



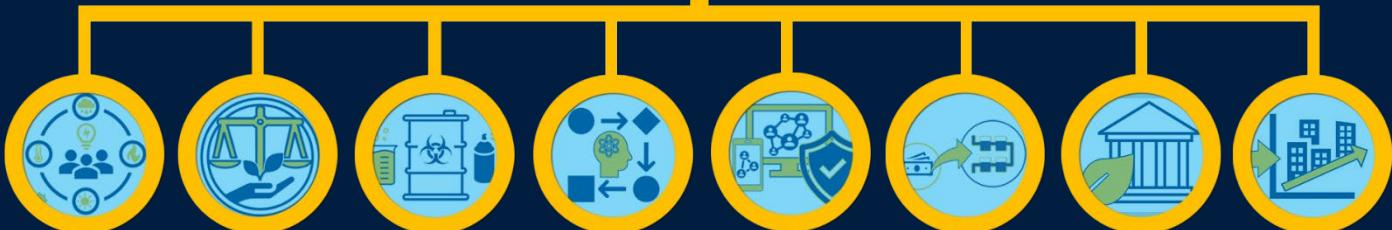
OFFICE OF INSPECTOR GENERAL U.S. ENVIRONMENTAL PROTECTION AGENCY

CUSTOMER SERVICE ★ INTEGRITY ★ ACCOUNTABILITY

U.S. ENVIRONMENTAL
PROTECTION AGENCY

FISCAL YEAR 2023

TOP MANAGEMENT CHALLENGES



Abbreviations

| | |
|--------|--|
| EDSP | Endocrine Disruptor Screening Program |
| EPA | U.S. Environmental Protection Agency |
| ESA | Endangered Species Act |
| FISMA | Federal Information Security Modernization Act of 2002 |
| FY | Fiscal Year |
| GAO | U.S. Government Accountability Office |
| GHG | Greenhouse Gases |
| IIJA | Infrastructure Investment and Jobs Act (2021) |
| IRA | Inflation Reduction Act |
| IT | Information Technology |
| OCSPP | Office of Chemical Safety and Pollution Prevention |
| OIG | Office of Inspector General |
| TSCA | Toxic Substances Control Act |
| U.S.C. | United States Code |

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Office of Inspector General U.S. Environmental Protection Agency

At a Glance

What Are Management Challenges?

The Reports Consolidation Act of 2000 requires each inspector general to prepare an annual statement summarizing what the inspector general considers to be “the most serious management and performance challenges facing the agency” and to briefly assess the agency’s progress in addressing those challenges.

To identify these top challenges for fiscal year 2023, the U.S. Environmental Protection Agency Office of Inspector General considered the body of our work, as well as our objective and professional observations, work conducted by the U.S. Government Accountability Office, and Agency documentation and statements.

Report No. [22-N-0004](#), *EPA’s Fiscal Year 2022 Top Management Challenges*, identified seven top management challenges facing the Agency. We retained all of these challenges for fiscal year 2023, with one modification: the “managing infrastructure funding and business operations” challenge was split into two separate challenges. As such, we identified eight top management challenges for the EPA for fiscal year 2023.

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

[List of OIG reports](#).

The EPA’s Fiscal Year 2023 Top Management Challenges

What We Found

We identified eight top management challenges for the EPA for fiscal year 2023:

- Mitigating the Causes and Adapting to the Impacts of Climate Change.** The EPA must take a leadership role in addressing climate change and mitigating its effect on human health and the environment.
- Integrating and Leading Environmental Justice Across the Agency and Government.** The EPA must identify and address disproportionately high and adverse human health or environmental effects on environmental justice communities.
- Providing for the Safe Use of Chemicals.** The public must be able to depend on the EPA’s ability to conduct credible and timely assessments of the risks posed by pesticides, toxic chemicals, and other environmental chemicals.
- Safeguarding Scientific Integrity Principles.** The EPA must ground science-based decisions in principles of scientific integrity to ensure that human health and the environment are protected by using the best-available science.
- Ensuring Agency Systems and Other Critical Infrastructure Are Protected Against Cyberthreats.** Information technology is a fundamental and essential resource for the EPA to carry out its mission, and the Agency must ensure its systems and our nation’s critical infrastructure are protected against cyberthreats.
- Managing Business Operations and Resources.** The EPA must have effective business operations to achieve its mission and safeguard taxpayer dollars.
- Enforcing Compliance with Environmental Laws and Regulations.** Through enforcement, the EPA ensures that regulated entities are following environmental laws and will continue to do so, as enforcement actions effectively deter future noncompliance.
- Managing Increased Investment in Infrastructure.** The EPA must ensure that its infrastructure projects, which constitute the Agency’s largest investment, use Infrastructure Investment and Jobs Act appropriations effectively.

We have identified these as the most serious management and performance challenges facing the EPA, representing vulnerabilities to waste, fraud, abuse, and mismanagement or the most significant barriers to the EPA accomplishing its mission.



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

WASHINGTON, D.C. 20460

THE INSPECTOR GENERAL

October 28, 2022

MEMORANDUM

SUBJECT: The EPA's Fiscal Year 2023 Top Management Challenges

FROM: Sean W. O'Donnell

A handwritten signature in blue ink that reads "Sean W. O'Donnell".

TO: Michael S. Regan, Administrator

The Reports Consolidation Act of 2000 requires that I prepare an annual statement summarizing what the U.S. Environmental Protection Agency Office of Inspector General considers to be the “most serious management and performance challenges facing the agency.” This statement is also to briefly assess the EPA’s progress in addressing these challenges. Furthermore, the Inspector General Act of 1978, as amended, directs that I provide oversight to the EPA by conducting audits, evaluations, investigations, and other such analyses of Agency programs and operations for the dual purposes of promoting economy, efficiency, and effectiveness and of detecting and preventing fraud, waste, and abuse. By virtue of our statutory responsibilities, the EPA OIG has an independent and objective perspective regarding the challenges that the EPA faces that could hinder its mission of protecting human health and the environment, as well as the directive to share our perspective with the EPA. I am, therefore, pleased to present this top management challenges report, which details the most serious management and performance challenges we observe facing the EPA’s programs and operations over the coming year.

To identify the Agency’s top management challenges for fiscal year 2023, we reviewed the OIG’s body of work, surveyed all EPA headquarters offices, solicited senior EPA leadership input, and held outreach meetings with Agency offices to discuss their perceptions of the challenges they face. We also considered the work of the U.S. Government Accountability Office and public statements that EPA leaders made to the press and Congress. The resulting report represents our independent and objective assessment of the areas in which the Agency will, over the next year, need to focus its resources. As such, it represents a foundational effort that charts a path for purposeful OIG oversight. In other words, based on this report, we can plan audits, evaluations, and investigations that will help the EPA mitigate these challenges and achieve its mission in the most economical, efficient, and effective manner possible.

Last year, we identified seven top EPA management challenges. We retained all seven in this year’s report, although because of the passage of the Infrastructure Investment and Jobs Act, we reframed the *Managing Infrastructure Funding and Business Operations* challenge as two distinct challenges. We thus identified a total of eight top EPA management challenges for fiscal year 2023. While none of these challenges are more significant than the others, some do directly address the administration’s priorities of climate change and environmental justice. Of note is the *Managing Increased Investment in Infrastructure* challenge, which addresses the largest infrastructure appropriation in the EPA’s history. Throughout the management challenges we address the EPA provisions of the Inflation Reduction Act, which provides increased funding for a range of EPA programs and environmental and climate change topics.

We hope that you find this report both helpful and insightful. Thank you for your continued efforts to address these challenges. We look forward to working with you, on behalf of the American public, to safeguard the air we breathe, the water we drink, and the land we sow.

Table of Contents

Introduction and Management Challenges

| | |
|--|----|
| <i>INTRODUCTION</i> | 1 |
| Overview of FY 2022 Management Challenges..... | 2 |
| Summary of FY 2023 Management Challenges..... | 2 |
| <i>CHALLENGE 1: Mitigating the Causes and Adapting to the Impacts of Climate Change</i> | 5 |
| Introduction and Overview | 5 |
| Conducting Research to Address Climate Change | 8 |
| Mitigating GHG Emissions from Existing Power Plants | 8 |
| Promoting and Incorporating Adaptation and Resiliency into Environmental Programs | 9 |
| Implementing the IIJA to Make Water Systems More Resilient to All Weather Threats | 10 |
| Considering Environmental Justice in Agency Decisions | 10 |
| Advancing International Climate Change Mitigation..... | 11 |
| Addressing Impacts to EPA Programs and Operations from Increasing Natural Disasters Because of Climate Change | 11 |
| Conclusion | 14 |
| <i>CHALLENGE 2: Integrating and Leading Environmental Justice Across the Agency and Government</i> | 15 |
| Introduction and Overview | 15 |
| Introducing the Office of Environmental Justice and External Civil Rights | 17 |
| Communicating Risk Effectively to Affected Stakeholders..... | 18 |
| Identifying Cumulative Impacts to Better Protect Communities..... | 19 |
| Assessing the EPA's Technological Actions to Address Environmental Justice | 21 |
| Conclusion | 24 |
| <i>CHALLENGE 3: Providing for the Safe Use of Chemicals</i> | 25 |
| Introduction and Overview | 25 |
| Providing Timely Chemical Assessments | 25 |
| Ensuring Safety of Chemicals While Facing Resource Constraints..... | 28 |
| Addressing Additional Concerns Related to Ensuring Safety of Chemicals..... | 28 |
| Conclusion | 29 |
| <i>CHALLENGE 4: Safeguarding Scientific Integrity Principles</i> | 30 |
| Introduction and Overview | 30 |

