AAPCA
THE ASSOCIATION OF AIR POLLUTION CONTROL AGENCIES

THE StATS REPORT | 2025 EDITION

State Air Trends & Successes

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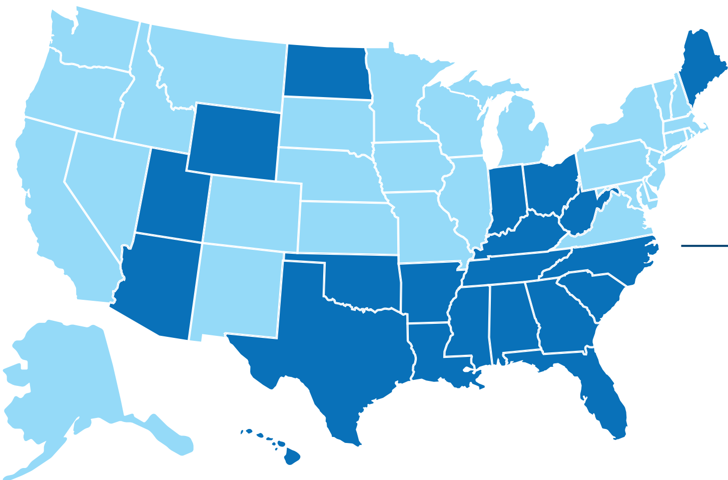
State Environmental Agencies Currently Represented on the AAPCA Board of Directors



Alabama	North Carolina
Arizona	North Dakota
Arkansas	Ohio
Florida	Oklahoma
Georgia	South Carolina
Hawaii	Tennessee
Indiana	Texas
Kentucky	Utah
Louisiana	West Virginia
Maine	Wyoming
Mississippi	

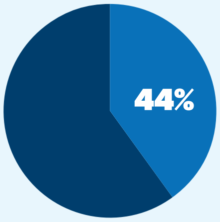
Association of Air Pollution Control Agencies (AAPCA)

AAPCA is a national, non-profit, consensus-driven organization focused on assisting state and local air quality agencies and personnel with implementation and technical issues associated with the federal Clean Air Act.

Created in 2012, AAPCA represents 53 state and local air pollution control agencies, and senior officials from 21 state environmental agencies currently sit on the AAPCA Board of Directors. AAPCA is housed in Lexington, Kentucky as an affiliate of The Council of State Governments. More information about AAPCA can be found on the Association's website: www.cleanairact.org.

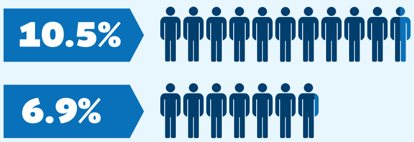
Footprint of AAPCA Member States

State members of the AAPCA Board of Directors have primary responsibility for protecting air quality for a significant portion of the country, as reflected in the following statistics:



An estimated **149.9 million** Americans, nearly **44%** of the total ***U.S. population*** in 2024.

A ***population growth*** of **10.5%** vs. a national population growth of **6.8%** from 2014 to 2024.



2,646 million metric tons of ***total CO_2 emissions*** in 2022.

39% of ***U.S. Gross Domestic Product*** (GDP) in 2024.

42% of ***U.S. total manufacturing output*** and **5.5 million** manufacturing jobs in 2023.

1.6 trillion ***vehicle miles traveled*** in 2023.

68% of ***U.S. operable petroleum refining capacity*** in 2024.

Total ***energy production growth*** of **55%** vs. a national growth of **31%** since 2000.

65% of total ***U.S. energy production*** in 2022, as well as:

- **54%** of total ***net electricity generation*** in 2024.
- **46%** of ***solar generation*** in 2024.
- **46%** of ***wind generation*** in 2024.
- **68%** of ***natural gas production*** in 2023.
- **71%** of ***crude oil production*** in 2023.
- **76%** of ***coal production*** in 2023.

Foreword

Dear Readers,

While many associate air pollution with modern industrialization, the importance of clean air has long been recognized. As early as 535 AD, Byzantine Emperor Justinian I declared that clean air, along with running water and access to the sea, were fundamental rights of humanity — a concept that now serves as a precursor to contemporary clean air regulations. As we approach a new administration in 2025 and reflect on the past year's progress, we take pride in the continued success of efforts to reduce air pollution and enhance air quality across the United States.

Despite ongoing challenges, Association of Air Pollution Control Agencies (AAPCA) member states and local communities remain steadfast in their commitment to protecting public health and the environment. In 2024, we made significant strides in implementing the Clean Air Act, with member states and localities playing a vital role in reducing emissions, improving visibility, and elevating air quality nationwide. The coming year offers a chance for renewed collaboration and progress, as AAPCA remains focused on providing our members with the tools and resources necessary to tackle the evolving challenges of air quality management. United by a common vision, we will continue to advocate for sound, science-based policies and promote best practices in air quality monitoring and regulation.

AAPCA is a consensus-driven organization of 53 state and local air agencies focused on assisting members with implementation of technical issues associated with the federal Clean Air Act. Comprised of senior officials from 21 state environmental agencies, AAPCA's Board of Directors is geographically diverse, providing a unique forum of perspectives to engage as we work to improve air quality for the more than 149 million Americans we represent. AAPCA's Member States also guide the Association on a consensus-basis, seeking to engage our federal co-regulator partners on common principles as we implement the federal Clean Air Act.

As the current president of AAPCA, I am pleased to present the Association's 2025 edition of its annual publication, *State Air Trends & Successes: The StATS Report*. Highlights from this year's report include:

- From 2000 to 2023, AAPCA member states have achieved a 44 percent decrease in the combined emissions of the pollutants (or pollutant precursors) for which there are national ambient air quality standards, or NAAQS.
- Since 1970 when the Clean Air Act was enacted, the United States has reduced aggregate emissions of the six criteria air pollutants by 78 percent.
- In 2024, AAPCA Member States were the permitting agencies for 23,224 facilities, or 49 percent of the state agency total, and the lead agencies for 6,857 Full Compliance Evaluations, approximately 50 percent of the state lead agency total.
- The United States has seen at least a 26 percent decline in the ambient levels of carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), and sulfur dioxide (SO_2) since 1980.
- From 2000 to 2022, visibility in 156 national parks and wilderness areas across the United States has improved by 37 percent on the clearest days and 29 percent on the most impaired days.
- From 2000 to 2022, the United States reduced energy-related carbon dioxide (CO_2) emissions by 16 percent while experiencing a 28 percent increase in total energy production.

Thank you for reading.

Laura M. Crowder

Laura Crowder

Director, Division of Air Quality

West Virginia Department of Environmental Protection

2025 President, AAPCA

Introduction

Published annually since 2017, *State Air Trends & Successes: The StATS Report* spotlights state and local air agencies as essential to the significant improvement in air quality that has been achieved in the United States since the enactment of the Clean Air Act (CAA) in 1970. Under the CAA's framework of cooperative federalism, the U.S. Environmental Protection Agency (EPA) sets national standards while state, local, and tribal agencies work on the ground with businesses, communities, and other stakeholders to develop implementation strategies. State, local, and tribal governments are uniquely situated to take an informed approach when melding environmental, economic, and social priorities to meet the distinct needs within their jurisdictions. This approach has been remarkably successful and air pollution control efforts have vastly improved air quality while the nation has experienced substantial economic and social growth.

In support of state and local air quality agencies, *The StATS Report* by the Association of Air Pollution Control Agencies (AAPCA) catalogues key trends and metrics that are publicly available from federal, state, and local agencies (see page 6 of this report, "Types of Air Quality Data and Metrics"), and includes data for criteria air pollutant concentrations and emissions, hazardous air pollutants (or air toxics), energy-related carbon dioxide, and visibility in national parks. Where applicable, trends for economic and social indicators like Gross Domestic Product (GDP), energy production, and population are included to offer important context. *The StATS Report* provides these metrics and trends in three sections:

- First, "AAPCA Member State Air Trends & Successes," focuses on the 21 AAPCA Member States, which are responsible for protecting air quality for nearly 150 million Americans, about 44 percent of the U.S. population. These states have seen above-average population growth, are responsible for 42 percent of the nation's manufacturing output, and produce 65 percent of the nation's total energy.
- Second, "American Air Quality in an International Context," examines U.S. air quality improvement and economic indicators alongside other nations. The United States is the clear leader in air quality internationally while ranking first in GDP, second in total electricity generation, and third in population.
- Third, "Air Quality Trends in the United States," presents trends for ambient concentrations and emissions of pollutants under the National Ambient Air Quality Standards (NAAQS) program, toxic air releases, visibility in national parks, and energy-related carbon dioxide. These decades-long trends show substantial, sustained improvement.

By virtually any metric, the nation's air is cleaner and healthier than fifty-five years ago, when the CAA was first enacted. Air quality trends show consistent and prolonged improvement, with drastic reductions in the emissions and ambient concentrations of pollutants, while the United States has seen tremendous growth in economic and social factors. *The StATS Report* underscores that environmental protection and economic development can be simultaneously achieved through the leadership of state and local air agencies and collaborative efforts amongst co-regulators.

Cooperative Federalism as a Successful Framework

Under the tenets of cooperative federalism, state agencies have become the primary implementers of environmental statutes and programs, such that today, states have assumed more than 96 percent of the delegable authorities under federal law.[1] As primary implementers of the CAA, air agencies are responsible for a broad range of core air pollution control efforts, including developing plans to meet air quality standards and improve visibility, implementing federal air toxics rules, monitoring, modeling, managing emissions inventories, permitting, public outreach, and overseeing enforcement and compliance. States perform more than 90 percent of the enforcement and compliance actions and collection of the environmental quality data currently held by the U.S. EPA.[2]

Crucially, state and local agencies are responsible for ensuring the availability of quality data used to drive science-based policies, regulatory decisions, and best practices. Air agencies are increasingly involved in innovative efforts utilizing emerging technologies like sensors, satellites, and artificial intelligence to meet demands for real-time data and forecasting. State and local technical staff contribute heavily to the development of national, regulatory tools and resources. Subject matter experts from state air pollution control agencies are cornerstone members of U.S. EPA advisory committees, such as the Clean Air Scientific Advisory Committee (CASAC) and Clean Air Act Advisory Committee (CAAAC).

Often the first contact for citizens, air agencies serve as vital checkpoints for emerging issues in air quality. These agencies are responsible for timely, informed, and reasoned responses that are transparent, understandable by the public, and meet stakeholder expectations. In this capacity, air agencies have built the necessary relationships, credibility, and trust for interfacing with the public and regulated industries on environmental challenges. Cooperative federalism supports early, meaningful, and substantial state and local agency involvement in the development and implementation of environmental programs to increase mutual understanding, improve co-regulatory relations, remove barriers, reduce costs, and more quickly improve the nation's air quality.

Confronted in recent years by resource and staffing constraints, state and local agencies require strategic budgeting and innovative programming to meet new and existing responsibilities under the CAA. Nonetheless, state and local air agencies are led by dedicated public servants determined to meet the challenges of administering progressively complicated and demanding operations.

Succinctly put, state and local agencies are a critical part of achieving our nation's environmental and public health goals and mandated responsibilities in an effective and efficient way. The successes presented in AAPCA's *State Air Trends & Successes: The StATS Report* result from long-standing partnerships between state, local, and tribal entities, U.S. EPA, and the regulated community. Supporting these agencies through the framework of cooperative federalism strengthens their position as co-regulators in improving air quality. Amidst increased efforts to modernize regulatory policies and technologies, cooperative federalism remains a proven framework for achieving successful environmental outcomes – and is necessary to continuing the success of the first half-century of the Clean Air Act.

1 The Environmental Council of the States (ECOS), *Cooperative Federalism 2.0: Achieving and Maintaining a Clean Environment and Protecting Public Health*, June 2017

2 The Environmental Council of the States (ECOS), *Resolution 00-1: On Environmental Federalism*, Revised March 27, 2024

Types of Air Quality Data and Metrics

This report primarily relies on data from the U.S. Environmental Protection Agency (EPA) and other federal agencies, such as the U.S. Energy Information Administration (EIA), to evaluate air quality trends. These trends include metrics for criteria air pollutants, air toxics and hazardous air pollutants, visibility progress in National Parks and wilderness areas, and greenhouse gases, with sources provided below each chart or graph and in the reference notes. Also included in this report are case studies and short excerpts from other relevant analyses, which include links to their source and data.

Criteria Air Pollutant Data

Trends and indicators of air quality can be measured in a variety of ways, but an important group of data to analyze is that of the air pollutants that are regulated under the federal Clean Air Act. Section 109 of the Clean Air Act requires U.S. EPA to establish both primary and secondary national ambient air quality standards, or NAAQS. Primary NAAQS are "standards the attainment and maintenance of which in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health," while secondary NAAQS "specify a level of air quality the attainment and maintenance of which… is requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air."[1]

NAAQS have been set for six "criteria" pollutants: carbon monoxide (CO), sulfur dioxide (SO_2), ground-level ozone (O_3), fine and coarse particulate matter ($PM_{2.5}$ and PM_{10}), lead (Pb), and nitrogen dioxide (NO_2). Individual NAAQS may differ in form (for example, annual fourth highest daily maximum 8-hour concentration average over three years, for ozone), level[2] (often measured in parts per billion or micrograms per cubic meter), and averaging time (from one hour up to one year).[3] U.S. EPA and the Clean Air Scientific Advisory Committee review the adequacy of the NAAQS according to the statute.[4]

Nationally, ambient air pollution data from thousands of monitors across the United States are collected by U.S. EPA and state, local, and tribal air pollution control agencies and provided to the Air Quality System, or AQS. These data are used to "assess air quality, assist in attainment/non-attainment designations, evaluate State Implementation Plans [SIPs] for non-attainment areas, perform modeling for permit review analysis, and prepare reports for Congress as mandated by the Clean Air Act."[5]

U.S. EPA reports on long-term air quality trends by preparing data analyses that show the overall trend lines for pollutant concentrations and emissions. Primary sources that inform this report include:

- Criteria air pollutant concentration data from U.S. EPA's analysis of the AQS that looks at long-term trends in air quality.[6]
- Data showing emissions trends of the criteria pollutants from U.S. EPA's Air Pollutant Emissions Trends Data,[7] which relies on the National Emissions Inventory (NEI). The NEI is "a comprehensive and detailed estimate of air emissions of criteria pollutants, criteria precursors, and hazardous air pollutants from air emissions sources… released every three years based primarily upon data provided [to the Emissions Inventory System (EIS)] by State, Local, and Tribal air agencies for sources in their jurisdictions and supplemented by data developed by the US EPA."[8]
- Design values that are computed and published annually by U.S. EPA and defined as "a statistic that describes the air quality status of a given location relative to the level of the NAAQS… typically used to designate and classify nonattainment areas, as well as to assess progress towards meeting the NAAQS."[9]

Other Air Quality Data

In addition to tracking criteria air pollutants, U.S. EPA also maintains data and develops analyses on multiple other federal air quality programs used to inform this report, including:

- The Toxic Release Inventory (TRI), which provides a consistent set of data over time for hazardous air pollutants (or air toxics) from source reporting.[10]
- Visibility progress tracked as part of the Regional Haze Program, with long-term trends available in U.S. EPA's annual air quality trends report.[11]
- Power sector emissions data for SO_2, nitrogen oxides (NO_X), and hazardous air pollutants (HAPs), as published in U.S. EPA's annual progress report.[12]

Additionally, greenhouse gas data in this report are primarily from U.S. EPA's annual *Inventory of U.S. Greenhouse Gas Emissions and Sinks*[13] and U.S. EIA reports, such as the *Annual Energy Outlook*, which includes CO_2 emissions data from energy sources.[14]

1 42 U.S.C. §7409(b).

2 U.S. EPA states: "Units of measure for the standards are parts per million (ppm) by volume, parts per billion (ppb) by volume, and micrograms per cubic meter of air (µg/m^3)."

3 A chart of the primary and secondary NAAQS by pollutant, which includes averaging time, level, and form, can be found here.

4 42 U.S.C. §7409(d).

5 U.S. EPA, Air Quality System. U.S. EPA notes that the AQS "also contains meteorological data, descriptive information about each monitoring station (including its geographic location and its operator), and data quality assurance/quality control information."

6 Links to data summary files for national criteria pollutant trends can be found here.

7 Data can be found here. U.S. EPA notes: "The latest version of the 1970 – 2023 data show the trends for Tier 1 categories which distinguish pollutant emission contributions among major source types. Improvements to the methods used to estimate emissions for the years 2002-2019 were introduced for the trends summaries released in 2023, and are retained for the current February 2024 update of these data."

8 More information on the NEI can be found here. U.S. EPA states: "The NEI is built using the Emissions Inventory System (EIS) first to collect the data from State, Local, and Tribal air agencies and then to blend that data with other data sources."

9 U.S. EPA, Air Quality Design Values.

10 U.S. EPA, Toxics Release Inventory (TRI) Program. Annual TRI National Analysis here. U.S. EPA notes that the TRI "is a resource for learning about toxic chemical releases and pollution prevention activities reported by industrial and federal facilities. TRI data support informed decision-making by communities, government agencies, companies, and others. Section 313 of the Emergency Planning and Community Right-to-Know Act (EPCRA) created the TRI Program."

11 U.S. EPA, Air Quality – National Summary. See also: U.S. EPA, Our Nation's Air: Trends Through 2023, (Section: "Visibility Improves in Scene Areas").

12 U.S. EPA, Power Sector Programs – Progress Report.

13 U.S. EPA releases the *Inventory of U.S. Greenhouse Gas Emissions and Sinks* annually on April 15. See also: U.S. EPA, Greenhouse Gas Inventory Data Explorer.

14 U.S. EIA, *Annual Energy Outlook*, Spring 2025.

AAPCA Member State Air Trends & Successes

"The success of environmental protection and public health in the United States begins on the front lines at the state, tribal and local levels....Collaboration and teamwork with state and territorial environmental and health agencies in particular have made it possible to better achieve the mission of protecting human health and the environment."

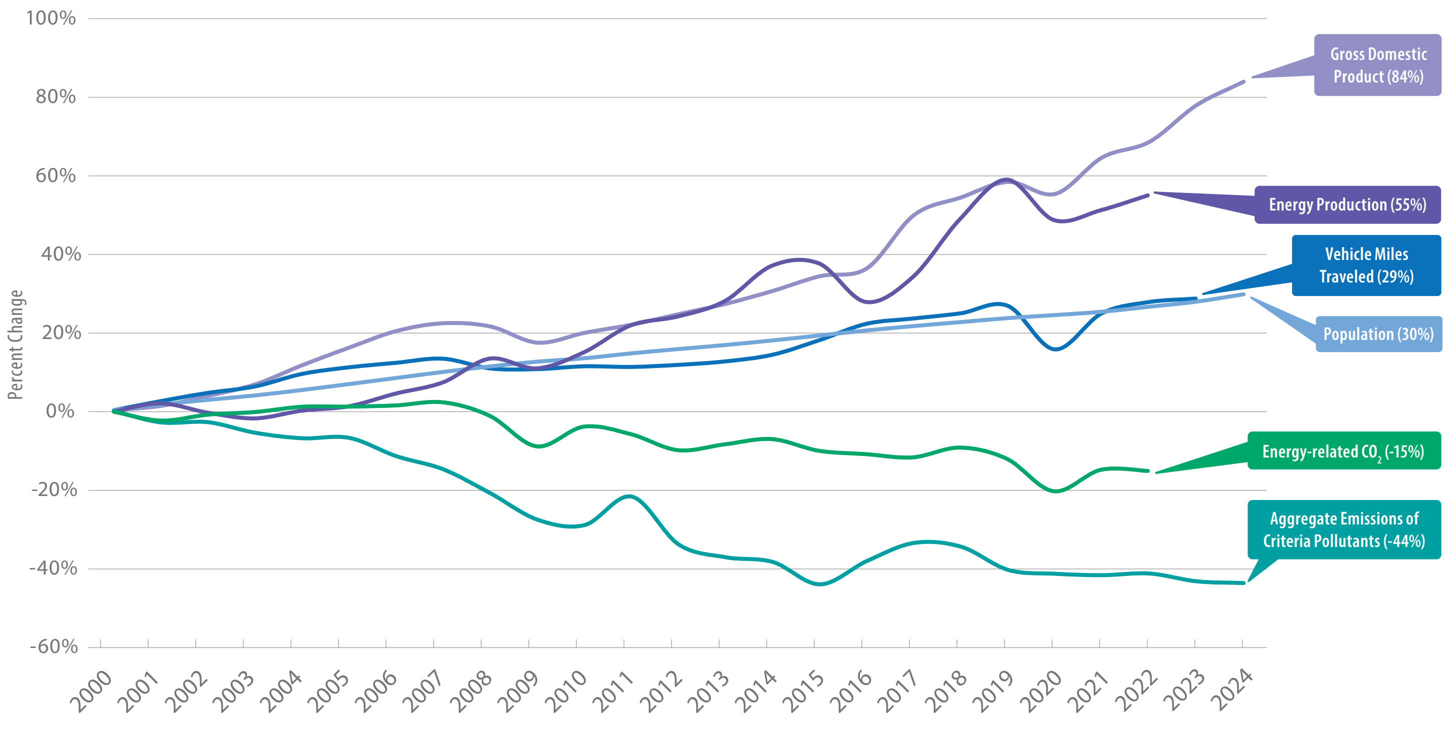
*Source: U.S. EPA, **EPA Research Partner Support Stories**, February 2025 Update.*

Economic Growth and Air Quality in AAPCA Member States

Since the turn of the century, AAPCA Member States have overseen significant improvements in air quality from emissions reductions, decreasing the combined emissions of the pollutants (or pollutant precursors) for which there are national ambient air quality standards, or NAAQS,[1] by 44 percent from 2000 to 2024. Simultaneously, AAPCA Member States have experienced demonstrable economic and social growth:

- A 84 percent increase in Gross Domestic Product (GDP) from 2000 to 2024, including accounting for nearly 39 percent of the total U.S. GDP in 2023.[2]
- A 30 percent increase in population from 2000 to 2024, representing over 149 million people, 44 percent of the total U.S. population.[3]
- A 29 percent increase in vehicle miles traveled from 2000 to 2023.[4]
- A 55 percent increase in energy production from 2000 to 2022, contributing 65 percent of total U.S. energy production in 2022.[5]
- A 15 percent decrease in energy-related carbon dioxide (CO_2) emissions from 2000 to 2022.[6]

Figure 1. AAPCA Member States | Comparison of Growth Indicators and Emissions Since 2000



Sources: U.S. Bureau of Economic Analysis, data available **here**; U.S. Energy Information Administration (EIA), **State Energy Data System (SEDS): 1960-2022**, Table P2. *Primary energy production estimates in trillion Btu, 2022*; U.S. Federal Highway Administration Office of Highway Policy Information, data available **here**; U.S. Census Bureau, data available **here**; U.S. EIA, **Energy-Related CO_2 Emission Data Tables**, Table 1. State energy-related carbon dioxide emissions by year (1970–2022); U.S. EPA, **Air Pollutant Emissions Trends Data**, State Tier 1 CAPS Trends, Criteria pollutants State Tier 1 for 1990–2024.

