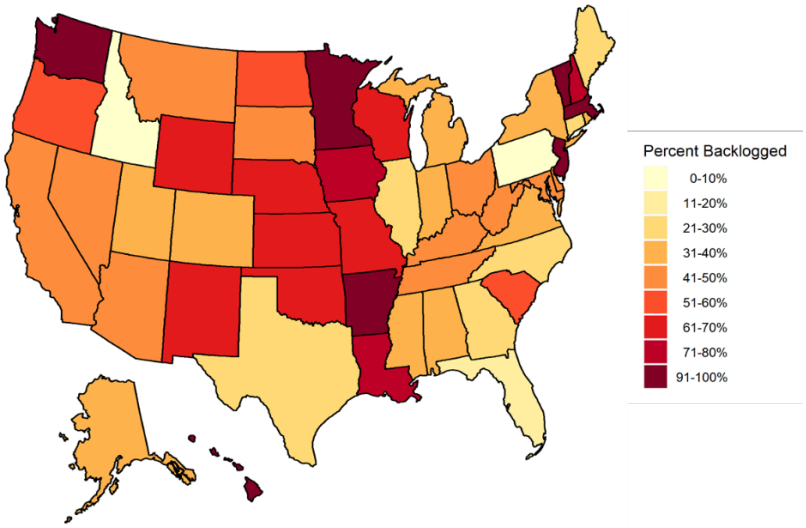
U.S. ENVIRONMENTAL PROTECTION AGENCY

OFFICE OF INSPECTOR GENERAL

Improving air quality

EPA Has Reduced Its Backlog of State Implementation Plans Submitted Prior to 2013 but Continues to Face Challenges in Taking Timely Final Actions on Submitted Plans

Report No. 21-E-0163 **June 14, 2021**



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Abbreviations

CAA	Clean Air Act
EPA	U.S. Environmental Protection Agency
NAAQS	National Ambient Air Quality Standards
OIG	Office of Inspector General
OTR	Ozone Transport Region
SIP	State Implementation Plan
SPeCS	State Planning Electronic Collaboration System
SSM	Startup-Shutdown-Malfunction

Cover Image: Percentage of active State Implementation Plans under review at the EPA that are in backlogged status, by state, based on OIG analysis of the EPA's State Planning Electronic Collaboration System as of May 2021. (EPA OIG image)

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U.S. Environmental Protection Agency
Office of Inspector General

21-E-0163
June 14, 2021

At a Glance

EPA Has Reduced Its Backlog of State Implementation Plans Submitted Prior to 2013 but Continues to Face Challenges in Taking Timely Final Actions on Submitted Plans

Why We Did This Evaluation

We conducted this evaluation to determine the (1) number of Clean Air Act State Implementation Plans awaiting U.S. Environmental Protection Agency approval, (2) factors causing delays in plan approvals, (3) extent to which states have not submitted required plans to the EPA, (4) potential impact of delays in plan processing on achieving air quality standards, and (5) steps that the EPA is taking to address delays in plan processing.

The Clean Air Act requires each state to submit State Implementation Plans that demonstrate that it has an air quality management program in place to implement National Ambient Air Quality Standards and to identify emission-control requirements to attain or maintain the standards. The Act provides statutory deadlines for when states must submit and the EPA must approve or disapprove the plans.

This evaluation addresses the following:

- *Improving air quality.*

This evaluation addresses these top EPA management challenges:

- *Complying with key internal control requirements (policies and procedures).*
- *Overseeing states implementing EPA programs.*

Address inquiries to our public affairs office at (202) 566-2391 or OIG_WEBCOMMENTS@epa.gov.

List of OIG reports.

What We Found

Delays in EPA SIP actions increase the risk that state or local air agencies are not implementing plans sufficient to achieve or maintain the NAAQS.

Since 2015, the EPA has reduced the number of State Implementation Plan submittals awaiting EPA action, including the portion of these submittals that have been backlogged at the EPA. A SIP submittal is considered ***backlogged*** when it is not acted upon by the EPA within 12 months from the date of the completeness determination. The Agency has reduced its backlog by taking final actions on SIPs backlogged prior to 2013, encouraging states to withdraw some SIP submittals, and conducting early engagement with state agencies prior to SIP submittal. We found that, from 2013 through 2020, states were often late submitting SIPs to the EPA, submitting 51 percent of required SIP elements six months or more after the statutory deadline.

Despite this progress, the EPA has still not taken timely action on a significant number of SIP submittals. As of January 1, 2021, approximately 39 percent of the 903 active SIP submittals awaiting EPA action were considered backlogged. Several factors can negatively impact the Agency's ability to take timely action: the number of SIP submittals received in a given year, the complexity of certain types of SIP submittals, limited regional resources, and unresolved litigation and legal and policy issues that would set national precedents. For example, as of February 2021, approximately 46 percent of backlogged SIP elements at the EPA were under further review due to ongoing national precedent or litigation concerns.

The impact of EPA delays in taking SIP actions varies. In circumstances where air quality is not meeting National Ambient Air Quality Standards, delayed EPA actions increase the risk that state or local air agencies are not implementing plans sufficient to achieve the NAAQS. In other cases, delayed action can result in a lack of regulatory certainty and different enforceable requirements for regulated entities.

Recommendations and Planned Agency Corrective Actions

We recommend that the EPA (1) develop and implement a process to identify which SIP elements are not submitted by statutory deadlines; (2) develop and implement a plan to address regional workload disparities to ensure timely SIP actions; (3) reassess certain decisions affecting the suspension of SIP requirements in Yuma, Arizona, and Mariposa, California; and (4) issue findings of failure to submit or take disapproval actions for areas without an EPA-approved SIP in place that continue to exceed the NAAQS beyond their required attainment dates. The EPA agreed with our recommendations. Recommendations 1 and 3 are completed, and Recommendation 4 is resolved with corrective actions pending. Recommendation 2 is unresolved pending additional information on future years' plans.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

THE INSPECTOR GENERAL

June 14, 2021

MEMORANDUM

SUBJECT: EPA Has Reduced Its Backlog of State Implementation Plans Submitted Prior to 2013 but Continues to Face Challenges in Taking Timely Final Actions on Submitted Plans
Report No. 21-E-0163

FROM: Sean W. O'Donnell

TO: Joseph Goffman, Acting Assistant Administrator
Office of Air and Radiation

This is our report on the subject evaluation conducted by the Office of Inspector General of the U.S. Environmental Protection Agency. The project number for this evaluation was OA&E-FY20-0125. This report contains findings that describe the problems the OIG has identified and corrective actions the OIG recommends. Final determinations on matters in this report will be made by EPA managers in accordance with established audit resolution procedures.

The Office of Air and Radiation is responsible for the issues discussed in this report. Recommendations 1 and 3 are complete. Recommendation 4 is resolved with corrective actions pending.

Action Required

Recommendation 2 is unresolved. The resolution process begins immediately with the issuance of this report. Furthermore, we request a written response to the final report within 60 days of this memorandum. Your response will be posted on the OIG's website, along with our memorandum commenting on your response. Your response should be provided as an Adobe PDF file that complies with the accessibility requirements of Section 508 of the Rehabilitation Act of 1973, as amended. The final response should not contain data that you do not want to be released to the public; if your response contains such data, you should identify the data for redaction or removal along with corresponding justification.

We will post this report to our website as www.epa.gov/oig.

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Appendices

Chapter 1
Introduction

Purpose

The Office of Inspector General for the U.S. Environmental Protection Agency conducted this evaluation to determine the (1) number of Clean Air Act, or CAA, State Implementation Plans awaiting EPA approval; (2) factors causing delays in SIP approvals; (3) extent to which states have not submitted required SIPs to the EPA; (4) potential impact of delays in SIP processing on achieving the EPA's National Ambient Air Quality Standards, or NAAQS; and (5) steps that the EPA is taking to address delays in SIP processing.

Top Management Challenges

This evaluation addresses the following top management challenges for the Agency, as identified in OIG Report No. 20-N-0231, *EPA's FYs 2020–2021 Top Management Challenges*, issued July 21, 2020:

- Complying with key internal control requirements (policies and procedures).
- Overseeing states implementing EPA programs.

Background

Sections 108 and 109 of the CAA establish the EPA's authority to promulgate, review, and revise primary and secondary NAAQS for each criteria air pollutant to protect the nation's public health and the environment. The NAAQS address six criteria pollutants known to be harmful to human health:

- Carbon monoxide.
- Nitrogen dioxide.
- Sulfur dioxide.
- Particulate matter.
- Lead.
- Ground-level ozone.

The human health effects of each of the six criteria pollutants are summarized in Table 1.

Table 1: Health effects of the six criteria pollutants identified in the CAA

Criteria pollutant	Human health effects of exposure to pollutant
Carbon monoxide	Breathing elevated levels of carbon monoxide reduces the amount of oxygen reaching the body's organs and tissues.
Nitrogen dioxide	Exposure to nitrogen dioxide can aggravate respiratory diseases, particularly asthma; contribute to asthma development; and potentially increase susceptibility to respiratory infections.
Sulfur dioxide	Short-term exposure to sulfur dioxide is linked to respiratory effects, including difficulty breathing and increased asthma symptoms.

Criteria pollutant	Human health effects of exposure to pollutant
Particulate matter	Exposure to particulate matter has been linked to premature death in people with heart or lung disease; heart attacks; aggravated asthma; decreased lung function; and respiratory symptoms, such as coughing or difficulty breathing.
Lead	Exposure to lead may harm the developing nervous system of children, resulting in learning deficits and behavioral problems. Lead can adversely affect the nervous system, kidney function, the immune system, reproductive and developmental systems, and the cardiovascular system.
Ground-level ozone	Breathing ozone can trigger a variety of health problems, including chest pain, coughing, throat irritation, and airway inflammation. It also can reduce lung function and harm lung tissue. Ozone can worsen bronchitis, emphysema, and asthma.

Source: OIG summary of EPA information. (EPA OIG table)

SIP Development, Submittal, and Action Process

Section 110 of the CAA requires each state to submit SIPs to the EPA that provide for the implementation, maintenance, and enforcement of the NAAQS. The purpose of SIPs is to demonstrate to the EPA that states have basic air quality management programs in place to implement new or revised NAAQS and to identify emission-control requirements to attain or maintain the NAAQS.

What is a SIP?

A ***SIP*** is a collection of regulations and documents used by state, territory, or local air districts to maintain air quality in areas that meet the NAAQS or to reduce air pollution in areas that do not meet the NAAQS.

The CAA requires that the EPA review the NAAQS every five years and determine whether changes are warranted. After the EPA promulgates a new national standard or revises the NAAQS, each state has between three and five years to develop and submit a SIP to the EPA for the new standard or revised NAAQS. The statutory deadline for when the SIPs are due to the EPA is dependent on what type of SIP the state is submitting and whether a state has areas that do not meet the new standard or revised NAAQS. These areas are known as ***nonattainment areas***. Generally, the EPA's implementing regulations require each state to adopt the regulations necessary for attainment and maintenance of the relevant NAAQS in each SIP prior to submitting it to the EPA.

States submit several different types of SIPs to the EPA. The major SIP types are listed in Table 2.