| | |
|---|-----------|
| Safeguarding the EPA’s <i>Scientific Integrity Policy</i> | 30 |
| Adhering to the EPA’s <i>Scientific Integrity Policy</i> | 31 |
| Addressing EPA Corrective Actions from Previous OIG Reports Related to Scientific Integrity... | 32 |
| Issuing Additional OIG Projects Related to Safeguarding Scientific Integrity Principles | 32 |
| Exploring the Difference in Scientific Opinion | 34 |
| Coordinating on Scientific Integrity Concerns with the OIG and the EPA | 34 |
| Conclusion | 34 |
| <i>CHALLENGE 5: Ensuring Agency Systems and Other Critical Infrastructure Are Protected Against Cyberthreats</i> | 36 |
| Introduction and Overview | 36 |
| Addressing Cybersecurity as an Agency Concern..... | 37 |
| Providing Oversight of Water and Wastewater Sector Cybersecurity..... | 40 |
| Conclusion | 43 |
| <i>CHALLENGE 6: Managing Business Operations and Resources</i> | 44 |
| Introduction and Overview | 44 |
| Addressing Workforce Planning and Management | 44 |
| Overseeing Programs Delegated to States, Tribes, and Territories | 45 |
| Conclusion | 46 |
| <i>CHALLENGE 7: Enforcing Compliance with Environmental Laws and Regulations</i> | 47 |
| Introduction and Overview | 47 |
| Investing in Enforcement Activities | 48 |
| Accomplishing Strong Enforcement Starts with Effective Permitting | 49 |
| Improving Collaboration with and Oversight of States to Ensure Compliance with Environmental Laws and Regulations | 51 |
| Incorporating Environmental Justice into the EPA’s Compliance and Enforcement Program | 53 |
| Conclusion..... | 54 |
| <i>CHALLENGE 8: Managing Increased Investment in Infrastructure</i> | 55 |
| Introduction and Overview | 55 |
| Allocating Funding to EPA Partners..... | 56 |
| Funding Drinking Water and Wastewater Infrastructure Programs | 56 |
| Investing in Environmental Remediation | 58 |
| Implementing Infrastructure Funding | 59 |
| Conclusion | 60 |

INTRODUCTION

The Reports Consolidation Act of 2000 requires each inspector general to prepare an annual statement summarizing what the inspector general considers to be “the most serious management and performance challenges facing the agency” and to briefly assess the agency’s progress in addressing those challenges. To this end, the U.S. Environmental Protection Agency Office of Inspector General annually assesses the top management and performance challenges affecting the programs and operations of the EPA. As part of this assessment, the OIG solicits input from senior EPA leadership; reviews congressional hearings and public statements; analyzes oversight work conducted by the U.S. Government Accountability Office, or GAO; and considers issues raised by media coverage and the civil sector. We also consider how the EPA’s programs addressed top management challenges identified in previous fiscal years and our FY 2022 oversight work. This top management challenges report provides Congress and the Agency an independent and objective assessment of the management and performance challenges facing the Agency in FY 2023.

The FY 2023 top EPA management challenges are:

1. Mitigating the causes and adapting to the impacts of climate change.
2. Integrating and leading environmental justice across the Agency and government.
3. Providing for the safe use of chemicals.
4. Safeguarding scientific integrity principles.
5. Ensuring Agency systems and other critical infrastructure are protected against cyberthreats.
6. Managing business operations and resources.
7. Enforcing compliance with environmental laws and regulations.
8. Managing increased investment in infrastructure.

These challenges are not listed in order of priority, importance, or magnitude. Each challenge is critical to ensuring that the EPA meets its mission of protecting human health and the environment. For this reason, the top management challenges are forward-looking so that they may assist the Agency in effectively achieving its mission and the OIG in planning oversight for the next fiscal year.

Overview of FY 2022 Management Challenges

In FY 2022, the OIG issued 26 project notifications and 26 reports that addressed the EPA's FY 2022 top management challenges. The 26 reports contained 99 recommendations. The table below presents the FY 2022 results.

OIG metrics for FY 2022 management challenges

| FY 2022 management challenges | | Notification memorandums* | Issued recommendations** |
|-------------------------------|---|---------------------------|--------------------------|
| 1 | Mitigating the causes and adapting to the impacts of climate change. | 1 | 3 |
| 2 | Integrating and leading environmental justice across the Agency and government. | 3 | 2 |
| 3 | Ensuring the safe use of chemicals. | 3 | 12 |
| 4 | Safeguarding scientific integrity principles. | 0 | 9 |
| 5 | Ensuring information technology and systems are protected against cyberthreats. | 3 | 2 |
| 6 | Managing infrastructure funding and business operations. | 9 | 58 |
| 7 | Enforcing environmental laws and regulations. | 7 | 13 |
| TOTAL | | 26 | 99 |

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

* Some notification memorandums were issued addressing multiple management challenges; however, the memorandums only identify a primary challenge.

** Some reports issued recommendations addressing management challenges that were not the primary challenge addressed by the report.

Summary of FY 2023 Management Challenges

The first challenge among those we identified for FY 2023 is ***Mitigating the Causes and Adapting to the Impacts of Climate Change***. According to the EPA, climate change refers to significant changes in measures of climate—such as temperature, precipitation, and wind patterns—that last for extended periods of time. To meet this challenge, the Agency will need to effectively allocate resources to facilitate its coordination with local, state, federal, and international partners for development of comprehensive strategies that will mitigate the effects of climate change. Implementing these strategies will require the Agency to adhere to principles of scientific integrity in its decision making processes.

The second challenge, ***Integrating and Leading Environmental Justice Across the Agency and Government***, addresses the EPA's challenges as it leads the federal effort to identify and address disproportionately high and adverse human health or environmental effects on communities facing environmental justice concerns. Environmental justice is, according to the EPA, the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income, with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies. The challenges facing the Agency include effectively communicating risks, assessing cumulative impacts, and integrating environmental justice principles into civil rights enforcement. As environmental justice continues to be woven into EPA decisions, and across multiple programs, EPA decision-makers must have the proper tools and training to properly assess and mitigate the environmental effects of its decisions.

The third challenge, ***Providing for the Safe Use of Chemicals***, focuses on the EPA's mission to protect human health and the environment from harmful chemicals and pesticides. The EPA assesses

chemicals and their risks to find ways to prevent or reduce pollution in the environment. The Agency also regulates the manufacture and use of all pesticides to safeguard the nation's food supply. The EPA must be able to conduct credible and timely assessments of the risks that pesticides, toxic chemicals, and other environmental chemicals pose. In 2016, the EPA's regulatory authority under the Toxic Substances Control Act, or TSCA, was expanded, increasing the need for timely and accurate risk assessments. Further, the EPA must continue to conduct the registration and reregistration of hundreds of pesticides per year and to ensure that it sets appropriate exposure levels for contaminants in drinking water. Without appropriate resource and implementation plans in place to demonstrate that the EPA can accomplish this work and the ability to accurately conduct scientifically sound risk assessments, the public's trust and confidence in the ability of the EPA to accomplish its mission of protecting human health and the environment will be at risk.

The fourth challenge, ***Safeguarding Scientific Integrity Principles***, addresses the importance of scientific integrity in the EPA's decision-making. Per the EPA, science not only informs all aspects of the EPA's decision-making but also impacts other domestic and international organizations' decision-making that is based on the Agency's science. Safeguarding scientific integrity principles ensures that the federal government's policies are based upon sound science. Although the EPA has taken numerous actions to promote scientific integrity, we continue to find examples of loss of scientific integrity. Additionally, the OIG continues to receive hotline complaints raising scientific integrity concerns. The EPA is challenged to fully deploy its scientific integrity concepts throughout the EPA's culture, potentially hindering its ability to protect human life and the environment. The OIG will continue to make recommendations related to how the Agency implements its scientific integrity goals and initiatives.

The fifth challenge, ***Ensuring Agency Systems and Other Critical Infrastructure are Protected Against Cyberthreats***, addresses EPA efforts to strengthen the security and resilience of its critical infrastructure. The federal government, including the EPA, relies heavily on information technology, or IT, to support its mission and to protect its sensitive information and continues to face sophisticated attacks on its IT systems, to include those supporting critical infrastructure. These attacks challenge current cybersecurity defenses, creating an urgent need for a new security paradigm. Issued in May 2021, Executive Order 14028, *Improving the Nation's Cybersecurity*, directs federal agencies to invest in their cybersecurity defenses. Without a robust and mature cybersecurity posture, acts from malicious cyber actors could hinder the ability of the EPA to perform its mission and support its responsibility as the Sector Risk-Management Agency for the water and wastewater sectors. This could endanger national security, as well as the health and safety of the American people.

Presidential Policy Directive 21 designates certain executive agencies with institutional knowledge and specialized expertise about particular sectors as "Sector-Specific Agencies" for those sectors and assigns them federal governmentwide roles related to those sectors.

The sixth challenge, ***Managing Business Operations and Resources***, focuses on the Agency's ability to create and maintain effective business operations for distributing billions of dollars in grants and contracts to states, tribes, and nongovernmental organizations for infrastructure and Superfund projects. Congress annually provides the Agency with billions of dollars for its mission to protect human health and the environment. In annual appropriations for FY 2022, Congress provided the EPA

over \$850 million to fund nearly 500 earmarked projects, in addition to the significant funding the Agency received under the Infrastructure Investment and Jobs Act and the Inflation Reduction Act of 2022. This additional funding significantly challenges the ability of the Agency to effectively manage its business operations, as it will significantly add to the workload to adequately oversee the distribution and implementation of the funding.

The seventh challenge, ***Enforcing Environmental Laws and Regulations***, addresses a robust enforcement program that is vital to deterring regulated entities from violating environmental laws and regulations and to protecting human health and the environment. From FYs 2007 through 2022, EPA compliance-monitoring activities, enforcement actions, and most enforcement results generally declined. Considering its limited resources, the EPA is challenged to assess its resource requirements for enforcement programs and to identify innovative and cost-effective means of detecting and deterring noncompliance in the future.

Finally, the eighth challenge, ***Managing Increased Investment in Infrastructure***, addresses the EPA's funding of infrastructure projects which is increased by the Infrastructure Investment and Jobs Act. The Act provided the EPA with an unprecedented \$61 billion in funding to invest in environmental infrastructure improvements. In addition, the Inflation Reduction Act appropriates another \$41.5 billion to fund a range of EPA activities and awards programs, to include air quality, enforcement, greenhouse gas emission reduction and reporting, and environmental justice. With these funds, the EPA will help lead the nation in one of the largest infrastructure investment programs in our history. This challenge includes delegating funds to the EPA's partners to improve drinking water, wastewater, and stormwater infrastructure. The Agency will retain some IIJA funds to increase its workforce and to improve geographic, Superfund, and recycling programs. The majority of the IIJA funding is available until it is expended, although the Agency will receive most of the funds over five years (FYs 2022 through 2026). The Congress made IRA funding immediately available to EPA. The appropriation represents a significant increase in the EPA's funding, and the Agency must effectively manage these funds to achieve the intended results.

