POLICY ALERT:

February 2024

EPA lowers the annual $PM_{2.5}$ NAAQS:

How this might impact your operations

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On February 7, 2024, the U.S. Environmental Protection Agency (EPA) lowered the level of the annual National Ambient Air Quality Standard (NAAQS) for fine particulates ($PM_{2.5}$) from 12.0 to 9.0 micrograms per cubic meter (µg/m³).[1]

The revised NAAQS will have a multitude of implications to stakeholders across the country as shown in the list below. Key implications include increased compliance costs due to technology upgrades; additional monitoring equipment; or operational changes necessary to show compliance, both for existing and new sources.

- Increased public and stakeholder scrutiny during permitting reviews, potentially necessitating strategic communication and engagement efforts to minimize the risk of permit appeals and subsequent project delays.

- **In *nonattainment* areas:**
  - Stricter $PM_{2.5}$ emission limits, which could require additional, costly controls for existing units; new and modified units would require expensive Lowest Achievable Emission Rate (LAER) controls. In either case, the return on capital projects is likely to suffer and some may no longer be viable.
  - Additionally, the need for emission offsets for new and modified sources may prove prohibitive in the near term due to lack of available offsets.
- **In *attainment* areas:**
  - Reduced headroom (i.e., the difference between revised NAAQS and current background levels), making it difficult to demonstrate compliance with the revised NAAQS via air quality modeling.
  - Potential delays in obtaining permits due to additional complex analysis and compliance measures (growth-oriented capital expenditures could be delayed).

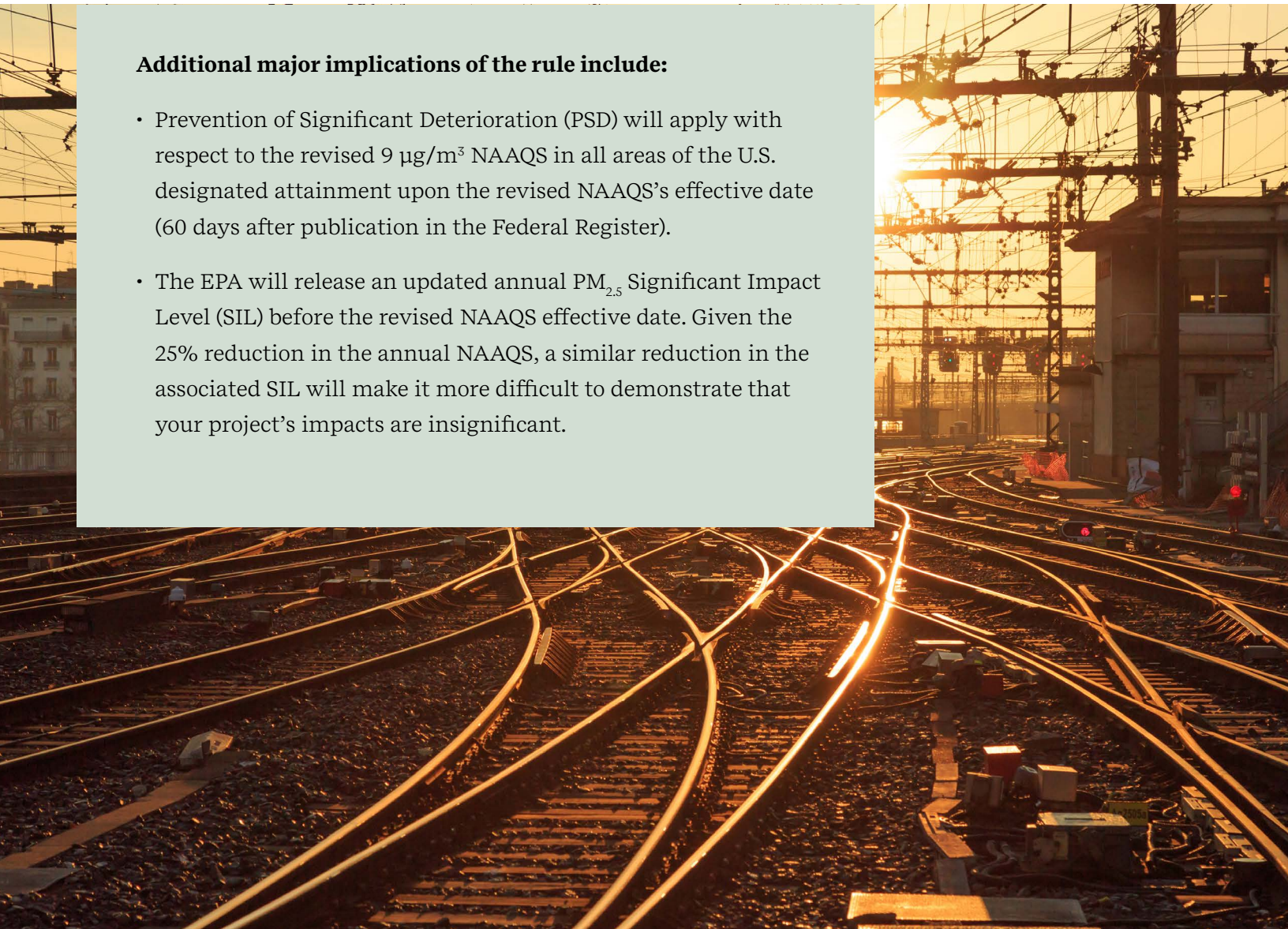
[1] https://www.epa.gov/pm-pollution/final-reconsideration-national-ambient-air-quality-standards-particulate-matter-pm