Table 2: Major NAAQS-related SIPs submitted to the EPA

SIP type	Description
Infrastructure SIP	The CAA requires these plans for all states, regardless of designation, to demonstrate what controls to use and regulate in order to remain in attainment.
Nonattainment new source review SIP	In nonattainment areas, the EPA requires stationary sources of air pollution to obtain permits before construction begins on a new source of air pollution or a major modification of an existing source.
Nonattainment area SIP*	If an area is designated as nonattainment, the state must develop an additional SIP detailing the measures that the state will implement to reduce air pollution and to achieve the NAAQS.

SIP type	Description
Ozone transport region SIP	States in such a region are required to submit a SIP and install a certain level of controls for the pollutants that form ozone, even if the states meet the ozone standards.
Interstate transport SIP	The CAA requires each state's SIP to prohibit emissions that will significantly contribute to nonattainment of the NAAQS or interfere with maintenance of the NAAQS in a downwind state.
Maintenance SIP	A state submits a request for redesignation of a nonattainment area for any air pollutant that has attained the NAAQS. The state must also submit a revision of the applicable SIP to provide for the maintenance of the NAAQS for at least ten years after the redesignation occurs.

Source: OIG summary of EPA information. (EPA OIG table)

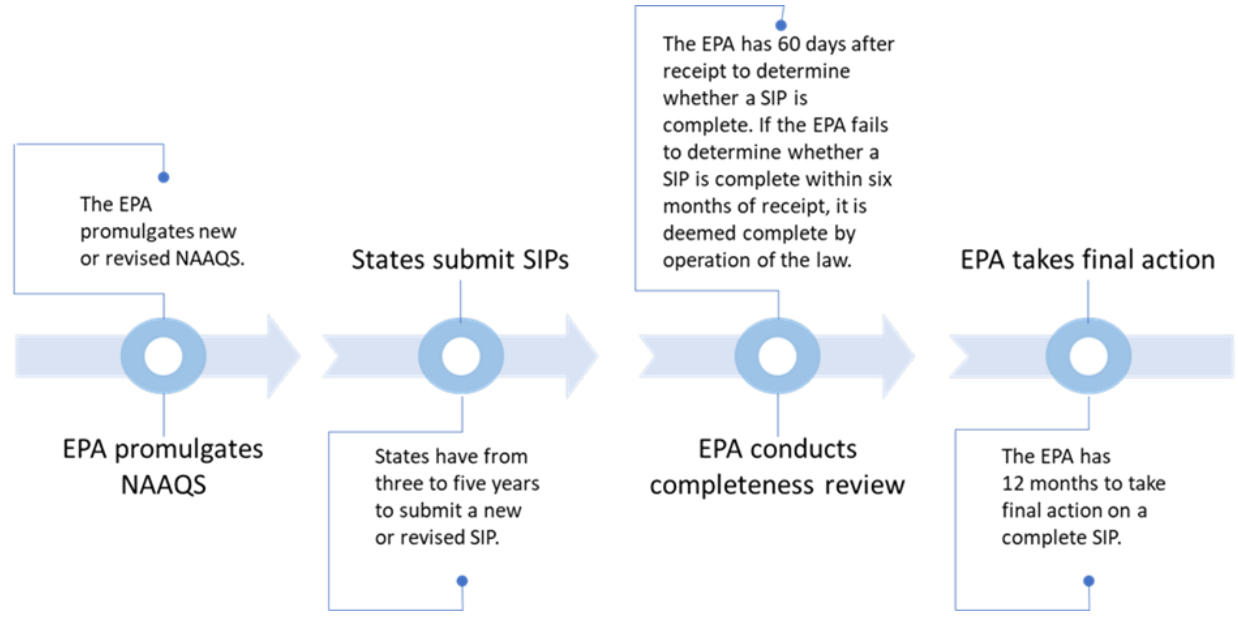
*According to the EPA, these plans are commonly referred to as Attainment Plans.

As noted above, the CAA specifies the time frames for state SIP submissions to the EPA. In addition, the CAA details when the EPA must take certain actions in reviewing the SIPs submitted by states. Some of the key action points in the SIP process include the:

- State's submission of the SIP to the EPA.
- EPA's review of the completeness of the SIP submission.
- EPA's final action on the SIP submission.

Figure 1 provides the general timeline for key points in the SIP development and action processes. At any of the key action points, the EPA may find that a state has failed to take sufficient action, as required in the CAA.

Figure 1: Timeline for key action points in the SIP development, submittal, and action process

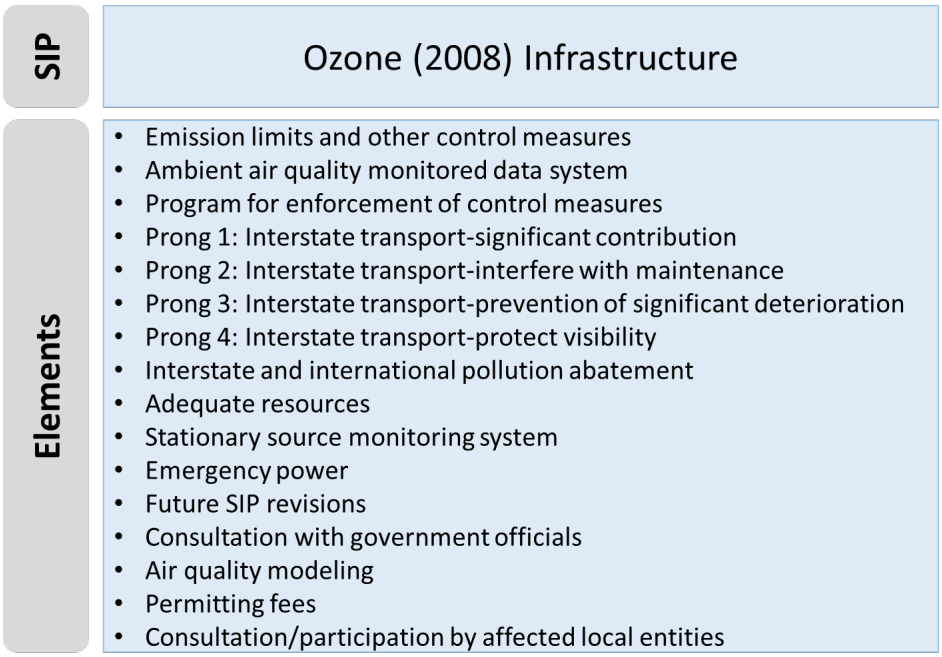


Source: OIG analysis of key time frames identified in the CAA. (EPA OIG image)

States Submit SIPs

The EPA identifies required SIP elements that states must address, depending on the type of SIP a state is submitting. States can submit required SIP elements all at once or in multiple submissions. Figure 2 shows an example of the different required elements for an infrastructure SIP.

Figure 2: Required elements for an infrastructure SIP



Source: OIG summary of EPA SIP requirements. (EPA OIG image)

EPA Completeness Review

Once the EPA receives a SIP submittal from the state, the EPA has 60 days, but no longer than six months after the SIP is due, to determine whether the minimum completeness criteria have been met. According to the EPA's *SIP Processing Manual*, the EPA conducts a completeness review to determine whether all required materials have been submitted, rather than to conclude whether the SIP submittal can be approved. The manual also states that the objective of the completeness criteria is to return fundamentally unreviewable SIP submittals to the state for corrective action. If the EPA does not notify the state that its SIP is complete or incomplete within six months after submittal, the SIP is deemed complete by operation of law.

EPA Takes Final Action

Once the SIP is deemed complete, the EPA has 12 months to review and take action on the SIP. An ***action*** on a SIP is when the EPA makes a formal decision to approve or disapprove the SIP—in a full, partial, limited, or conditional manner, as described in Table 3—and publishes that decision in

the *Federal Register*. The EPA's approval of a SIP means that the Agency has determined that the SIP meets the requirements of the CAA. Following the SIP's approval, the elements and measures in the SIP become federally enforceable. In addition to approval, the EPA can take other actions on a SIP. The October 31, 2011 EPA document titled *Options and Efficiency Tools for EPA Action on State Implementation Plan (SIP) Submittals* describes these actions, which Table 3 summarizes.

Table 3: Types of EPA SIP actions

Type of action	Description
Full approval	This action is taken when a submission meets all applicable requirements of the CAA regulations. This is the EPA's preferred option.
Partial approval or disapproval	This action is used when some portions of the submittal meet all applicable requirements of the CAA and other portions do not. The portions must be able to be separated because the EPA's disapproval action cannot change the stringency of the portion of the submittal it approves.
Limited approval or limited disapproval	This action is taken when some provisions of the submittal meet the requirements of the CAA and other provisions that cannot be separated do not. If, overall, the submittal strengthens the SIP, limited approval may be used. Unlike a partial approval, this EPA action approves the entire rule with a limitation.
Conditional approval	This action can be used in limited circumstances in which the submittal contains one or more deficiencies and the state has made a commitment to address the deficiencies within one year of approval of the SIP submission. This option cannot be used when the submission consists solely of a commitment to submit a SIP in the future, nor can it be used when the SIP has so many deficiencies that the entire SIP is deemed defective. The conditional approval reverts to a disapproval if the state does not meet the commitment.
Disapproval	This action is used in situations in which the state provides a submission that does not meet statutory and regulatory requirements and the state is unable to make changes to provide a submission that does meet applicable requirements.

Source: OIG summary of the EPA's *Options and Efficiency Tools for EPA Action on State Implementation Plan (SIP) Submittals.* (EPA OIG table)

Section 110(c)(1) of the CAA requires that the EPA develop a Federal Implementation Plan within two years of the time that it:

- Finds that a state failed to submit a required SIP.
- Deems a state SIP to be incomplete.
- Disapproves a state SIP in whole or in part.

A submitted SIP that corrects the original deficiencies will remove the EPA's obligation to promulgate a Federal Implementation Plan. Possible sanctions that a state faces include having its federal transportation funds withheld or requiring new sources in the area to offset emissions by a ratio of 2:1.

EPA Tracking of SIP Submittals and Actions

In 2018, the EPA launched the State Planning Electronic Collaboration System for State Implementation Plans, known as SPeCS. It was created in partnership

with the Environmental Council of States and other state stakeholders as part of the E-Enterprise Initiative. In addition to newly submitted SIPs, the EPA's SPeCS database consists of SIP tracking data compiled from older databases used by the EPA regions to track SIP actions. According to the EPA, two objectives of SPeCS are to:

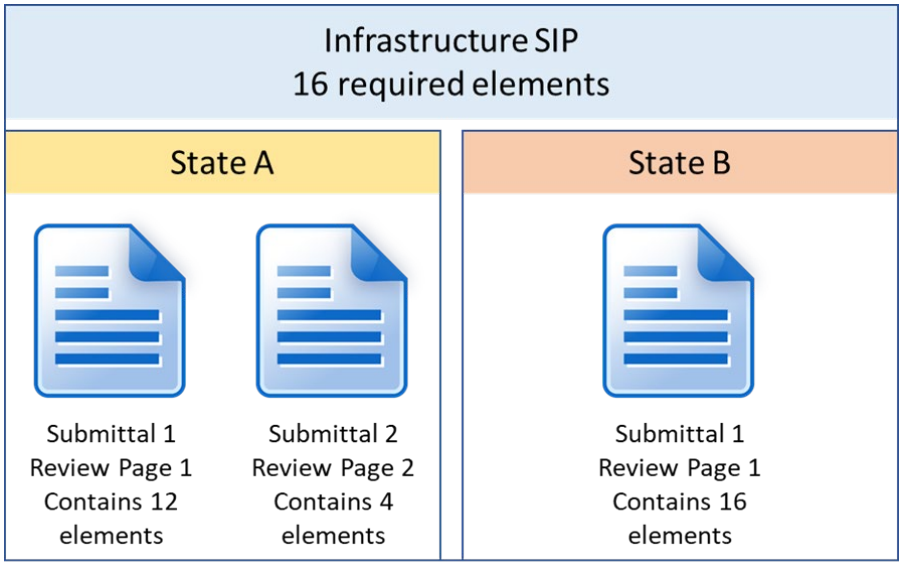
- Allow states to make electronic submittals to the EPA, which reduces costs and lessens burdens on state and local air agencies and the EPA by reducing the number of paper copy submissions required.