CHALLENGE 1: *Mitigating the Causes and Adapting to the Impacts of Climate Change*

Introduction and Overview

Climate change refers to significant changes in measures of climate—such as temperature, precipitation, and wind patterns—that last for an extended period.¹ The EPA has reported that changes to the climate that have occurred over the past century are caused primarily by increases in greenhouse gas, or GHG, emissions. GHG emissions lead to increased extreme weather events, such as prolonged heat waves and intensified storms, that affect human health. In addition, droughts and rising sea levels can diminish access to essential resources in impacted areas. Specific health impacts include heat-related deaths, asthma attacks, and other respiratory and cardiovascular health effects from worsening air quality. Contaminated water supplies can also lead to water-related illnesses.²



Based on OIG work we see that the EPA faces numerous challenges across the multiple roles it plays within the federal government to address climate change, including:

- Closely coordinating and conducting research efforts to better understand climate change impacts and assure the best available science is used to set climate change policy.
- Developing and implementing GHG regulations that will withstand legal challenges and changes in administrations.
- Promoting and incorporating adaptation and resiliency into environmental programs.
- Advancing international and subnational climate efforts.
- Preparing for and responding to natural disasters made worse by climate change.

According to the U.S. Global Change Research Program, the earth's climate is warming and changing faster than at any point in the history of modern civilization.³ The EPA states these conditions primarily result from emissions of heat-trapping GHGs from fossil fuel combustion, deforestation, and land-use changes.⁴ According to the Agency, atmospheric GHG levels have risen since the Industrial Revolution in the latter part of the nineteenth century. From 1990 to 2019, the total warming effect from GHGs added to the earth's atmosphere by human activity increased by 45 percent.⁵ GHGs can exist in the atmosphere for a few to thousands of years.⁶ These gases trap and prevent heat

GHGs are gases that trap heat in the Earth's atmosphere. The EPA estimates that carbon dioxide accounted for 80 percent of U.S. GHG emissions in 2019 while methane accounted for 10 percent. The remaining GHG emissions were from nitrous oxide and fluorinated gases.

—EPA [webpage](#), “Overview of Greenhouse Gases”

¹ EPA, [Vocabulary Catalog Climate Change Terms](#) (last visited Oct. 26, 2022).

² EPA, [Climate Impacts on Human Health](#) (last visited Oct. 26, 2022).

³ U.S. Global Change Research Program, [Understand Climate Change](#) (last visited Oct. 21, 2022).

⁴ EPA, [Climate Adaptation Action Plan](#), Oct. 2021.

⁵ EPA, [Climate Change Indicators: Greenhouse Gases](#) (last visited Oct. 26, 2022).

⁶ EPA, [Overview of Greenhouse Gases](#) (last visited Oct. 26, 2022).

from escaping the earth, acting as a catalyst for climate change. The Agency also reports that climate change impacts accelerate as GHG levels increase. The resulting net temperature increase changes weather patterns by increasing rainfall, temperatures, and the severity and frequency of severe weather events. Climate change will affect geographic locations in the United States differently. Figure 1.1 shows the variation in average annual temperature change across the United States.

Addressing climate change requires mitigation, adaptation, and resilience.

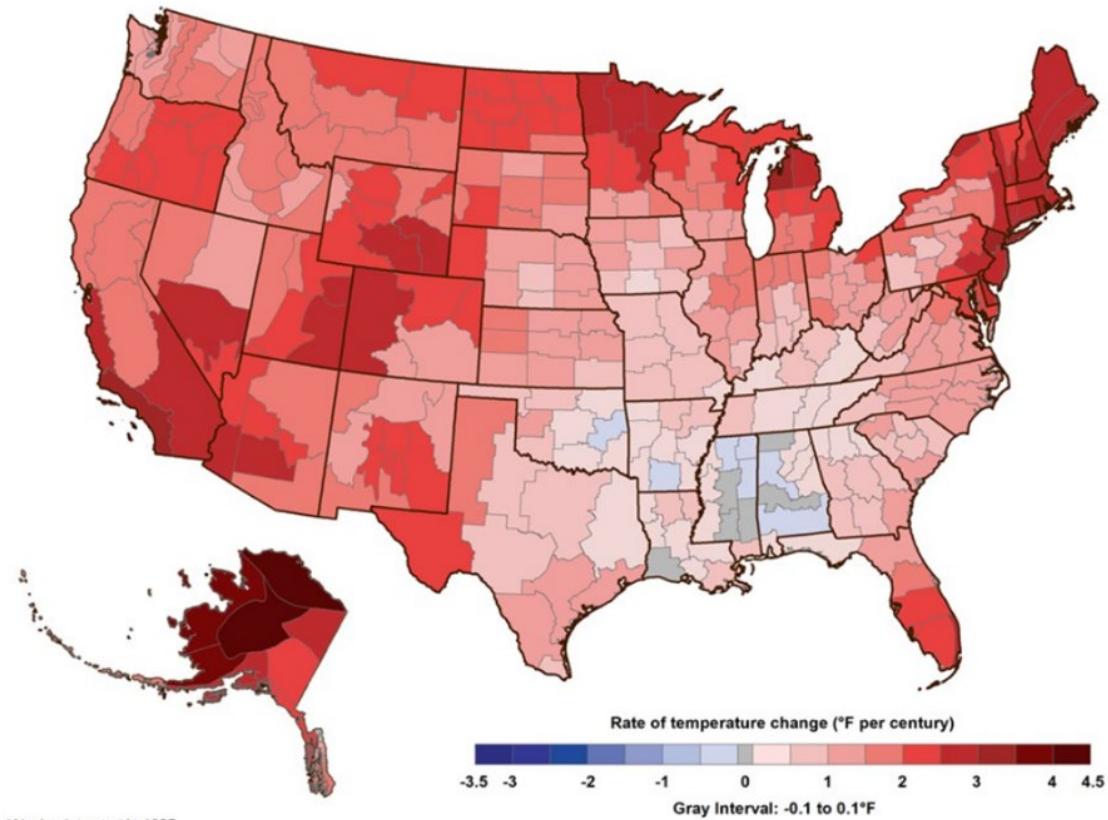
Mitigation refers to actions limiting the magnitude and rate of future climate change by reducing net GHG emissions.

Adaptation refers to the adjustment or preparation of natural or human systems to a new or changing environment which moderates harm or exploits beneficial opportunities.

Resilience refers to the capability to anticipate, prepare for, respond to, and recover from significant multi-hazard threats with minimum damage to social well-being, the economy, and the environment.

— EPA Climate Adaptation Plan, EPA [website](#).

Figure 1.1: Annual average temperature change in the United States from 1901 through 2020



Source: EPA Climate Change Indicators [website](#). (EPA image)

The EPA's focus on addressing climate change has varied over the years. For example, the [FY 2014–2018 EPA Strategic Plan](#) included addressing climate change among the Agency's main goals. However, the [FY 2018–2022 U.S. EPA Strategic Plan](#) did not include climate change as an Agency priority. Since 2021, the EPA has focused once again on addressing climate change. In the [FY 2022–2026 EPA Strategic Plan](#), issued March 28, 2022, the EPA placed fighting climate change at the center of its agenda for FYs 2022

through 2026. The plan noted that the “EPA must aggressively tackle the climate crisis by helping the nation reduce greenhouse gas (GHG) emissions and anticipate, prepare for, and adapt to or recover from the impacts of climate change.”⁷

In 2021, President Joseph R. Biden Jr. announced a goal of achieving net-zero GHG emissions by 2050 and limiting global warming to 1.5 degrees Celsius, following the recommendations of scientists. To help achieve this goal, the president, in his proposed budgets for the EPA for FY 2022 and FY 2023, included a priority budget area called “Tackling the Climate Crisis.”⁸ Specifically, the president requested \$773,113,000 in FY 2023 to address the climate crisis, an increase of \$231,965,000 over the amount authorized for this area by the FY 2022 continuing resolution.⁹

The OIG finds that the EPA is uniquely positioned to lead efforts to address this issue because climate change is a crosscutting issue affecting major Agency programs across air, water, and land. For example, the EPA states that increased ground-level ozone from climate change can worsen air quality, which makes it more difficult for states to meet the health-based National Ambient Air Quality Standards; poor air quality could, thus, cause increased morbidity and mortality.¹⁰ In addition, natural disasters made worse by climate change—such as flooding and storm surges—could threaten Superfund site cleanup actions and release contaminants. Increased flooding from climate change could harm local drinking water supplies and leave communities without safe drinking water.

The EPA has taken multiple actions in the past year to address climate change, including:

- Issuing the first regulations to address hydrofluorocarbons, which are potent GHGs commonly used in refrigerators, air conditioners, and other applications.¹¹
- Issuing an updated *Climate Adaptation Action Plan* to focus Agency attention on priority actions to fulfill its mission and increase human and ecosystem resilience even as the climate changes.¹²
- Issuing proposed regulations to reduce methane emissions from new and existing sources within the oil and natural gas industries. These are the highest methane-emitting industries in the United States.¹³
- Issuing revised GHG emissions standards for light-duty vehicles for model years 2023 through 2026 for more stringent standards.¹⁴

⁷ EPA, [FY 2022–2026 EPA Strategic Plan](#), Mar. 28, 2022.

⁸ EPA, [FY 2023 EPA Budget in Brief](#), No. EPA-190-S-22-001, Mar. 2022; EPA, [FY 2022 EPA Budget in Brief](#), No. EPA-190-R-21-003, May 2021.

⁹ EPA, [Fiscal Year 2023 Justification of Appropriation Estimates for the Committee on Appropriations](#), Apr. 2022.

¹⁰ EPA, [Air Quality and Climate Change Research](#) (last visited Oct. 26, 2022).