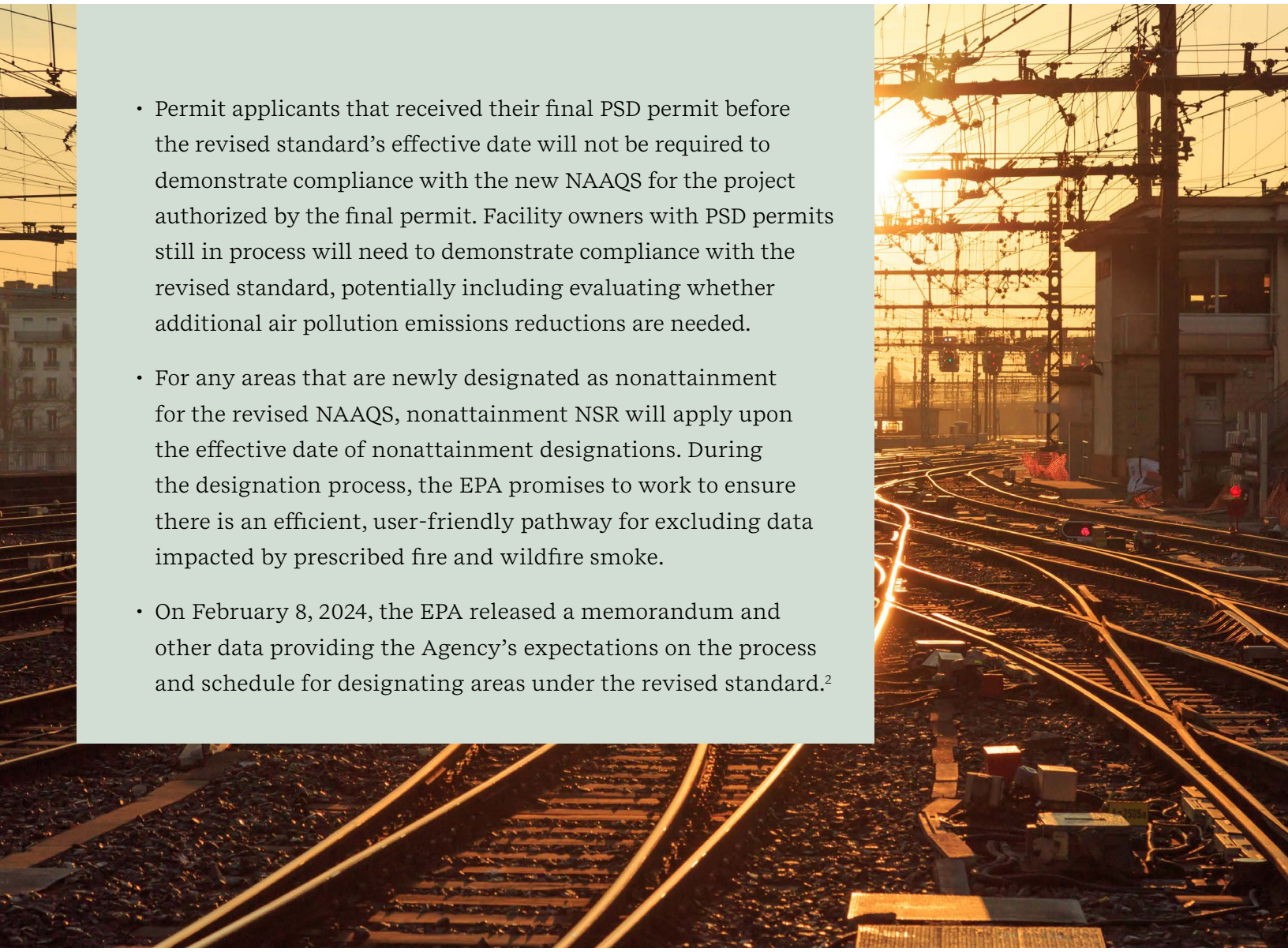
The Clean Air Act requires EPA to review the NAAQS every five years to determine whether they should be revised or retained. The Particulate Matter (PM) NAAQS were last revised in 2012. Though the EPA lowered the level of the annual NAAQS for $PM_{2.5}$, the other PM NAAQS standards remain the same. The EPA has retained the current primary 24-hour $PM_{2.5}$ standard and the primary 24-hour PM_{10} standard. The EPA did not change the secondary 24-hour $PM_{2.5}$ standard, secondary annual $PM_{2.5}$ standard, or the secondary 24-hour PM_{10} standard. The EPA finalized revisions to other key aspects related to the PM NAAQS, including revisions to the PM ambient monitoring requirements.