State Clean Air Act Deadlines

The timeline below lays out important dates for developing State Implementation Plans (SIPs)[1] for several recent U.S. EPA Office of Air & Radiation rulemakings, including National Ambient Air Quality Standards (NAAQS).[2]

2025

- **May 2025** — States Certify 2024 $PM_{2.5}$ Data; U.S. EPA Calculates Design Values
- **June 2025** — proposed U.S. EPA extension for Second Planning Period SIP Progress Reports
- **July 2025** — Ambient Air Monitoring 5-Year Network Assessments Due
- **September 2025** — 2024 Exceptional Events Demonstration Submittals Due
- **October 2025** — U.S. EPA Notifies States of any Intended Modifications to Their Recommendations
- **December 2025** — States Submit Additional Information to Respond to U.S. EPA's Intended Modifications
- **December 2025** — States Submit Recommendations for Secondary SO_2 Designations to U.S. EPA
- **December 2025** — Serious Area Outermost Attainment Date

2026

- **January 2026** — Serious Nonattainment Area SIPs Due
- **February 2026** — U.S. EPA Promulgates Final Area Designations
- **March 2026** — EG State Plans for EG OOOOc Due
- **May 2026** — EG State Plans for Electric Generating Units (EGUs) Due
- **August 2026** — EPA Notifies States of any Intended Modifications to Their Recommendations
- **October 2026** — States Submit Additional Information to Respond to U.S. EPA's Intended Modifications
- **December 2026** — U.S. EPA Promulgates Final Area Designations

2027

- **February 2027** — "Infrastructure" SIPs Due
- **August 2027** — Moderate Area Attainment SIPs Due
- **August 2027** — Serious Nonattainment Area Attainment Date

2028 AND BEYOND

- **March 2029** — State Plan Compliance Deadline for EG OOOOc
- **January 2030** — EG State Plan Compliance Deadline for EGUs (based on subcategory)
- **July 2030** — Ambient Air Monitoring 5-Year Network Assessments Due
- **July 2031** — Proposed Extended Due Date for Third Implementation Period SIPs
- **January 2032** — EG State Plan Compliance Deadline for EGUs (based on subcategory)
- **December 2032** — Moderate Area Attainment Date
- **July 2033** — Third Implementation Period Progress Reports Due
- **December 2036** — Serious Area Attainment Date
- **July 2038** — Fourth Implementation Period SIPs Due

Legend

- 2024 Fine Particulate Matter ($PM_{2.5}$) NAAQS (89 FR 16202)
- 2012 Fine Particulate Matter ($PM_{2.5}$) NAAQS (78 FR 3086, See also: 81 FR 58009)
- 2015 Ozone NAAQS (80 FR 65292)
- NSPS and Emissions Guidelines (EG) for the Oil & Natural Gas Sector / Methane Rule (89 FR 16820)
- NSPS and Emissions Guidelines (EG) for Existing Fossil Fuel-Fired Electric Generating Units (89 FR 39798)
- Monitoring Network
- Regional Haze (89 FR 104471)
- 2024 Secondary Annual Sulfur Dioxide ($SO2_2$) NAAQS (89 FR 105692)

1 A State Implementation Plan (SIP) is a collection of regulations and documents used by a state, territory, or local air district to implement, maintain, and enforce the NAAQS, and to fulfill other requirements of the Clean Air Act. More information from U.S. EPA is available here.

2 On March 12, 2025, U.S. EPA Administrator Zeldin announced the Agency will undertake actions to reconsider at least 27 U.S. EPA Office of Air & Radiation regulations from previous administrations, including several of the recent rulemakings included in this timeline.

Air Quality | Ozone

U.S. EPA's online Green Book "provides detailed information about area National Ambient Air Quality Standards (NAAQS) designations, classifications, and nonattainment status."[7] According to U.S. EPA's Green Book, 47 areas in the United States were previously designated as nonattainment for the 2008 ozone annual National Ambient Air Quality Standards (NAAQS) of 0.075 parts per million (ppm), determined using the annual fourth-highest daily maximum 8-hour concentration, averaged over three years.[8]

U.S. EPA develops design values[9] based on monitoring data from the Agency's Air Quality System (AQS).[10] The table below lists the percent change in design values from 2003 to 2023 for the 13 previously designated nonattainment areas for the 2008 ozone annual NAAQS that are partially or fully within AAPCA Member States, which averaged a 24 percent reduction in ambient concentrations of ozone.[11]

Table 1

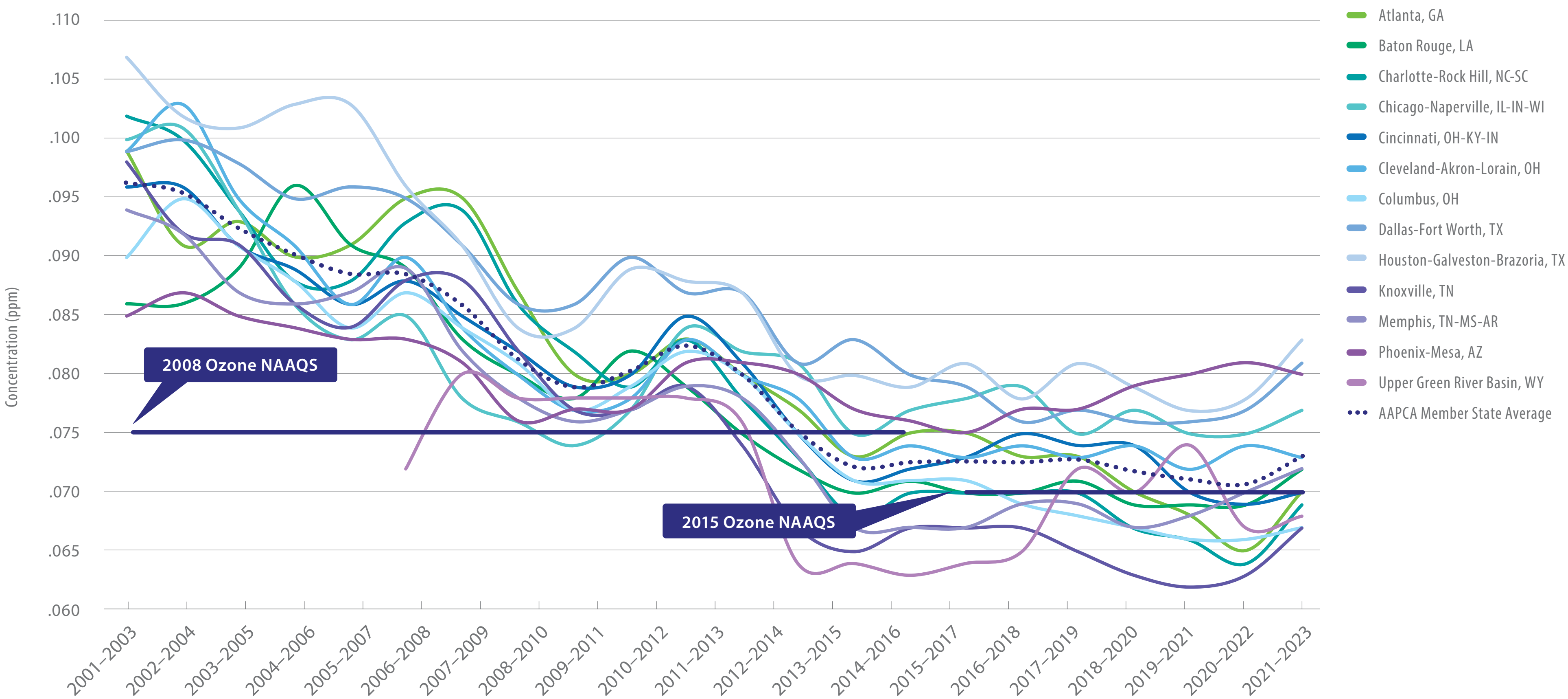
Designated Area	2001 – 2003 Design Value	2021 – 2023 Design Value	Percent Change in Ozone Concentrations
Atlanta, GA	0.091	0.070	-23%
Baton Rouge, LA	0.086	0.072	-16%
Charlotte-Rock Hill, NC-SC	0.100	0.069	-31%
Chicago-Naperville, IL-IN-WI	0.101	0.077	-24%
Cincinnati, OH-KY-IN	0.096	0.070	-27%
Cleveland-Akron-Lorain, OH	0.103	0.073	-29%
Columbus, OH	0.095	0.067	-29%
Dallas-Fort Worth, TX	0.100	0.081	-19%
Houston-Galveston-Brazoria, TX	0.102	0.083	-19%
Knoxville, TN	0.092	0.067	-27%
Memphis, TN-MS-AR	0.092	0.072	-22%
Phoenix-Mesa, AZ	0.087	0.080	-8%
Upper Green River Basin, WY*	--	0.068	-6%

*Upper Green River Basin, WY is calculated from the first year that data was available, design value year 2005–2007. This area is excluded from average calculations.

Source: U.S. EPA, **Air Quality Design Values**, Ozone Design Values, 2023.

Air Quality | Ozone

Figure 2. AAPCA Member States | Design Value History for Areas Previously Designated Nonattainment or Maintenance for the 2008 Ozone Annual NAAQS, 2003 – 2023



Source: U.S. EPA, **Air Quality Design Values**, Ozone Design Values, 2023.

Air Quality | Fine Particulate Matter

According to the U.S. EPA Green Book, a total of 39 areas were initially designated nonattainment for the 1997 fine particulate matter ($PM_{2.5}$) annual NAAQS of 15.0 micrograms per cubic meter ($\mu g/m^3$), measured by the three-year average annual mean concentration.[12]

Of the previously designated nonattainment areas for the 1997 annual $PM_{2.5}$ NAAQS, 23 are located partially or completely within AAPCA Member States. The table below lists the percent change in design values from 2003 to 2023, a period in which AAPCA Member States averaged a 42 percent reduction in $PM_{2.5}$ ambient air concentrations.[13] Furthermore, all the designated areas within AAPCA Member States have since been classified as attainment or maintenance for the 2012 $PM_{2.5}$ NAAQS of 12.0 $\mu g/m^3$.[14]

Table 2

Designated Area	Percent Change in $PM_{2.5}$ Concentrations (2001-2003 through 2021-2023 Design Values)
Atlanta, GA	-46%
Birmingham, AL	-47%
Canton-Massillon, OH	-46%
Charleston, WV	-53%
Chattanooga, TN-GA-AL	-38%
Chicago-Gary-Lake County, IL-IN	-35%
Cincinnati-Hamilton, OH-KY-IN	-37%
Cleveland-Akron-Lorain, OH	-33%
Columbus, OH	-44%
Dayton-Springfield, OH	-41%
Evansville, IN	-42%
Greensboro-Winston Salem-High Point, NC	-42%
Hickory-Morganton-Lenoir, NC	-45%
Huntington-Ashland, WV-KY-OH	-54%
Indianapolis, IN	-29%
Knoxville, TN	-45%
Louisville, KY-IN	-42%
Macon, GA	-38%
Martinsburg-Hagerstown, WV-MD	-44%
Parkersburg-Marietta, WV-OH	-49%
Rome, GA*	-38%
Steubenville-Weirton, OH-WV	-44%
Wheeling, WV-OH	-43%

*Data ends in designation year 2014–2016
Source: U.S. EPA, **Air Quality Design Values**, $PM_{2.5}$ Design Values, 2023.

U.S. EPA and delegated programs at state, local, and tribal air agencies work together to implement the NAAQS, as directed by the federal Clean Air Act (CAA). On February 7, 2024, U.S. EPA promulgated a final rule to tighten the annual $PM_{2.5}$ NAAQS to 9.0 $\mu g/m^3$, based on an annual arithmetic mean averaged over three years.[15] As a result of this revision to the NAAQS, the CAA requires that U.S. EPA designate all parts of the country with respect to the revised annual, or primary, standard. U.S. EPA provides the below timeline for state designations and implementation[16] of the 2024 annual $PM_{2.5}$ NAAQS:

State deadline to submit recommendations for designations to U.S. EPA
February 7, 2025

U.S. EPA notifies states concerning intended modifications to recommendations (120-day letters)
October 9, 2025

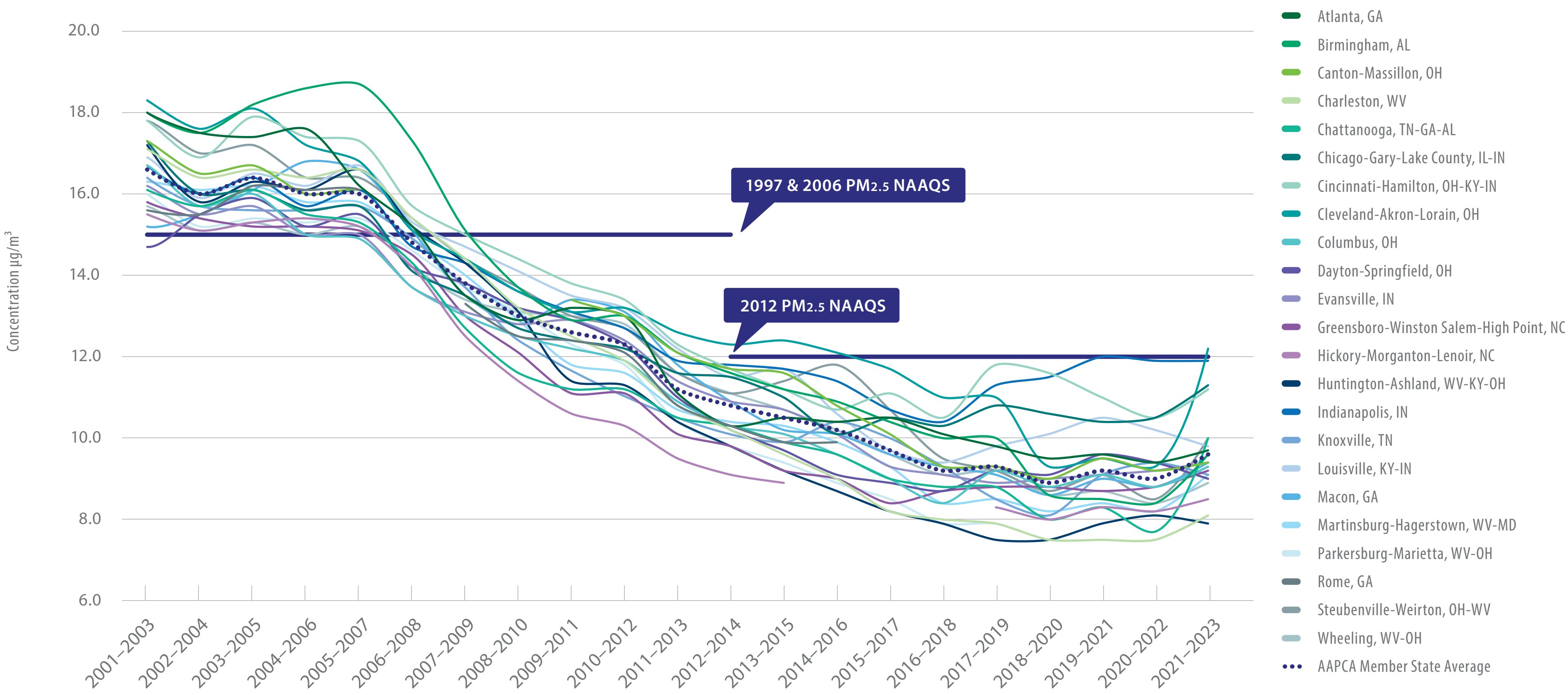
U.S. EPA promulgates final area designations
February 6, 2026

State deadline to submit "infrastructure" state implementation plans (SIP)
February 7, 2027

State deadline to submit nonattainment area SIPs
August 6, 2027

Air Quality | Fine Particulate Matter

Figure 3. AAPCA Member States | Design Value History for Areas Previously Designated Nonattainment or Maintenance for the 1997 $PM_{2.5}$ Annual NAAQS, 2003 – 2023



Source: U.S. EPA, **Air Quality Design Values**, $PM_{2.5}$ Design Values, 2023.

Local Program Case Study | San Joaquin Valley, CA

San Joaquin Valley in Central California Reaches Key $PM_{2.5}$ Air Quality Milestone

In a major development for air quality in Central California, air quality data from 2024 confirms that the San Joaquin Valley has met the federal annual standard for fine particulate matter ($PM_{2.5}$) for the first time. Based on monitoring data from 2022 to 2024, the San Joaquin Valley's official design value has fallen below the 15 micrograms per cubic meter (μg/m^3) threshold established by the U.S. Environmental Protection Agency (EPA) to protect public health.

This milestone marks a significant turning point in a region historically challenged by persistent air quality issues due to its unique topography, meteorological conditions, and emissions sources. Since $PM_{2.5}$ monitoring began in the San Joaquin Valley in 1999, the region has worked to address levels of fine particulate pollution that once reached an annual average of 27.6 μg/m^3. By 2023, that number had dropped to 13.5 μg/m^3—representing a reduction of more than 50 percent over the last 25 years.

The progress is the result of decades of effort by local, state, and federal agencies, in partnership with Valley communities and industries. In particular, the San Joaquin Valley Air Pollution Control District and the California Air Resources Board have implemented a combination of regulatory and voluntary programs to reduce emissions from vehicles, industrial operations, agricultural activities, and other sources. These efforts have contributed to steady improvements in both $PM_{2.5}$ and ozone pollution levels throughout the region.

Despite the Valley's natural disadvantages—including its bowl-like topography that traps pollution and intensifying wildfire seasons—air quality has steadily improved. These improvements over the last few decades have been realized even with rapid population growth across the San Joaquin Valley, an increase in the number of vehicles and vehicle miles traveled (VMT) across the region, and the Valley being a significant transportation corridor for much of California, bringing with it significant impacts from heavy duty freight emissions. The successful reduction in $PM_{2.5}$ levels underscores the importance of sustained, multi-agency coordination and investment in emissions reduction strategies.

The federal annual $PM_{2.5}$ standard was established to limit exposure to fine particulate matter, which can penetrate deep into the lungs and pose serious health risks, especially for vulnerable populations. Meeting this standard is considered an important benchmark for protecting public health and improving quality of life for Valley residents.

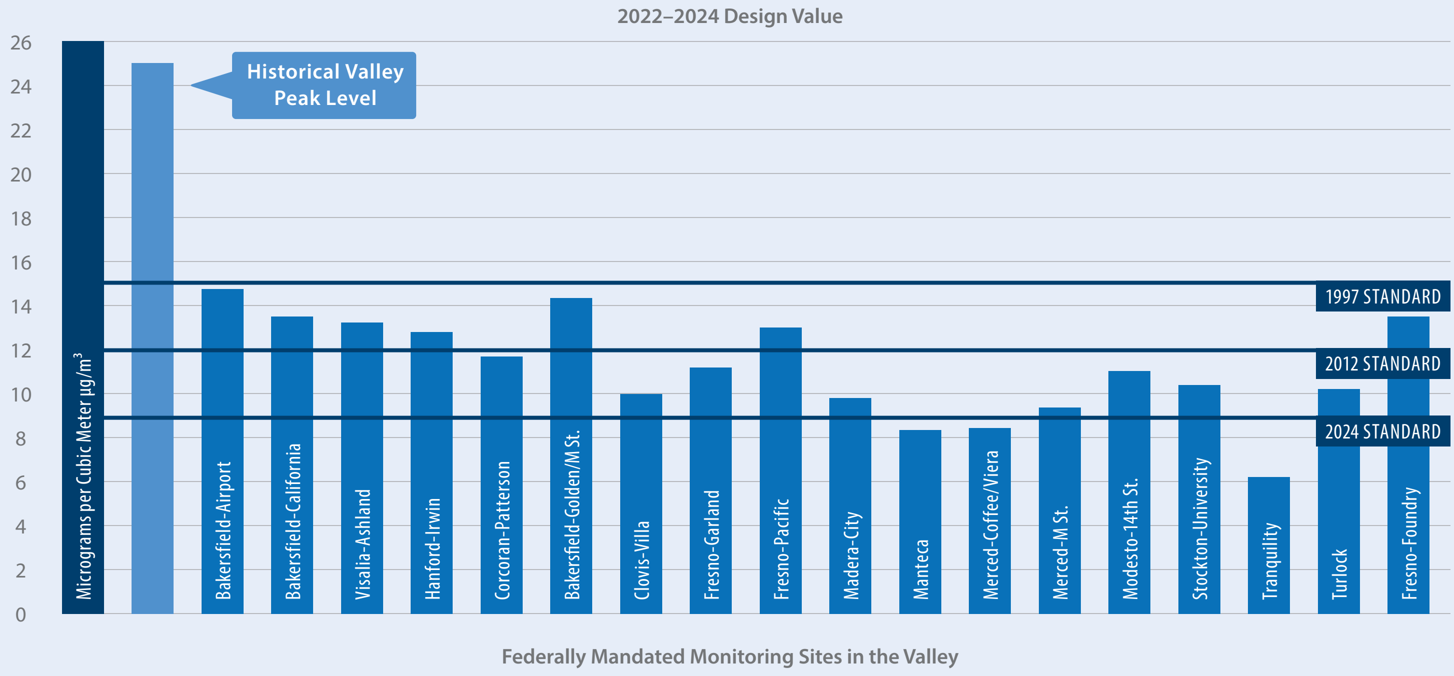
Looking ahead, significant challenges remain. Although the Valley has met the 15 μg/m^3 standard, more stringent standards still remain. Achieving these new goals will require further emissions reductions, particularly from sources not currently regulated by local air districts, such as locomotives, aircraft, and federally regulated mobile sources.

Continued funding for incentive programs and clean technology transitions—such as replacing older diesel equipment with electric or hybrid alternatives—will be crucial. Ongoing collaboration will also play a key role in identifying additional opportunities to reduce emissions and support compliance with the evolving federal standards.

The San Joaquin Valley's achievement in meeting the 15 μg/m^3 standard offers a moment of reflection on the progress made and a reminder of the work that still lies ahead to ensure clean air for all communities in the region.

Thank you to the San Joaquin Valley APCD for the contribution of this case study. More on the SJVAPCD can be found at **www.valleyair.org**.

Figure 4. Particulate Matter Continues to Decline



Regional Haze Case Study | Georgia

Cohutta Wilderness Area

The Cohutta Wilderness Area (Figure 1) is one of three Federal Class I areas in Georgia and is located in the northwest portion of the state. It is managed by the U.S. Forest Service and currently consists of 36,977 acres, with 95 percent of the acres located in Georgia in the Chattahoochee National Forest and the other 5 percent located in Tennessee in the Cherokee National Forest. It is one of the largest federally designated wilderness areas on the East Coast. This area has a rich cultural history and ecological significance, making it a critical area for both preservation and recreation. The Cohutta Wilderness Area is popular with hikers, fishermen, botanists, kayakers, mountain bikers, naturalists, and hunters, offering a variety of ecosystems that include remote gorges, ridgelines, river valleys, and hardwood forests.