¹¹ EPA, [Final Rule – Phasedown of Hydrofluorocarbons: Establishing the Allowance Allocation and Trading Program under the AIM Act](#) (last visited Oct. 26, 2022).

¹² *Supra* n.4.

¹³ [Standards of Performance for New, Reconstructed, and Modified Sources and Emissions Guidelines for Existing Sources: Oil and Natural Gas Sector Climate Review](#), 86 Fed. Reg. 63,110 (proposed Nov. 15, 2021).

¹⁴ [Revised 2023 and Later Model Year Light-Duty Vehicle Greenhouse Gas Emissions Standards](#), 86 Fed. Reg. 74,434 (Dec. 30, 2021).

- Issuing [Climate Adaptation Implementation Plans](#) for 20 EPA offices and regions that specify actions each office or region will take to increase the nation's resilience to the impacts of climate change.
- Conducting research in precipitation increases modeling, municipal energy policy solutions modeling, better protections for endangered species, comparative air quality impacts of wildfires versus prescribed burns, and the relationship between ground-level ozone and climate change.

While these are important actions, the EPA still faces significant challenges across its primary climate change roles, as detailed in the sections below.

Conducting Research to Address Climate Change

The EPA conducts multiple research initiatives and programs related to climate change. According to the EPA's [Climate Change Research webpage](#), the Agency is conducting research in air quality, ecosystems, energy production, human health, and wildland fires.¹⁵ In addition, the EPA is a member of larger cross-agency programs and initiatives, such as the U.S. Global Change Research Program, which is a federal program that Congress has mandated to coordinate and invest in federal research. The EPA is also part of the Intergovernmental Panel on Climate Change, which is the United Nations body for assessing the science related to climate change. In addition to these cross-agency programs, the EPA must closely coordinate internal research efforts to avoid duplication, to meet priority research needs, and to effectively communicate research results.

Mitigating GHG Emissions from Existing Power Plants

Based upon our work, the EPA needs to develop and implement regulations to reduce GHG emissions to effectively address climate change. In April 2007, the U.S. Supreme Court ruled in *Massachusetts v. EPA* that the EPA has the authority to regulate GHG emissions from mobile sources under the Clean Air Act.¹⁶ However, legal challenges and changes in administrations have affected the EPA's efforts to implement such regulations—and by extension, regulations for other GHG sources under the Clean Air Act—particularly for electricity-producing power plants. Per the EPA, power plants represent the largest industrial sector source of overall GHG emissions in the United States. The Agency reports that they accounted for 25 percent of all U.S. GHG emissions in 2020.¹⁷ In 2015, the EPA issued the *Clean Power Plan*, containing regulations to limit carbon dioxide emissions from existing power plants.¹⁸ The EPA replaced the *Clean Power Plan* with the Affordable Clean Energy rule on July 8, 2019.¹⁹ The U.S. Court of Appeals for the District of Columbia Circuit vacated the Affordable Clean Energy rule on January 19, 2021, and remanded it to the Agency for further proceedings consistent with the court's

¹⁵ EPA, [Climate Change Research](#) (last visited Oct. 26, 2022).

¹⁶ [Massachusetts v. EPA](#), 549 U.S. 497 (2007).

¹⁷ EPA, [Sources of Greenhouse Gas Emissions](#) (last visited Oct. 26, 2022).

¹⁸ [Carbon Pollution Emission Guidelines for Existing Stationary Sources: Electric Utility Generating Units](#), 80 Fed. Reg. 64,662, (Oct. 23, 2015).

¹⁹ [Repeal of the Clean Power Plan; Emission Guidelines for Greenhouse Gas Emissions from Existing Electric Utility Generating Units; Revisions to Emission Guidelines Implementing Regulations](#), 84 Fed. Reg. 32,520 (July 8, 2019).

opinion.²⁰ That ruling was appealed, and the Supreme Court reversed the ruling on June 30, 2022. The Supreme Court ruled that the use of carbon emissions caps to shift power generation from coal-generated electricity to other cleaner electricity sources—as included in the *Clean Power Plan*—was not permissible under the Clean Air Act absent clear authorization by Congress.²¹ The EPA must now develop and implement regulations for existing power plants that will withstand future legal challenges consistent with the Supreme Court’s ruling.

Promoting and Incorporating Adaptation and Resiliency into Environmental Programs

For the EPA to fully achieve its mission, the Agency needs to continuously modify existing programs to promote and integrate opportunities for adaptation and resiliency. One way the EPA has proposed addressing these issues is to implement the EPA’s 2021 *Climate Adaptation Action Plan*. The five priorities of the 2021 Plan include:

- Integrating climate adaptation into EPA programs, policies, rulemaking processes, and enforcement activities.
- Consulting and partnering with states, tribes, territories, local governments, environmental justice organizations, community groups, businesses, and other federal agencies to strengthen adaptive capacity and increase the resilience of the nation, with a particular focus on advancing environmental justice.
- Implementing measures to protect the Agency’s workforce, facilities, critical infrastructure, supply chains, and procurement processes from the risks posed by climate change.
- Measuring and evaluating performance.
- Identifying and addressing climate-adaptation science needs.²²

The EPA must collaborate with external partnering entities and with internal program offices to meet the above expectations. Partners include state, tribal, territorial, local, and international partners; other federal agencies; environmental justice organizations; and the federal chief sustainability officer. This level of collaboration is challenging and will require additional personnel and resources. If it cannot procure additional personnel and resources, the Agency will need to carefully manage its current limited personnel and resources. The EPA acknowledged this in its [FY 2022–2026 EPA Strategic Plan](#), which notes that “[t]he increasing frequency of climate-related disruptions may stress already limited federal, tribal, and state resources to support planning and preparedness to minimize long-term impacts.” The EPA recognizes that this will be a challenge. The Agency stated that “to anticipate, prepare for, adapt to, and recover from the impacts of climate change will require all levels of government to transform together.”

Although the *Climate Adaption Action Plan* describes the five priority actions for increasing human and ecosystem resilience, it does not provide specific time frames for implementing each action. The *Plan* broadly states that the five actions will be implemented over a four-year period, starting in 2021, and

²⁰ [American Lung Association v. EPA](#), 985 F.3d 914 (D.C. Cir. 2021).

²¹ [West Virginia v. EPA](#), 597 U.S. ___, 142 S.Ct. 2587 (2022).

²² *Supra* n.4.

that implementation will be “an ongoing process.”²³ Implementation may be further complicated by how the EPA has chosen to divide action plan responsibilities among program offices.

Implementing the IIJA to Make Water Systems More Resilient to All Weather Threats

The EPA is expected to help water systems become more resilient and adaptive through new funding under the IIJA. For example, the Agency will receive \$11.7 billion for the Drinking Water State Revolving Fund, and the EPA describes water-related funds under the IIJA as “the single largest investment in water that the federal government has made.”²⁴ The IIJA provides the EPA with an opportunity for it to help make local water systems more resilient to the impacts of severe weather events, such as flooding, that are made worse by climate change. To do so, the EPA must closely monitor its fund distribution to help ensure that the communities most vulnerable to climate change impacts make their systems more resilient.

Considering Environmental Justice in Agency Decisions

Based upon our work, we believe the EPA needs to consider the needs of disproportionately impacted and vulnerable communities while EPA is incorporating resiliency and adaptation across programs. The *FY 2022 EPA Budget in Brief* describes climate change as a “public health and environmental justice crisis.”²⁵ The EPA has stated that, while the impacts of climate change endanger all people, climate change disproportionately affects some communities and groups that are less able than others to adapt to or to recover from its impacts.²⁶ These vulnerable communities and groups include, but are not limited to, people of color, people with low incomes, and people over the age of 65. In its 2021 report titled *Climate Change and Social Vulnerability in the United States*, the EPA identified ways that climate change can impact vulnerable populations, which include:²⁷

- Poor air quality leading to new asthma diagnoses in children.
- Extreme heat temperatures leading to deaths and lost labor hours for weather-exposed workers.
- Coastal flooding leading to traffic delays and loss of property.
- Inland flooding that also leads to property damage.

In addition, the EPA has stated that lack of access to clean and safe water might particularly endanger vulnerable and underserved communities. The EPA also stated these communities have a more limited ability to prepare for and respond to climate-related events affecting their water infrastructure.²⁸

In its *FY 2022–2026 EPA Strategic Plan*, the EPA recognized it must increasingly measure community climate risk and resiliency to allow the EPA to target limited resources most effectively to communities

²³ *Supra* n.4.

²⁴ EPA, [2022 Bipartisan Infrastructure Law Clean Water and Drinking Water State Revolving Funds \(SRFs\)](#) (last visited Oct. 26, 2022).

²⁵ EPA, [FY 2022 EPA Budget in Brief](#), No. EPA-190-R-21-003, May 2021.

²⁶ EPA, [Climate Change, Health and Environmental Justice](#), No. EPA 430-F-16-054, May 2016.

²⁷ EPA, [Climate Change and Social Vulnerability in the United States: A Focus on Six Impacts](#), Sept. 2021.

²⁸ *Supra* n.4.

with environmental justice concerns at greatest risk. However, the [*FY 2022–2026 EPA Strategic Plan*](#) states that “data related to local impacts and effective actions to reduce risk are not consistent or widely available. This may limit the Agency’s ability to identify and invest in the most vulnerable communities using the highest impact actions.” This indicates that the EPA needs to improve data collection and data quality to better understand how to address climate change impacts in communities with environmental justice concerns and invest in communities with the greatest risks and needs.

Advancing International Climate Change Mitigation

Based on our work, we found that to mitigate climate change, countries will need to cooperate to reduce its effects. The EPA represents and advances U.S. interests in international conventions, such as the United Nations Framework Convention on Climate Change. Additionally, the EPA works in multilateral and bilateral partnerships, such as the Global Methane Initiative and the ENERGY STAR International Partnerships.²⁹ Consequently, the EPA states that it “plays a critical role internationally by providing technical expertise, guidance, and capacity building to help countries set and meet ambitious GHG reductions, improve adaptive capacity, and strengthen climate governance.”³⁰

The EPA faces challenges to achieving its international goals. For instance, the EPA does not control what countries do or how countries use its assistance. This lack of control extends to climate change tools and information, capacity-building trainings and guidance, and technical assistance. In addition, the EPA must decide which countries to engage with and where to target its efforts. In its [*FY 2022–2026 EPA Strategic Plan*](#), the EPA states that it “will target all engagement and technical assistance toward countries where the EPA expects to have the greatest potential impact and where the EPA can leverage the work of other federal departments or agencies, as appropriate.” Consequently, the challenge of implementing effective climate change policy requires the EPA to participate in diplomacy to arrive at successful climate change solutions.