The final rule does not make any $PM_{2.5}$ NAAQS attainment/nonattainment designations. Rather, the revised annual $PM_{2.5}$ NAAQS will prompt the designation process that the EPA will require states to undergo based on current $PM_{2.5}$ monitoring data. This process could take up to two years. Areas not in attainment with the lower $PM_{2.5}$ NAAQS will be designated nonattainment, which will trigger nonattainment new source review (NSR) permitting requirements. These requirements would likely contain more stringent LAER controls and involve purchasing costly $PM_{2.5}$ emission reduction credits/offsets.

Additional major implications of the rule include:

- Prevention of Significant Deterioration (PSD) will apply with respect to the revised 9 $\mu g/m^3$ NAAQS in all areas of the U.S. designated attainment upon the revised NAAQS's effective date (60 days after publication in the Federal Register).
- The EPA will release an updated annual $PM_{2.5}$ Significant Impact Level (SIL) before the revised NAAQS effective date. Given the 25% reduction in the annual NAAQS, a similar reduction in the associated SIL will make it more difficult to demonstrate that your project's impacts are insignificant.





- Permit applicants that received their final PSD permit before the revised standard's effective date will not be required to demonstrate compliance with the new NAAQS for the project authorized by the final permit. Facility owners with PSD permits still in process will need to demonstrate compliance with the revised standard, potentially including evaluating whether additional air pollution emissions reductions are needed.
- For any areas that are newly designated as nonattainment for the revised NAAQS, nonattainment NSR will apply upon the effective date of nonattainment designations. During the designation process, the EPA promises to work to ensure there is an efficient, user-friendly pathway for excluding data impacted by prescribed fire and wildfire smoke.
- On February 8, 2024, the EPA released a memorandum and other data providing the Agency's expectations on the process and schedule for designating areas under the revised standard.[2]