- Track the Agency's progress in reaching final action on state SIP submittals.

In March 2021, the EPA completed quality assurance of data in SPeCS and released three publicly available online SIP status tools that use data from SPeCS.

SPeCS tracks SIPs in different ways. First, SPeCS tracks SIPs by submittal, which is referred to in SPeCS as a ***review page***. Review pages can have more than one required SIP element per submittal. The elements included in a state's review page may vary depending on *how* the state submitted the SIP. This means that review pages are not always comparable across different state submittals. For example, one state could submit all 16 required elements for its infrastructure SIP in one review page, while another state could submit 12 elements in one review page and the remaining four elements in another review page, for a total of two review pages. In this situation, one state would have double the number of review pages in SPeCS but the same number of submitted elements as the state with a single review page. Figure 3 illustrates this example.

Figure 3: Example of how states may have a different number of submittals to address the same number of required SIP elements



Source: OIG summary of infrastructure SIP submittal example. (EPA OIG image)

Staff in the Office of Air Quality Planning and Standards told us that the EPA is required to act on state submittals once they are deemed complete, even if all required elements are not included in a single submittal. Therefore, tracking review pages allows the Agency to identify SIP submittals that require action and the milestones for those actions. However, the way that the data are organized in SPeCS has limitations when evaluating the SIP program nationally because each state submittal may have a different number of elements in it. The review-page-level report in SPeCS does not indicate how many elements are present within each submittal. In addition, it does not note when a state has submitted all required elements.

Second, SPeCS tracks SIPs by element. However, the only SIPs that have element-level tracking in SPeCS are infrastructure; ozone transport region, or OTR; and maintenance plan or attainment plan SIPs.

As illustrated in Figures 2 and 3, SIPs consist of multiple required elements. SPeCS includes reports that show tracking data for each required SIP element. Similar to review-page-level data, there are limitations to using element-level data in SPeCS to evaluate the timeliness of state SIP submittals and EPA actions. For example, SPeCS does not identify certain elements that may have been suspended or are no longer required to be submitted by a state. In addition, element-level data in SPeCS are not tracked for all types of SIP submittals.

SIP Backlog at EPA

A SIP submittal is considered ***backlogged*** when it is not acted upon by the EPA within 12 months from the date of the completeness determination, which is the deadline for EPA action provided in the CAA. For several years, the EPA and state and local air agencies have focused attention on reducing the SIP backlog.

At the beginning of 2010, the EPA had a backlog of 451 review pages. At that time, the EPA and two state government association groups formed a SIP Reform Workgroup with a mission "to make the SIP process more efficient and effective while ensuring the fulfillment of statutory responsibilities to attain the NAAQS as expeditiously as practicable." One of the workgroup's goals was to eliminate the EPA's SIP backlog by the end of 2017. The group aimed to accomplish this goal by having EPA regions establish four-year management plans. Although the Agency has reduced its SIP backlog, it still had a backlog of 418 review pages at the end of 2017, and 356 review pages at the end of 2020. Steps that the Agency have taken to help reduce its SIP backlog and improve the timeliness of SIP actions are described in Chapter 2.

SIP Enforcement

States generally enforce the measures and regulations within their SIPs. However, an EPA-approved SIP is federally enforceable. This means that the EPA is

authorized to take enforcement actions against violators. If elements of a SIP have been approved by a state but not yet been approved by the EPA, such elements are only state-enforceable. If a state submits a SIP that revises the previously EPA-approved version of a SIP, regulated entities may be subject to two different sets of requirements—the new state-enforceable measures in the revised SIP, as well as the federally enforceable measures in the previously EPA-approved SIP—until the EPA takes action to approve the revised SIP submittal.

Responsible Offices

The Office of Air Quality Planning and Standards, within the Office of Air and Radiation, is the lead office in tracking national policy issues that may affect SIP submittals across multiple states. The Office of Air Quality Planning and Standards tracks SIP submittals through SPeCS. In addition, EPA regions are responsible for shepherding SIPs through the EPA review-and-action process, including providing technical and legal expertise during early engagement with air agencies. EPA regional offices are delegated authority to propose and take final action on SIPs submitted by state agencies, provided there are no national policy consistency issues that pertain to the SIPs under review by EPA regional offices.

Scope and Methodology

We conducted our work from April 2020 to April 2021. We conducted this evaluation in accordance with the *Quality Standards for Inspection and Evaluation*, published in January 2012 by the Council of the Inspectors General on Integrity and Efficiency. Those standards require that we perform the evaluation to obtain sufficient, competent, and relevant evidence to provide a reasonable basis for our findings, conclusions, and recommendations based on our objectives. We believe that the evidence obtained provides a reasonable basis for our findings, conclusions, and recommendations.

To address our objectives, we obtained access to and reviewed data available in the EPA's SPeCS database. We used the following SPeCS data sets to complete our evaluation: element level, review-page level, and the SIP Issue Tracker. Each data set had unique characteristics that allowed to us identify the number of SIP submittals under review at the EPA, the status of state submittals, and the EPA's SIP actions.

We used data in SPeCS to determine the status of active required SIP elements at the EPA. We discussed the methodology used with the Agency. We compared the data we obtained from SPeCS to data in the Agency's publicly available SIP Status Report website. Elements that were not present on both the website and the element-level report were removed from our analyses. We also removed data from our review that were not chronologically accurate with the SIP review process, such as elements that showed a completeness determination date after a

final action date. These dates were removed to ensure the quality and consistency of our results. We identified and removed from our analyses elements for geographical areas that had been redesignated as in attainment and no longer required SIP submission.

We used tools and reports available in SPeCS to identify data that did not meet certain CAA criteria, such as required elements that were not submitted to the EPA on time or elements on which the EPA had not taken timely action. To verify our data analyses of SPeCS, we identified a sample of 29 SIPs in EPA Regions 1 and 9 for further evaluation and follow-up. The sample included SIPs from each of the following six categories of criteria:

- The state had not submitted the required SIP and six months had passed from the statutory deadline for submittal.
- The submittal had been backlogged for more than five years.
- The EPA took more than five years to take final action on the SIP.
- The EPA took final action on the SIP within the statutory time frame.
- The submittal was withdrawn by the state.
- The EPA made a finding other than full approval or disapproval more than two years prior to our review or prior to May 2018. We conducted interviews with managers and staff in those regions and requested documentation to understand selected SIP actions.

We also developed a linear regression model to evaluate the rate of change of time taken by the EPA to reach final action on a SIP submittal. ***Linear regression models*** show or predict the relationship between two variables or factors. We assessed how this time was affected by the month and year in which the SIP was submitted, as well as by the total number of elements submitted in a month and year. To be consistent with the rest of our data, the final results were scaled up to years.

In addition, we interviewed EPA managers and staff in the Office of Air Quality Planning and Standards and EPA Regions 1, 2, 9, and 10. We initially evaluated all element-level data available in SPeCS. Based on this evaluation, we selected Regions 1 and 9 for additional follow-up.

Region 1 was identified for additional follow-up because:

- The required SIP elements in this region had the highest average number of days between the completeness determination and the final action.

- A low percentage of required elements were acted upon within the statutory time frame.
- The states within the region were subject to OTR requirements.

Region 9 was identified for additional follow-up because:

- It had the highest percentage of active backlogged SIP review pages.
- A low percentage of required elements were acted upon within the statutory time frame.
- A significant number of areas within the region were in nonattainment status.

We interviewed an executive at the California Air Resources Board to discuss the process for developing SIPs in California, the manner in which the state works with the EPA, and the impacts the state experienced as a result of EPA SIP backlogs and delayed final actions. We also interviewed an attorney at the Center for Biological Diversity to discuss environmental and public health impacts of delayed EPA final actions.

Chapter 2
EPA Has Reduced the SIP Backlog, but Taking Timely SIP Actions Remains a Challenge Compounded by Legal and Policy Issues

While the percentage of SIPs backlogged at the EPA has decreased from 64 percent at the beginning of 2015 to 39 percent at the beginning of 2021, the EPA still faces challenges in taking timely SIP actions. Both the EPA and state agencies are frequently late in taking required actions. For example, the EPA only took actions within the one-year time frame required by the CAA for 24 percent of required SIP elements submitted since 2013. In addition, from 2013 through 2020, state agencies submitted 51 percent of the required SIP elements to the EPA six months or more after the statutory deadline.

The EPA has implemented process changes over the last decade to help reduce its SIP backlog and to improve the timeliness of EPA final actions on SIPs. The EPA reduced the backlog for SIPs that were backlogged prior to 2013, encouraged states to withdraw SIPs that had been superseded or were no longer necessary, and conducted early engagement with the states. While the EPA has implemented SIP process changes, the Agency has not been able to eliminate the SIP backlog entirely.

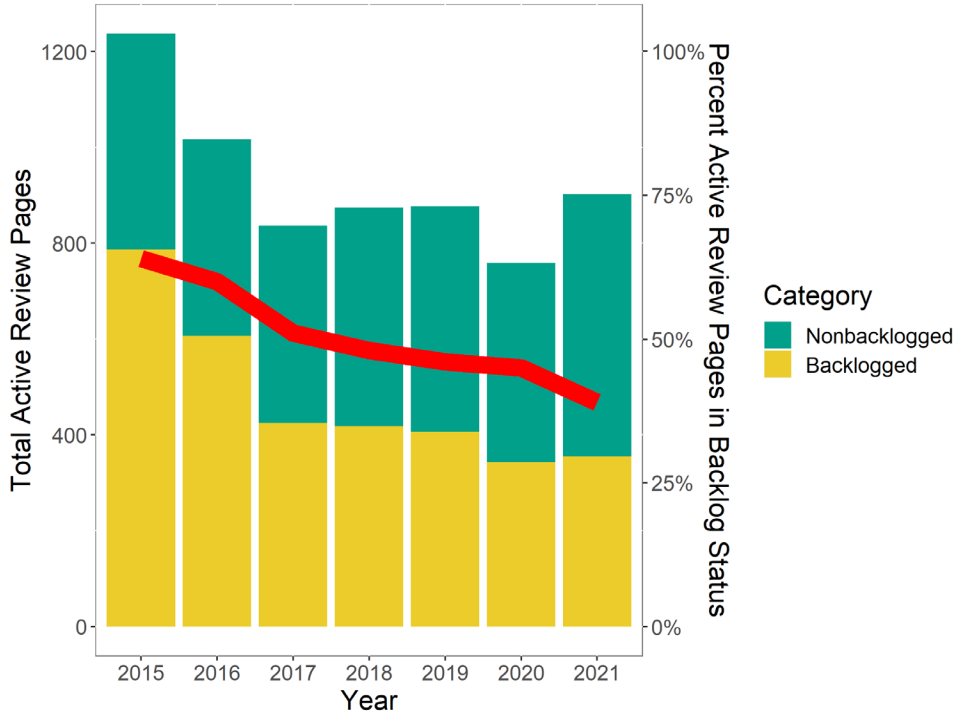
Many factors impact the timeliness of the EPA's final actions on SIPs. The number and complexity of SIP submittals affect the timeliness of EPA action. EPA regions indicated that they have limited resources to review and approve SIP submittals. EPA and state personnel told us that legal and policy issues affecting the national consistency of EPA SIP actions impede the EPA from taking timely final SIP actions. Delayed EPA actions increase the risk that state or local air agencies are not implementing plans sufficient to achieve or maintain the NAAQS. If the NAAQS are not being achieved, the residents in those areas could be exposed to harmful pollutants affecting their health. In addition, the EPA's delay in taking action on a SIP submittal, even if the submittal is eventually approved, results in prolonged periods of regulatory uncertainty for regulated entities during the time the SIP is with the EPA.