Addressing Impacts to EPA Programs and Operations from Increasing Natural Disasters Because of Climate Change

EPA and EPA-authorized state programs, regulate facilities and contaminated sites containing potentially hazardous substances to the public and the environment. Also, the increased incidence of climate change-related disasters creates potential vulnerabilities at these facilities and sites that the EPA must identify and address. For example, EPA-regulated facilities—such as chemical manufacturers, hazardous waste handlers, underground storage tanks, and contaminated sites—could release harmful chemicals and contaminants because of natural disaster incidents. In addition, in its 2021 *Climate Adaptation Action Plan*, the EPA acknowledged that “[c]limate impacts can increase the amount of debris sent to landfills and can also encroach on the landfills.”³¹

According to Figures 1.2 and 1.3, large-scale natural disaster events have increased in the United States since 1980. From January through September 2021 alone, the National Oceanic and Atmospheric

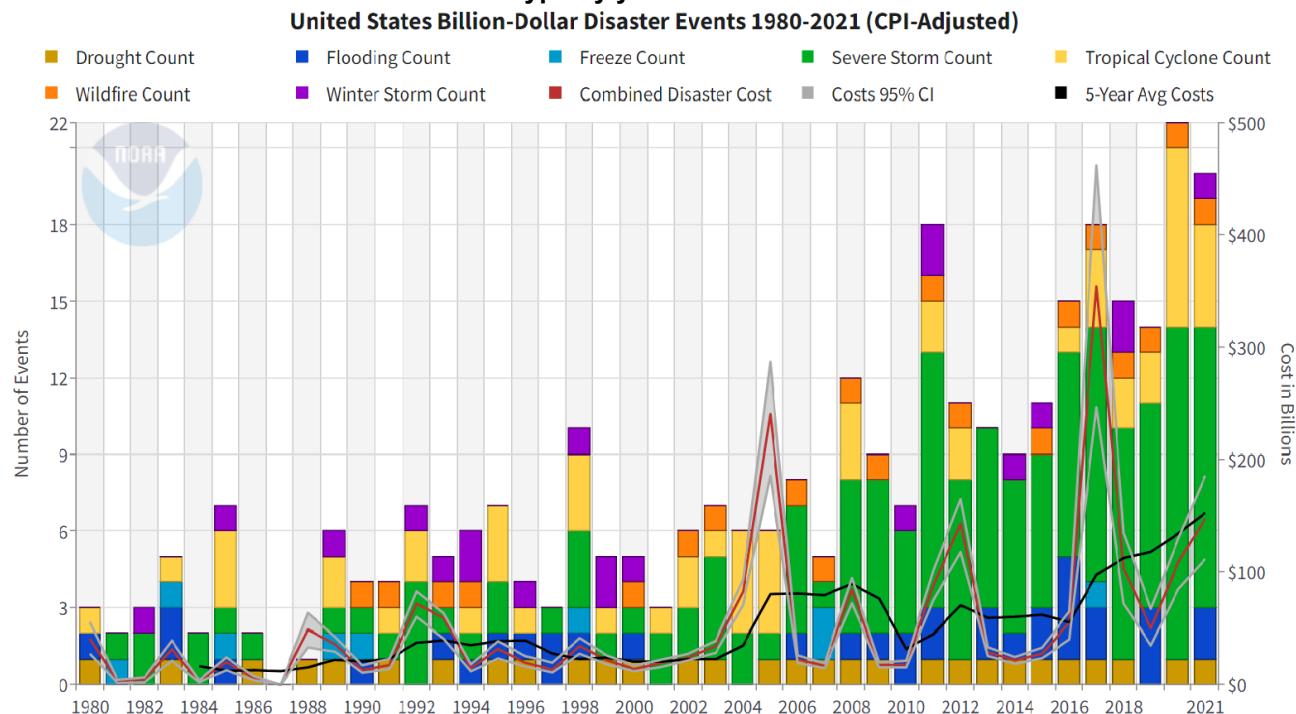
²⁹ EPA, [*International Climate Partnerships*](#) (last visited Oct. 26, 2022).

³⁰ *Supra* n.7.

³¹ *Supra* n.4.

Administration identified \$18 billion attributed to natural disasters in the United States.³² These natural disasters include droughts, flooding, tropical storms, hurricanes, and other extreme weather. For example, the National Oceanic and Atmospheric Administration published a report in July 2021 that documented the increased frequency of high-tide flooding. This flooding occurs when water levels exceed about 1.75 feet above high tide.³³ Specifically, high-tide flooding damages infrastructure and creates other economic impacts within coastal communities. In 2020, coastlines in the United States experienced high-tide flooding at a rate that was double that of 2000. High-tide flooding will likely increase between five and 15 times without further adaptation measures.

Figure 1.2: U.S. billion-dollar disaster event type by year

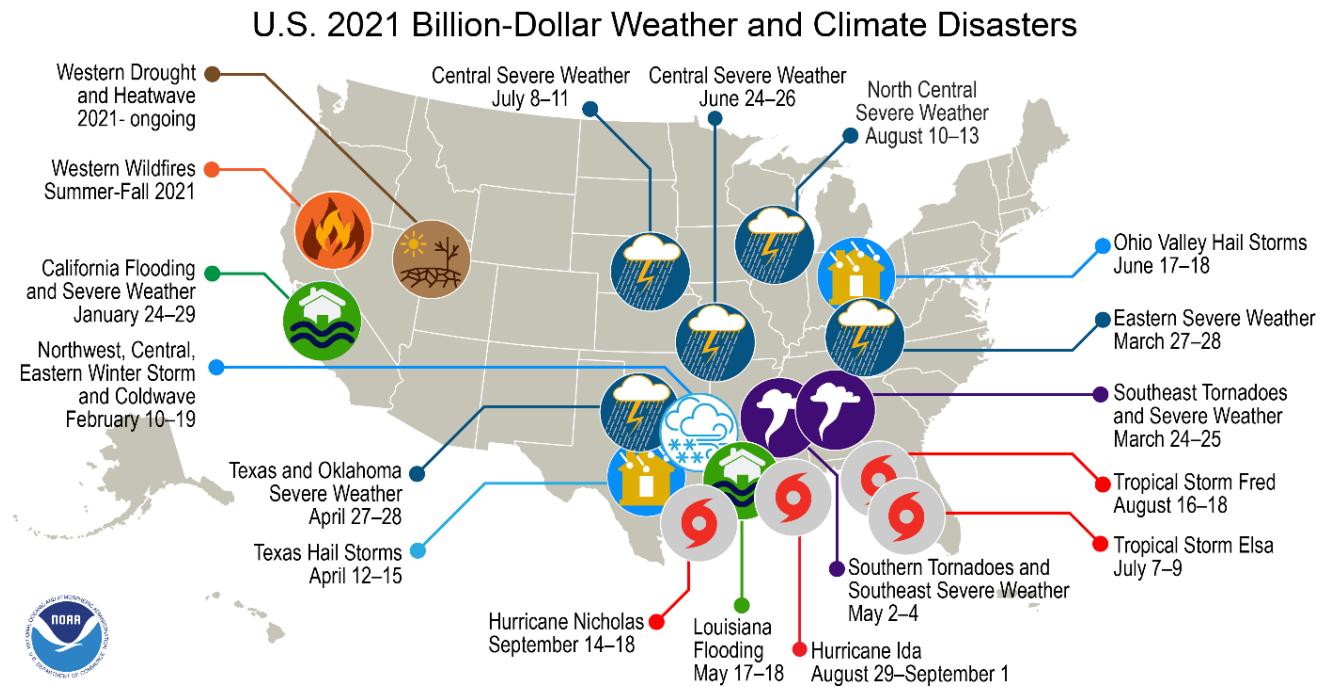


Source: National Oceanic and Atmospheric Administration data from its [website](#). (National Oceanic and Atmospheric Administration image)

³² Press Release, National Oceanic and Atmospheric Administration, [U.S. hit with 18 billion-dollar disasters so far this year](#) (Oct. 8, 2021).

³³ National Oceanic and Atmospheric Administration, [2021 State of High Tide Flooding and Annual Outlook](#), Jul. 2021.

Figure 1.3: U.S. billion-dollar disaster events January–September 2021 by type and location



This map denotes the approximate location for each of the 18 separate billion-dollar weather and climate disasters that impacted the United States January–September 2021.

Source: National Oceanic and Atmospheric Administration data from its [website](#). (National Oceanic and Atmospheric Administration image)

The OIG concluded that the flooding that closed Yellowstone National Park in June 2022 further illustrated climate change impacts on natural disasters. According to the U.S. Geological Survey, the flood was an unprecedented event that was characterized as a 500-year flood.

To address climate change impacts, EPA-regulated sites and facilities in vulnerable areas may need to revisit remedial designs. For example:

- A 2019 GAO report examined the potential effects of flooding, storm surges, wildfires, and rising sea levels caused by climate change. It found that about 60 percent of all nonfederal contaminated sites on the *Superfund National Priorities List* are in climate change-impacted areas.³⁴ The EPA issued a memorandum in response on June 30, 2021, describing approaches for the EPA's regions to evaluate how vulnerable the cleanup remedies are at nonfederal sites



June 2022 Yellowstone River flooding. ([U.S. Geological Survey](#) image)

³⁴ GAO, [Superfund: EPA Should Take Additional Actions to Manage Risks from Climate Change](#), No. GAO-20-73, Oct. 18, 2019.

in the *Superfund National Priorities List*. These actions also help evaluate adaptation measures to adapt and increase the system's resilience to a changing climate.

- A 2022 GAO report evaluated the potential impacts of natural hazards that climate change may exacerbate at *Risk Management Plan* facilities that manage hazardous substances.³⁵ The report identified over 3,200 (about 31 percent) of 10,420 facilities in areas affected by such natural hazards as flooding, storm surges, wildfires, and sea-level rises.