There are currently nine locations in the U.S. under nonattainment or maintenance area status for the previous annual $PM_{2.5}$ standard of 12 µg/m³. It is currently possible to estimate the expected increase in nonattainment areas. Monitoring data design values for 2020-2022 of all $PM_{2.5}$ monitors in the U.S. reveals that there will be at least ten times the number of monitors with design values above the revised standard of 9 µg/m³. The figure in the attachment illustrates the continental U.S. counties with current monitoring design values at or above the revised annual NAAQS of 9 µg/m³. In addition, the table in the attachment summarizes the calculated 2022 design value for each state/county that is at or above 9 µg/m³, illustrating cz of how many areas will be affected.

[2] https://www.epa.gov/particle-pollution-designations/particle-pollution-designations-memorandum-and-data-2024-revised

How ERM can help

ERM is equipped to provide tailored solutions to help navigate the challenges associated with the lower annual $PM_{2.5}$ NAAQS. This is especially important if you are planning capital projects for your facilities. You may want to proactively address the items listed below to mitigate risk of delays and minimize escalation of capital expenditures. ERM can help develop a compliance strategy through the application of the following approaches:

- **Background Concentration Assessment -** ERM can assess current $PM_{2.5}$ monitoring measurements made near your facilities to identify $PM_{2.5}$ headroom for future projects or to provide a heads-up that the facility may be located in an annual $PM_{2.5}$ nonattainment area. ERM can also use the EPA's proposed new framework for characterizing background concentrations in cumulative air impact modeling analysis. Further, ERM can leverage EPA guidance on handling and accounting for exceptional events, such as wildfire smoke, to mitigate impacts on monitors used to characterize background concentrations.
- **Proactive $PM_{2.5}$ Monitoring** – ERM can implement a robust air quality monitoring program to provide a facility-specific background $PM_{2.5}$ concentration. For permitted facilities located far from the existing monitors in the EPA ambient monitoring network, a facility-specific monitoring program may result in lower background concentrations which can be used in NAAQS modeling demonstrations (a requirement of PSD permitting). **The ERM monitoring team has PSD-quality $PM_{2.5}$ monitors that are ready to deploy.**
- **Refining conservative emission factors** – ERM can review and refine outdated or conservative emission factors to estimate emissions more accurately.
- **Revisiting generous permit limits** – For sources with actual emissions consistently below permit limits, ERM can help develop lower permit limits to comply with the revised NAAQS while minimizing costly changes to equipment and operations.
- **Refresh your $PM_{2.5}$ air quality modeling** – If there is a concern that your existing or proposed operations may indicate modeled noncompliance with the revised NAAQS, we can refresh your air quality modeling with revised emission estimates to identify issues and possible mitigations.

Our air quality specialists have performed permitting support for a diverse group of industrial and government clients in response to a wide variety of needs, and ERM's expertise has been nationally recognized for our participation and performance in the fields of air monitoring, emissions control, and regulatory modeling. ERM is committed to providing air quality permitting support that provides the best representation of a given situation within established guidelines that withstand detailed review throughout the length of a project. Through this support we have been able to accelerate capital project schedules, to mitigate risk of delays, and help our clients minimize control and operating costs.