EPA Has Reduced SIP Backlog but Still Often Exceeds CAA Time Frames for Final Actions

The total number of active SIP submittals, or review pages, awaiting EPA action has declined from January 1, 2015, to January 1, 2020, although an increase in submittals occurred at the beginning of 2021. Similarly, the percentage of active SIP submittals in backlogged status has declined each year since 2015, as shown by the red line in Figure 4. The significant decline in the number of active and

backlogged SIP submittals at the EPA in 2016 and 2017 coincides with the EPA SIP Reform Workgroup's goal of eliminating the SIP backlog by the end of 2017.

Figure 4: Active, backlogged SIP submittals at start of each year, 2015–2021



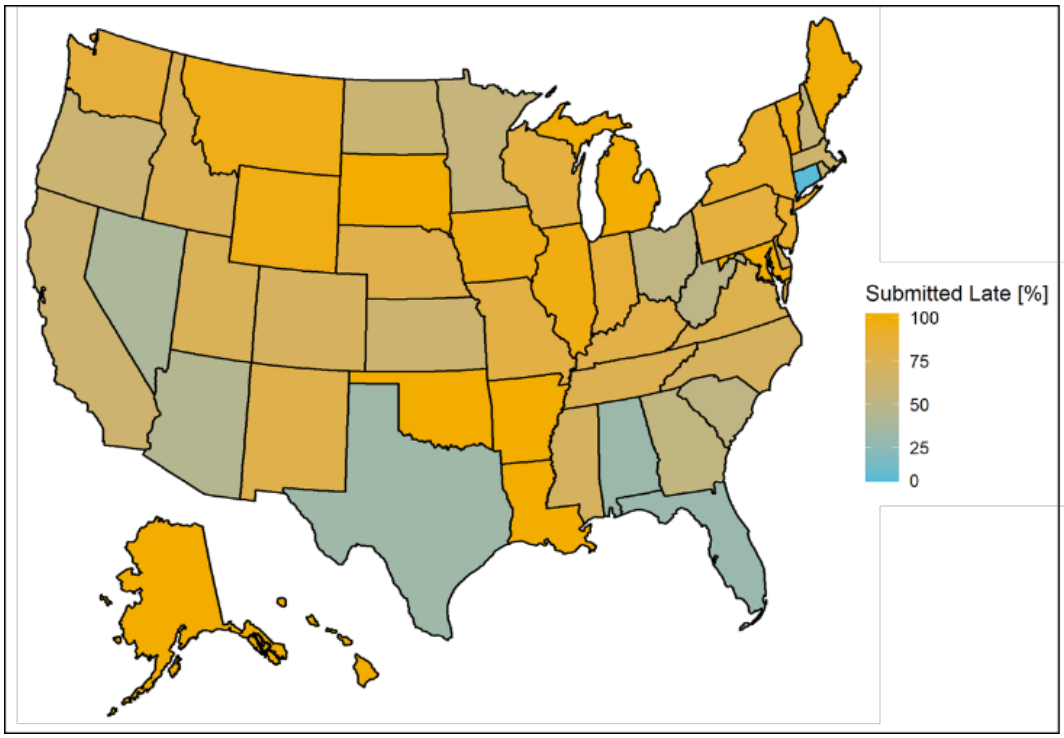
Source: OIG analysis of review page data in SPeCS. (EPA OIG image)

While the SIP backlog has been reduced, the EPA did not meet its goal of eliminating the backlog by the end of 2017. In addition, the average time needed by the EPA to take final SIP actions still exceeds the statutory time frames identified in the CAA. Specifically, the EPA acted within the statutory time frame on only 24 percent of required SIP elements submitted since 2013 and has consistently had over 39 percent of active SIP submittals at the EPA in backlog status each year since 2013.

States' SIP Submittals to EPA Are Frequently Late

State agencies have frequently submitted required SIPs to the EPA late. From 2013 through 2020, states submitted 72 percent of required SIP elements after the statutory deadline and approximately 51 percent of required SIP elements six months or more after the statutory deadline, according to data in SPeCS. Figure 5 shows the percentage of elements submitted after the deadline by state from 2013 through 2020.

Figure 5: Each state's percentage of SIP elements submitted after statutory deadline



Source: OIG analysis of element-level data in SPeCS. (EPA OIG image)

When states fail to submit required SIP elements within six months of the statutory deadline for that submission, the CAA requires that the EPA make a ***failure to submit*** finding, which triggers a statutory time frame for the EPA to develop a Federal Implementation Plan or to potentially issue sanctions against the state. Despite the CAA imposing this nondiscretionary duty on the Agency to issue findings of failure to submit when states do not make required SIP submittals, we found that the EPA rarely makes such findings. When the Agency does not make findings of failure to submit when states do not make SIP submittals within required time frames, the Agency is not adhering to CAA requirements.

Staff members from Regions 1 and 9 told us that they generally avoid failure-to-submit findings or disapproval actions because of resource concerns, and a Region 1 manager said that the manager was advised against doing so by EPA headquarters. Region 9 managers told us that, because of the region's limited resources, they make environmental-benefit and resource-based decisions on whether to make a finding of failure to submit. According to a Region 1 manager, the development of a Federal Implementation Plan can be more resource-intensive than working with a state on correcting deficiencies in a SIP submittal.

Many Factors Cause Delayed Action on SIP Submittals

Many factors cause delays in the EPA taking action on SIP submittals. These factors include the number of SIP submittals received annually and the complexity of the SIP submittals. In addition, both EPA and state personnel told us that legal and policy issues affecting the national consistency of the EPA's SIP actions impede the EPA from taking required, timely final SIP actions. For example, after receiving a September 2019 letter from the EPA administrator that discussed California SIPs in the EPA's backlog, the California Air Resources Board included the following information in an October 2019 response to the EPA administrator:

> U.S. EPA's backlog is the result of its own failure to take timely action and the circumstances surrounding each submittal, including: Submitted rules that U.S. EPA has given lower priority for review based on its limited resources (due, in part, to U.S. EPA staff cuts and hiring freezes); Submitted rules that received no action before being later updated by an air district, and so are out of date and no longer governing; Submitted SIP elements that U.S. EPA has since concluded are not needed in the SIP, but have taken a lower priority in response to more pressing issues; Rules or attainment plans where U.S. EPA has delayed taking action because there is concern over setting national precedent or where U.S. EPA has not yet decided how to address recent court actions that impact the decision.

Such factors, according to the California Air Resources Board, impact the timeliness of EPA final actions on SIP submittals and, therefore, may result in increased backlogs of SIPs at the EPA.

Timeliness of EPA Action Depends on Number of SIP Submittals Received Annually and Complexity of SIPs Submittals

We found that the timeliness of EPA action fluctuates in years in which the Agency receives a significant number of SIP submittals. Further, the Agency told us that those submittals that address nonattainment areas or NAAQS with especially complex requirements for meeting the CAA could affect the timeliness.

Using a linear regression model with SPeCS data from 2013 through 2018, we found that the time it takes an element to reach final action is dependent on the number of elements received and the year it was submitted to the EPA, among other factors. Using our model, if the number of elements received by the EPA was to remain constant, the average time it would take for an element to receive a final action would decrease each year by 77 days. However, the number of elements submitted to the EPA fluctuates each year. The purpose of the model was to understand the relationship between the number of days it takes an element to be finalized and the time it was submitted. The model was not intended to

predict future processing time. According to a Region 1 manager, future improvements in timeliness of SIP actions would be more modest than the previous years' improvements.

Based on our discussions with EPA regional managers, SIPs vary in complexity based upon individual NAAQS and attainment status. A Region 9 manager told us that nonattainment SIPs are more difficult to review and take action on than infrastructure SIPs. Similarly, a Region 2 manager told us that SIPs addressing ozone NAAQS are comprehensive documents, requiring more time for the region to review and to take final action on. The EPA may need more time to review complex SIPs, which can impact the timeliness of final EPA actions. This could cause the SIP backlog to increase in years when more SIPs are submitted or in years when the SIPs submitted are more complex.

As shown in Table 4, a limited number of required SIP elements were due in 2016 and 2019 compared to 2017, 2018, and 2020.[1] These years correspond to decreases in the number of active SIP review pages at the EPA at the beginning of the following years—in other words, 2017 and 2020. The elements due in 2020 were mostly for nonattainment ozone (2015 standard) areas. Given the large number of SIP submittals in 2020, along with the complexities of ozone nonattainment SIPs, the time needed to take final actions on these SIPs may increase, therefore adding to the EPA's SIP backlog.

Table 4: SIP elements due 2016–2020, compared to review pages

Year	Number of SIP elements due during the calendar year	Number of active review pages at beginning of year	Number of backlogged review pages at beginning of year
2016	106	1017	607
2017	951	837	425
2018	975	875	418
2019	1	877	406
2020	974	759	343

Source: OIG analysis of data in SPeCS. (EPA OIG table)

Managers from both Regions 1 and 9 identified scarce resources as hindering timely SIP actions.

A Region 9 manager told us that over 50 percent of the Region 9 Air and Radiation Division's full-time equivalents are dedicated to SIP processing. Region 9 has engaged in work-sharing opportunities across regions to help address resource constraints. For example, the Region 9 manager told us that the region has worked with EPA Region 5 staff to use their expertise to help review SIP submittals in Region 9.

[1] The small number of required SIP elements due in 2019 is attributed to the timing of the most recent NAAQS revision by the EPA. The last EPA revision to the NAAQS was the 2015 ozone standard. Infrastructure SIP elements for this standard were due prior to 2019, and nonattainment SIP elements were due after 2019.