Failure to identify potential climate change vulnerabilities at EPA-regulated facilities and to evaluate adaptation measures that increase facility resilience may compromise the ability of the EPA and authorized state programs to effectively regulate major facilities to prevent uncontrolled releases of contaminants. If it does not address climate change impacts on vulnerable facilities, the EPA might not be able to meet its core mission to protect human health and the environment. If unaddressed, climate change effects on vulnerable facilities could impact vulnerable and overburdened populations living near such facilities.

Conclusion

The OIG maintains that climate change threatens the EPA's ability to meet its core mission to protect human health and the environment across multiple program areas. If the EPA does not address climate change, more Americans could live in areas that fail to meet the National Ambient Air Quality Standards, be exposed to poor water quality or contaminant releases after natural disasters, or face health effects from weather events. The EPA must address climate change with a long-term, agencywide approach. The EPA must ensure that its programs, policies, rulemaking processes, and enforcement and compliance assurance activities consider the current and future impacts of climate change. To accomplish this task, the EPA must fully implement its climate change priority goal in the *FY 2022–2026 EPA Strategic Plan* and the 2021 *Climate Adaptation Action Plan*.³⁶ It must develop regulations for GHG emissions, particularly those from power plants; integrate adaptation and resiliency across programs; continue its international climate change efforts; and prepare for natural disasters made worse by climate change.

³⁵ GAO, [Chemical Accident Prevention: EPA Should Ensure Regulated Facilities Consider Risks from Climate Change](#), No. GAO-22-104494, Feb. 28, 2022.

³⁶ Supra n.4.

CHALLENGE 2: Integrating and Leading Environmental Justice Across the Agency and Government



Introduction and Overview

The EPA leads the federal effort to identify and address disproportionately high and adverse human health or environmental effects on communities facing environmental justice concerns. However, the EPA continues to face significant challenges to effectively communicate risk, assess cumulative impacts in an Agency that operates within programmatic silos, and integrate environmental justice principles into civil rights enforcement.

A series of executive orders spanning over 25 years guide federal agencies' response to tackling environmental justice. Executive Order 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations*, dated February 11, 1994, required agencies to develop an agencywide environmental justice strategy that addressed disproportionately high and adverse human health or environmental effects.³⁷ In 2021, two executive orders were issued directing the federal government to advance equity for all with a comprehensive approach and to make achieving environmental justice part of its missions. The latter order was issued to address the climate crisis.³⁸

The [FY 2022–2026 EPA Strategic Plan](#) prioritizes advancing environmental justice as a strategic goal for the first time. As shown in Table 2.1, Goal 2, “Take Decisive Action to Advance Environmental Justice and Civil Rights,” has three objectives, which the EPA has committed to achieving by September 30, 2026. In September 2022, the Agency announced it would establish a new Office of Environmental Justice and External Civil Rights, which will combine the existing Office of Environmental Justice, External Civil Rights Compliance Office, and the Conflict Prevention and Resolution Center. The EPA plans to staff the office with 200 employees at EPA headquarters and the ten regional offices. With the billions of dollars provided by the Inflation Reduction Act for program funding and block grants, these offices, once combined, will see a nearly 250 percent increase in available resources since FY 2021.

Table 2.1: FY 2022–2026 EPA Strategic Plan Goal 2 objectives

| Objective | Title | Description |
|-----------|--|---|
| 2.1 | Promote environmental justice and civil rights at the federal, tribal, state, and local levels | <ul style="list-style-type: none">Provide capacity-building resources to communities with environmental justice concerns.Include commitments to address disproportionate impacts in written agreements.Direct implementation authority to take at least 100 significant actions to measurably improve Indian Country.Ensure foundational civil rights programs for all state recipients of EPA funding.Increase Office of Research and Development EJ activities. |

³⁷ Exec. Order No. 12898, [Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations](#) (Feb. 11, 1994).

³⁸ Exec. Order No. 14008, [Tackling the Climate Crisis at Home and Abroad](#) (Jan. 27, 2021); Exec. Order No. 13985, [Advancing Racial Equity and Support for Underserved Communities Through the Federal Government](#) (Jan. 20, 2021).

| Objective | Title | Description |
|------------------|---|---|
| 2.2 | Embed environmental justice and civil rights concerns into the EPA's programs, policies, and activities | <ul style="list-style-type: none"> Reduce certain identified disparities in environmental and public health conditions. 80% of significant EPA actions with environmental justice implications will clearly demonstrate how the action is responsive to environmental justice concerns and reduces or otherwise addresses disproportionate impacts. Conduct community-driven, collaborative, and equitable community development that provides meaningful involvement and fair treatment. Identify and implement areas of opportunity to integrate environmental justice and civil rights considerations into activities. Implement language-assistance and disability-access plans. |
| 2.3 | Strengthen civil rights enforcement in communities with environmental justice concerns | <ul style="list-style-type: none"> Initiate 45 proactive post award civil rights compliance reviews to address discrimination issues. Complete 305 audits to ensure EPA assistance recipients follow nondiscrimination program procedural requirements. Complete 84 information sharing sessions and outreach events with overburdened and underserved communities. |

Source: *FY 2022–2026 EPA Strategic Plan*, March 22, 2022. (EPA OIG graphic)

Additionally, the EPA's April 2022 Executive Order 13985, *Equity Action Plan: U.S. Environmental Protection Agency*, included the following priority actions to address environmental justice:³⁹

- Develop a comprehensive framework to consider cumulative impacts in relevant EPA decisions and operationalize that framework in the EPA's programs and activities.
- Help underserved communities provide their experience to the EPA and implement community-led projects.
- Develop the EPA's internal capacity to engage underserved communities and implement clear and accountable processes to act based on communities' input.
- Strengthen the EPA's external civil rights compliance program and ensure that civil rights compliance is an agencywide responsibility

To meet these ambitious performance goals and priority actions, the Agency will need to monitor its environmental justice budgets in light of increased funding from the President's Budget, IIJA, and IRA. As shown in Table 2.2, the enacted President's Budget for environmental justice increased over \$82 million from FY 2021 to 2022 and will increase over \$200 million from FY 2022 to 2023 if the proposed FY 2023 budget is enacted.

Table 2.2: The EPA's proposed and enacted environmental justice budgets (in millions)

| Fiscal year | President's Budget | Enacted budget |
|--------------------|---------------------------|-----------------------|
| 2016 | \$13.97* | \$6.74 |
| 2017 | \$15.29 | \$6.74 |
| 2018 | \$0 | \$6.74 |
| 2019 | \$2 | \$6.74 |
| 2020 | \$2.74 | \$9.55 |
| 2021 | \$2.73 | \$11.84 |

³⁹ EPA, [E.O. 13895 Equity Action Plan](#), Apr. 2022.

| Fiscal year | President's Budget | Enacted budget |
|-------------|--------------------|----------------|
| 2022 | \$293.86 | \$94.16 |
| 2023 | \$294.94 | N/A |

Source: EPA, Office of the Chief Financial Officer

*These numbers do not include Superfund.

Starting in FY 2022, the IIJA and IRA provided additional environmental justice funding of \$23.8 billion and \$18.1 billion in supplemental appropriations, respectively. A breakdown of this funding is available in Table 2.3. According to the EPA, the newly created Office of Environmental Justice and External Civil Rights will not only be responsible for overseeing the implementation and delivery of a \$3 billion climate and environmental justice block grant program but will also ensure that the EPA's implementation of other funding programs provided by IIJA, IRA, and regular appropriations meet or exceed the president's Justice40 Initiative.⁴⁰

Table 2.3: IIJA and IRA funding for environmental justice programs (FYs 2022–2026)

| | EPA program | Funding |
|---------------|---|-----------------------|
| IIJA | Clean Water State Revolving Funds | \$5.739 billion |
| | Drinking Water State Revolving Funds | \$5.739 billion |
| | Drinking Water State Revolving Funds for lead service lines | \$7.35 billion |
| | Emerging Contaminants | \$5 billion |
| Total: | | \$23.8 billion |
| IRA | Greenhouse Gas Reduction Fund | \$15 billion |
| | Diesel Emissions Reductions | \$0.06 billion |
| | Funding to Address Air Pollution | \$0.003 billion |
| | Funding to Address Air Pollution at Schools | \$0.05 billion |
| | Low Emissions Electricity Program | \$0.017 billion |
| | Environmental and Climate Justice Block Grants | \$3 billion |
| Total: | | \$18.1 billion |

Source: OIG analysis of [IIJA](#) and [IRA](#). (EPA OIG table)

The EPA will face an unprecedented amount of IIJA funding for environmental justice spread across FYs 2022–2026. This new funding will provide the EPA additional means to address such issues as clean and safe drinking water, replacement lead service lines, and emerging contaminants in disadvantaged communities. EPA funding provided by the IRA was appropriated in full in FY 2022 and included \$3 billion in Environmental and Climate Justice Block Grants to fund community-based nonprofit organizations. In addition to these grants, the IRA provides \$50 million for grants, other activities, and technical assistance to monitor and reduce air pollution and greenhouse gas emissions at schools in low-income and disadvantaged communities.

Introducing the Office of Environmental Justice and External Civil Rights

The EPA's new national Office of Environmental Justice and External Civil Rights will be led by an assistant administrator and continue the work of the three existing offices it replaces, but with increased resources, funding, and influence to elevate environmental justice and external civil rights

⁴⁰ Press Release, EPA, [EPA Launches New National Office Dedicated to Advancing Environmental Justice and Civil Rights](#), (Sept. 24, 2022).

throughout the Agency. The new office will oversee new funding created by the IRA, IIJA, and regular appropriations, as well as ensure the implementation of the president's Justice40 Initiative, which aims to ensure that 40 percent of federal investment benefits go to disadvantaged communities. Besides new funding, the new office will also be staffed with 200 employees across EPA headquarters and all ten EPA regions. While the increased resources may result in challenges with workforce planning, execution and business operations, which we discuss in Challenge 6, the OIG believes the elevation of environmental justice and civil rights to a national program office should allow it to execute its mission and priorities in a more holistic manner, breaking down siloes and more fully integrating environmental justice principles into the way the Agency conducts its work.