The goal of the U.S. EPA's Regional Haze Rule is for each Class I area to achieve natural conditions by the year 2064. The Cohutta Wilderness Area has benefited from the collaborative effort of state, local, and federal stakeholders through the Regional Haze Program. Statewide SO_2 emissions in Georgia were reduced by 95 percent between 2000-2020 and NO_x emissions in Georgia were reduced by 60 percent during this same time period. Visibility progress is measured by comparing the 5-year average haze index (dv) for the 20 percent most impaired days to the uniform rate of progress (URP) glide path at each Class I area. The monitoring data through 2022 indicates that the Cohutta Wilderness Area is well below the 2028 URP glide slope target (Figure 2). In fact, the Cohutta Wilderness Area is currently meeting the 2045 URP target. This is more than 20 years ahead of schedule!

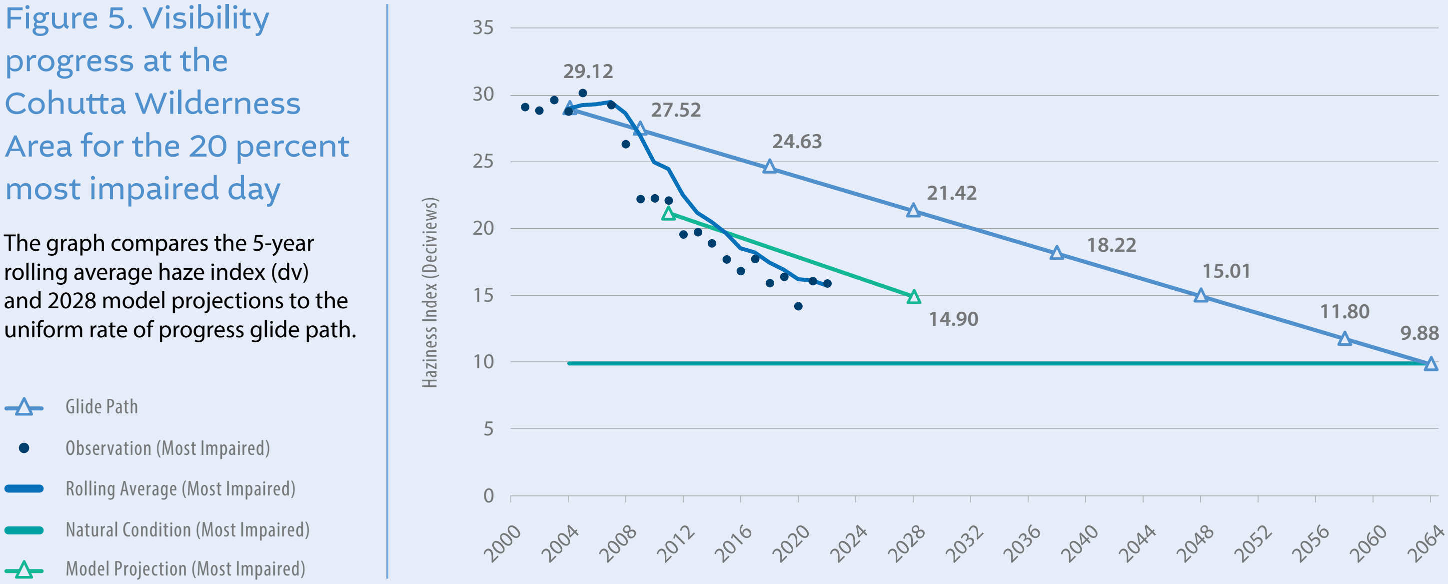
The Georgia Environmental Protection Division (EPD) submitted "Georgia's State Implementation Plan for Regional Haze (Second Planning Period)" on August 11, 2022. On November 21, 2024, EPA formally approved Georgia's SIP submittal. To date, this is the only fully approved Regional Haze SIP for the Second Planning Period in EPA Region 4. In order to meet the aggressive court ordered deadline for submittal, Georgia EPD developed a "Streamlined Response to Comments Approach for SIPs". This innovative approach was awarded an AAPCA Best Practices award in 2023. In addition, Georgia EPD submitted "Georgia's Regional Haze Progress Report for the Second Planning Period" to EPA on March 14, 2025. With all the Regional Haze Second Planning Period obligations completed, Georgia EPD will soon start working on their Regional Haze SIP for the Third Planning Period.

Figure 4. Picture of Cohutta Wilderness Area. Photo taken from exploregeorgia.org/blue-ridge/outdoors-nature/fishing/cohutta-wilderness-area.

More on the Georgia Environmental Protection Division can be found at ***https://epd.georgia.gov/air-protection-branch***.

Figure 5. Visibility progress at the Cohutta Wilderness Area for the 20 percent most impaired day

The graph compares the 5-year rolling average haze index (dv) and 2028 model projections to the uniform rate of progress glide path.



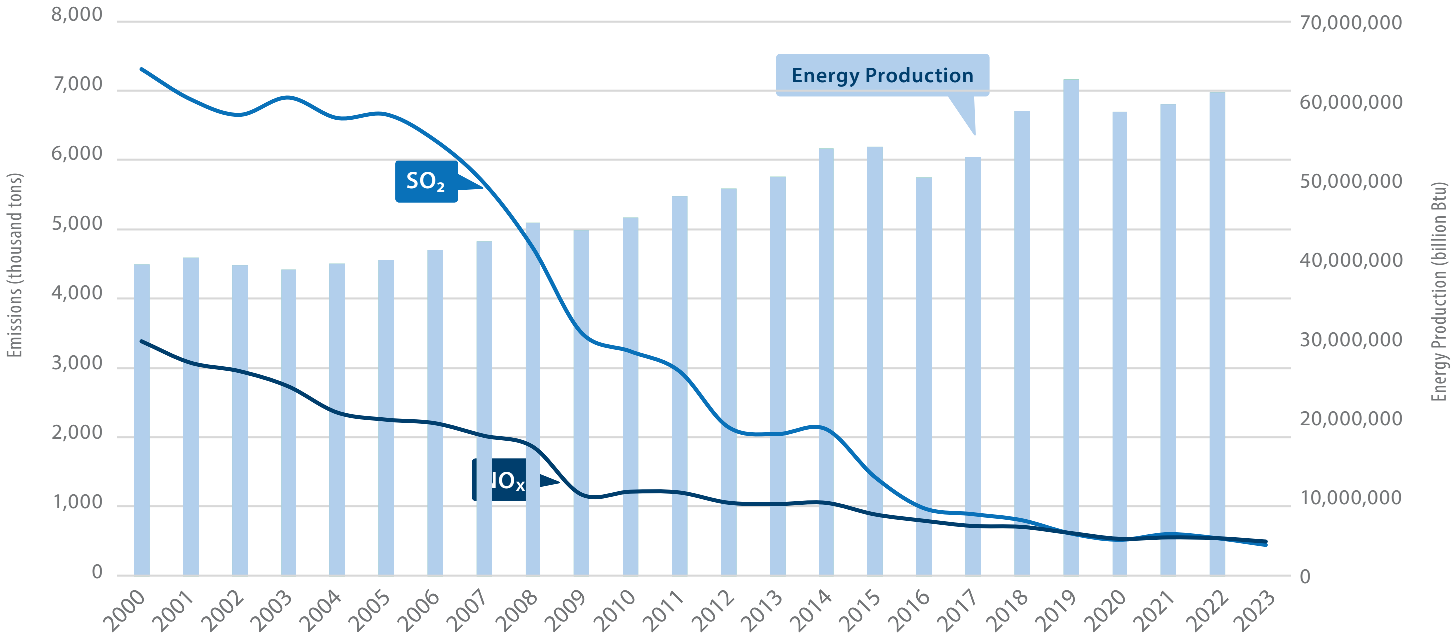
Emissions Reductions in the Electricity Sector

Since 2000, AAPCA Member States have overseen significant reductions in the emissions of sulfur dioxide (SO_2) and oxides of nitrogen (NO_x) from the electricity sector:

- SO_2 emissions decreased 94 percent, from 7,322,232 tons in 2000 reduced to 437,703 tons in 2023; and
- NO_x emissions decreased 86 percent, from 3,405,187 tons in 2000 down to 482,711 tons in 2023.[17]

AAPCA Member States produced nearly 59,500,000 billion British thermal units (billion Btu) of energy in 2022, experiencing a 51 percent increase in energy production from 2000 levels.[18]

Figure 6. AAPCA Member States | Energy Production Compared to SO_2 and NO_x Emissions from the Electricity Sector, Since 2000

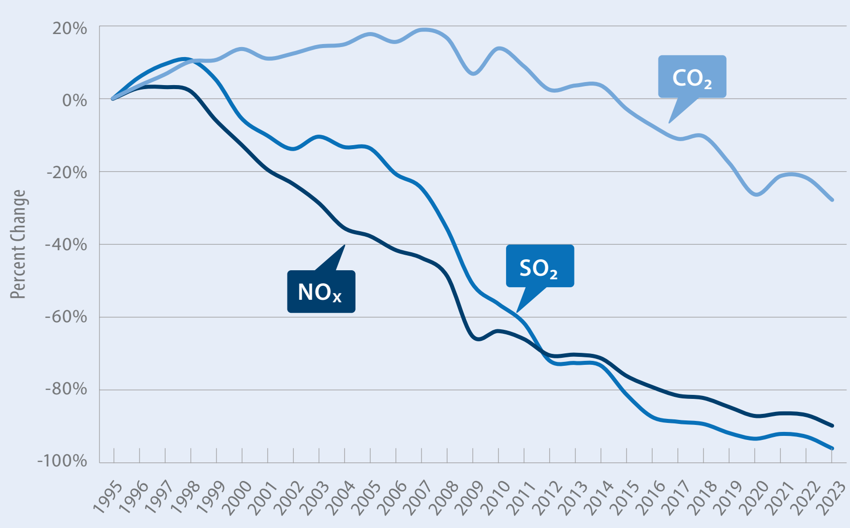


Source: U.S. Energy Information Administration, **State Energy Data System (SEDS): 1960-2022**; U.S. EPA, **Air Pollutant Emissions Trends Data**, State Tier 1 CAPS Trends, Criteria pollutants State Tier 1 for 1990–2023.

U.S. Power Plant Emissions Trends Annual Percent Change of Emissions from Power Plants, Since 1995

In March 2025, U.S. EPA updated the 2023 annual emissions data for power plants across the United States, highlighting the following trends:

- A 24 percent decrease in sulfur dioxide (SO_2) emissions, from 2022 to 2023, which is 96 percent below 1995 levels;
- A 15 percent decrease in nitrogen oxides (NO_x) emissions, from 2022 to 2023, which is 90 percent below 1995 levels; and,
- A 7 percent decrease in carbon dioxide (CO_2) emissions, from 2022 to 2023, which is 28 percent below 1995 levels.



Source: U.S. EPA, Power Plant Progress Report, last updated September 12, 2024. Data available **here**.

Emissions Reductions in the Electricity Sector

Data from U.S. EPA's Clean Air Markets Programs[19] show that the United States reduced sulfur dioxide (SO_2) emissions from the electricity sector by 96 percent, from 15,592,075 tons in 1990 to 664,622 tons in 2023.

AAPCA Member States accounted about 65 percent of the total 14,927,453-ton national reduction in SO_2 emissions, lowering SO_2 emissions from 10,013,501 tons in 1990 to 383,489 tons in 2023.[20]

Figure 7. AAPCA Member States Share of SO_2 Emissions Reductions in the Electricity Sector, 1990–2023 (tons of SO_2 reduced)

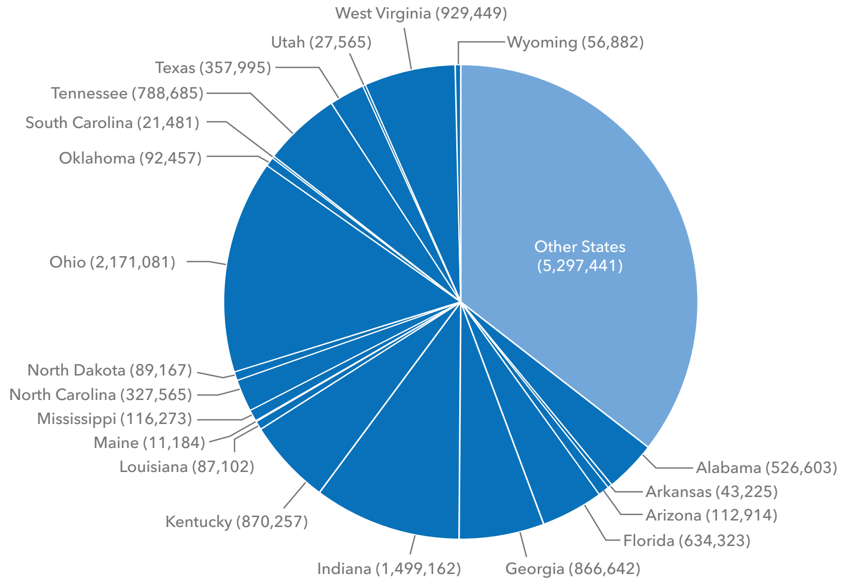
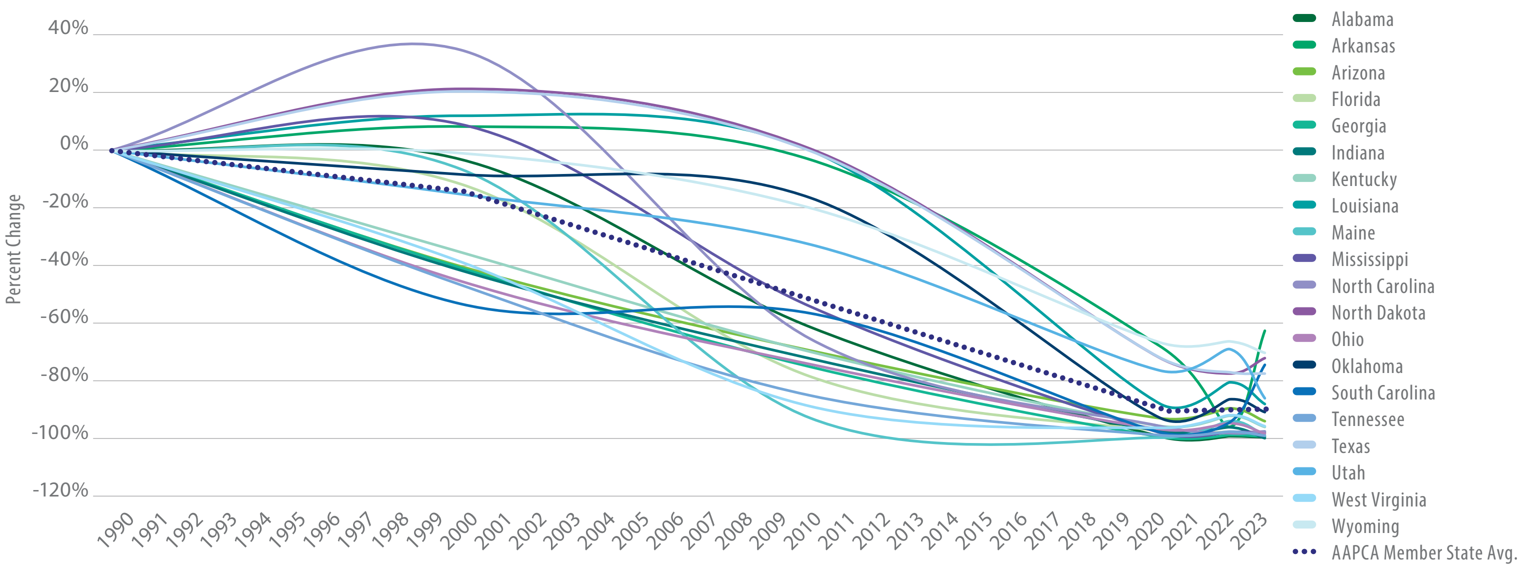


Figure 8. AAPCA Member States | Percent Reduction in SO_2 Emissions from the Electricity Sector, 1990–2023



Source: U.S. EPA, "State-by-State SO_2 Emissions from CSAPR and ARP Sources, 1990-2023," January 27, 2025.

Emissions Reductions in the Electricity Sector

U.S. EPA's Clean Air Markets Programs[21] data also show that the United States reduced nitrogen oxides (NO_x) emissions from the electricity sector by 90 percent, from 6,409,837 tons in 1990 to 639,686 tons in 2023.

AAPCA Member States accounted for 59 percent of the total 5,770,151-ton national reduction in NO_x emissions, lowering NO_x emissions from 3,861,642 tons in 1990 to 434,664 tons in 2023.[22]

Figure 9. AAPCA Member States Share of NO_x Emissions Reductions in the Electricity Sector, 1990–2023 (tons of NO_x reduced)

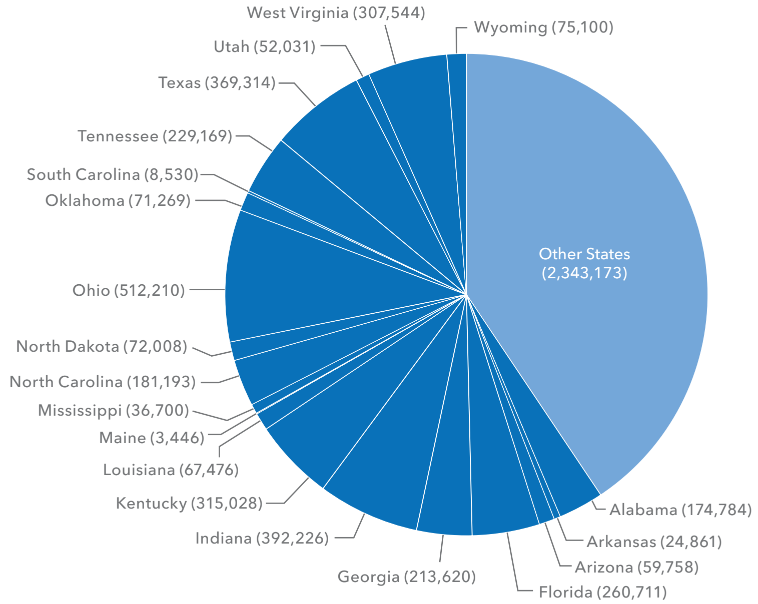
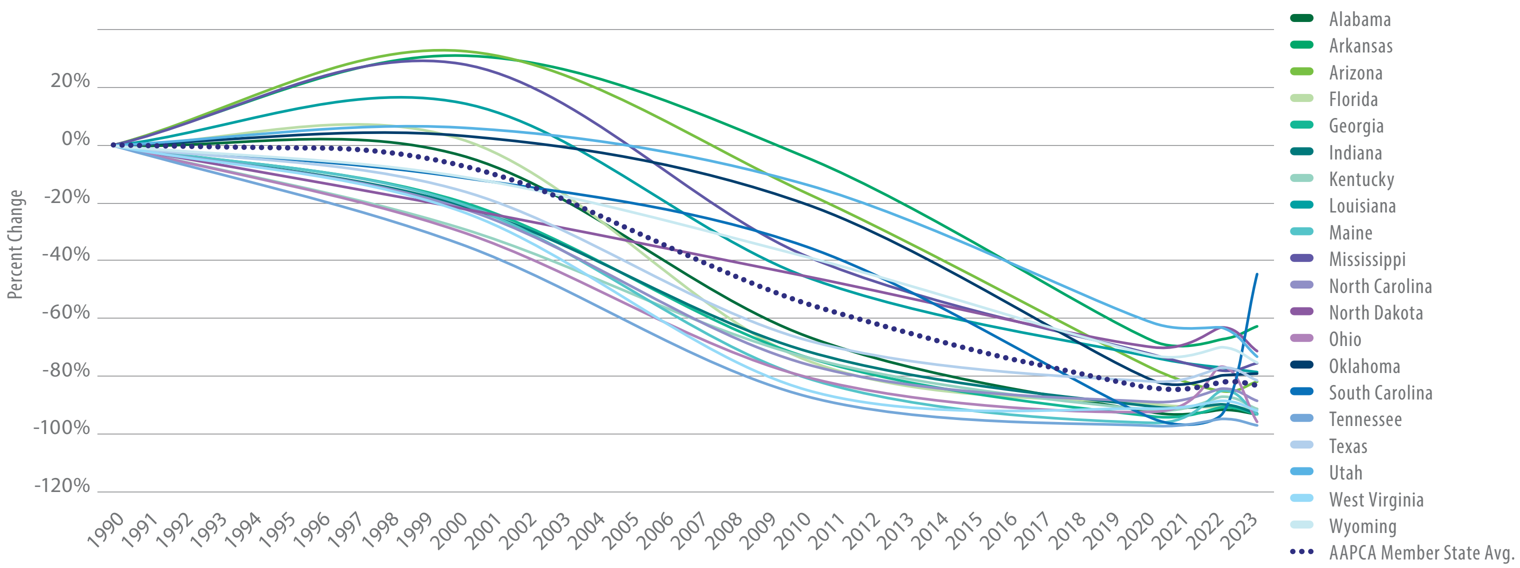


Figure 10. AAPCA Member States | Percent Reduction in NO_x Emissions from the Electricity Sector, 1990–2023

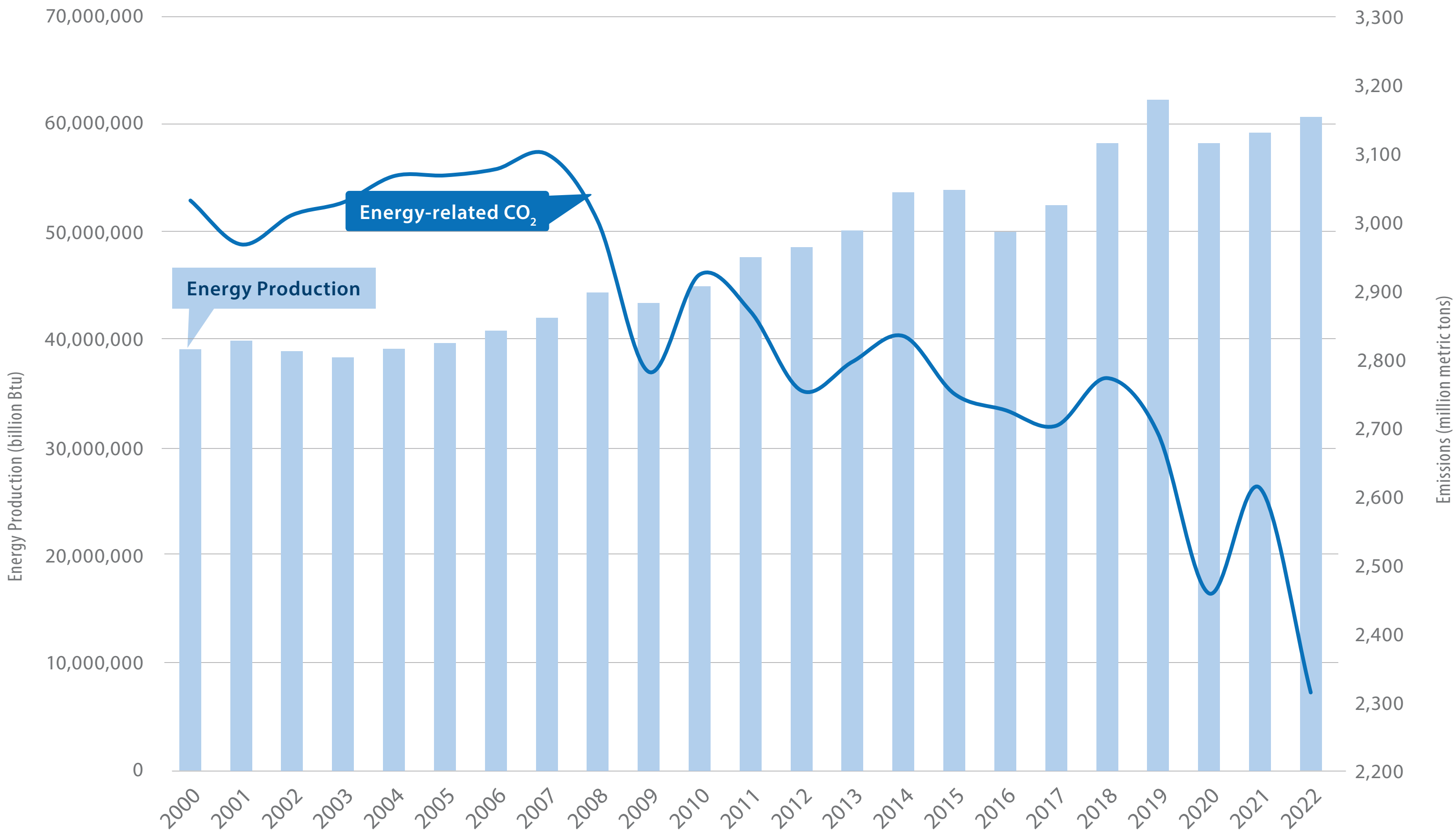


Source: U.S. EPA, "State-by-state NOX Emissions from CSAPR and ARP Sources, 1990–2023," January 27, 2025.