Region 1 managers told us that there are scenarios that could lead to a SIP workload that would require additional resources. Although they told us that the region has adequate resources to manage the current SIP workload, SIP workload increases are not always predictable. For example, in 2019 and 2020, Rhode Island resubmitted regulations in its SIP to reflect a new numbering system adopted on the state level. According to Region 1, this required the region to review approximately 25 SIP elements. Additionally, a Region 1 manager informed us how OTR requirements affect Region 1's SIP submittals more than other EPA regions because all six states in Region 1 are located in the OTR. Therefore, upon promulgation of a new ozone standard, all OTR states are required to comply with various SIP requirements regardless of attainment status. This leads to unique and significant workload increases for the region during times following EPA revisions to the ozone NAAQS. The EPA last revised the ozone NAAQS in 2015.

If the number and complexity of SIPs increase in any future year, the resource constraints in some EPA regions will likely cause the SIP backlog to increase in the future.

National Consistency Issues Contribute to Delays in SIP Actions

In addition to limited resources, managers and staff in Regions 1, 2, and 9 highlighted two issues that impact the timeliness of the EPA's final actions:

- National policy decisions.
- Litigation or judicial review of EPA regulations.

The EPA defines ***SIP consistency issues*** as situations in which "a Region wishes to pursue an action that 1) may require a change in the way a regulation or policy has been applied in the past, 2) change a current Agency interpretation, or 3) pursue an action where a policy has not yet been developed." When SIP consistency issues are identified, the Agency employs a process that involves EPA headquarters and regional offices. EPA regions may be directed by EPA headquarters to not take final action on the affected SIP submittals until the consistency issue is resolved.

The EPA and the regions use the SIP Issue Tracker in SPeCS, which color-codes consistency issues to reflect the level of involvement required from EPA headquarters on certain SIP actions. This tracking report helps to identify what SIP consistency issues are under review at the EPA, as well as any court-ordered or legal deadlines affecting SIP actions. Table 5 shows the types of SIP consistency issues, along with the number of affected SIPs, identified in the EPA's SIP Issue Tracker as of February 2021. As shown in Table 5, approximately 46 percent of the backlogged SIPs were affected by "red" or "yellow" SIP consistency issues.

Table 5: Descriptions of SIP consistency issues

Issue category	Definition	Percentage of backlogged SIPs affected as of February 2021
Red	No region may act on a SIP within this issue category until further notice.	46% (157 of 342)
Yellow	Regions must receive concurrence from EPA headquarters prior to proceeding with a SIP action.	
Green	Regions may proceed with a SIP action without EPA headquarters' concurrence. Green issues are only kept in the database for documentation purposes.	2% (6 of 342)
	Total	**48% (163 of 342)**

Source: OIG summary of the *SIP Consistency Guide* and data from SIP Issue Tracker in SPeCS, as of February 2021. (EPA OIG table)

Regions do not have authority to take final SIP actions on any SIP submittals affected by consistency issues that are coded "red" in the SIP Issue Tracker until EPA headquarters resolves the issues and changes the status to "green." Of the SIPs affected by "red" issues as of February 2021, the majority concern one issue: the startup-shutdown-malfunction, or SSM, policy.

Startup, Shutdown, and Malfunction

SSM refers to a startup, shutdown, or malfunction at a pollution source. It does not include periods of maintenance at such a source. An ***SSM event*** is a period of startup, shutdown, or malfunction during which there may be exceedances of the applicable emission limitations and excess emissions over permitted thresholds.

In May 2015, the EPA issued findings that the SSM provisions in the SIPs of 36 states did not meet the requirements of the CAA. The EPA also issued "SIP calls" directing the affected states to correct the SSM provisions in their SIPs and requiring new SIP submissions by November 2016.[2] However, the EPA reviewed that policy in 2017 and issued a new policy in October 2020 that changed the prior policy but did not otherwise disrupt the 2015 SIP call. According to the Agency's October 2020 policy, the "EPA plans to continue its review of each of the SIP calls issued in 2015 and to consider whether any particular SIP call should be maintained, modified, or withdrawn in light of the guidance. ... EPA anticipates completing this review by December 31, 2023." As of January 2021, the issue was still coded "red." In addition, the SSM policy is slated for review under Executive Order 13990, *Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis*.[3] We anticipate the SSM SIP consistency issue to continue to delay SIP actions until the Agency completes its review.

[2] CAA Section 110(k)(5) provides a mechanism commonly called a "SIP call" for correcting state implementation plans that the administrator finds to be substantially inadequate to meet CAA requirements.
[3] Specifically, in the January 20, 2021 *Fact Sheet: List of Agency Actions for Review* associated with Executive Order 13990, the review of the SSM policy is Number 21 under the EPA's section.

A Region 1 manager stated that a national policy decision is needed before Region 1 can take final action on many active SIP submittals in the region. The SIP elements that are currently on hold are captured on the SIP dashboard, which is updated to reflect the status of the issue currently under consideration. The manager said that the region is awaiting a decision that will ultimately provide a path forward to acting on the SIP elements associated with the policy question.

Required SIPs Not Submitted by States Are Not Easily Identified in SPeCS

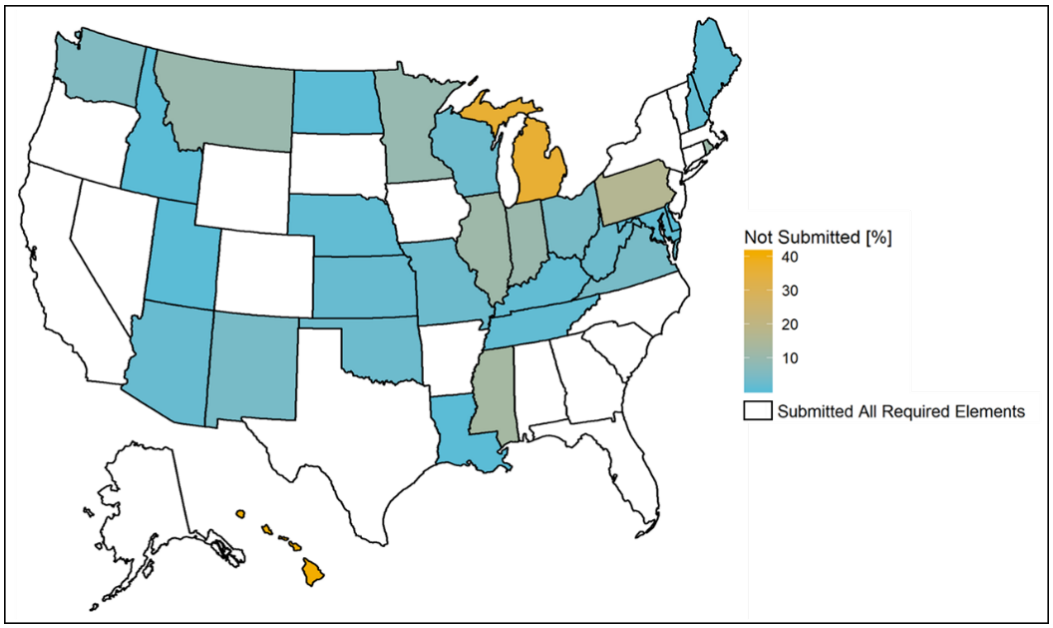
As stated above, states submit a large percentage of their SIP submittals late, and some are not submitted at all. SPeCS does not include tools to query or summarize all required SIPs that states have failed to submit. During our review, we were unable to assess the extent to which state agencies had not submitted the required nonattainment or maintenance SIPs because of the manner in which SIP elements are tracked in SPeCS.

Nonattainment or maintenance SIPs are the plans states use to achieve or maintain the NAAQS, thus protecting human health and the environment. SPeCS, however, does not have capabilities for users to query or generate reports on which elements of these types of SIPs are no longer required to be submitted because of changes, such as attainment designations. For example, SPeCS data we reviewed showed that Mariposa County in California had not submitted a single element for the ozone eight-hour standard from 1997. Region 9 managers informed us that some of the required elements for that standard for Mariposa County were suspended because the EPA found that the area was in attainment with the NAAQS. This meant that Mariposa County was no longer required to submit these elements. However, we could not identify in SPeCS which SIP elements for these types of plans were still required to be submitted.

Managers from EPA Regions 1 and 9 told us that their staffs are aware of the individual circumstances affecting state and local jurisdictions in their regions and would know when required SIP elements were overdue for submittal. Region 9 managers also told us that an accurate national data set does not exist to identify such instances. The EPA released three public dashboards in March 2021 that the public can use to identify areas where a state has not submitted required nonattainment or maintenance SIPs.

For two types of SIPs, infrastructure and OTR, we were able to identify required SIP elements that states had failed to submit. For infrastructure SIP elements, we determined that states did not submit 11 percent of these required elements. Figure 6 shows which states have not submitted the required infrastructure SIP elements.

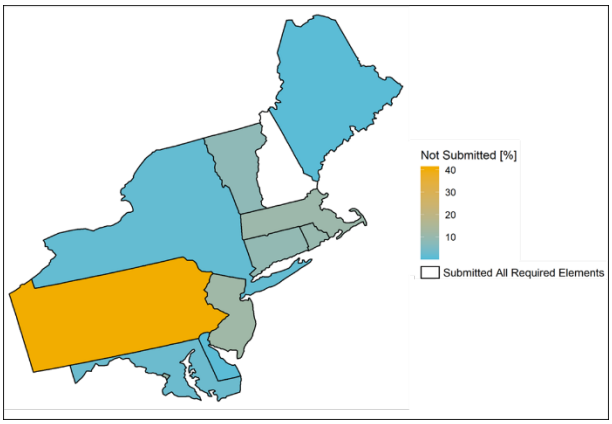
Figure 6: States' percentage of infrastructure SIP elements not submitted



Source: OIG analysis of element-level data in SPeCS. (EPA OIG image)

For OTR elements, we found that states had not submitted 12 percent of required OTR SIP elements. Figure 7 shows which states have not submitted required OTR SIP elements. OTR SIPs are only required in Northeast states.

Figure 7: States' percentage of OTR elements not submitted



Source: OIG analysis of element-level data in SPeCS. (EPA OIG image)

In addition, we reviewed six SIPs for states in Regions 1 and 9 where the statutory deadline for submittal had passed and the states had not yet submitted the required elements for those SIPs. In one instance, a state in Region 9 had not submitted the required elements because a court decision found that the state had to address SIP elements that it was not originally required to address, which delayed the state's development of the SIP. In other instances, both Regions 1 and 9 said that they did not pursue EPA action, such as a finding of failure to submit, for these SIPs because they did not believe that the states' failure to submit had a significant impact on public health.

EPA Has Taken Steps to Address Its SIP Backlog Through Process Changes and Improvements

The EPA reduced its overall SIP backlog since 2015. This was done primarily through:

- Process improvement initiatives.
- Actions taken on SIP elements backlogged prior to 2013.
- Encouragement to states to withdraw backlogged SIPs that were no longer necessary.
- Early engagement with the states prior to states submitting SIPs to the EPA.