Communicating Risk Effectively to Affected Stakeholders

Effective risk communication allows stakeholders to make informed decisions about risks to health, safety, and the environment. Affected populations may not perceive risks the same way as risk experts, and risk communication seeks to bridge those information gaps. Risk communication can be difficult when information exchange between laypersons and experts does not consider differing risk perceptions among individuals. Risk perception—which describes how people identify and measure risk based on information they have about that risk—does not always match calculated “real” risk. For example, an individual living in a major evacuation zone may not evacuate during a hurricane if they have experience with the hazard and do not feel they are in danger, despite officials warning them to do so. The disconnect between risk perceptions and “real” risk can also occur due to varying knowledge about a risk; cultural, social, and ethnic contexts; biases from media and other information sources; and previous hazard experiences. Information is the key influencing factor for both risk perception and risk communication. When, how, and from whom people obtain information also critically influences how people perceive risks and how empowered they are to make decisions. We have reported on many instances of inconsistent, ineffective, or untimely risk communication across EPA programs, including some in communities with environmental justice concerns.⁴¹ In some instances, the Agency may not have alerted stakeholders of their prolonged exposure to harmful contaminants.⁴²

In the past several years, the EPA has made several efforts to address risk communication issues. In 2019, the EPA hired a risk communications advisor in the Office of the Administrator. In 2020, the EPA developed and launched a new risk communication training course that covers governing principles from the science of risk and the process for risk communication at the EPA.⁴³ In 2021, the EPA updated its *Risk Communication* webpage with a new definition of risk communication. It also introduced the Strategy Action Learning Tools Framework, which is the EPA’s process framework to guide risk communication.⁴⁴ Figure 2.1 provides an overview of this framework tool.⁴⁵ In its FY 2023 budget justification, the Agency requested an additional \$16.4 million to support engagement with state and local partners, to enhance training of healthcare providers in underserved communities, and to

⁴¹ EPA OIG, *EPA’s Fiscal Year 2022 Top Management Challenges*, Report No. [22-N-0004](#) (Nov. 12, 2021).

⁴² EPA OIG, [FY 2022 Top Management Challenges](#), Nov. 12, 2021.

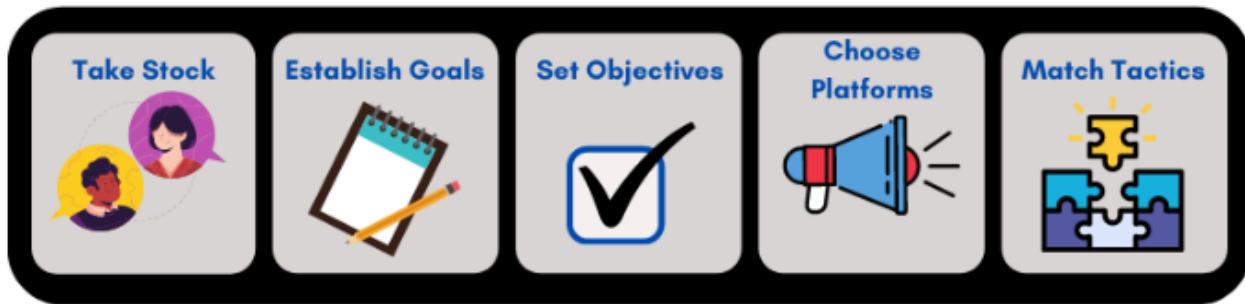
⁴³ EPA OIG, *EPA’s Office of Land and Emergency Management Lacked a Nationally Consistent Strategy for Communicating Health Risks at Contaminated Sites*, Report No. [21-P-0223](#) (Sept. 9, 2021).

⁴⁴ EPA, [Risk Communication](#) (last visited Oct. 26, 2022).

⁴⁵ EPA, [Learn about Risk Communication](#) (last visited Oct. 26, 2022).

implement and strengthen the Agency's ability to effectively communicate risks.⁴⁶ The EPA's budget request provides contract support for the Agency's management operations and multimedia and risk communications. The EPA will continue risk communication work with an additional focus on the current administration's priorities of environmental justice and climate change. To address these issues and to meet future challenges, the EPA must establish strategic goals or objectives to address risk communication, among many other activities. The EPA must define and implement timely, current, accurate, and accessible risk communication information to achieve its mission. Accomplishing these tasks is important for communities facing disproportionate health effects from exposure to harmful contaminants.⁴⁷

Figure 2.1: The Strategy Action Learning Tools Framework



Source: The *Strategy Action Learning Tools Framework* [website](#). (EPA image)

In an EPA OIG report issued in 2021, we found that the EPA did not consistently communicate human health risks at select sites related to Office of Land and Emergency Management programs.⁴⁸ The lack of communication did not allow impacted communities to decide how to manage their exposure risks to harmful contaminants. Absent a national strategy, the Office of Land and Emergency Management did not consistently integrate and apply risk communication across programs and regional offices. The report recommended that the Office of Land and Emergency Management implement internal controls to achieve officewide, nationally consistent risk communication, which would improve public awareness and understanding of risks. All recommendations for the report are resolved with corrective actions pending.⁴⁹

Identifying Cumulative Impacts to Better Protect Communities

The EPA's Office of Research and Development released an external review draft of cumulative impacts recommendations for the office's research in January 2022.⁵⁰ While lacking a formal definition, cumulative impacts are described in the Office of Research and Development report as:

[T]he total burden - positive, neutral, or negative - from chemical and non-chemical stressors and their interactions that affect the health, well-being, and quality of life of an individual, community, or population at a given point in time or over a period of

⁴⁶ *Supra* n.9.

⁴⁷ *Supra* n.42.

⁴⁸ EPA OIG, *Office of Land and Emergency Management Lacked a Nationally Consistent Strategy for Communicating Health Risks at Contaminated Sites*, Report No. 21-P-0223 (Sept. 9, 2021).

⁴⁹ *Id.*

⁵⁰ EPA, [Cumulative Impacts Recommendations for ORD Research](#), Jan. 2022.

time.”⁵¹ Exposures to pollution and/or environmental degradation can disproportionately affect disadvantaged and overburdened individuals and communities.

Executive Order 13045, *Protection of Children from Environmental Health Risks and Safety Risks*, dated April 21, 1997, directs agencies to identify and assess environmental health and safety risks that may disproportionately affect children.⁵² A host of chemicals and pollutants from a range of different sources—such as commercial, industrial, or agricultural facilities; road traffic; and transportation hubs—endanger communities facing environmental justice concerns. Such sources often overlap with the adverse effects of poverty and other social and economic factors, including limited health care access, low-quality schools, crime, and substandard housing. This overlap presents a complex challenge for regulators tasked with protecting residents of those communities from environmental and other harms.⁵³

The EPA cannot fully identify where disproportionate health effects exist without identifying cumulative impacts. It can be scientifically and legally complicated to address cumulative impacts from and interactions between chemical and nonchemical stressors.⁵⁴ Some possible aspects of cumulative impact analysis—such as crime and substandard housing—do not fall under the EPA’s purview to address. Furthermore, different programs under the EPA address cleanups in a siloed approach that does not holistically consider which other EPA programs could assist. Notably, in the EPA’s *Annual Environmental Justice Progress Report FY 2020*, the administrator acknowledged the need “to tear down the silos between programs within the agency so that we can be more effective in addressing the environmental burdens that communities face.”⁵⁵ The new Office of Environmental Justice and External Civil Rights, announced in September 2022, plans to engage communities with environmental justice concerns such as cumulative impacts and increase support for community-led action through grants and technical assistance.

Since the publication of the [*EPA’s Fiscal Year 2022 Top Management Challenges*](#), we initiated three projects and published one report involving cumulative impacts. We released a project notification for an audit in September 2021 to determine what actions the EPA has taken—in accordance with its mission, program goals, and applicable executive orders—to identify and address any disproportionate health effects to disadvantaged communities located on or near the 35th Avenue Superfund site in Birmingham, Alabama.⁵⁶ In October 2022, we released a project notification for an audit and another for an evaluation.⁵⁷ The audit will focus on whether states have met the Drinking Water State Revolving loan subsidy goals for disadvantaged communities. It will also address whether the EPA has identified and addressed any barriers that hindered states from spending the maximum allowed on

⁵¹ *Id.*

⁵² Exec. Order No. 13045, [*Protection of Children From Environmental Health Risks and Safety Risks*](#) (Apr. 21, 1997).

⁵³ *Supra* n.42.

⁵⁴ *Id.*

⁵⁵ EPA, [*EPA Annual Environmental Justice Progress Report FY 2020*](#), 2020.

⁵⁶ EPA OIG Notification Memorandum, *35th Avenue Superfund Site Case Study on Cumulative Impacts*, Project No. [OA-FY21-0279](#) (Sep. 16, 2021).

⁵⁷ EPA OIG Notification Memorandum, *Drinking Water State Revolving Fund Loan Subsidies to Disadvantaged Communities*, Project No. [OA-FY22-0020](#) (Oct. 20, 2021); EPA OIG Notification Memorandum, *Effectiveness of EPA’s Oversight of Testing and Certification Program for Residential Wood Heaters*, Project No. [OSRE-FY22-0026](#) (Oct. 22, 2021).

loan subsidies for disadvantaged communities in their Drinking Water State Revolving funds. The evaluation project will determine whether the EPA effectively uses its oversight and enforcement authority on residential wood heaters to ensure that all heaters reaching consumers are tested and certified in accordance with established standards.