Energy-Related Carbon Dioxide

Data for 2022 from U.S. Energy Information Administration (EIA) show that AAPCA Member States reduced energy-related carbon dioxide (CO_2) emissions by 25 percent compared to 2000 levels, from 3,107 million metric tons of CO_2 in 2000 to 2,323 million metric tons in 2022. Over the same period, energy production in AAPCA Member States increased by 55 percent. In 2022, total energy production in AAPCA Member States was more than 21,000,000 billion British thermal units (Btu) higher than in 2000.[23]

Figure 11. AAPCA Member States | Total Energy Production Compared to Energy-Related CO_2 Emissions, 2000—2022



Source: U.S. Energy Information Administration (EIA), **State Energy Data System (SEDS): 1960-2022**; U.S. EIA, **Energy-Related CO_2 Emission Data Tables**, Table 1. State energy-related carbon dioxide emissions by year.

Carbon Intensity of the Economy

The U.S. Energy Information Administration (EIA) also calculates carbon intensity of the economy by state as metric tons of energy-related CO_2 per chained 2012 million dollars of gross domestic product. The table below lists the percent reduction in carbon intensity of the economy for AAPCA Member States from 2000 to 2022. AAPCA's membership oversaw an average reduction in carbon intensity of the economy of 43.9 percent.[24]

Table 3

AAPCA Member State	Percent Change in Carbon Intensity of the Economy (2000-2022)
Alabama	-51.7%
Arizona	-47.8%
Arkansas	-43.0%
Florida	-52.1%
Georgia	-53.6%
Hawaii	-36.6%
Indiana	-49.1%
Kentucky	-43.4%
Louisiana	-20.1%
Maine	-52.6%
Mississippi	-35.0%
North Carolina	-54.4%
North Dakota	-34.9%
Ohio	-47.8%
Oklahoma	-46.1%
South Carolina	-51.3%
Tennessee	-56.6%
Texas	-47.6%
Utah	-55.8%
West Virginia	-19.4%
Wyoming	-22.4%

Source: U.S. Energy Information Administration, **Energy-Related CO_2 Emission Data Tables**, Table 7. Carbon intensity of the economy by state.

Air Toxics

Data from U.S. EPA's *2023 Toxics Release Inventory (TRI) National Analysis* shows a national reduction in reported toxic air releases of 33 percent over the last decade, down from 775,021,513 pounds in 2013 to 520,738,140 pounds in 2023.[25]

Of the 254,283,373-pound decrease in reported toxic air releases from 2013 to 2023, AAPCA Member States were responsible for 172,057,214 pounds, or about 68 percent.[26]

Figure 12. AAPCA Member States Share of Total Reduction of Reported Toxic Air Releases, 2013–2023 (pounds reduced)

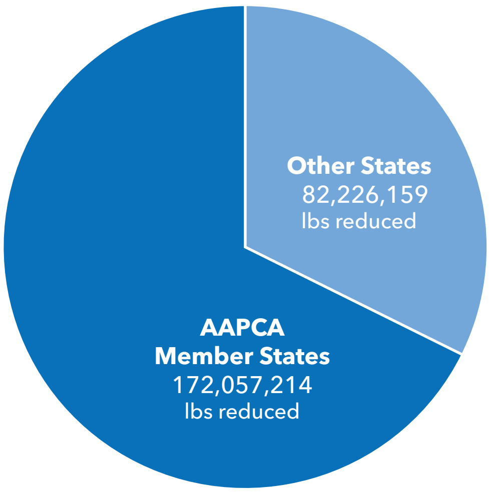
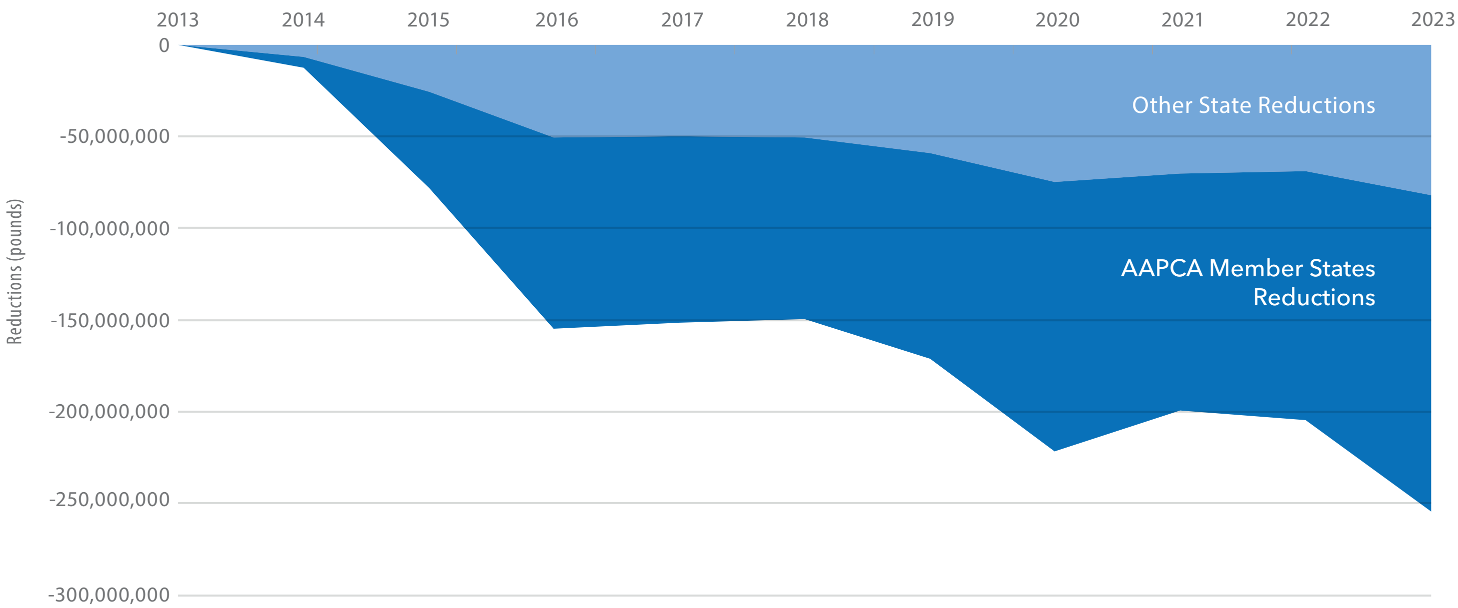


Figure 13. AAPCA Member States | Annual Share of National Reduction in Reported Toxic Air Releases, 2013–2023



U.S. EPA Toxics Release Inventory Explorer, **2023 TRI Factsheets**.

Local Program Case Study | Louisville, KY

STAR (Strategic Toxic Air Reduction Program): Louisville's Local Air Toxics Program

By the early 2000s resident concerns had long been mounting about toxic air pollution emissions from "Rubbertown," an industrial area along the Ohio River in west Louisville, Kentucky, nicknamed for the tire and synthetic rubber facilities that were built there during World War II. Rubbertown had become home to facilities producing a variety of chemicals and materials, many of which were in close proximity to residential areas. In response to these concerns and existing environmental studies, the Louisville Metro Air Pollution Control District (LMAPCD) and other local partners, including the West Jefferson County Community Task Force (WJCCTF), the Kentucky Division for Air Quality (KY DAQ), and the University of Louisville (UofL), conducted a landmark air monitoring study known as the West Louisville Air Toxics Study (WLATS). WLATS concluded that Louisville had unacceptably high levels of toxic chemicals in the air, particularly in Rubbertown-adjacent neighborhoods.

After more than 60 public meetings with approximately 1,300 attendees and hundreds of questions and responses, the Louisville Metro Air Pollution Control Board adopted the Strategic Toxic Air Reduction (STAR) program through a set of local regulations on June 21, 2005. STAR established a framework to assess and address toxic air emissions in Louisville and the risk they pose to nearby communities.

Among other steps, the regulations identified 190 toxic air contaminants (TACs), relied on scientific research to determine cancer and non-cancer risk of those chemicals, and required facilities' modeled emissions to meet certain risk benchmarks. For example, no existing facility may create a cancer risk of greater than 7.5 in a million at an adjacent resident fence line, and no single chemical as part of a single process may create a cancer risk greater than 1 in a million. In the nearly 20 years since the passing of the STAR program, local emissions of toxic air pollution in Louisville have been significantly reduced.

Figure 17. One of the public meetings held as part of the process to create the STAR program

According to the latest data from U.S. EPA's Toxics Release inventory, emissions of all TACs have been reduced by more than 85 percent in Louisville. Emissions of Category 1 TACs, those that were of the greatest concern based on the WLATS, have been reduced by more than 97 percent. Still, the work of STAR continues in LMAPCD permits and compliance work. As LMAPCD's Director Rachael Hamilton likes to say, "STAR is a do, not a did."

Figure 14. Total TAC emissions, 2005-2023

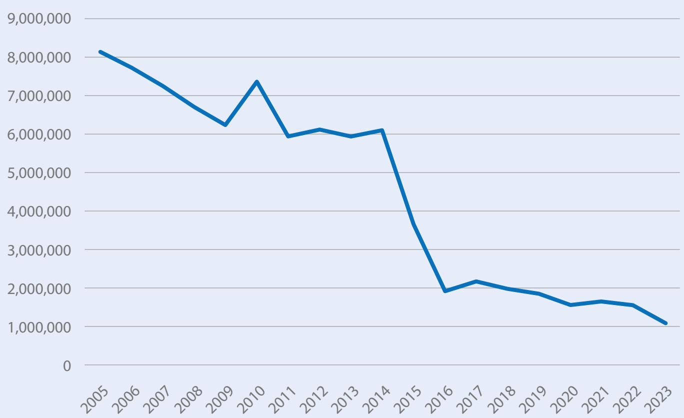
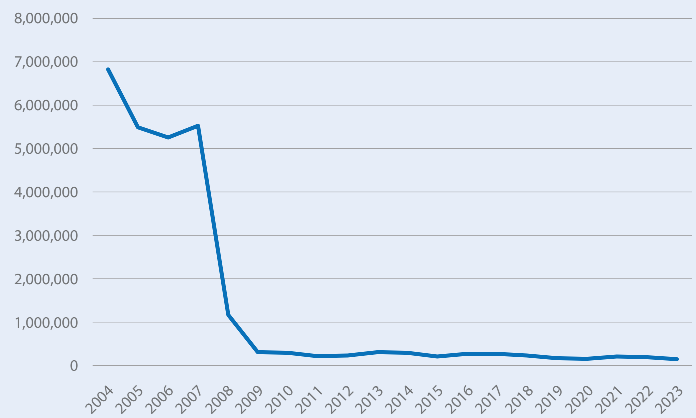


Figure 15. Category 1 TACs, 2005-2023



Thank you to the LMAPCD for the contribution of this case study. More on the LMAPCD can be found at **https://louisvilleky.gov/government/air-pollution-control-district**.

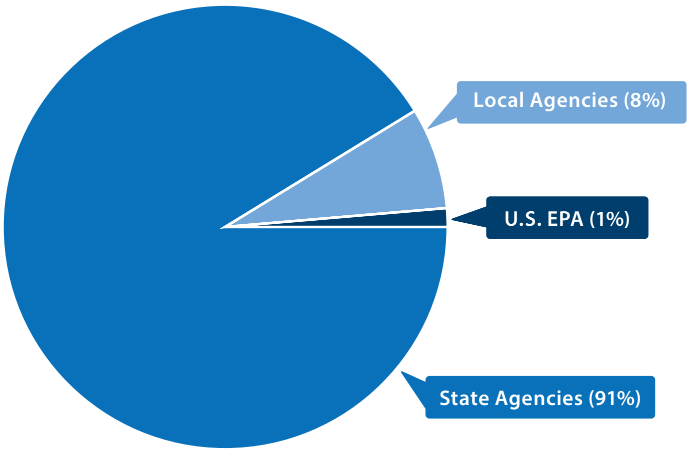
Compliance and Enforcement Activity

U.S. EPA's Enforcement and Compliance History Online (ECHO) Air Dashboard notes that "EPA delegates much of its [Clean Air Act] authority to state, local, and tribal agencies" to regulate air pollution from stationary sources.[27] ECHO documents compliance monitoring activities that are undertaken by state and local air agencies and U.S. EPA, such as compliance evaluations, compliance determinations, and enforcement actions.

The ECHO Air Dashboard shows that of the 51,676 facilities permitted under the Clean Air Act in federal fiscal year (FY) 2024, states were the permitting agency for 47,153 facilities, local agencies for 3,822, and U.S. EPA for 701 facilities. AAPCA Member States were the permitting agency for 23,224 facilities, or 49 percent of the state agency total in 2024.[28]

Figure 16. Facilities Permitted under Clean Air Act by Lead Agency, 2024

Source: U.S. EPA, Analyze Trends: EPA/State Air Dashboard.

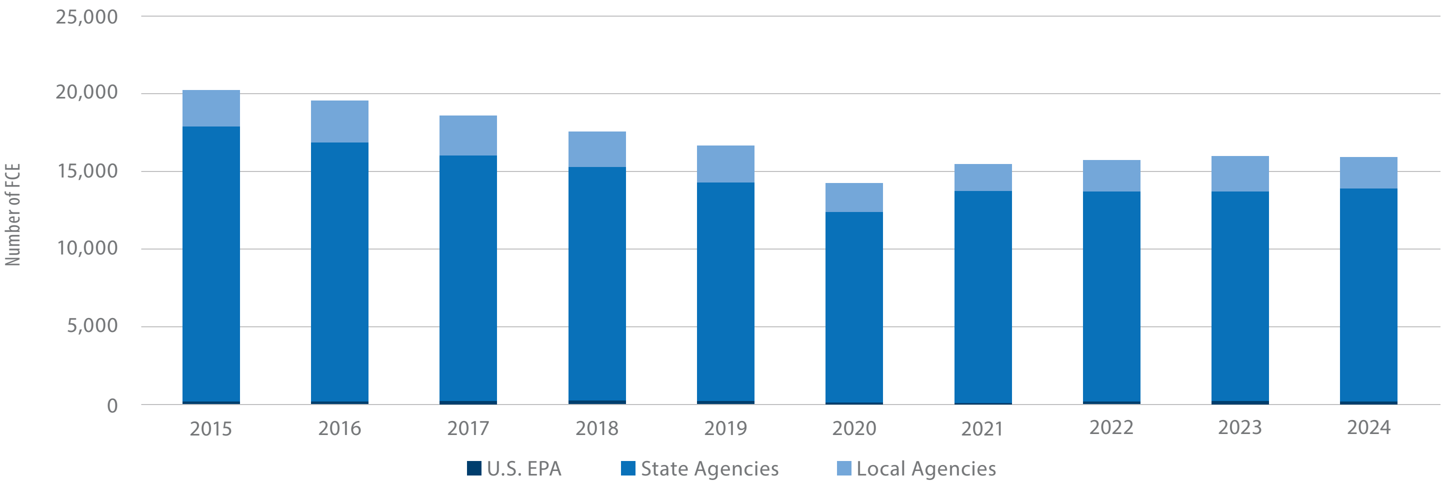


The ECHO Air Dashboard also provides data on Full Compliance Evaluations (FCE) performed by U.S. EPA and state and local agencies. U.S. EPA defines an FCE as "a comprehensive evaluation of the compliance status of the facility. It looks for all regulated pollutants at all regulated emission units, and it addresses the compliance status of each unit, as well as the facility's continuing ability to maintain compliance at each emission unit."[29]

In 2024, AAPCA Member States were the lead agency for 6,857 FCE, approximately 50 percent of the state lead agency total. In federal FY 2024, ECHO details the following FCE lead agency distribution:

- States were the lead agency for 13,730 FCE, averaging more than 14,600 FCE annually since 2015;
- Local programs were the lead agency for 2,035 FCE, averaging more than 2,200 FCE annually since 2015; and,
- U.S. EPA was the lead agency for 172 FCE, averaging about 160 FCE annually since 2015.[30]

Figure 17. Full Compliance Evaluations under Clean Air Act by Lead Agency, 2015–2024



Source: U.S. EPA ECHO, Analyze Trends: EPA/State Air Dashboard.

AAPCA **Best Practices** in Air Pollution Control

Each year, AAPCA designates Best Practices that identify ground-breaking technology, innovative approaches, and exemplary operations in the field of air pollution control, with particular focus on activities that are directly transferable to the operation of an air pollution control agency. Below are recipients of AAPCA's Best Practices in Air Pollution Control for the last five years:

2024

Oklahoma's Air Quality Health Advisory Program
Oklahoma Department of Environmental Quality

Enhance Exceptional Event Demonstrations for Wildfire Events using a New Modeling Approach
Pennsylvania Department of Environmental Protection

Comprehensive Wildfire Prevention and Smoke Impact Response Program
San Joaquin Valley Air Pollution Control District (Local Government Best Practice)

2023

Streamlined Response to Comments Approach for State Implementation Plans
Georgia Environmental Protection Division

Representative Sample Guidance Document
Oklahoma Department of Environmental Quality

Wyoming Pond Emissions Calculator
Wyoming Department of Environmental Quality

Healthy Air Living Schools Program
San Joaquin Valley Air Pollution Control District (Local Government Best Practice)

2022

Open Burn Permit Program
Arizona Department of Environmental Quality

2022 Air Quality Workshop
Oklahoma Department of Environmental Quality

Environmental Trainee Mentoring Program
Pennsylvania Department of Environmental Protection

Wyoming Environmental Audit Process
Wyoming Department of Environmental Quality

Air Quality Action Partners Program
Louisville Metro Air Pollution Control District (Local Government Best Practice)

Streamlined Communication and Collaboration for Air Monitoring Programs via Microsoft Teams
Mecklenburg County Air Quality (Local Government Best Practice)

Residential Woodsmoke Reduction Strategy
San Joaquin Valley Air Pollution Control District (Local Government Best Practice)

2021

COVID-19 Air Quality Inspection/Compliance Determinations
Arizona Department of Environmental Quality

Efficiencies in the Data Quality Review of Ambient Air Monitoring Data
Georgia Environmental Protection Division

NESHAP 6H Reg Nav Tool
North Carolina Department of Environmental Quality

Shiny Dashboard for Remote Monitoring of Air Quality Data
Tennessee Department of Environment and Conservation

2020

Georgia PSD Emissions Inventory
Georgia Environmental Protection Division

Presentations from all past recipients can be found on AAPCA's website at **www.cleanairact.org**

American Air Quality in an International Context

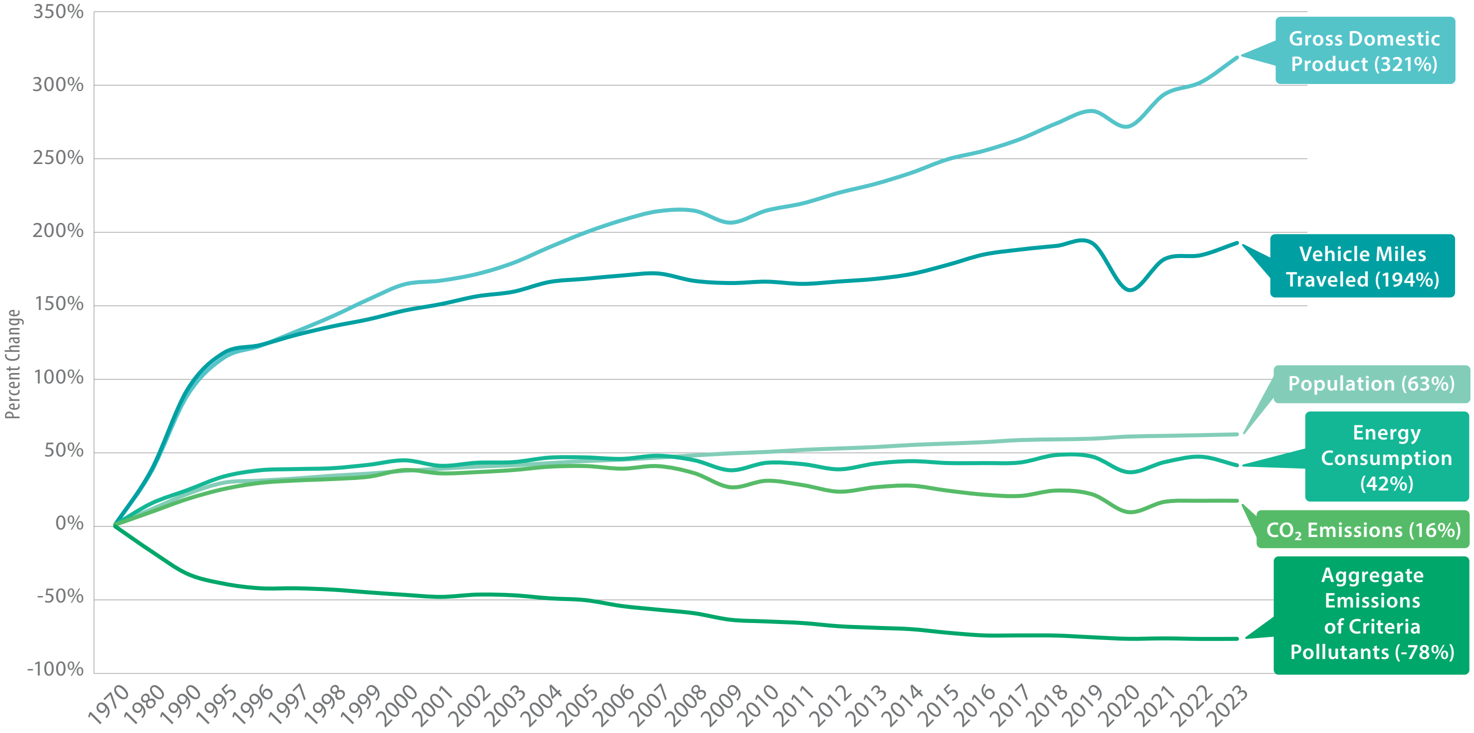
"The Clean Air Act directs EPA to periodically review the National Ambient Air Quality Standards. Together with our Tribal, state, and local air agency partners, we have successfully implemented those standards to bring Americans cleaner air and lower risks of adverse health effects."