EPA Initiated Workgroup and Lean Effort to Address SIP Backlog

Over the past decade, the EPA has taken steps to address delays in the SIP review-and-action process, including:

- Working with states to form a SIP Reform Workgroup.
- Creating SIP management plans with the goal of eliminating SIP backlogs.
- Conducting a Lean process review and developing new guidance to address various aspects of the SIP review and action process.[4]

In 2010, the EPA, together with the National Association of Clean Air Agencies and the Environmental Council of States, formed a SIP Reform Workgroup to make the SIP process more efficient and effective. The workgroup recommended that EPA regions develop four-year SIP management plans for fiscal years 2014–2017 to address backlogged SIPs and prioritize SIPs for action. The goal was to eliminate the SIP backlog by the end of 2017. All ten EPA regions completed the four-year management plans for reducing SIP backlog and negotiated priority actions with their states. Despite these actions, the EPA was not able to fully eliminate its SIP backlog by the end of 2017.

In February 2018, EPA headquarters and regional staff members met, along with state and local air agency representatives, at a Lean event to improve the efficiency of the SIP process. As a result of this event, the EPA issued new internal SIP processing guidance. Early engagement between the EPA and state agencies was also identified as an important collaboration tool. The concept of early engagement encourages EPA regions to work with air agencies from the time the air agency begins

Early Engagement

According to the EPA's *SIP Lean Toolkit for Collaboration Between EPA and Air Agencies*, if the EPA can provide feedback—particularly in terms of flagging issues that could affect approvability—on an early engagement draft SIP, the EPA will be better able to take more timely and efficient action when the SIP is formally submitted for EPA review and action.

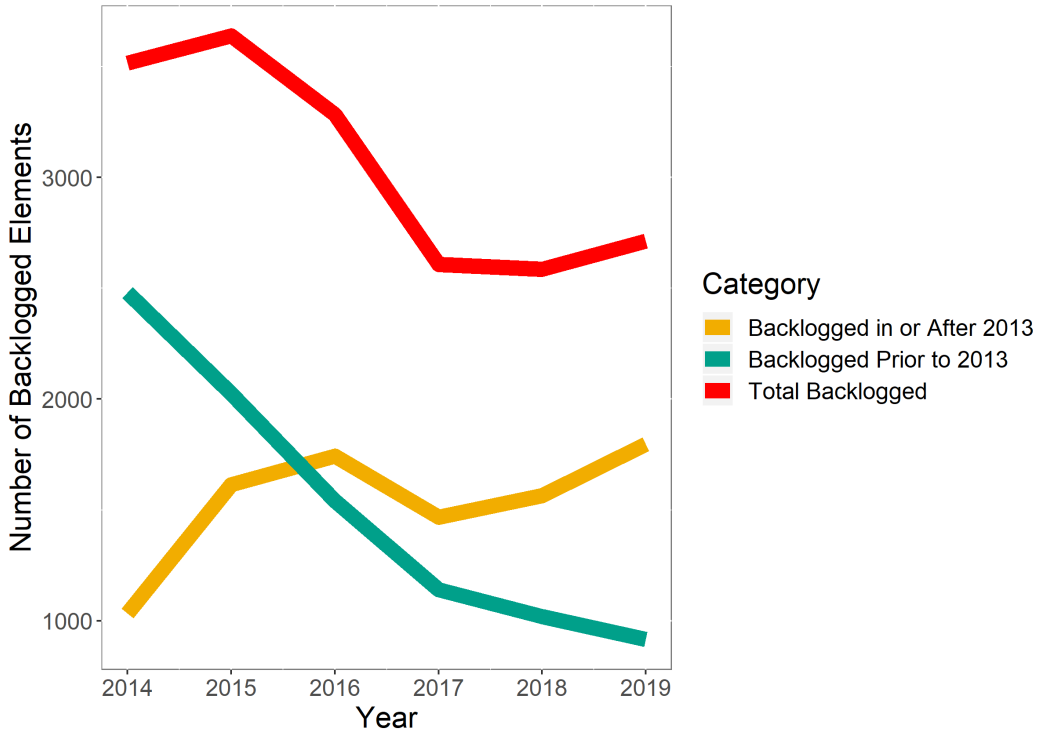
[4] Lean refers to principles and methods that effectively engage employees in a continuous improvement culture that naturally encourages waste minimization and pollution prevention.

planning for the development of the SIP to the time the SIP is formally submitted to the EPA for review and action.

EPA Reduced SIP Backlog by Taking Action on SIPs Backlogged Prior to 2013

We found that much of the progress in reducing the Agency's SIP backlog was due to the Agency taking final action on older SIP elements that were backlogged prior to 2013, as shown in Figure 8. The figure shows that elements backlogged prior to 2013 have dropped dramatically from 2013 to 2019. Elements backlogged after 2013 have remained relatively steady since 2015.

Figure 8: Status of SIP elements and number of elements acted on, 2013–2019



Source: OIG analysis of element level data in SPeCS. (EPA OIG image)

EPA Encouraged State SIP Withdrawals to Reduce SIP Backlog

State withdrawals of SIP submittals occurred in nine out of ten EPA regions between 2010 and 2020. However, state withdrawals occurred more frequently in Regions 1, 4, and 9 during this time and were an effective mechanism for reducing the SIP backlog in these regions. A Region 1 environmental specialist told us that the region reviewed backlogged SIPs during this time period to identify submittals that were superseded by newer SIP submittals or were no longer required to satisfy CAA requirements and thus could potentially be withdrawn. According to SPeCS data, 117 SIP submittals were removed from the

Region 1 backlog from the beginning of 2013 to the beginning of 2015, with approximately 59 percent (69) removed due to state withdrawals.

Similarly, Region 9 also decreased its SIP backlog through state withdrawal of SIPs. From the beginning of 2018 to the beginning of 2020, Region 9 removed 213 SIP submittals from its backlog, with approximately 42 percent (89) removed due to state withdrawals.

We found that the Agency identified SIP withdrawals as a strategic option for reducing the SIP backlog. In November 2019, six EPA regions sent letters to state agencies addressing backlogged SIPs. In several of these letters, the Agency included statements that identified state SIP withdrawals as part of its strategy to reduce the SIP backlog. For example, one region stated in its letter that:

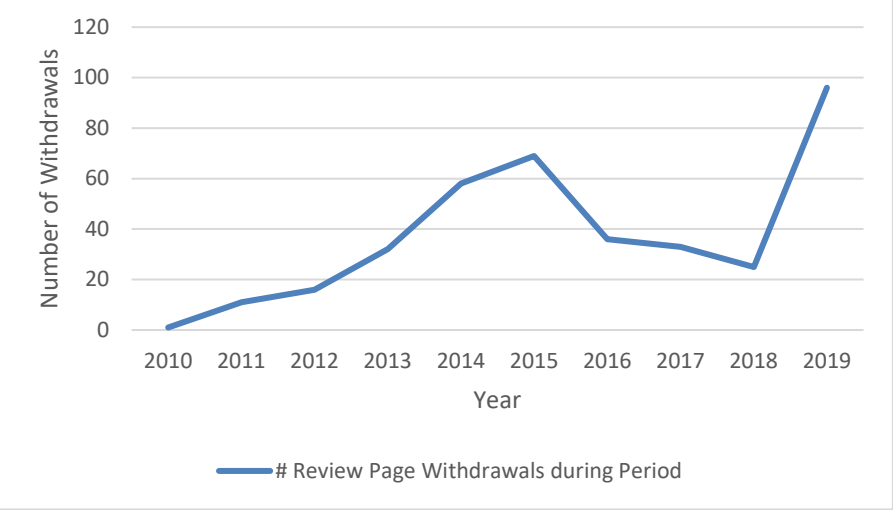
> We continue to look for ways to improve our processing time. One strategy we identified to help reduce the SIP submission backlog is to work with air agencies to withdraw backlogged SIP submissions where it makes sense to do so. This strategy is anticipated to benefit air agencies and the EPA.

Another region stated the following in one letter sent to a state air agency:

> [W]e look forward to working with [the state] over the coming weeks to discuss efforts to withdraw SIPs that are outdated, not required, or not fully approvable by the EPA … we view withdrawal of these SIPs a better outcome than retaining them in the backlog or potentially disapproving them.

Figure 9 shows the trend in state SIP withdrawals across all ten EPA regions between 2010 and 2019.

Figure 9: Number of state withdrawals of SIP review pages, 2010–2019



Source: OIG analysis of review-page-level data in SPeCS. (EPA OIG image)

EPA Engages Early with States to Improve Timeliness of Actions

The Agency is using early engagement with states to improve the timeliness of the EPA's actions. Early engagement provides opportunities to promptly identify and discuss issues that may affect the approvability of a SIP submission, facilitating changes before the public comment period at the state or local air agency level. In addition, early engagement allows the EPA to develop familiarity with the anticipated SIP submittals, such that the EPA is prepared to take timely action on these submittals from states and air agencies.

As part of our evaluation, we reviewed four SIP submittals that had final action taken by Regions 1 and 9 within the statutory time frame. During our follow-up with the regions, both regional offices informed us that, for these particular submittals, the state submitted draft SIPs to the EPA and the EPA provided comments to the state prior to formal submittal of the SIP by the state. The regions cited early engagement as the main reason that these SIP submittals had timely final action taken on them. A Region 9 manager stated that, although early engagement makes the SIP process quicker, the region lacks the resources to always assist state and local air agencies in early engagement efforts, especially in smaller areas. An executive official from the California Air Resources Board also stated early engagement opportunities may be more prevalent in some states and EPA regions than in others.

The Office of Air Quality Planning and Standards also provided us with an example of a complex SIP in which early engagement occurred between Region 10 and the state. Through early engagement, the region was able to discuss technical challenges with the Office of Air Quality Planning and Standards and provide comments back to the state. When the state submitted the SIP, Region 10 deemed the SIP complete within weeks. However, the SIP is currently in a backlog status due to additional factors.

Delays in EPA SIP Actions May Impact States' Ability to Achieve Air Quality Standards and Prolong Periods of Regulatory Uncertainty

When the EPA delays action or takes no action on a SIP submittal or lack of a SIP submittal, it increases the risk of a state not having an adequate plan in place to achieve and maintain the NAAQS. We found multiple instances of areas for which the EPA delayed taking action on SIPs that exceeded the NAAQS after the required attainment dates. An ***attainment date*** is the date by which an area is required to comply with the NAAQS. If a state fails to implement or enforce regulations to maintain or attain the NAAQS, communities could be exposed to harmful pollutant levels. Delayed EPA action also increases the time in which regulated entities must adhere to state-enforceable requirements in a revised SIP that a state has submitted for EPA review, as well as to any federally enforceable requirements from the previous EPA-approved SIP. Because these two sets of

requirements may be different from one another, they can result in prolonged periods of regulatory uncertainty for regulated entities.

Areas in California and Arizona Exceed NAAQS After Required Attainment Dates and Lack EPA-Approved SIPs

We identified 33 areas that were in nonattainment with one of the following three standards and for which the required attainment dates for these areas had passed:

- PM_{10} (1987 standard).
- $PM_{2.5}$ (2006 standard).
- Eight-hour ozone (2008 standard), classified as "Marginal" or "Moderate."

Four of these areas did not have fully approved EPA SIPs, as shown in red in Figure 10, despite ambient air-monitoring data showing that the air quality in these areas continued to exceed the NAAQS. We found that the EPA had issued a Clean Data Determination, which is the informal term for a determination of attainment, for two of the four areas. The EPA may issue a Clean Data Determination through notice and comment rulemaking to determine that a previous nonattainment area is now attaining the relevant NAAQS. This determination suspends the requirement for states to submit certain required SIP elements, as long as the state continues to attain the NAAQS. However, our review of EPA monitoring data found that the two areas where the EPA issued Clean Data Determinations are no longer attaining the NAAQS.