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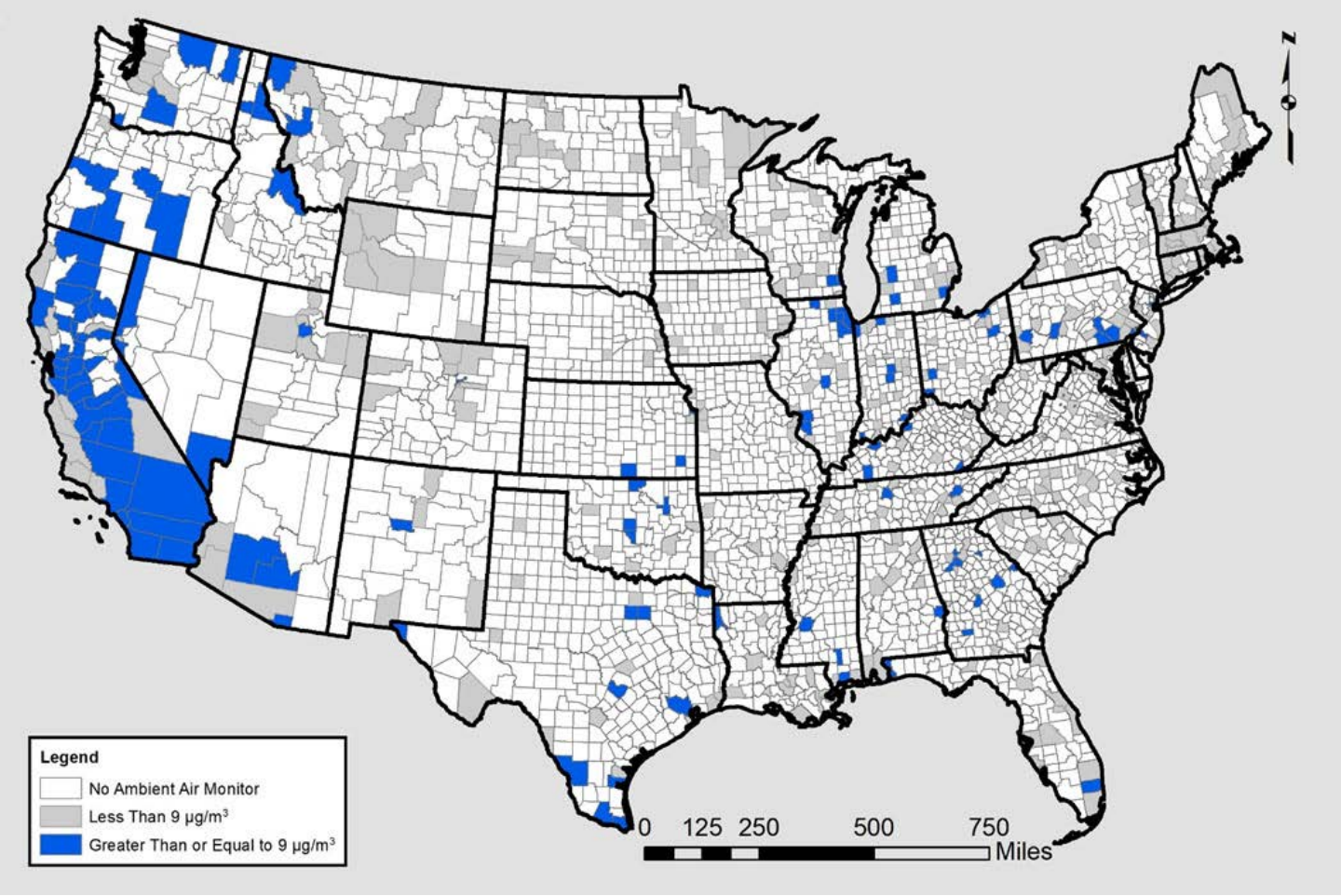
The following map and table present the counties in the United States where annual $PM_{2.5}$ 2022 design value concentrations are at or above the revised NAAQS of 9 µg/m³. There is one monitor of concern in Alaska that is listed in the following table of counties with 2022 design value at or above the revised annual $PM_{2.5}$ NAAQS of 9 µg/m³.

Counties with 2022 Design Values at or above the Revised Annual $PM_{2.5}$ NAAQS of 9 µg/m³



Data source: Air Quality Design Values | US EPA

Counties with 2022 Design Value at or above the Revised Annual $PM_{2.5}$ NAAQS of 9 µg/m³