*U.S. EPA, **Our Nation's Air: Trends Through 2023** (Section: "NAAQS"), June 2024.*

Economic Growth and Air Quality in the United States

Since 1970 when the Clean Air Act was enacted, the United States has reduced aggregate emissions of the six criteria air pollutants by 78 percent.[31] U.S. EPA's 2024 report, *Our Nation's Air: Trends Through 2023*, indicates that the substantial progress in emissions reductions and air quality improvements have occurred while economic indicators in the United States remain strong. Between 1970 and 2023, national gross domestic product grew by 321 percent, vehicle miles traveled increased by 194 percent, population grew by 63 percent, and energy consumption rose by 42 percent.[32]

Figure 18. Growth Indicators and Emissions Reductions in the United States, 1970–2023



Source: U.S. EPA, ***Our Nation's Air: Trends through 2023***, Section: "Economic Strength with Cleaner Air," June 2024.

Internationally, the United States ranks:

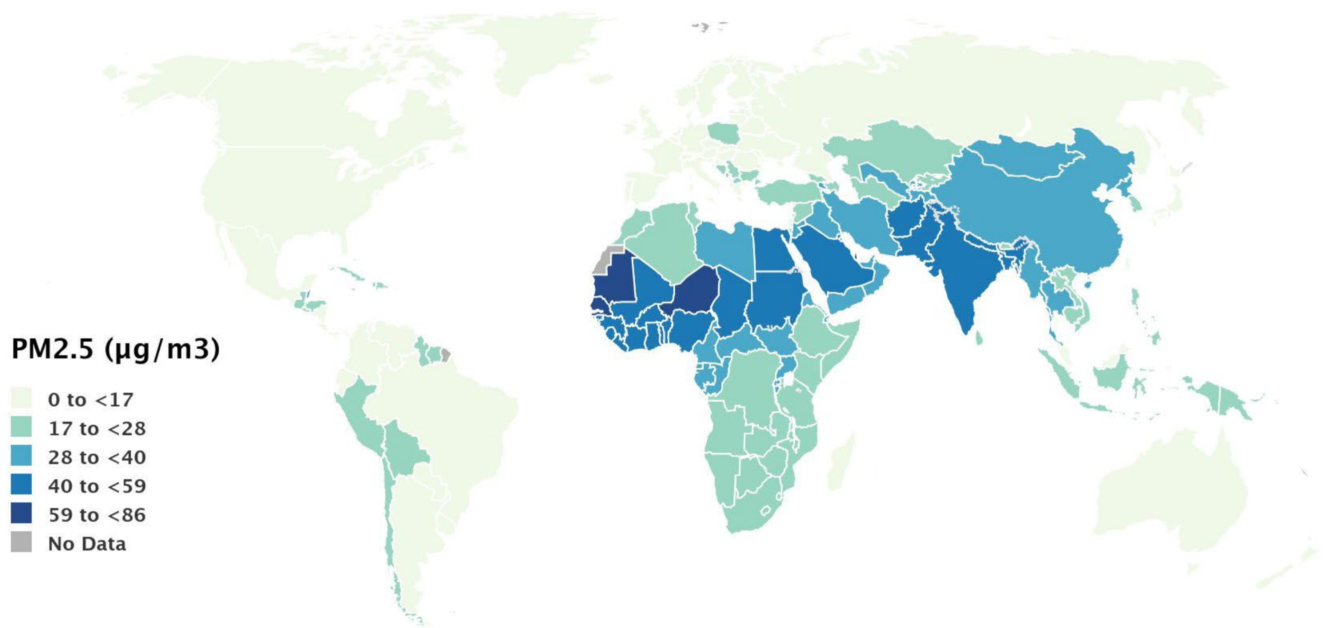
- First in gross domestic product, at $27.72 trillion in 2023, representing approximately 26 percent of gross world product.[33]
- Second in both total energy supply, at 90,978,682 terajoules (TJ), and total electricity generation, at 4,495,368 gigawatt hours (GWh), representing approximately 15 percent of the world total in 2022 for both categories.[34]
- Third in population, at more than 342 million people in 2025, representing approximately 4 percent of the world population.[35]

International Air Quality | Fine Particulate Matter

The State of Global Air/2024, a research and outreach initiative led by the Health Effects Institute and the Institute for Health Metrics and Evaluation's Global Burden of Disease (GBD) project, reports on global exposure to air pollution and its human health impacts. The report includes information on global health impacts of fine particulate matter ($PM_{2.5}$), nitrogen dioxide (NO_2), and ozone (O_3), from 1990-2021.

The State of Global Air/2024 report indicates that on a global scale $PM_{2.5}$ levels are decreasing or stabilizing in many regions, with a global average exposure of 31.3 μg/m^3 in 2020, while the average $PM_{2.5}$ concentration in the United States in 2020 was 7.81 ug/m^3. The primary sources of $PM_{2.5}$ in the Middle East and Africa include dust, power plants, transportation, and industries, while the primary sources of $PM_{2.5}$ in South Asia include residential fuel use, energy generation, industries, and agriculture. Notably, $PM_{2.5}$ exposure in low- and middle-income countries (LMICs) are one to four times higher than exposures in high-income countries, tracking with socio-economic development and national policy actions.

Figure 19. Global Map of National Population-Weighted Annual Average $PM_{2.5}$ Concentrations in 2020

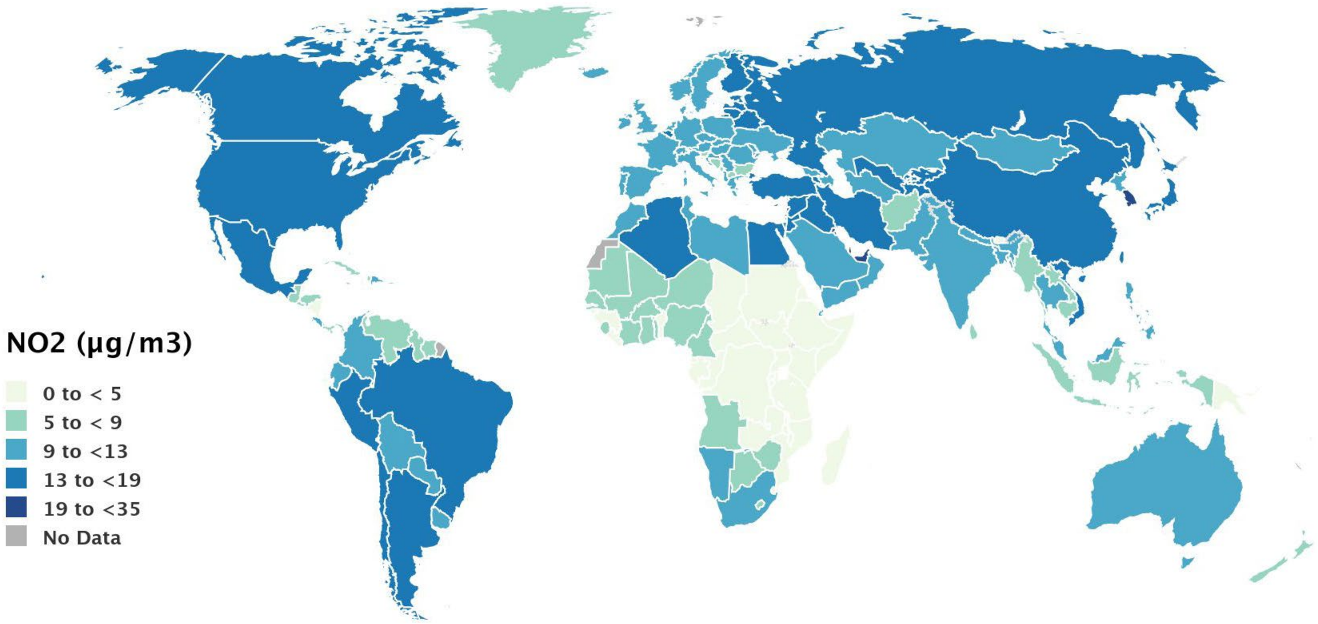


Source: Health Effects Institute. 2024. *State of Global Air 2024*. Available: **www.stateofglobalair.org** [accessed 3/20/2025]. Global Burden of Disease Study 2021. IMHE, 2024.

International Air Quality | Nitrogen Dioxide

The *State of Global Air/2024* report recognizes the contribution of NO_2 to other pollutants, including O_3 and secondary particulate matter. The report also indicates that the highest levels of NO_2 pollution are seen in high-income countries, due to NO_2 being generated from the burning of fuel in vehicles, power plants, and industrial facilities. In addition to vehicle traffic, agriculture is also a primary source of nitrogen oxides. The highest levels of NO_2 are seen in North Africa and the Middle East (26.8 ug/m^3), and in Central and Eastern Europe and Central Asia (26.1 ug/m$_3$); The average NO_2 concentration in the United States in 2020 was 14.5 ug/m^3. The highest exposures to NO_2 are seen in countries with a high socio-development index, like Singapore, Japan and Canada. Notably, these countries are also experiencing a substantial decline in NO_2 exposures due to sustained policy action and technological advancements.

Figure 20. Global Map of National Population-Weighted Annual Average NO_2 Concentrations in 2020

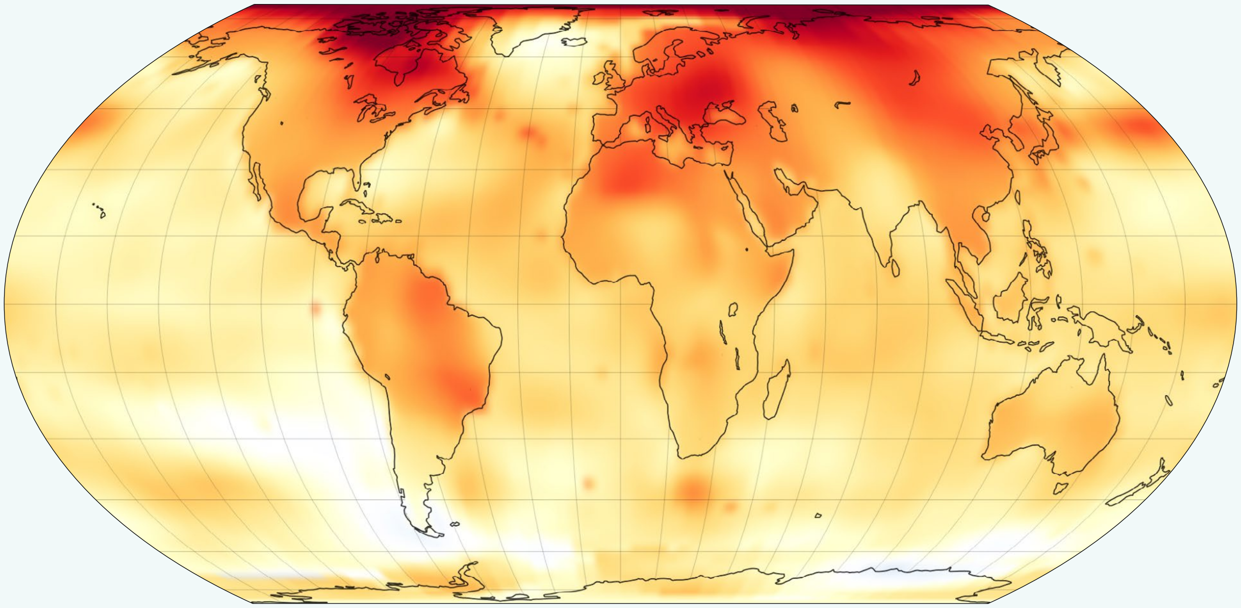


Source: Health Effects Institute. 2024. *State of Global Air 2024*. Available: **www.stateofglobalair.org** [accessed 3/20/2025]. Global Burden of Disease Study 2021. IMHE, 2024.

Satellite Snapshot | 2024 A Record Year

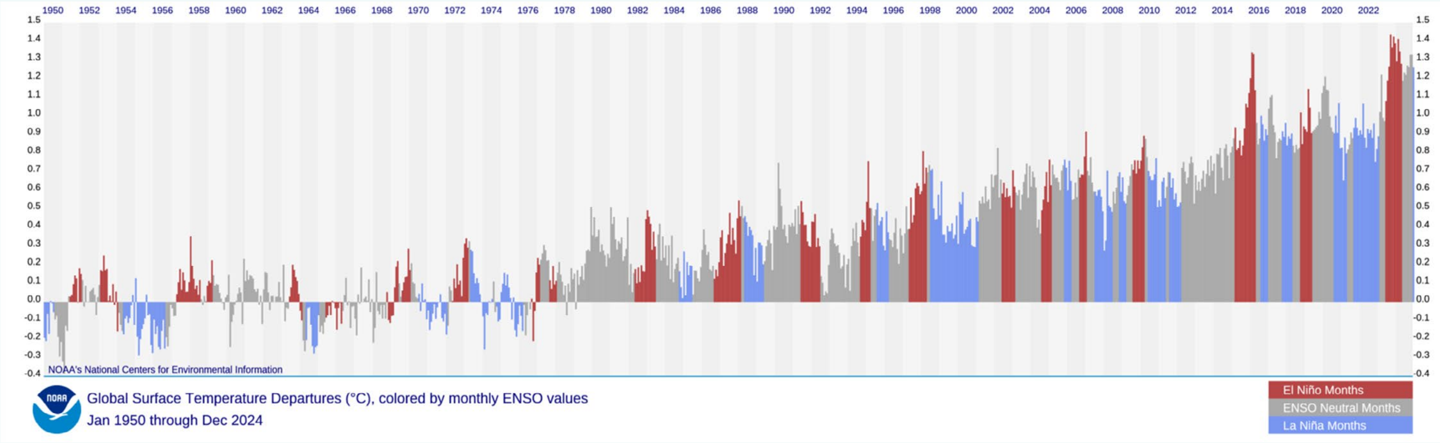
Data from the National Oceanic and Atmospheric Administration (NOAA) and the National Aeronautics and Space Administration (NASA) Earth Observatory (EO) demonstrate that global temperatures on the Earth's surface in 2024 were the warmest on record. The global surface temperature in 2024 exceeded the pre-industrial (1850-1900) average global temperature by 2.63 degrees Fahrenheit[36] and exceeded the 20th-century baseline (1951-1980) by 2.30 degrees Fahrenheit.[37] Figure 23 shows global temperatures in 2024 compared to global temperatures from 1951-1980; Figure 24 shows global temperatures during the 1950-2024 time period.

Figure 21. Global Temperature Anomaly (°C compared to the 1951-1980 average)



Source: NASA Earth Observatory, "**2024 Was the Warmest Year on Record**," January 11, 2025.

Figure 22. Global Surface Temperature Departures (°C), January 1950 – December 2024

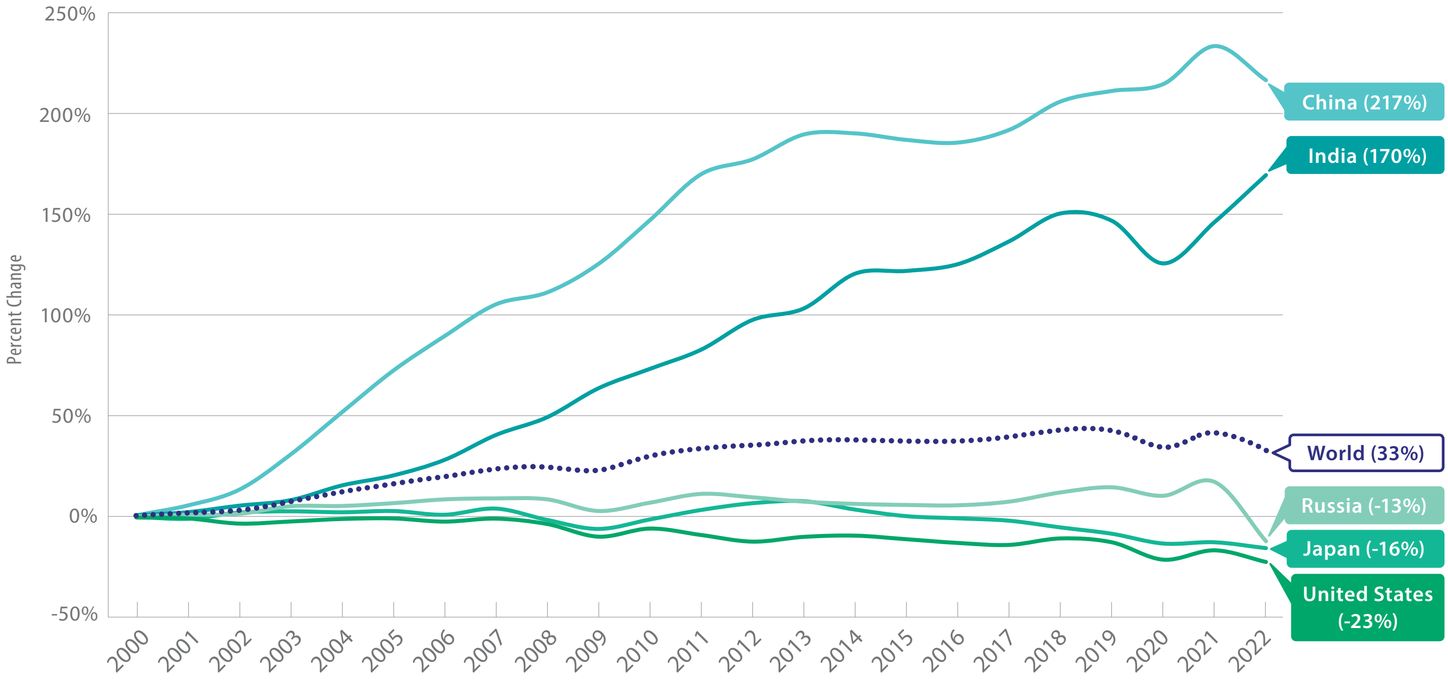


Source: NOAA National Centers for Environmental Information, **Monthly Global Climate Report for Annual 2024, Global monthly temperature anomolies, with ENSO status**, January 2025.

International Air Quality | Greenhouse Gases

The International Energy Agency's (IEA) database*, *Greenhouse Gas Emissions from Energy*, is designed to help understand the contributions to greenhouse gas (GHG) emissions associated with energy from 1971 to 2022 for more than 205 countries. In 2022, China and the United States together were responsible for 45 percent of global fuel combustion emissions, followed by India, Russia, and Japan. By 2022, GHG emissions from energy in the United States totaled 4,677.8 million tonnes of CO_2 eq., a decrease of 23 percent compared to emissions levels in 2000.[38]

Figure 23. Annual Percent Change of Greenhouse Gas Emissions from Energy by Country, 2000–2022



Source: International Energy Agency, ***Greenhouse Gas Emissions from Energy***, August 2, 2024.

*The IEA database includes estimates of total GHG emissions from energy and related indicators, covering CO_2, CH_4 and N_2O emissions from fuel combustion, as well as fugitive emissions. (measured as million tonnes of CO_2 eq.)

International Energy Agency | Global Energy Demand and CO_2 Emissions in 2024

In March 2025, IEA published the report, *Global Energy Review 2025*, highlighting the following trends in global energy demand and carbon dioxide (CO_2) emissions:

- Global energy demand grew by 2.2 percent in 2024, a faster rate than the annual average of 1.3 percent seen between 2013 and 2023.
- Global energy-related CO_2 emissions increased by 0.8 percent in 2024, compared with a 1.2 percent increase in 2023; In 2023, CO_2 emissions totaled 36.8 gigatons (Gt), while CO_2 emissions totaled 37.6 gigatons (Gt) in 2024.
- Global GDP increased by 3.2 percent in 2024, while electricity demand increased by 4.3 percent in 2024.

Source: International Energy Agency, **Global Energy Review 2025**, March 2025.

Air Quality Trends in the United States

"States currently perform the vast majority of environmental protection tasks in America, including more than 90% of the enforcement and compliance actions and collection of the environmental quality data currently held by the U.S. EPA."

Source: The Environmental Council of the States (ECOS), ***Resolution 00-1 Environmental Federalism****, March 2024.*

Concentration Trends | Criteria Air Pollutants

U.S. EPA's national-level analysis of 2023 monitoring data show the substantial reductions in ambient concentrations of all criteria pollutants over the past several decades. As the table below indicates, the United States has seen at least a 26 percent decline in the ambient levels of carbon monoxide (CO), lead (Pb), nitrogen dioxide (NO_2), ozone (O_3), and sulfur dioxide (SO_2) since 1980. Available data show that fine and coarse particulate matter ($PM_{2.5}$ and PM_{10}) ambient concentrations have declined by at least 29 percent since 2000. And more recent data point to a sustained trend of meaningful improvements, with monitored concentrations of most criteria pollutants now below 2010 levels.[39]

Table 4

Ambient Concentrations	1980 vs 2023	1990 vs 2023	2000 vs 2023	2010 vs 2023
Carbon Monoxide	-88%	-79%	-65%	-18%
Lead	---	---	---	-87%
Nitrogen Dioxide (annual)	-68%	-62%	-54%	-30%
Nitrogen Dioxide (1-hour)	-66%	-55%	-40%	-23%
Ozone (8-hour)	-26%	-18%	-12%	-1%
PM_{10} (24-hour)	---	-29%	-36%	0%
$PM_{2.5}$ (annual)	---	---	-37%	-15%
$PM_{2.5}$ (24-hour)	---	---	-29%	+1%
Sulfur Dioxide (1-hour)	-95%	-92%	-87%	-78%

Source: U.S. EPA, "**Air Quality—National Summary: Air Quality Trends**," Last updated January 8, 2025.