Figure 10: Areas that exceeded particulate matter and ozone NAAQS after their attainment dates had passed

Source: OIG review of EPA attainment designations and SIP status in SPeCS. (EPA OIG image)

Areas Exceeding PM_{10} Without Approved SIP

We identified three areas in Region 9 that were exceeding the PM_{10} NAAQS and did not have EPA-approved SIPs, as shown in Table 6. PM_{10} has a NAAQS threshold of 150 $\mu g/m^3$. An area is in nonattainment if it exceeds this threshold more than once per year on average over three years. Table 1 in Chapter 1 details potential human health effects of exposure to PM_{10}. According to EPA ambient air monitoring data, the three areas listed in Table 6 have consistently had PM_{10} levels that exceeded the NAAQS, as shown in Figure 11. According to the Arizona Department of Environmental Quality's website, Yuma, Arizona, is still developing a PM_{10} plan, nearly three decades after the area was designated to be in nonattainment with the NAAQS.

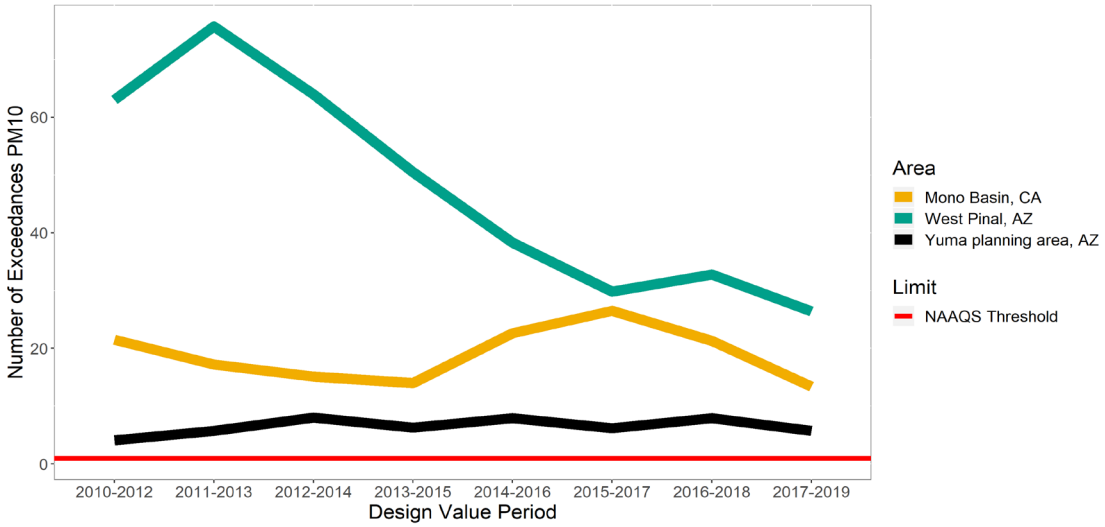
Table 6: Areas not meeting PM_{10} NAAQS without fully approved SIPs

Area	Status of SIP	Year of nonattainment designation	Population	Reason for SIP status
Pinal County, AZ	Backlogged	2012	283,032	The Agency requested additional information from the state. Receiving additional information from the state has been challenging because multiple agencies are responsible for reducing emissions in the area.
Yuma	Suspended	1990	100,710	Initially, the area received a Clean Data Determination in 2006, suspending certain SIP elements. The area, however, has exceeded the NAAQS every year since 2006, according to a Region 9 manager. The Agency is working closely with the Arizona Department of Environmental Quality to improve emission control measures.
Mono Basin, CA	Withdrawn	1993	285*	The Agency stated there were approvability issues for the area's initial submittals. Because of a lack of regional resources, Region 9 was unable to prioritize working with the state.

Source: OIG analysis of element-level data in SPeCS and follow-up requests with Region 9. (EPA OIG table)

*The U.S. Geological Survey reports that Mono Lake receives millions of visitors each year.

Figure 11: Exceedances for PM_{10} NAAQS for three areas without EPA-approved SIP



Source: OIG analysis of design value reports from 2013 to 2020 for PM_{10}. (EPA OIG image)

Areas Exceeding Ozone Without Approved SIP

We identified one area that is exceeding the NAAQS for ozone that does not have an approved SIP. Areas that have an EPA design value that exceeds 0.075 parts per million for ozone (2008 standard) are exceeding the NAAQS. A ***design value*** is a statistic that describes the air quality status of a given location relative to the NAAQS. See Table 7 for more details.

Table 7: Area not meeting eight-hour ozone (2008 Standard) NAAQS without fully approved SIP

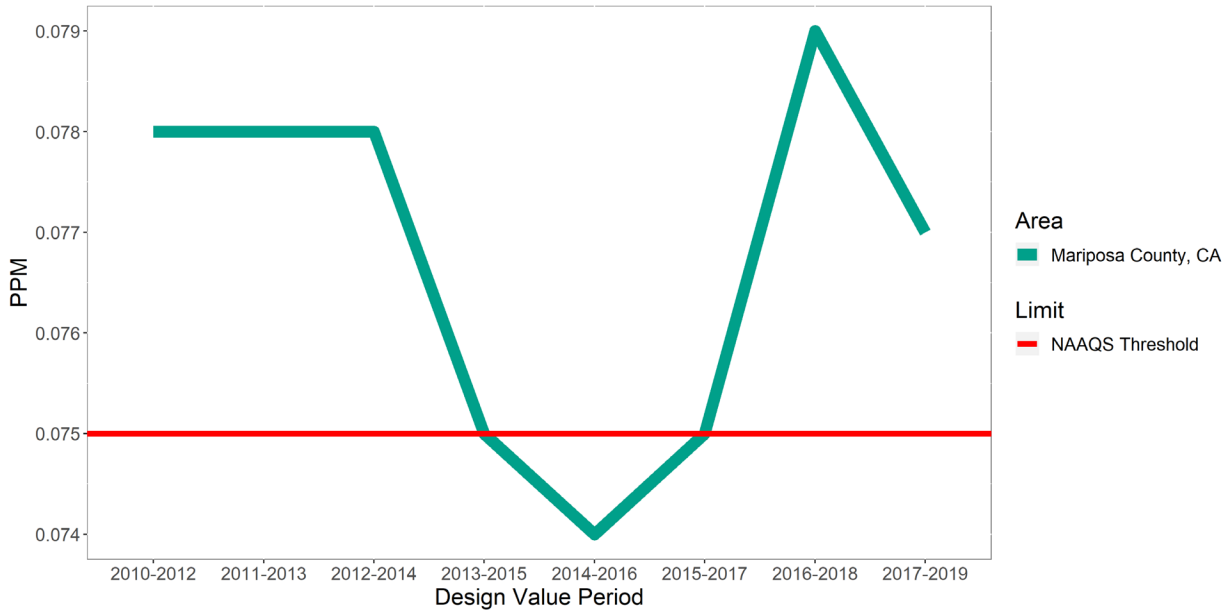
Area	Status of SIP	Year of nonattainment designation	Population	Reason for SIP status
Mariposa County	Not submitted	2012	18,251	In 2016, the area was issued a Clean Data Determination, but because of wildfires, the area has exceeded the NAAQS.*

Source: OIG analysis of element-level data in SPeCS and follow-up requests with Region 9. (EPA OIG table)

* The EPA told us that wildfire exceedances for numerous areas in California are the single biggest challenge for areas maintaining the 2008 ozone NAAQS. The EPA's Exceptional Events Rule establishes criteria and procedures for use in determining whether air quality monitoring data has been influenced by exceptional events. Exceptional events are unusual or naturally occurring events that can affect air quality, which may include wildfires, high-wind dust events, and prescribed fires, among others. This rule governs the exclusion of event-influenced air quality data from certain regulatory decisions under the CAA, including Clean Data Determinations.

According to EPA ambient air-monitoring data, Mariposa County had ozone levels that met the NAAQS for several years. Monitoring data now show that the ozone levels in Mariposa County are exceeding the NAAQS, as shown in Figure 12. Mariposa County has not timely submitted 47 of 54 required SIP elements; however, the EPA has delayed taking action to make a finding of failure to submit.

Figure 12: Ozone design values for Mariposa County compared to the NAAQS



Source: OIG analysis of design value reports from 2013 to 2020 for ozone. (EPA OIG image)

We asked Region 9 managers if Mariposa County and the three PM_{10} areas identified in the previous section would have been able to achieve attainment with the NAAQS if they had EPA-approved SIPs in place. According to these managers, even if approved SIPs were in place for these areas, there is no guarantee the areas would be able to attain the standards, especially as wildfires continue to increase. However, the delays in EPA action to ensure that fully approved SIPs or Federal Implementation Plans are in place for these areas could contribute to the amount of time that the air quality could negatively affect the human health of these communities. A Region 9 manager told us that the region was aware that these areas need attention, but the region lacked the resources to do anything about them.

Delay in SIP Actions Causes Uncertainty for Regulated Entities

When a state submits a SIP, the regulations in the SIP are enforceable at the state level. Once the EPA fully approves a SIP, it becomes federally enforceable. If a SIP submittal is a SIP revision, the previously EPA-approved version of the SIP serves as the federally enforceable requirements for that state and any affected entities until the EPA approves the revised SIP.

Delayed SIP action increases the uncertainty for regulated entities within the area because they are required to adhere to the new state-adopted SIP, as well as any previously EPA-approved, federally enforceable SIP. In some cases, a newly submitted state SIP may have different requirements than the previously EPA-approved SIP, thus creating multiple sets of requirements for a regulated entity. Different enforceable requirements at the state and federal levels may also have potential enforcement impacts, as regulatory agencies have different sets of requirements for which a source is held accountable.

In addition, if the state was implementing and enforcing a SIP submittal that does not comply with the CAA, the delay in EPA action could extend the amount of time that the state is out of compliance with CAA requirements.

Conclusion

While the EPA has reduced the SIP backlog since 2015, the Agency did not meet its goal of eliminating the backlog by the end of 2017. The Agency has reduced the average amount of time it takes to reach final action on SIP submittals, but this process is impacted by the number and complexity of the SIP submittals received by the EPA, legal and policy issues that delay SIP approvals, and limited resources available to review and approve the SIP submittals. Therefore, the SIP backlog may increase in years when the Agency receives a significant number of complex SIP submittals. The EPA should improve SPeCS to identify required SIP elements that have not yet been submitted to the EPA. Improving the identification of missing or late SIP submittals will provide greater public

transparency that will allow communities to see when their states are not taking timely action to comply with CAA requirements.

In circumstances where state or local air quality is not meeting the NAAQS, delayed EPA actions increase the risk that state or local air agencies are not implementing plans sufficient to achieve the NAAQS. If the NAAQS are not being achieved, the residents in those areas could be exposed to harmful pollutants impacting their health.

Recommendations

We recommend that the assistant administrator for Air and Radiation:

1. Improve oversight of State Implementation Plan submittals by developing and implementing a process to search and summarize State Implementation Plan elements that have not been submitted by the statutory deadlines and to ensure that these data are available to the public.

