductions before a project needs NNSR. Test creditability and timing early.

Key takeaways

- The 9.0 μg/m³ annual $PM_{2.5}$ standard applies to PSD permitting now.
- Final nonattainment designations will add LAER, offsets, and precursor-based NNSR exposure for qualifying projects.
- Low screening values and limited ambient headroom make inventory and background assumptions decisive.
- Current minor sources should verify sitewide $PM_{2.5}$ PTE before designations.
- Early agency engagement gives facilities more options to refine, redesign, control, or sequence projects.
- Follow EPA news closely to watch for final $PM_{2.5}$ nonattainment designations. It is likely that we will know within the next 6 months!

Questions?

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