Emissions Trends | Criteria Air Pollutants

In coordination with state and local air agencies, tribes, and industry, U.S. EPA develops annual nationwide emissions estimates, which are "based on actual monitored readings or engineering calculations of the amounts and types of pollutants emitted by vehicles, factories, and other sources."[40] In the below table, U.S. EPA's most recently published estimates show that the emissions of all criteria pollutants and precursors declined by at least 27 percent from 1990 to 2023. Recent data point to a sustained trend of meaningful reductions, with estimated emissions of all criteria pollutants and precursors at least 5 percent lower than 2010 levels.[41]

Table 5

Emissions	1980 vs 2023	1990 vs 2023	2000 vs 2023	2010 vs 2023
Carbon Monoxide	-76%	-71%	-59%	-28%
Lead*	-99%	-88%	-78%	-36%
Nitrogen Oxides	-75%	-73%	-69%	-55%
Volatile Organic Compounds	-58%	-46%	-26%	-5%
Direct PM_{10}	-62%	-27%	-24%	-14%
Direct $PM_{2.5}$	---	-28%	-35%	-11%
Sulfur Dioxide	-94%	-93%	-90%	-76%

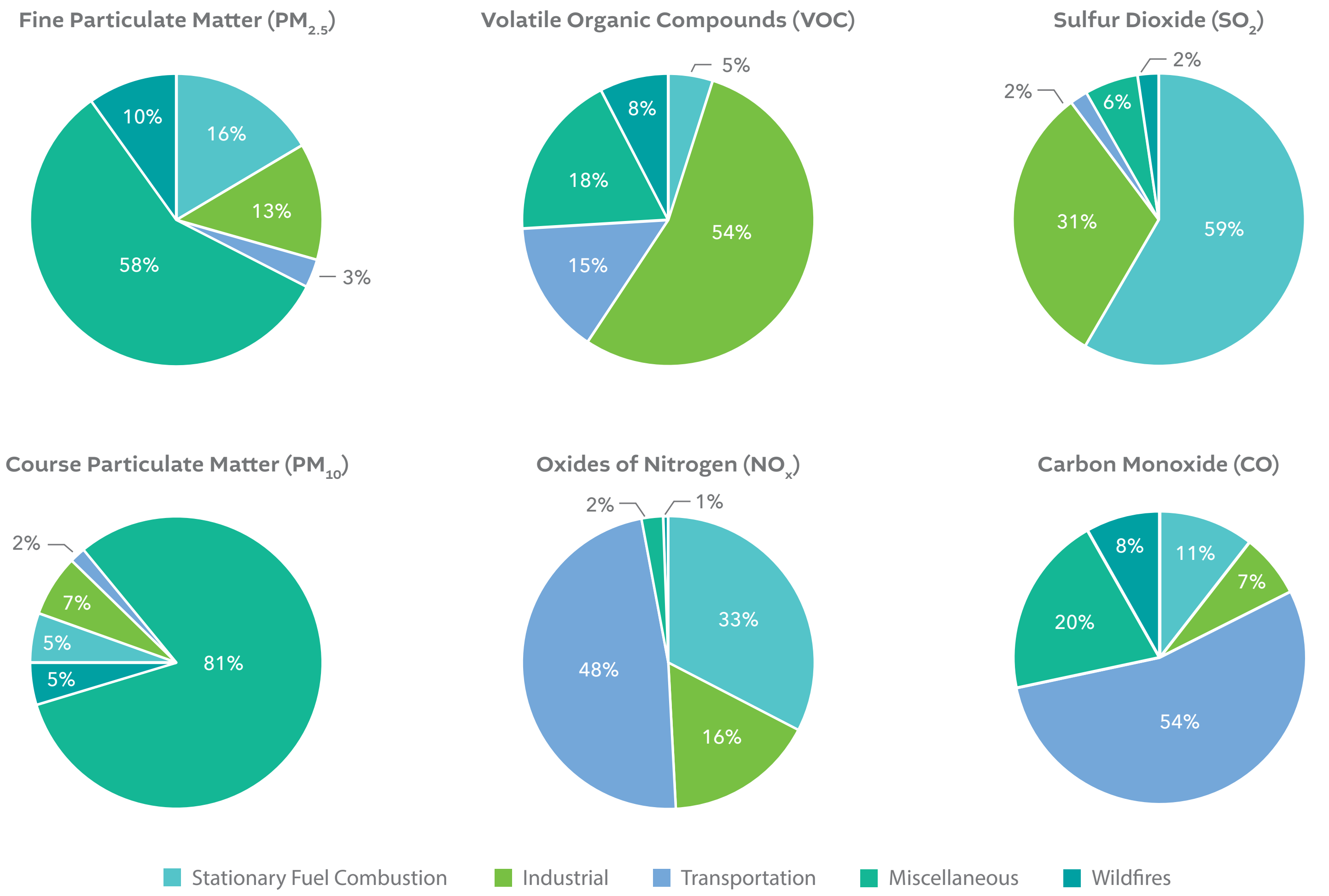
*As a result of the permanent phase-out of leaded gasoline, controls on emissions of lead compounds through EPA's air toxics program, and other national and state regulations, airborne lead concentrations in the U.S. decreased 98 percent between 1980 and 2005. After 2005, the EPA methodology for lead changed and is not comparable to the 2005 and earlier numbers. Since 2008, emissions have continued to decrease by 30 percent from 2008 to 2017. In the 2017 NEI, the highest amounts of Pb emissions are from Piston Engine Aircrafts, and Ferrous and Non-ferrous Metals industrial sources. The 2008 and 2017 estimates were used to approximate the 2010 to 2023 percent change.

Source: U.S. EPA, **Air Quality—National Summary: Emissions Trends**, Last updated January 8, 2025.

Emissions Sources | Criteria Air Pollutants

U.S. EPA tracks emissions from the following source categories: Stationary Fuel Combustion, Industrial, Transportation, Wildfires, and Miscellaneous. Included below are the sources of criteria air pollutant and precursor emissions for the year 2024.

Figure 24. Criteria Air Pollutant Sources, 2024



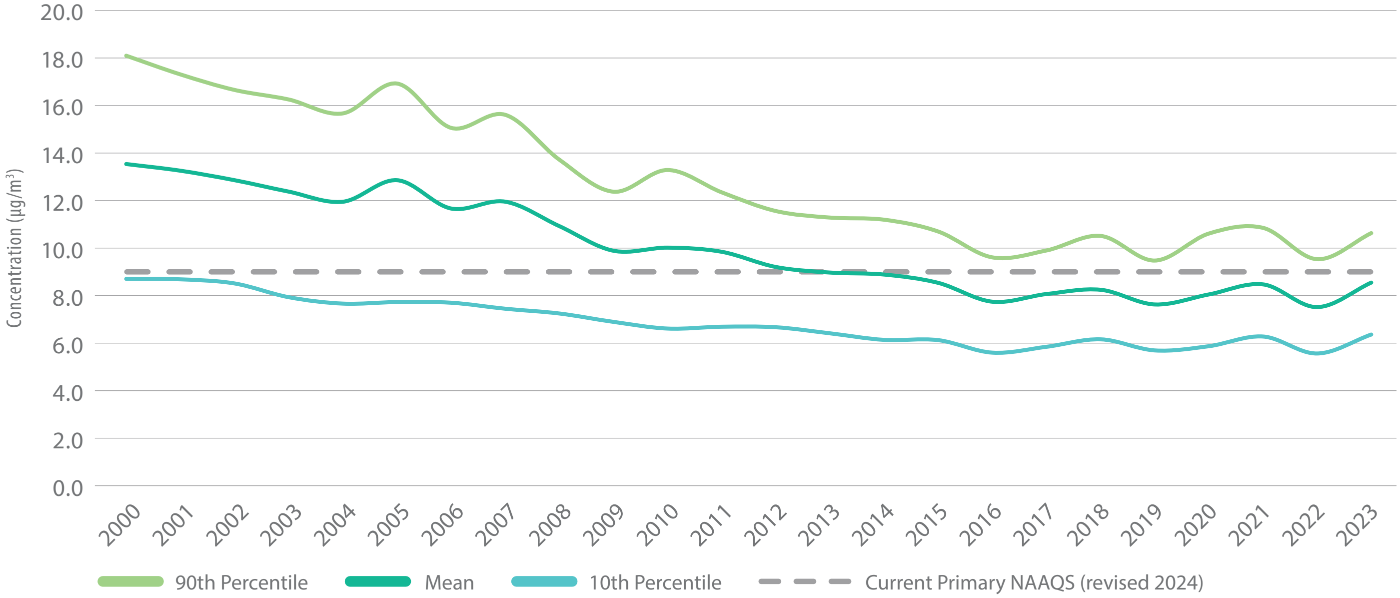
Source: U.S. EPA, **Air Pollutant Emissions Trends Data**, National Tier 1 CAPS Trends, Criteria pollutants National Tier 1 for 1970–2024.

What are Exceptional Events?

Exceptional Events are unusual or naturally occurring events that can affect air quality but are not reasonably controllable using techniques that tribal, state or local air agencies may implement in order to attain and maintain the National Ambient Air Quality Standards. On March 12, 2025, U.S. EPA Administrator Zeldin took action to reevaluate the treatment of data influenced by Exceptional Events."

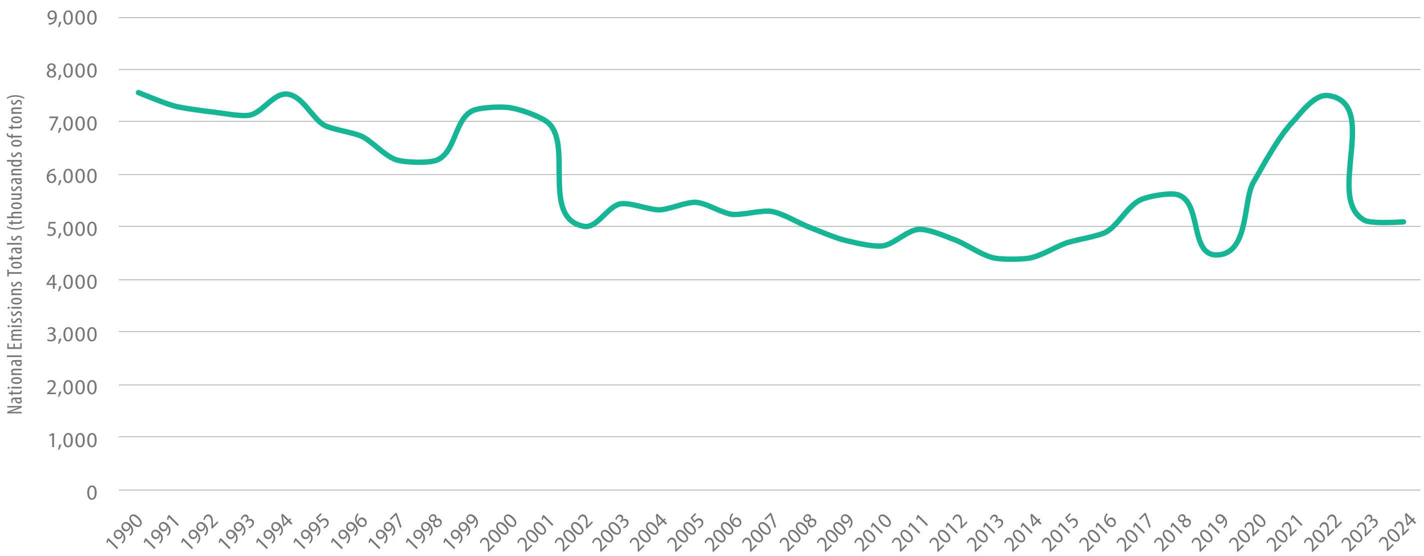
Criteria Air Pollutant Trends | Fine Particulate Matter

Figure 25. Fine Particulate Matter ($PM_{2.5}$) Air Quality, 2000-2023
(Seasonally Weighted Annual Average) National Trend based on 375 Sites



Source: U.S. EPA, **Particulate Matter (PM2.5) Trends**, August 2024.

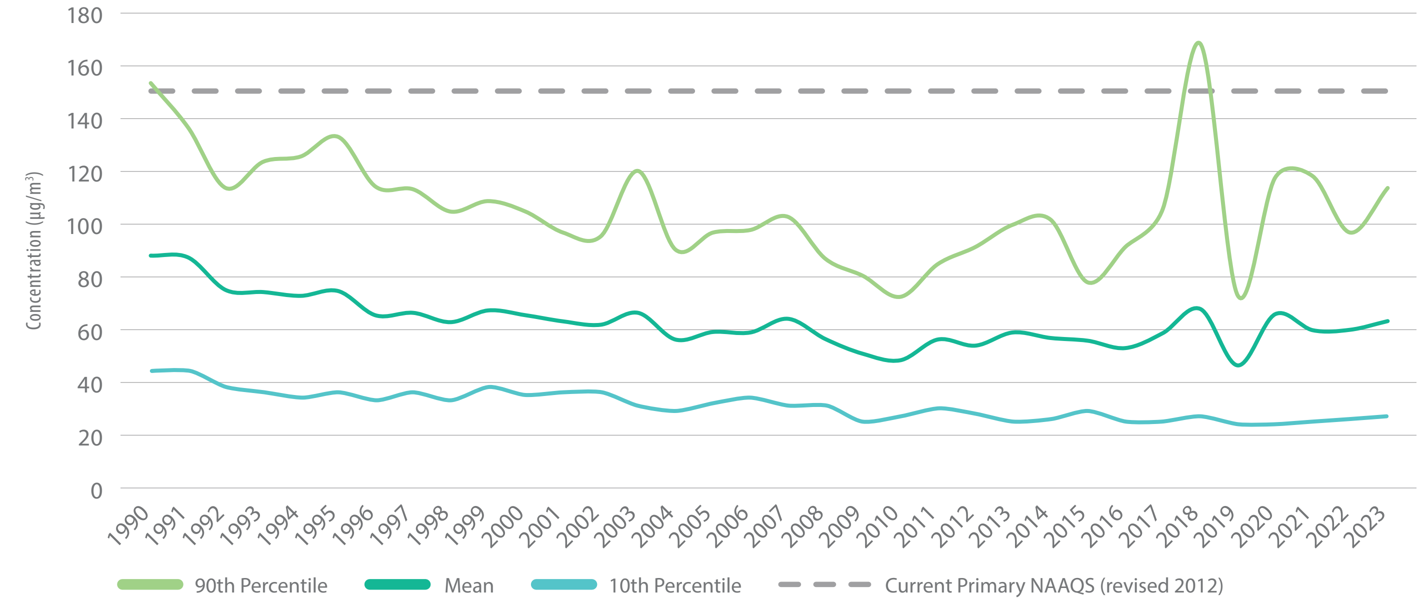
Figure 26. Fine Particulate Matter ($PM_{2.5}$) Emissions, 1990-2024



Source: U.S. EPA, **Air Pollutant Emissions Trends** (Data file: "National Tier 1 CAPS Trends, Criteria pollutants National Tier 1 for 1970– 2024").

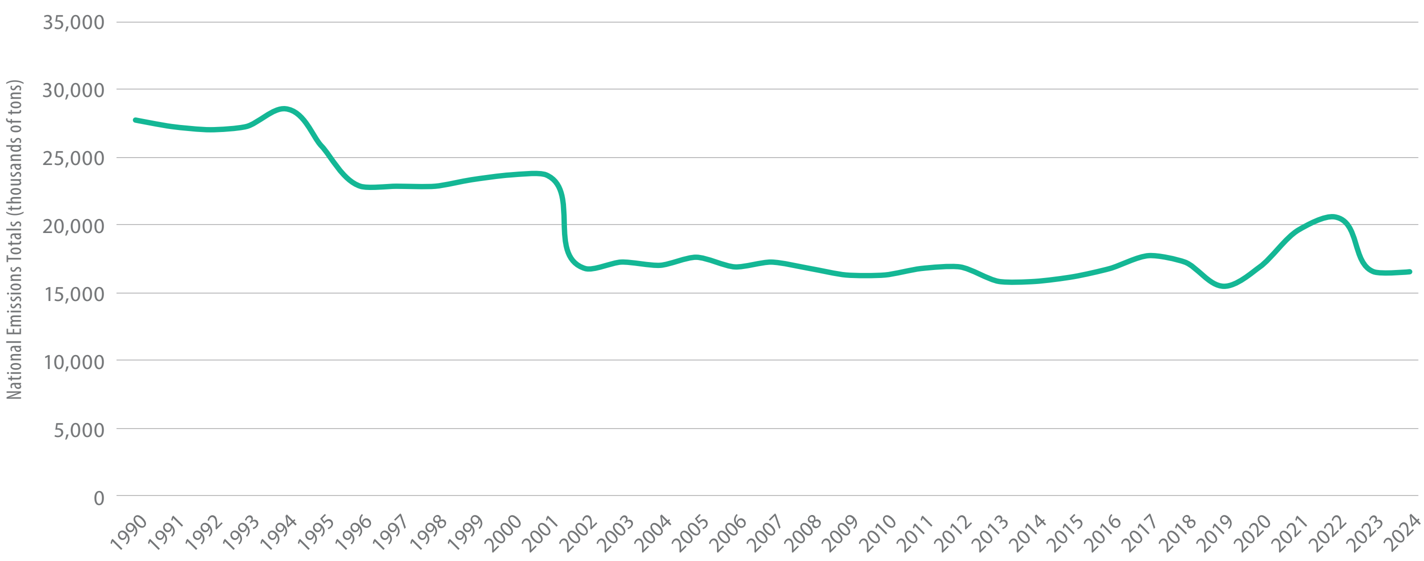
Criteria Air Pollutant Trends | Coarse Particulate Matter

Figure 27. Coarse Particulate Matter (PM_{10}) Air Quality, 1990–2023
(Annual 2nd Maximum 24-Hour Average) National Trend Based on 90 Sites



Source: U.S. EPA, **Particulate Matter (PM_{10}) Trends**, August 2024.

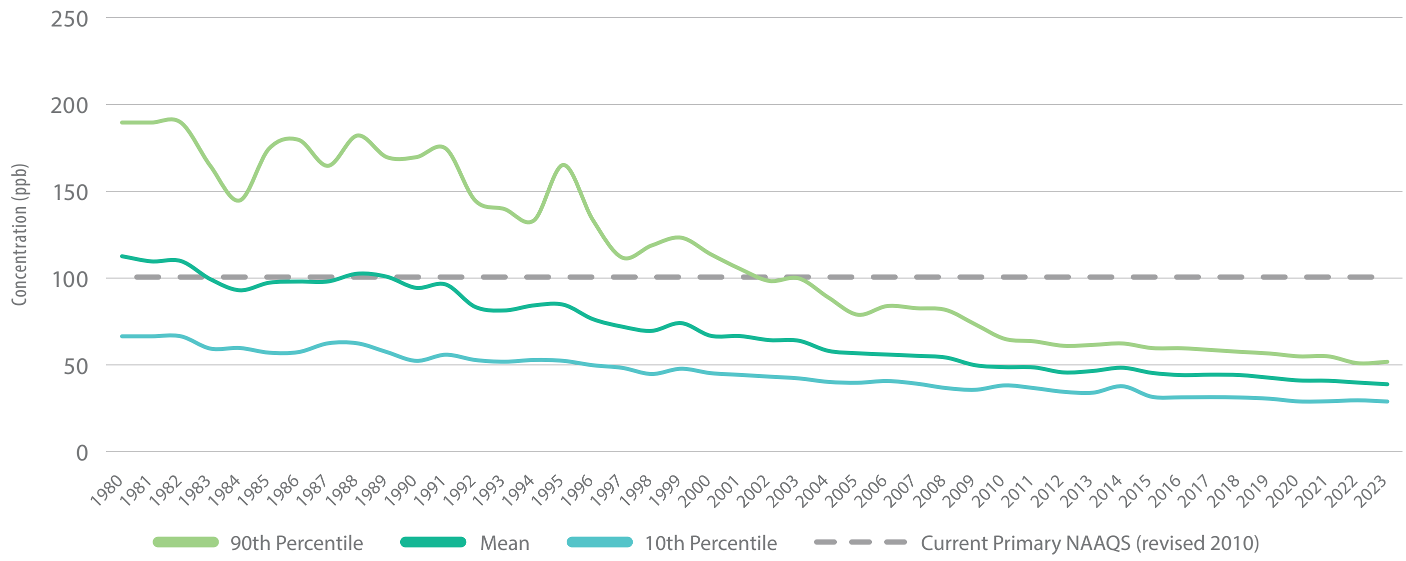
Figure 28. Coarse Particulate Matter (PM_{10}) Emissions, 1990–2024



Source: U.S. EPA, **Air Pollutant Emissions Trends** (Data file: "National Tier 1 CAPS Trends, Criteria pollutants National Tier 1 for 1970– 2024").

Criteria Air Pollutant Trends | Nitrogen Dioxide

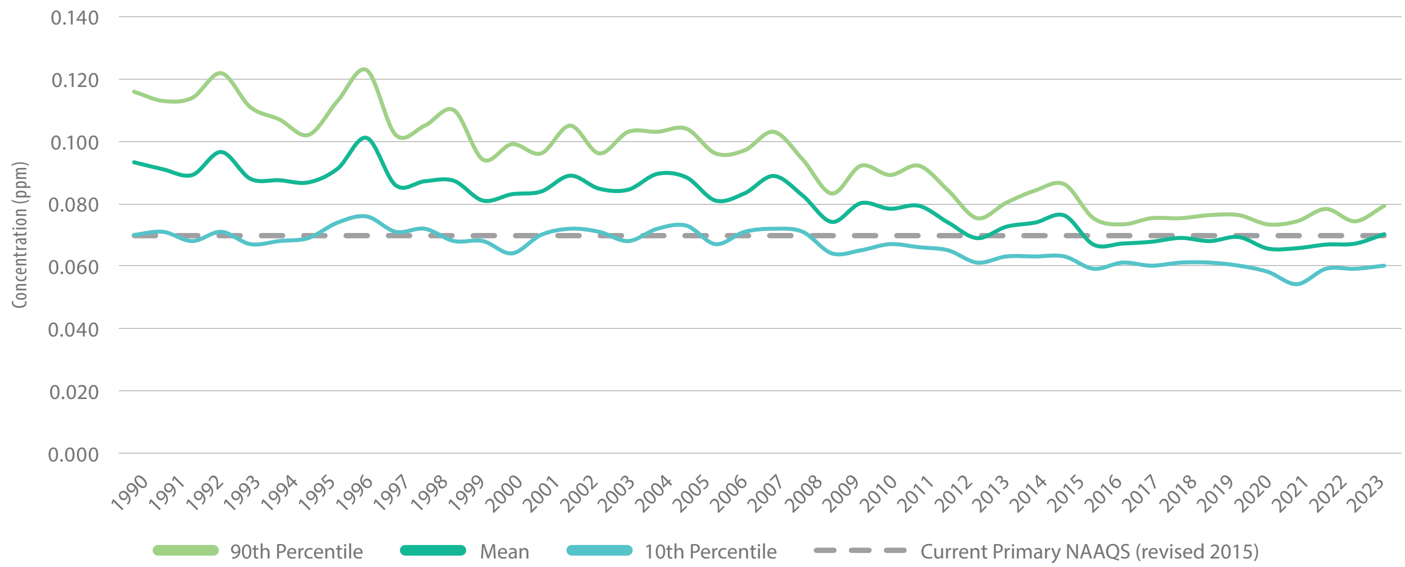
Figure 29. Nitrogen Dioxide (NO_2) Air Quality, 1980–2023
(Annual 98th Percentile of Daily Max 1-hour Average) National Trend based on 20 Sites



Source: U.S. EPA, **Nitrogen Dioxide Trends**, August 2024.