State	County	2022 Design Value (µg/m³)
Alabama	Russell	9.1
Alaska	Fairbanks North Star	12.2
Arizona	Maricopa	10.5
Arizona	Pinal	12.4
Arizona	Santa Cruz	10.2
California	Alameda	9.4
California	Butte	11.6
California	Calaveras	9.0
California	Colusa	10.5
California	Contra Costa	10
California	Fresno	17.5
California	Imperial	11.1
California	Kern	18.8
California	Kings	16.6
California	Los Angeles	13.4
California	Madera	13.2
California	Mendocino	11.1
California	Merced	12.3
California	Mono	19.5
California	Orange	11.2
California	Placer	10.9
California	Plumas	17.0
California	Riverside	13.6
California	Sacramento	11.7
California	San Bernardino	14.0
California	San Diego	10.0
California	San Joaquin	12.3
California	Santa Clara	10.7
California	Shasta	9.3
California	Siskiyou	11.6
California	Solano	9.4
California	Stanislaus	14.3
California	Sutter	13.8
California	Tehama	9.9
California	Tulare	18.4
Colorado	Denver	9.3
Florida	Broward	9.4
Florida	Escambia	9.5
Georgia	Clarke	9.2
Georgia	DeKalb	9.0
Georgia	Dougherty	9.2
Georgia	Fulton	9.4
Georgia	Houston	9.1
Georgia	Richmond	10.4
Georgia	Washington	10.2
Idaho	Benewah	10.2
Idaho	Lemhi	11.3
Idaho	Shoshone	10.7
Illinois	Cook	10.5
Illinois	DuPage	9.5
Illinois	Kane	9.2
Illinois	Macon	9.2
Illinois	Madison	10.0
Illinois	Saint Clair	10.0
Illinois	Will	9.7
Illinois	Winnebago	9.1
Indiana	Clark	9.9
Indiana	Hamilton	9.8
Indiana	Lake	9.8
Indiana	Marion	11.9
Indiana	St. Joseph	9.6
Indiana	Vanderburgh	9.2

Monitor 2022 Design Values (continued)

State	County	2022 Design Value (µg/m³)
Kansas	Neosho	9.6
Kansas	Sumner	9.8
Kansas	Wyandotte	10.8
Kentucky	Bell	9.3
Kentucky	Christian	9.2
Kentucky	Daviess	9.0
Kentucky	Jefferson	10.2
Louisiana	Caddo	9.6
Michigan	Kalamazoo	9.5
Michigan	Kent	9.2
Michigan	Wayne	11.7
Mississippi	Forrest	9.9
Mississippi	Harrison	9.1
Mississippi	Hinds	10.1
Montana	Lincoln	13.4
Montana	Missoula	10.1
Nevada	Clark	10.8
Nevada	Douglas	9.6
Nevada	Washoe	11.0
New Jersey	Camden	9.1
New Jersey	Union	9.0
New Mexico	Bernalillo	9.6
Ohio	Cuyahoga	9.3
Ohio	Hamilton	10.5
Ohio	Montgomery	9.4
Ohio	Stark	9.2
Oklahoma	Cleveland	10.3
Oklahoma	Kay	9.9
Oklahoma	Oklahoma	10.1
Oklahoma	Tulsa	9.2
Oregon	Crook	10.0
Oregon	Harney	10.8
Oregon	Jackson	13.5
Oregon	Klamath	15.6
Oregon	Lane	14.7
Pennsylvania	Allegheny	10.9
Pennsylvania	Cambria	9.6
Pennsylvania	Dauphin	9.9
Pennsylvania	Delaware	9.1
Pennsylvania	Lancaster	9.2
Pennsylvania	Philadelphia	9.1
Pennsylvania	York	9.6
Tennessee	Davidson	9.1
Tennessee	Knox	9.4
Texas	Bowie	10.0
Texas	Cameron	9.1
Texas	Dallas	9.4
Texas	El Paso	9.2
Texas	Harris	11.4
Texas	Hidalgo	10.1
Texas	Kleberg	10.3
Texas	Tarrant	9.1
Texas	Travis	9.3
Texas	Webb	10.1
Utah	Salt Lake	9.9
Washington	Clark	9.1
Washington	Okanogan	13.4
Washington	Stevens	11.6
Washington	Yakima	11.8
Wisconsin	Milwaukee	9.4
Wisconsin	Waukesha	9.2

Data source: Air Quality Design Values | US EPA