2. Develop and implement a plan to address regional workload disparities to ensure that State Implementation Plan submittals can be acted upon in a timely manner.

3. Reassess the Clean Data Determination status for the Yuma, Arizona, 1987 National Ambient Air Quality Standards for particulate matter up to ten micrometers in size and the Mariposa, California, 2008 ozone National Ambient Air Quality Standards to determine whether corresponding State Implementation Plan requirements should remain suspended.

4. Issue findings of failure to submit or take disapproval actions for required State Implementation Plan submittals in areas that have failed to meet required attainment dates and have not submitted required State Implementation Plan elements by the statutory deadline or that have submitted unapprovable State Implementation Plan elements.

Agency Response and OIG Assessment

The Agency agreed with our recommendations and proposed corrective actions. The EPA's response is in Appendix A. We consider Recommendations 1 and 3 completed. For Recommendation 1, the Office of Air and Radiation released the SPeCS Required SIP Elements Dashboard to the public in March 2021. For Recommendation 3, the Office of Air and Radiation reassessed the Clean Data Determination for Yuma and Mariposa.

Recommendation 4 is resolved with corrective actions pending. The Office of Air and Radiation identified seven areas nationally that meet these criteria as of May 1, 2021. Regional offices, in collaboration with the Office of Air and

Radiation, committed to evaluating appropriate actions for all these areas by September 30, 2021.

Recommendation 2 is unresolved, pending additional information on future years' budgets and plans. The Office of Air and Radiation recognized the disproportionate burden of SIP processing on Region 9, and, consequently, increased the region's SIP resources in its operating plan for fiscal year 2021 and is seeking additional resources for regional air programs in upcoming budget requests. A plan for addressing future regional workload disparities, however, is not yet in place.

Status of Recommendations and Potential Monetary Benefits

RECOMMENDATIONS

Rec. No.	Page No.	Subject	Status[1]	Action Official	Planned Completion Date	Potential Monetary Benefits (in $000s)
1	28	Improve oversight of State Implementation Plan submittals by developing and implementing a process to search and summarize State Implementation Plan elements that have not been submitted by the statutory deadlines and to ensure that these data are available to the public.	C	Assistant Administrator for Air and Radiation	3/31/21	
2	28	Develop and implement a plan to address regional workload disparities to ensure that State Implementation Plan submittals can be acted upon in a timely manner.	U	Assistant Administrator for Air and Radiation		
3	28	Reassess the Clean Data Determination status for the Yuma, Arizona, 1987 National Ambient Air Quality Standards for particulate matter up to ten micrometers in size and the Mariposa, California, 2008 ozone National Ambient Air Quality Standards to determine whether corresponding State Implementation Plan requirements should remain suspended.	C	Assistant Administrator for Air and Radiation	3/31/21	
4	28	Issue findings of failure to submit or take disapproval actions for required State Implementation Plan submittals in areas that have failed to meet required attainment dates and have not submitted required State Implementation Plan elements by the statutory deadline or that have submitted unapprovable State Implementation Plan elements.	R	Assistant Administrator for Air and Radiation	9/30/21	

[1] C = Corrective action completed.
R = Recommendation resolved with corrective action pending.
U = Recommendation unresolved with resolution efforts in progress.

Agency Response to Draft Report

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, D.C. 20460

May 13, 2021

OFFICE OF
AIR AND RADIATION

MEMORANDUM

SUBJECT: EPA Response to OIG Draft Report titled: "EPA Has Reduced Its Backlog of State Implementation Plans Submitted Prior to 2013 but Continues to Face Challenges in Taking Timely Final Actions on Submitted Plans" - Project No. OA&E-FY20-0125, April 22, 2021

FROM: Joseph Goffman
Acting Assistant Administrator
Office of Air and Radiation

TO: Renee McGhee-Lenart
Acting Air Director
Office of the Inspector General

The Office of Air and Radiation (OAR) welcomes the opportunity to provide comment on the following draft report and its recommendations: *EPA Has Reduced Its Backlog of State Implementation Plans Submitted Prior to 2013 but Continues to Face Challenges in Taking Timely Final Actions on Submitted Plans*. We have provided our comments in the attachments to this memorandum and provide our initial thoughts on the recommendations in the report below.

EPA Response to Draft Report "*EPA Has Reduced Its Backlog of State Implementation Plans Submitted Prior to 2013 but Continues to Face Challenges in Taking Timely Final Actions on Submitted Plans*"

OIG Recommendation 1: Improve oversight of State Implementation Plan submittals by developing and implementing a process to search and summarize State Implementation Plan elements that have not been submitted by the statutory deadlines and to ensure that this data is available to the public.

Response 1: We agree with the draft recommendation. OAR has satisfied this recommendation by releasing the SPeCS Required State Implementation Plan Elements Dashboard, which was available to the public beginning March 2021. This public dashboard can be filtered using the

"Submittal Date" column and the "SIP Due Date" column to display all SIP elements for which the EPA has not received a submission by the statutory deadline. The dashboard is available here: https://edap.epa.gov/public/extensions/S4S_Public_Dashboard_2/S4S_Public_Dashboard_2.html .

Planned Completion Date: OAR has implemented its response to recommendation 1.

OIG Recommendation 2: Develop and implement a plan to address regional workload disparities to ensure that State Implementation Plan submittals can be acted upon in a timely manner.

Response 2: As noted in your report, EPA Regions employ worksharing within and across Regions to address temporary shifts in workload. With respect to the workload associated with taking action on State Implementation Plans (SIP), EPA is seeking additional resources both for Region 9, which faces unique challenges posed by an unusually high number of SIP-submitting air agencies (48 state and local, 148 tribes and Guam), nonattainment areas (95), and SIPs in active litigation (over 100), and for all regional air programs. EPA has worked hard to improve the timeliness of its SIP actions through process improvements, including early engagement with submitting air agencies, and enhanced tracking via both visual management and the State Plan Electronic Collaboration System (SPeCS). These improvements enabled EPA to take action on a record number of SIPs in FY2020 (451 versus 510 submitted, noting that many of the 451 acted on were not submitted in FY2020) and reduced the historic backlog to an all-time low of 50 SIPs. However, even with this enhanced efficiency, 341 SIPs remained backlogged in FY2020. With 400 SIPs submitted on average each year and the SIP backlog on average totaling 350, it is clear that the 200 regional FTE currently devoted to processing SIPs is inadequate. EPA took a first step toward increasing SIP resources in Region 9 in its Operating Plan for FY2021, and is seeking additional resources for regional air programs in upcoming budget requests.

Planned Completion Dates: OAR has completed the development and is implementing its plan to address regional SIP workload disparities.

OIG Recommendation 3: Reassess the Clean Data Determination status for the Yuma, Arizona, 1987 National Ambient Air Quality Standards for particulate matter up to ten micrometers in size, and the Mariposa, California, 2008 ozone National Ambient Air Quality Standards to determine whether corresponding State Implementation Plan requirements should remain suspended

Response 3: We accept the OIG's recommendation to reassess the Clean Data Determination (CDD) status for PM10 in Yuma, Arizona and 2008 ozone in Mariposa, California 2008.

Yuma, Arizona: Between February and March 2021, EPA reassessed the PM10 Clean Data Determination for Yuma, AZ. The EPA Region 9 Administrator has directed staff to prepare a proposed action, which is expected to be signed in May 2021.

Mariposa, California: We have reassessed the CDD for 2008 ozone in Mariposa, California. As noted in the OIG evaluation, the ozone design values in Mariposa in 2018 and 2019 were impacted by wildfires, as was 2020. California has notified EPA via the Exceptional Events Rule initial notification process that they believe enough exceedances in 2018 and 2020 were caused by wildfires, such that the area would continue to be attaining the 2008 Ozone National Ambient Air Quality Standard (NAAQS) if EPA were to concur on demonstrations for those days. We further note that Mariposa, California is currently classified as a "marginal" nonattainment area for the 2015 Ozone NAAQS, with an attainment date of August 3, 2021. The Clean Air Act requires EPA to determine within six months of an attainment date whether an area has attained by the applicable attainment date. Upon a final EPA finding that a marginal nonattainment area has failed to attain by its applicable attainment date, the area is reclassified to "moderate" nonattainment. The preliminary 2020 design value for Mariposa for the 2015 Ozone NAAQS indicates the area has not attained by the applicable attainment date, and EPA intends to undergo a notice and comment rulemaking to determine whether marginal areas for the 2015 Ozone NAAQS have attained or failed to attain. If EPA takes final action to determine Mariposa failed to attain by the marginal area attainment date, the area would be reclassified to moderate nonattainment and attainment planning requirements and deadlines would apply. For these reasons, we have determined that taking no further action with respect to the 2008 ozone CDD is appropriate at this time.

Planned Completion Dates:

1.1 Reassess CDD for PM10 in Yuma, AZ.: Item complete. We have reassessed the CDD for PM10 in Yuma, AZ and anticipate proposing action for the area in May 2021.

1.2 Reassess CDD for 2008 ozone in Mariposa, CA.: Item complete. We have reassessed the CDD for 2008 ozone in Mariposa, CA and have determined that taking no further action is appropriate at this time.

OIG Recommendation 4: Issue findings of failure to submit or take disapproval actions for required State Implementation Plan submittals in areas that have failed to meet required attainment dates and have not submitted required State Implementation Plan elements by the statutory deadline, or have submitted unapprovable State Implementation Plan elements.

Response 4: EPA acknowledges that failure by states to submit required plan elements or attain applicable NAAQS by Clean Air Act deadlines triggers certain obligations for the Agency. To this end, we agree with the intent of the draft recommendation and have identified several criteria for identifying the specific areas needing attention:

- the area is designated as nonattainment for a national ambient air quality standard (NAAQS);
- the attainment date for that area and NAAQS has passed;
- the area is currently violating the identified NAAQS based on current (2017-2019 air quality data); and
- EPA has not taken an action on submitted elements or planning requirements have not been met and EPA has failed to make a finding of failure to submit.

After reviewing data in SPeCS, we have identified seven areas nationally that meet these criteria, as of May 1, 2021 – see table below. Regional Offices, in collaboration with OAR, commit to evaluating appropriate action for all these areas by September 30, 2021. Once the Regions and OAR identify the appropriate action, the Regions and OAR can then provide more information regarding the specific approach and timeline for each area.

Areas	**NAAQS**	**EPA Region**	**Target Date to Complete Evaluation and Identify Appropriate Action**
Southeast Desert Modified AQMA	1-Hour Ozone (1979 Standard)	Region 9	September 30, 2021
Inyo County; Owens Valley planning area	PM-10 (1987 Standard)	Region 9	September 30, 2021
Mono County/Mono Basin, CA	PM-10 (1987 Standard)	Region 9	September 30, 2021
Western Mojave Desert	8-Hour Ozone (1997 Standard)	Region 9	September 30, 2021
Sacramento Metro Area, CA	8-Hour Ozone (1997 Standard)	Region 9	September 30, 2021
Fairbanks, AK	PM-2.5 (2006 Standard)	Region 10	September 30, 2021
Denver-Boulder-Greeley-Ft. Collins-Loveland, CO.	8-Hour Ozone (2008 Standard)	Region 8	September 30, 2021

Planned Completion Dates: September 30, 2021

cc: Gabrielle Fekete
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Appendix B

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