Criteria Air Pollutant Trends | Ozone

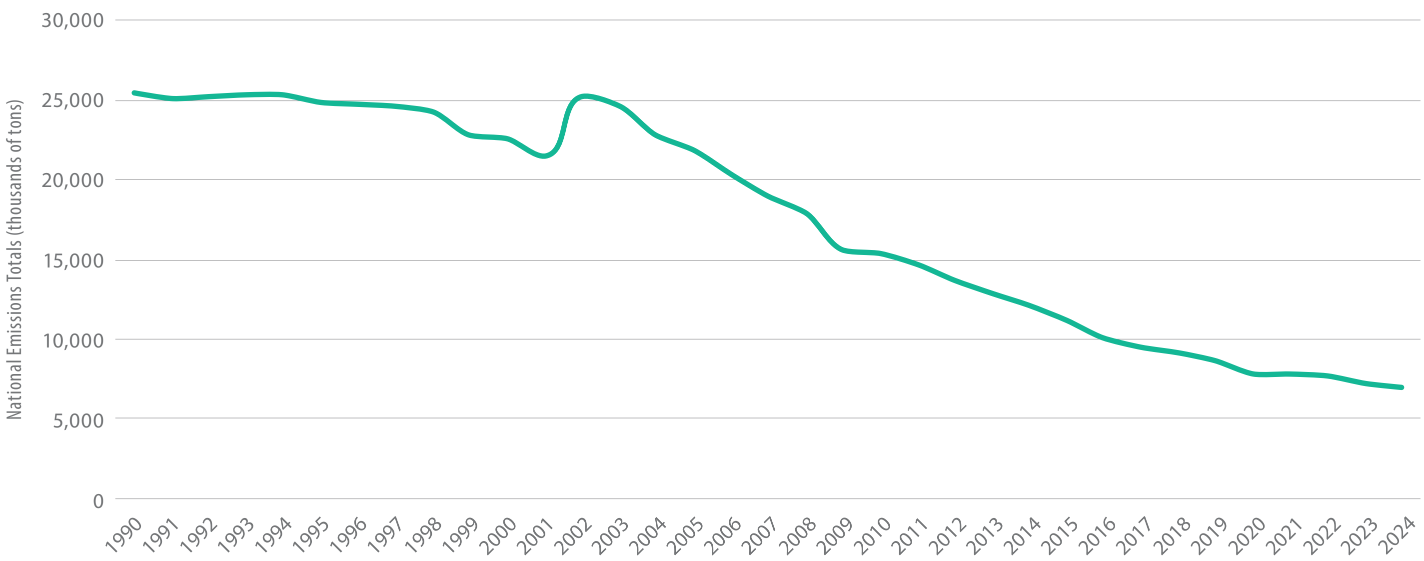
Figure 30. Ozone (O_3) Air Quality, 1980–2023
(Annual 4th Maximum Daily Max 8-Hour Average) National Trend based on 135 Sites



Source: U.S. EPA, **Ozone Trends**, August 2024.

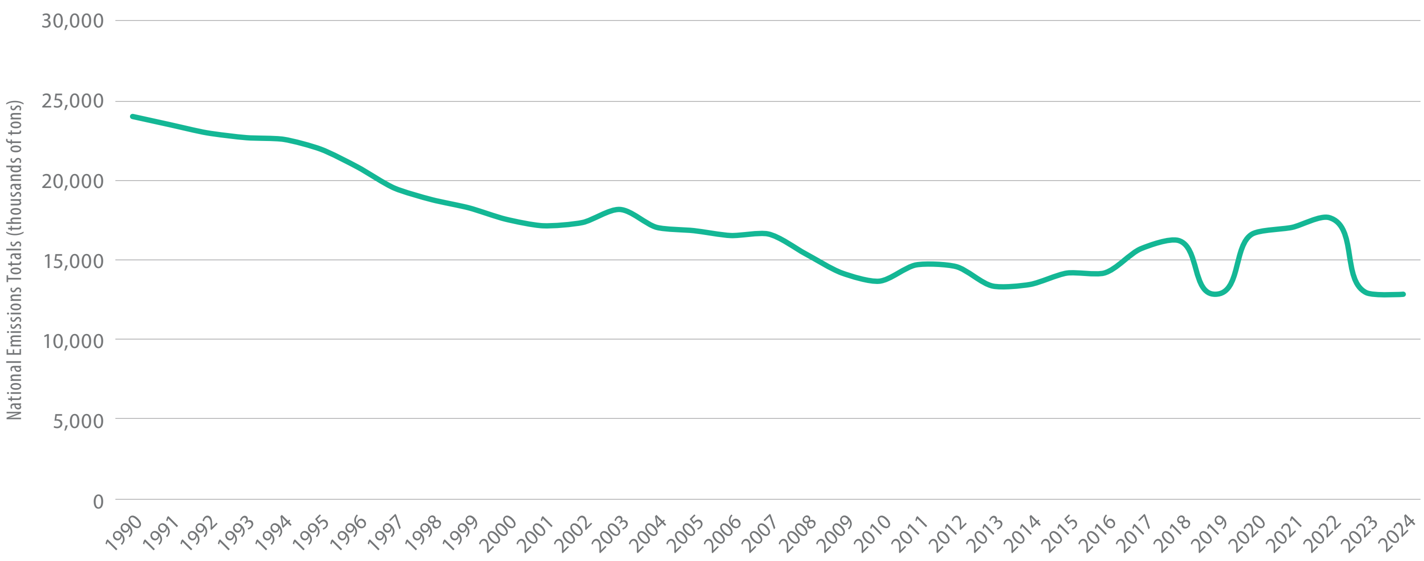
Criteria Air Pollutant Trends | Ozone Precursor Emissions

Figure 31. Oxides of Nitrogen (NO_x) Emissions, 1990-2024



Source: U.S. EPA, **Air Pollutant Emissions Trends Data** (Data file: "National Tier 1 CAPS Trends, Criteria pollutants National Tier 1 for 1970–2024").

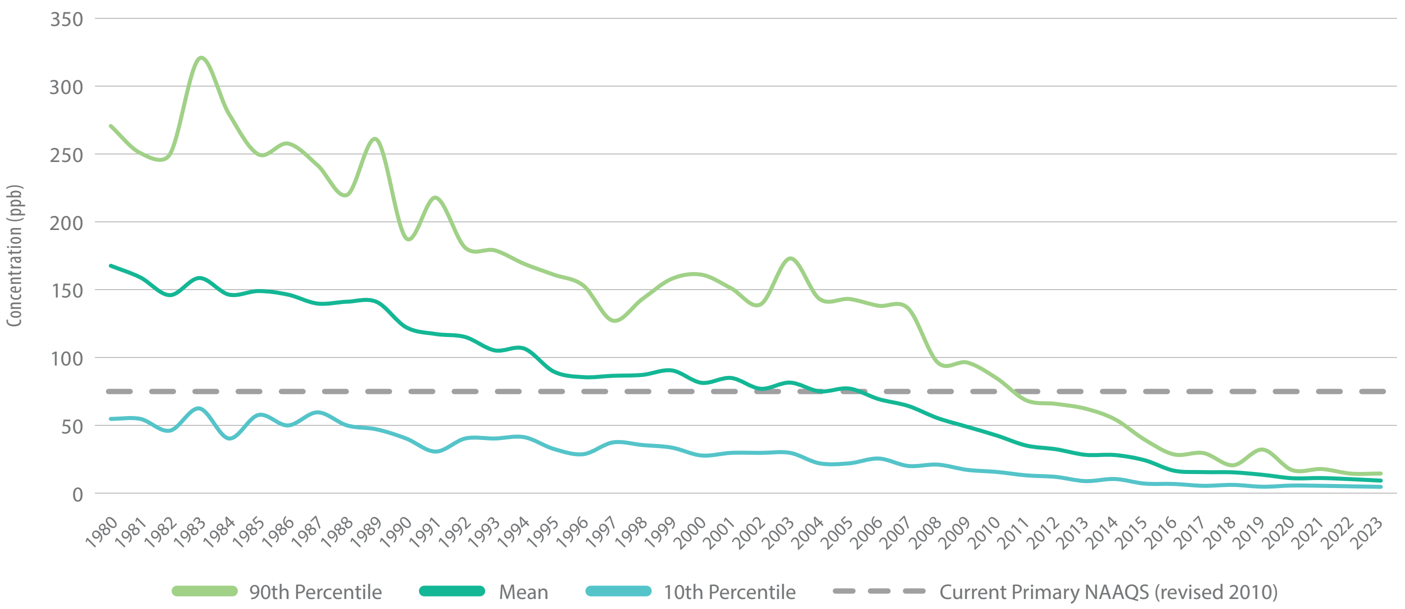
Figure 32. Volatile Organic Compound (VOC) Emissions, 1990-2024



Source: U.S. EPA, **Air Pollutant Emissions Trends** (Data file: "National Tier 1 CAPS Trends, Criteria pollutants National Tier 1 for 1970– 2024").

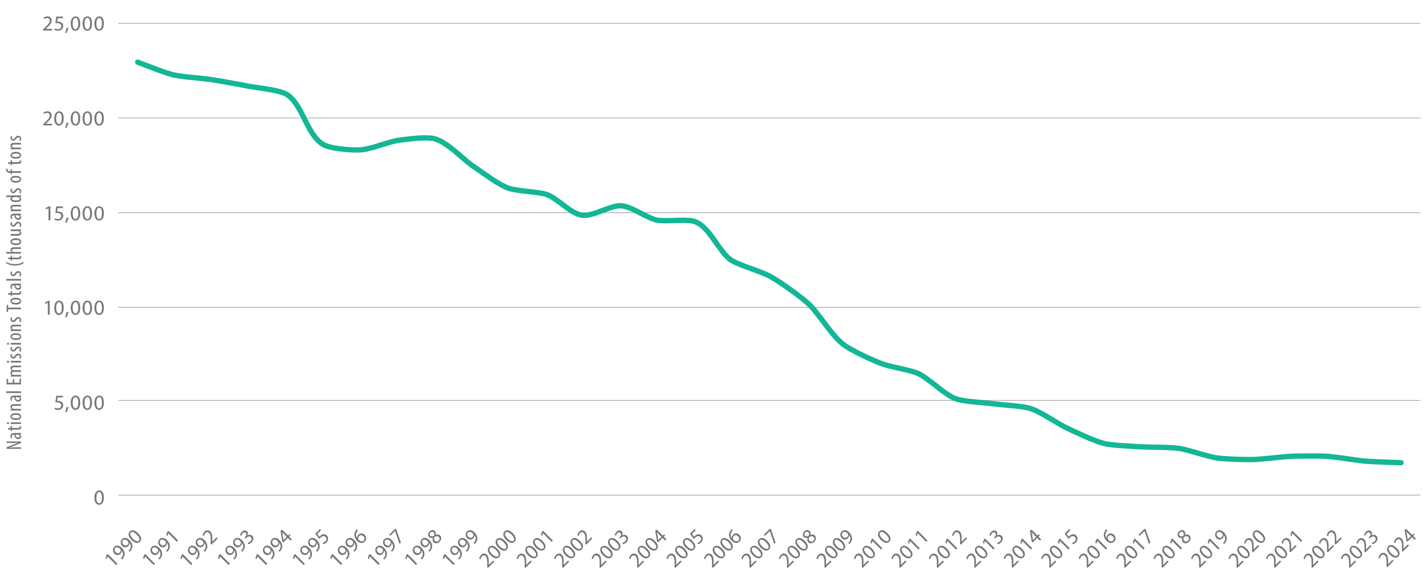
Criteria Air Pollutant Trends | Sulfur Dioxide

Figure 33. Sulfur Dioxide (SO_2) Air Quality, 1980-2023
(Annual 99th Percentile of Daily Max 1-Hour Average) National Trend based on 31 Sites



Source: U.S. EPA, **Sulfur Dioxide Trends**, August 2024.

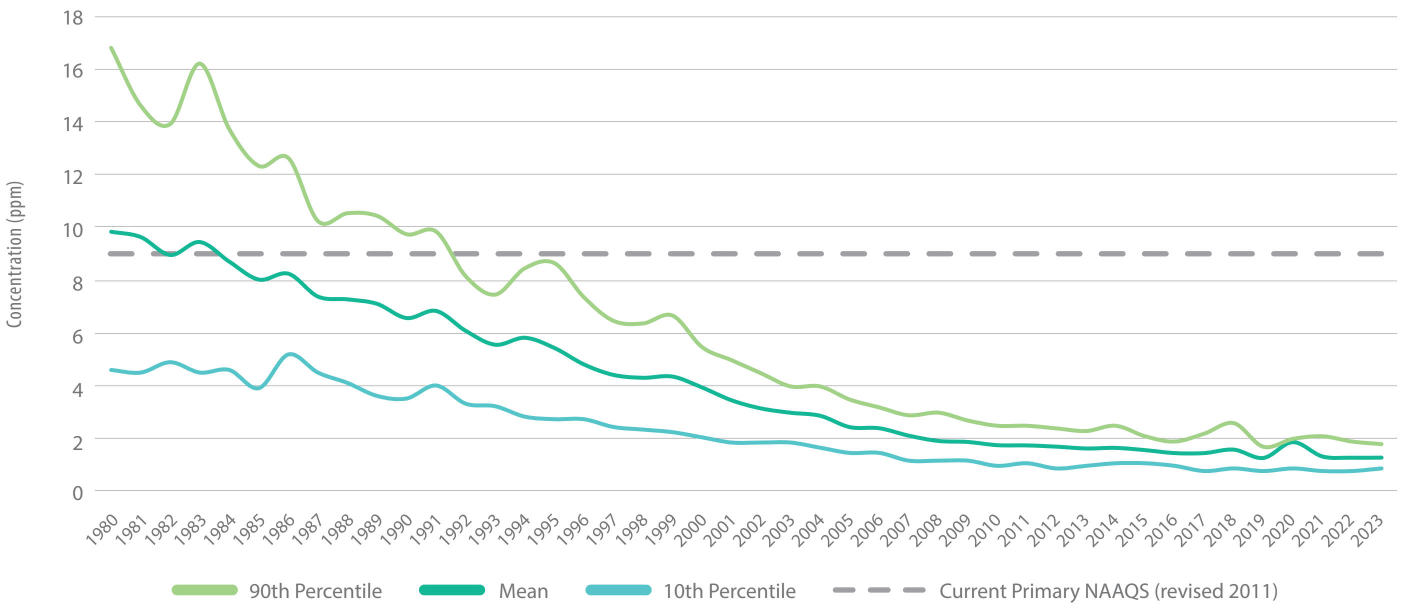
Figure 34. Sulfur Dioxide (SO_2) Emissions, 1990-2024



Source: U.S. EPA, **Air Pollutant Emissions Trends** (Data file: "National Tier 1 CAPS Trends, Criteria pollutants National Tier 1 for 1970– 2024").

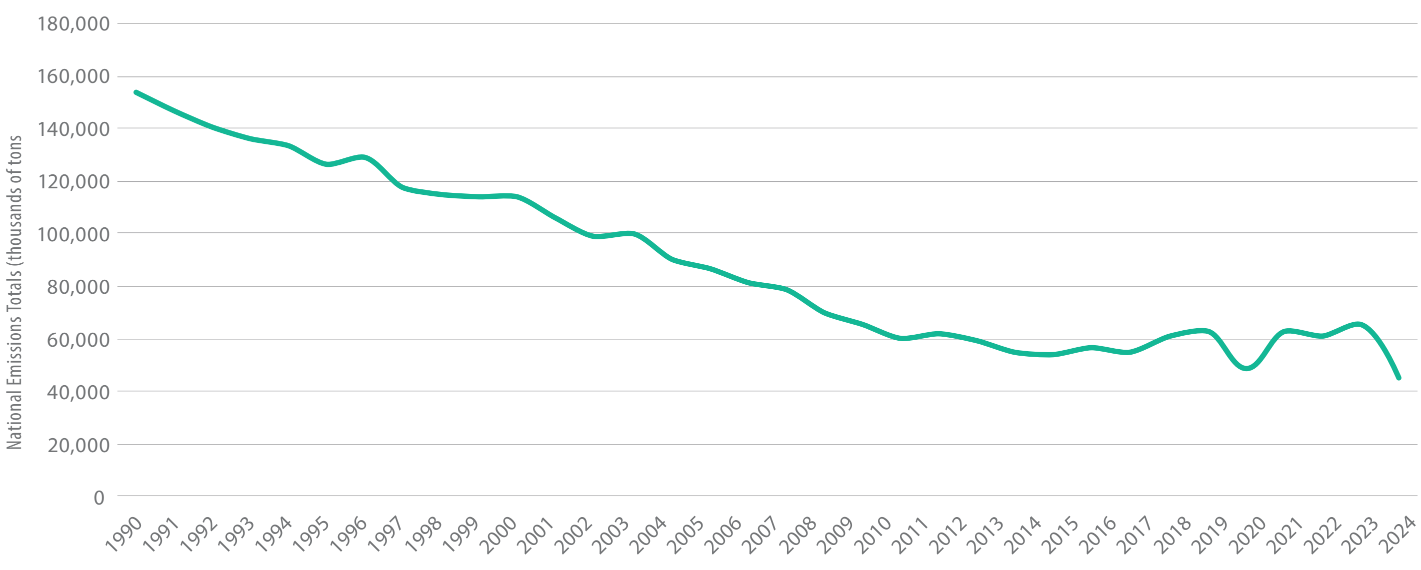
Criteria Air Pollutant Trends | Carbon Monoxide

Figure 35. Carbon Monoxide (CO) Air Quality, 1980–2023
(Annual 2nd Maximum 8-hour Average) National Trend based on 33 Sites



Source: U.S. EPA, **Carbon Monoxide Trends**, August 2024.

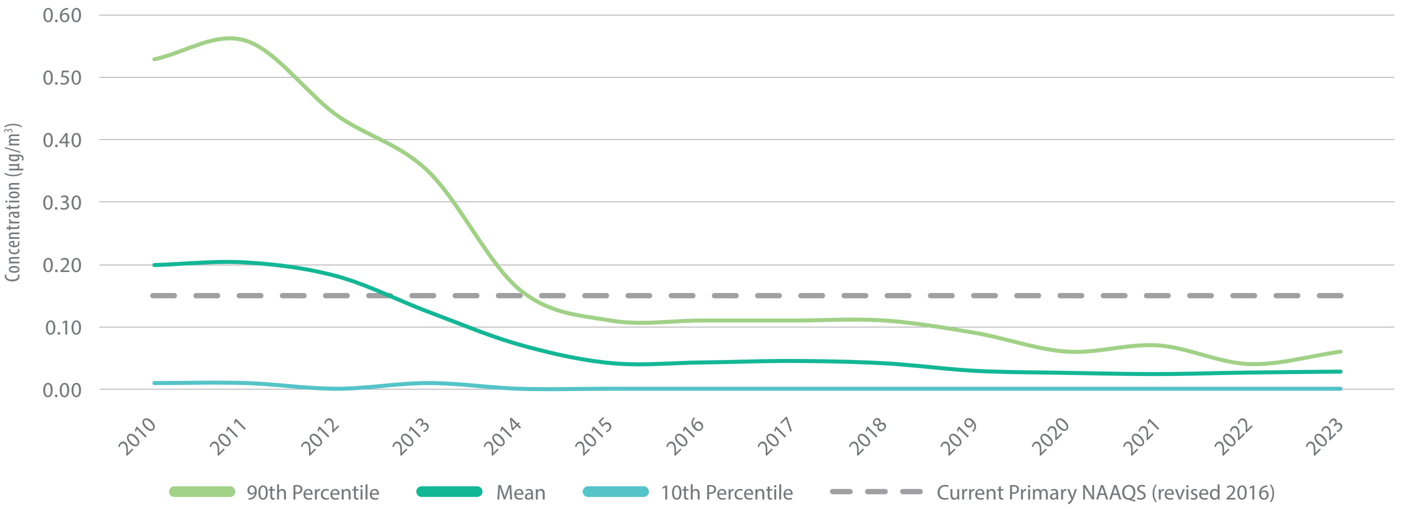
Figure 36. Carbon Monoxide (CO) Emissions, 1990–2024



Source: U.S. EPA, **Air Pollutant Trends Data** (Data file: "National Tier 1 CAPS Trends, Criteria pollutants National Tier 1 for 1970– 2024").

Criteria Air Pollutant Trends | Lead

Figure 37. Lead Air Quality, 2010–2023
(Annual Maximum 3-Month Average) National Trend Based on 92 Sites

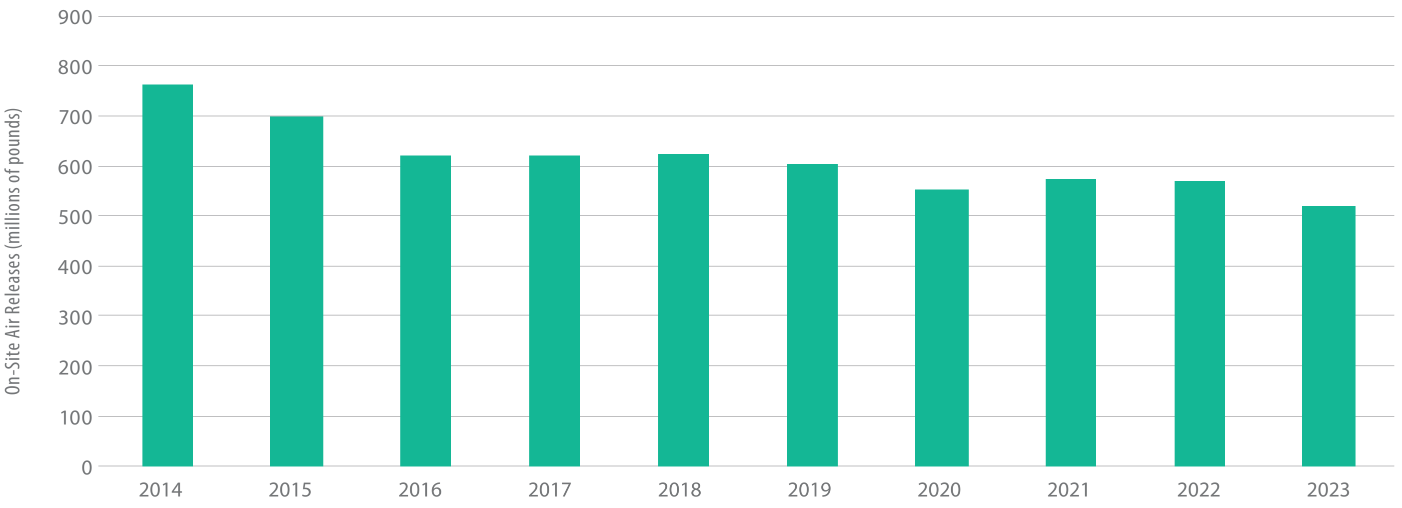


Source: U.S. EPA, Lead Trends, August 2024.

Hazardous Air Pollutants

U.S. EPA's 2023 *Toxics Release Inventory (TRI) National Analysis* data show declining emissions of hazardous air pollutants, or air toxics, over the last decade. Reported on-site releases of chemicals into the air decreased by 32 percent, a total reduction of 241 million pounds, from 2014 to 2023. In 2023, national air releases decreased by about 9 percent compared to 2022..

Figure 38. National Toxic Air Releases, 2014–2023

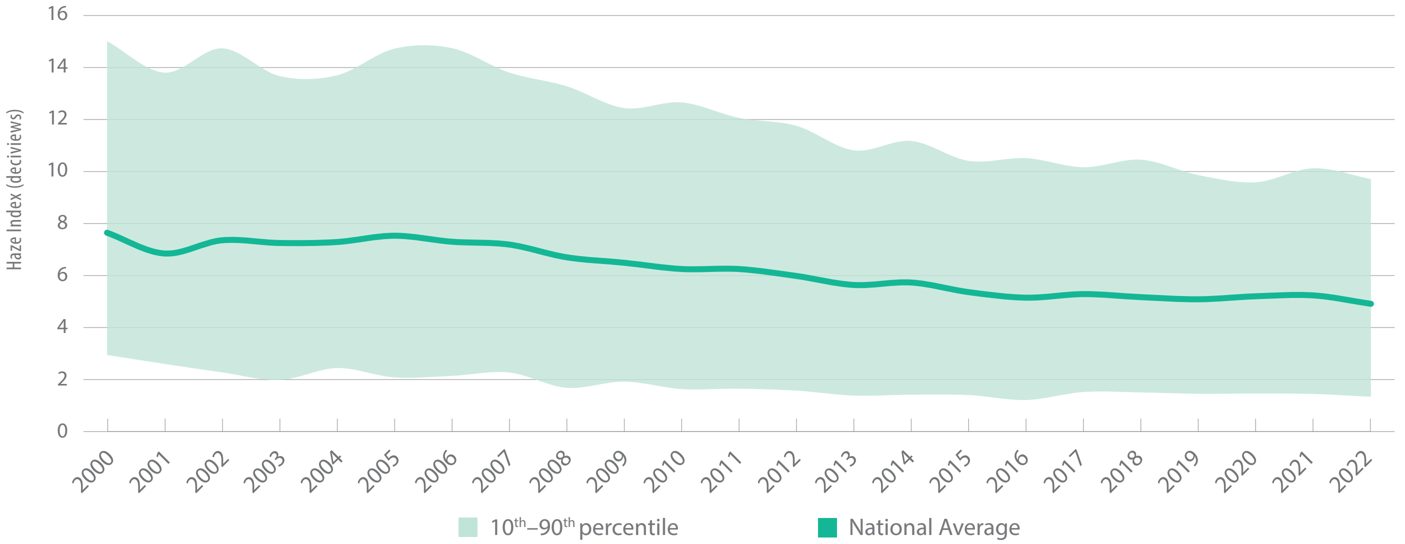


Source: U.S. EPA, *2023 Toxics Release Inventory National Analysis*, 2023 TRI Factsheet for US, October 2024.

Visibility Improvements

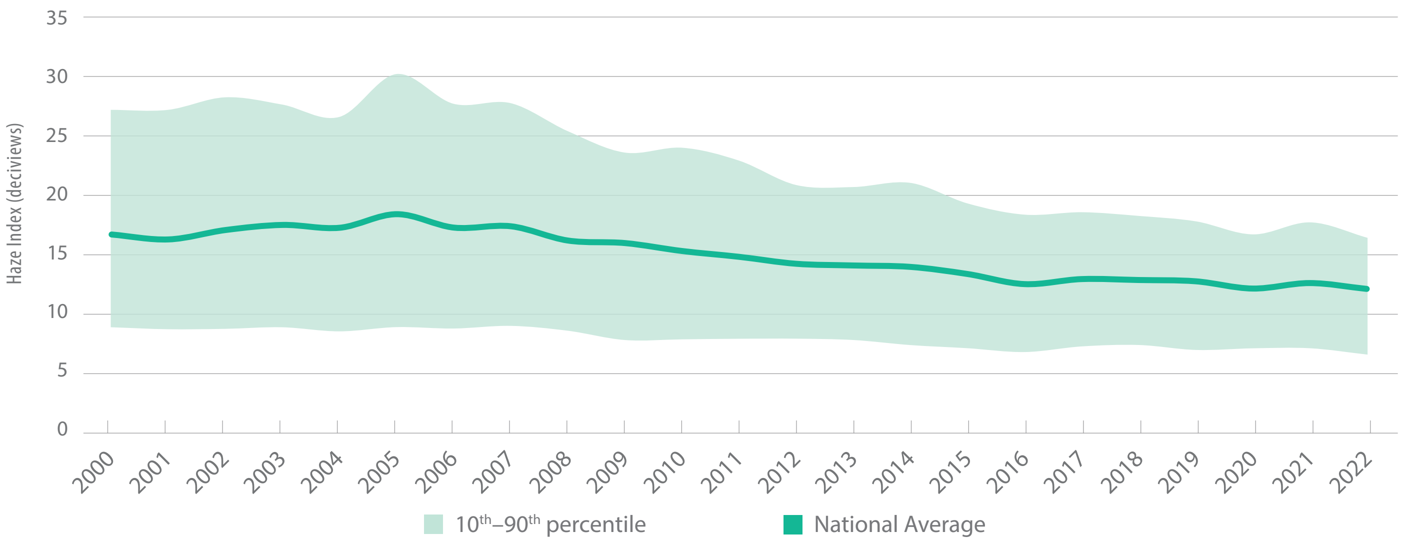
Under the national Regional Haze Program, state and federal agencies monitor visibility in 156 national parks and wilderness areas, or Class I areas.[42] U.S. EPA's latest annual air trends report, *Our Nation's Air: Trends Through 2023*, provides visibility data for Class I areas through 2023. On average from 2000 to 2022, visibility on the 20 percent clearest days improved by 37 percent, while visibility on the 20 percent most impaired days improved by 29 percent.[43]

Figure 39. National Visibility Trends on Clearest Days, 2000–2022



Source: U.S. EPA, ***Our Nation's Air: Trends Through 2023***, Section: "Visibility Improves in Scenic Areas," June 2024.

Figure 40. National Visibility Trends on Most Impaired Days, 2000–2022

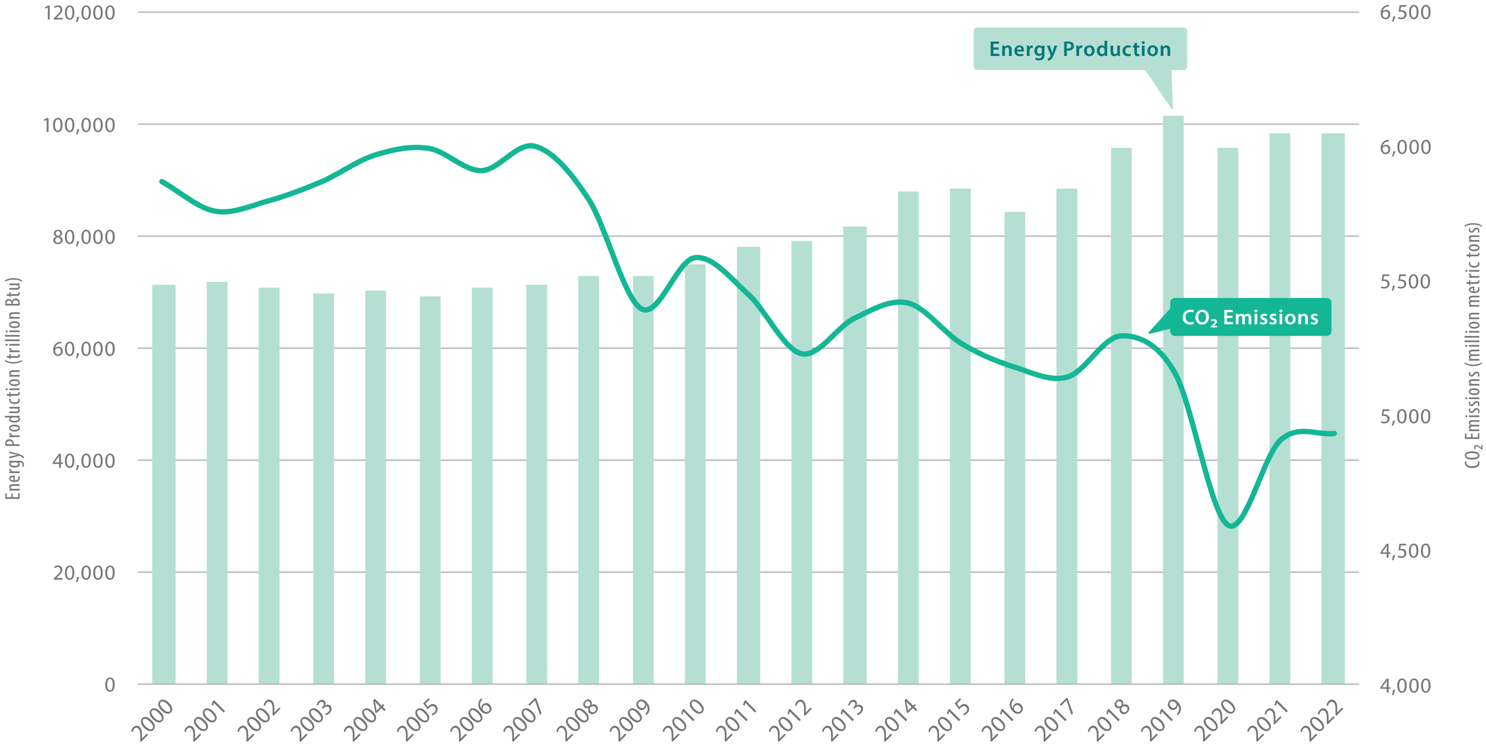


Source: U.S. EPA, ***Our Nation's Air: Trends Through 2023***, Section: "Visibility Improves in Scenic Areas," June 2024.

Emissions Trends | Energy-Related Carbon Dioxide

From 2000 to 2022, the United States reduced energy-related carbon dioxide (CO_2) emissions by 16 percent while experiencing a 28 percent increase in total energy production, according to recent data from the U.S. Energy Information Administration (EIA). National energy-related CO_2 emissions fell from 5,868 million metric tons in 2000 to 4,934 million metric tons in 2022.[44] Conversely, total energy production rose from 71,238 trillion British thermal units (Btu) in 2000 to 98,436 trillion Btu in 2022.[45]

Figure 41. United States | Total Energy Production Compared to Energy-Related CO_2 Emissions, 2000–2022



Sources: U.S. Energy Information Administration, **State Energy Data System (SEDS): 1960-2022**. U.S. EIA, **Energy-Related CO_2 Emission Data Tables**, Table 1. State energy-related carbon dioxide emissions by year (1970–2022).

International Energy Agency | Energy System of United States

The International Energy Agency Energy Statistics Data includes the following energy and emissions trends for the United States:

- Energy-related carbon dioxide (CO_2) emissions in the United States in 2022 totaled 4,608 Mt CO_2, a 20 percent decline since 2000;
- Energy intensity of the economy declined by 40 percent from 2000 to 2023;
- Crude oil production increased 129 percent from 2000 to 2023;
- Natural gas production increased 98 percent from 2000 to 2023; and
- Coal production decreased 48 percent from 2000 to 2023.

Source: International Energy Agency, **United States**, Data accessed February 21,2025.

Sources

1 U.S. EPA, **Air Pollutant Emissions Trends Data**, State Tier 1 CAPS Trends, Criteria pollutants State Tier 1 for 1990–2024.

2 U.S. Bureau of Economic Analysis, **Gross Domestic Product by State and Personal Income by State**," released March 28, 2025.

3 U.S. Census Bureau, data available **here**.

4 U.S. Office of Highway Policy Information, data available **here**.

5 U.S. EIA, **State Energy Data Systems (SEDS):1960-2022**.

6 U.S. EIA, **Energy-Related CO_2 Emission Data Tables**, Table 1. State energy-related carbon dioxide emissions by year.

7 U.S. EPA's Green Book can be found **here**.

8 U.S. EPA's listing of areas designated nonattainment or maintenance for the 2008 ozone NAAQS can be found **here**. In 2015, U.S. EPA lowered the NAAQS for ozone to .070 parts per million (ppm), based on the annual fourth-highest daily maximum 8-hour average concentration, averaged over three years. In 2020, U.S. EPA **retained** the 2015 standard of .070 ppm. In August 2023, U.S. EPA **initiated a new review** of the ozone NAAQS.

9 U.S. EPA defines a design value as "a statistic that describes the air quality status of a given location relative to the level of the [NAAQS]." More information is available **here**.

10 U.S. EPA's **Air Quality System** "contains ambient air pollution data collected by EPA, state, local, and tribal air pollution control agencies from over thousands of monitors."

11 U.S. EPA, **Air Quality Design Values**, Ozone Design Values, 2023.

12 U.S. EPA's listing of areas designated nonattainment or maintenance for the 1997 annual $PM_{2.5}$ NAAQS can be found **here**. In 2012, the NAAQS for $PM_{2.5}$ was lowered to 12.0 µg/m^3, based on an annual arithmetic mean averaged over three years (the 2006 review maintained the 1997 NAAQS). In 2020, U.S. EPA **retained** the 2012 standard of 12.0 µg/m^3. In June 2021, U.S. EPA announced the **reconsideration** of the 2020 decision to retain the 2012 $PM_{2.5}$ standards. On February 7, 2024, U.S. EPA promulgated a final rule revising the annual $PM_{2.5}$ NAAQS to 9.0 µg/m^3, based on an annual arithmetic mean averaged over three years.

13 U.S. EPA, **Air Quality Design Values**, $PM_{2.5}$ Design Values, 2023.

14 U.S. EPA's listing of areas designated nonattainment or maintenance for the 2012 $PM_{2.5}$ NAAQS can be found **here**.

15 U.S. EPA, "**EPA finalizes stronger standards for harmful soot pollution, significantly increasing health and clean air protections for families, workers, and communities**," February 7, 2024. More information available **here**.

16 U.S. EPA's February 7, 2024, memorandum on Initial Area Designations for the 2024 Revised Primary Annual Fine Particle National Ambient Air Quality Standard can be found **here**.

17 U.S. EPA, **Air Pollutant Emissions Trends Data**, State Tier 1 CAPS Trends, Criteria pollutants State Tier 1 for 1990–2024.

18 U.S. Energy Information Administration, **State Energy Data System (SEDS): 1960–2022**.

19 More information on U.S. EPA Clean Air Markets Programs can be found **here**, and include the **Acid Rain Program** (ARP), the **Cross-State Air Pollution Rule** (CSAPR), and the **CSAPR Update**.

20 U.S. EPA, "**Progress Report - Emissions Reductions**," March 19, 2025.

21 More information on U.S. EPA Clean Air Markets Programs can be found **here**, and include the **Acid Rain Program** (ARP), the **Cross-State Air Pollution Rule** (CSAPR), and the **CSAPR Update**.

22 U.S. EPA, "**Progress Report - Emissions Reductions**," March 19, 2025.

23 U.S. Energy Information Administration (EIA), **State Energy Data System (SEDS): 1960–2022**; U.S. EIA, **Energy-Related CO_2 Emission Data Tables,** Table 1. State energy-related carbon dioxide emissions by year.

24 U.S. Energy Information Administration, **Energy-Related CO_2 Emission Data Tables**, Table 7. Carbon intensity of the economy by state.

25 U.S. EPA Toxic Release Inventory Explorer, **2023 TRI Factsheets**.

26 U.S. EPA Toxic Release Inventory Explorer, **2023 TRI Factsheets**.

27 See **EPA/State Air Dashboard**, part of **Enforcement and Compliance History Online** (ECHO). Data accessed February 12, 2025.

28 See **EPA/State Air Dashboard**, part of **Enforcement and Compliance History Online** (ECHO). Data accessed February 12, 2025.

29 U.S. EPA's ECHO **Air Dashboard** reports the following as Clean Air Act compliance monitoring activities: Full Compliance Evaluation (FCE), Partial Compliance Evaluation (PCE), Stack Test, and Title V Annual Compliance Certification (TVACC) Reviews.

30 See **EPA/State Air Dashboard**, part of **Enforcement and Compliance History Online** (ECHO). Data accessed February 12, 2025.

31 U.S. EPA, ***Our Nation's Air: Trends through 2023***, Section: "Economic Strength with Cleaner Air," June 2024.

32 U.S. EPA, ***Our Nation's Air: Trends through 2023***, Section: "Economic Strength with Cleaner Air," June 2024.

Sources

[33] World Bank, **GDP Listings by Country**. Data accessed March 19, 2025.

[34] International Energy Agency (IEA), ***World Energy Outlook 2023***, October 2023. See IEA's **World Energy Mix**.

[35] U.S. Census Bureau, **Current Population**. Data accessed March 19, 2025.

[36] National Oceanic and Atmospheric Association, "**2024 was warmest year in the modern record for the globe**," January 10, 2025.

[37] National Aeronautics and Space Administration, "**Temperatures Rising: NASA Confirms 2024 Warmest Year on Record**," January 10, 2025.

[38] International Energy Agency, ***Greenhouse Gas Emissions from Energy, Highlights***, August 2, 2024. See IEA's **Greenhouse Gas Emissions from Energy Data Explorer**.

[39] U.S. EPA, **Air Quality—National Summary: Air Quality Trends**, Last updated January 8, 2025.

[40] U.S. EPA, **Air Quality—National Summary: Air Quality Trends**, Last updated January 8, 2025. Note: EPA estimates nationwide emissions of ambient air pollutants and the pollutants they are formed from (their precursors). These estimates are based on actual monitored readings or engineering calculations of the amounts and types of pollutants emitted by vehicles, factories, and other sources. Emission estimates are based on many factors, including levels of industrial activity, technological developments, fuel consumption, vehicle miles traveled, and other activities that cause air pollution. See U.S. EPA's **Air Pollutant Emissions Trends Data**.

[41] U.S. EPA, **Air Quality—National Summary: Emissions Trends**, Last updated January 8, 2025.

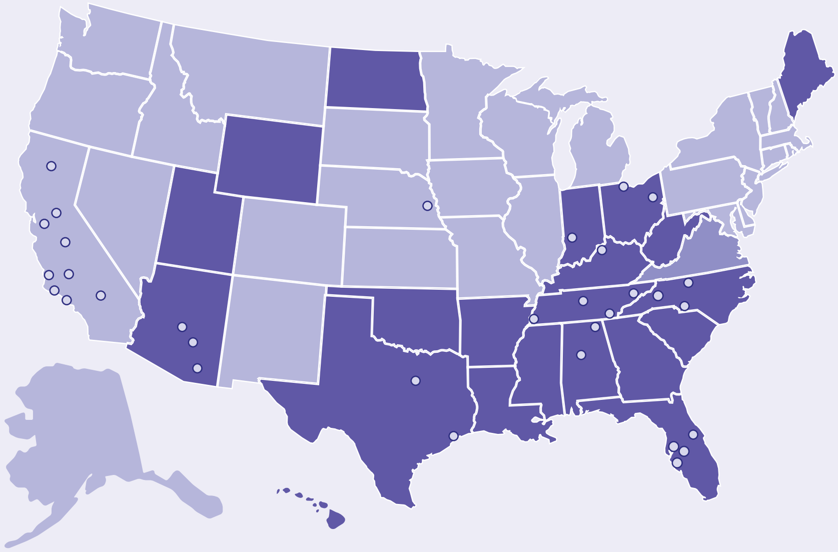
[42] A list of areas protected by the Regional Haze Program is available **here**.

[43] U.S. EPA, ***Our Nation's Air: Trends through 2023***, Section: "Visibility Improves in Scenic Areas," June 2024.

[44] U.S. Energy Information Administration, **Energy-Related CO_2 Emission Data Tables**, Table 1. State energy-related carbon dioxide emissions by year (1970–2022).

[45] U.S. Energy Information Administration, **State Energy Data System (SEDS): 1960-2022**.

Air Quality Resources



AAPCA STATE AGENCIES

- Alabama Department of Environmental Management
- Arizona Department of Environmental Quality
- Arkansas Division of Environmental Quality
- Florida Department of Environmental Protection
- Georgia Environmental Protection Division
- Hawaii Department of Health
- Indiana Department of Environmental Management
- Kentucky Division for Air Quality
- Louisiana Department of Environmental Quality
- Maine Department of Environmental Protection
- Mississippi Department of Environmental Quality
- North Carolina Department of Environmental Quality
- North Dakota Department of Environmental Quality
- Ohio Environmental Protection Agency
- Oklahoma Department of Environmental Quality
- South Carolina Department of Environmental Services
- Tennessee Department of Environment & Conservation
- Texas Commission on Environmental Quality
- Utah Department of Environmental Quality
- West Virginia Department of Environmental Protection
- Wyoming Department of Environmental Quality

AAPCA LOCAL AGENCIES

- Asheville-Buncombe Air Quality Agency (NC)
- Butte County Air Quality Management District (CA)
- Canton City Health Department Air Pollution Control Division (OH)
- Chattanooga-Hamilton County Air Pollution Control Bureau (TN)
- City of Fort Worth Environmental Quality Division (TX)
- City of Huntsville Natural Resources and Environmental Management (AL)
- City of Indianapolis (IN)
- El Dorado County Air Quality Management District (CA)
- Environmental Protection Commission of Hillsborough County (FL)
- Forsyth County Office of Environmental Assistance & Protection (NC)
- Galveston County Health District, Air Pollution Services (TX)
- Jefferson County Department of Health, Air & Radiation Protection Division (AL)
- Knox County Air Quality Management (TN)
- Louisville Metro Air Pollution Control District (KY)
- Manatee County Environmental Protection Division (FL)
- Maricopa County Air Quality Department (AZ)
- Mecklenburg County Air Quality (NC)
- Mojave Desert Air Quality Management District (CA)
- Nashville-Davidson Metro Public Health Department (TN)
- Omaha Air Quality Control Division (NE)
- Orange County Air Quality Management (FL)
- Pima County Department of Environmental Quality (AZ)
- Pinal County Air Quality (AZ)
- Pinellas County Air Quality Program (FL)
- San Joaquin Valley Air Pollution Control District (CA)
- Shelby County Health Department (TN)
- Toledo Division of Environmental Services (OH)
- Ventura County Air Pollution Control District (CA)
- Yolo-Solano Air Quality Management District (CA)

ADDITIONAL AIR QUALITY RESOURCES

- U.S. EPA Air Quality Trends Website
- U.S. EPA Nonattainment Areas for Criteria Pollutants (Green Book)
- U.S. EPA Report on the Environment (ROE) Website
- U.S. EPA Air Quality Index (AQI)
- U.S. EPA Power Plant Emissions Trends
- The Environmental Council of the States (ECOS)

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