In March 2022, we published a report, [The EPA Needs to Develop a Strategy to Complete Overdue Residual Risk and Technology Reviews and to Meet the Statutory Deadlines for Upcoming Reviews](#), to determine whether the EPA had conducted the proper residual risk and technology reviews in a timely manner to protect the public from air toxics from stationary sources. Air toxics can cause cancer and other serious health conditions. These overdue reviews may disproportionately impact communities with environmental justice concerns. Minority and low-income populations are more likely to live near industrial facilities or other pollution sources. We recommended that the EPA determine the staff and resources needed to meet statutory review deadlines with a workforce analysis. We also recommended that the EPA develop and implement a strategy to conduct the reviews by the statutory deadlines and all overdue reviews as soon as practicable. The report stated that the strategy should take into account the Agency's environmental justice responsibilities. The Agency agreed to the recommendations and corrective actions are pending.⁵⁸

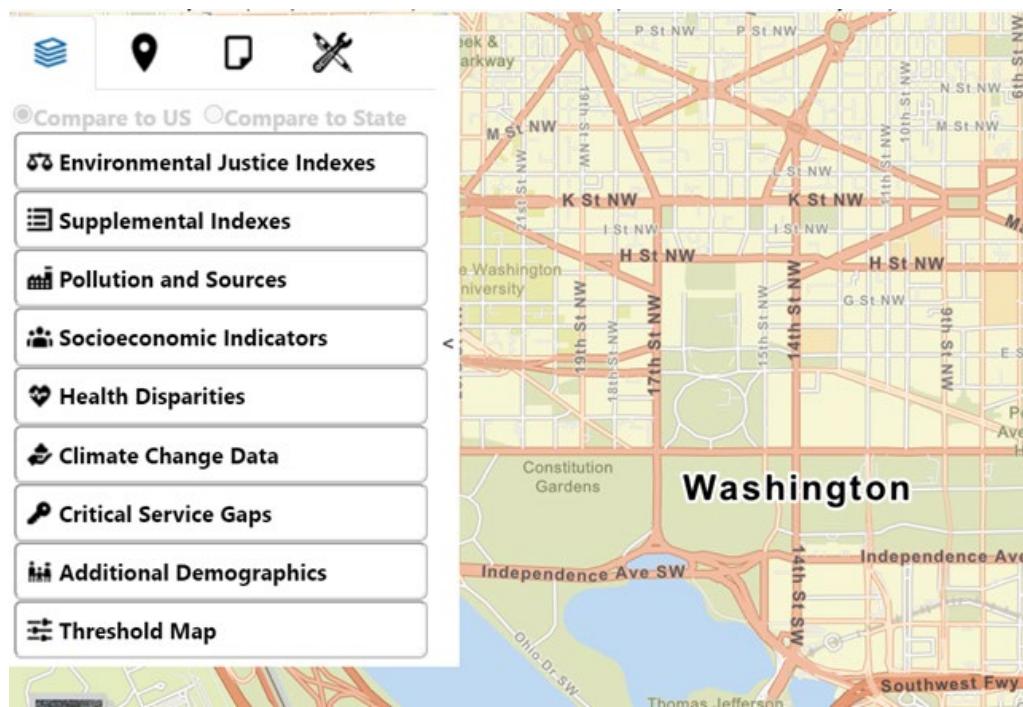
Assessing the EPA's Technological Actions to Address Environmental Justice

In addition to the actions identified above, the EPA intends to address environmental justice by providing the public with a number of monitoring and data tools with which they can utilize to better understand the environmental conditions in their community. The EPA took several web-based technological actions to help address environmental justice challenges, including updating its EJScreen—which provides demographic and environmental information for user selected geographic areas. The updates include an improved interface, data regarding health disparities, climate change, critical service gaps, and U.S. territories, and the addition of threshold maps, as shown in Figure 2.2.⁵⁹

⁵⁸ EPA OIG, [The EPA Needs to Develop a Strategy to Complete Overdue Residual Risk and Technology Reviews and to Meet the Statutory Deadlines for Upcoming Reviews](#), Report No. [22-E-0026](#) (Mar. 30, 2022).

⁵⁹ Press Release, EPA, [EPA Launches Updates to Environmental Justice Mapping Tool EJScreen](#) (Oct. 11, 2022); EPA, [Purposes and Uses of EJScreen](#) (last visited Oct. 26, 2022); EPA, [EJScreen Version 2.0](#) (last visited Oct. 21, 2022).

Figure 2.2: The EPA's EJScreen 2.1



Source: *EJScreen 2.1 website*. (EPA image)

In addition, the EPA released a web tool called ECHO Notify.⁶⁰ Users can select a geographic area or facility identification number and receive a weekly email notification of changes to enforcement and compliance data based on that selection.⁶¹ According to the EPA, overburdened and underserved communities are often victims of environmental crime.⁶² The EPA provided a survey to states about cumulative impacts and environmental justice programs to assist the Minnesota Pollution Control Agency. The survey results helped create an interactive map showing each state's survey response.⁶³ As shown in Figure 2.3, the EPA's Toxics Release Inventory Program added a community profiles layer to its interactive map, which combines Toxic Release Inventory data with demographic information, allowing one to overlay maps of facility locations with maps of overburdened and vulnerable communities.⁶⁴

⁶⁰ EPA, [ECHO Notify](#) (last visited Oct. 26, 2022).

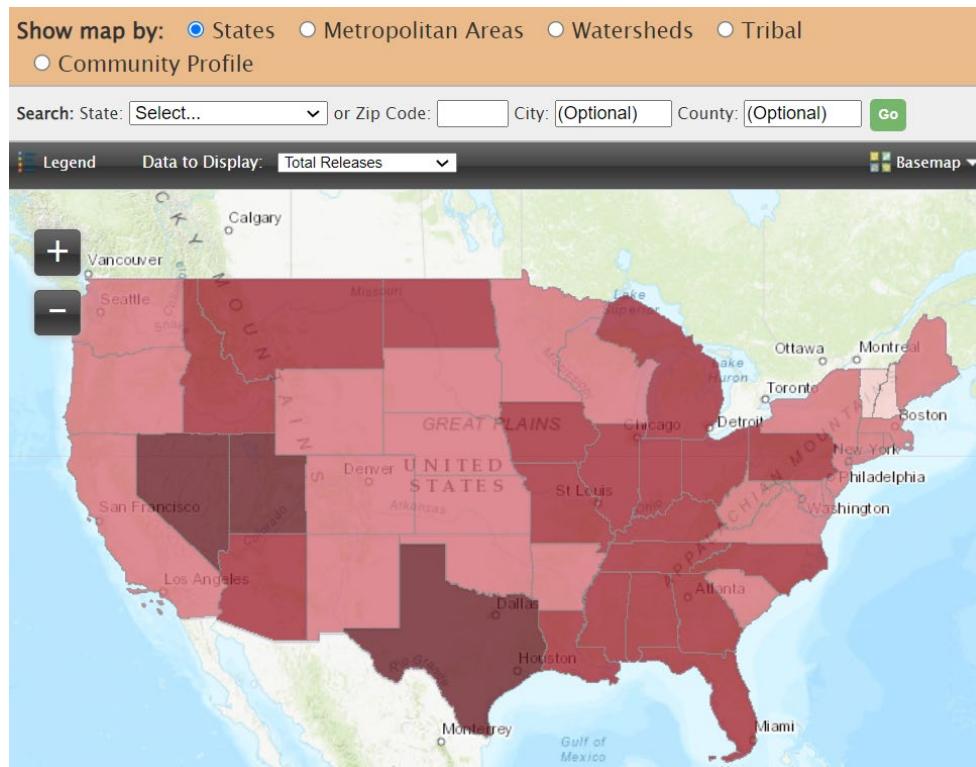
⁶¹ *Id.*; see also Press Release, EPA, [New EPA Tool Provides the Public with Customized Updates on Local Enforcement and Compliance Activities](#) (Mar. 22, 2022).

⁶² EPA, [FY 2023 EPA Budget in Brief](#), No. EPA-190-S-22-001, Mar. 2022.

⁶³ Minnesota Pollution Control Agency, [Cumulative impacts information request – preliminary data](#) (last visited Oct. 26, 2022).

⁶⁴ EPA, [EPA National Environmental Justice Community Engagement Call](#), Mar. 15, 2022; EPA, [Where You Live](#) (last visited Oct. 26, 2022).

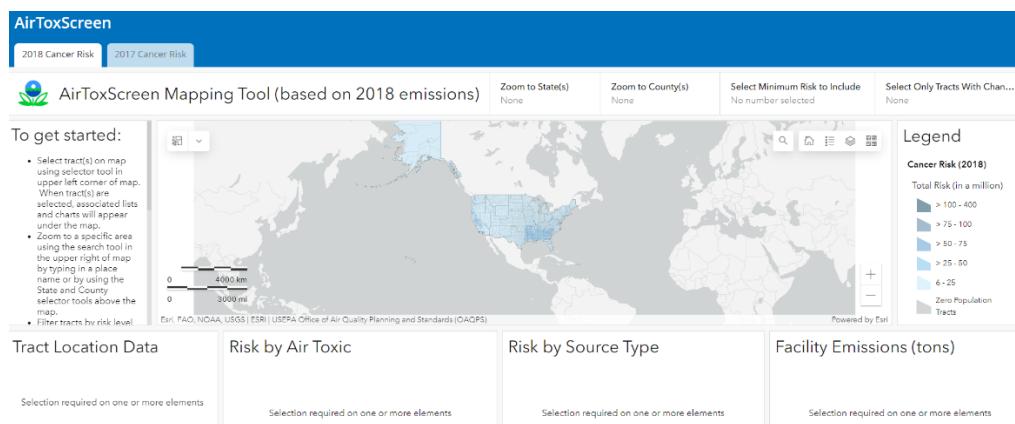
Figure 2.3: EPA Toxic Release Inventory National Analysis Where You Live website



Source: Toxic Release Inventory Analysis, *Where You Live* website. (EPA image)

Finally, the Air Toxics Screening Assessment, or [AirToxScreen](#), for emissions data is the EPA's latest tool to assess risks to the public from air toxics. Figure 2.4 shows what this tool looks like. It characterizes air toxics across the nation on a screening level. The EPA is committed to providing annual updates on air toxics data.⁶⁵

Figure 2.4: AirToxScreen mapping tool



Source: *AirToxScreen Mapping Tool* website. (EPA image)

⁶⁵ EPA, [AirToxScreen Overview](#) (last visited Oct. 26, 2022); EPA, [Air Toxics Data Update](#) (last visited Oct. 26, 2022); EPA, [EPA National Environmental Justice Community Engagement Call](#), Mar. 15, 2022.

To focus on the utilization of this data, we issued two project notifications in February 2022. The first is for an audit of the EPA's benzene fenceline monitoring program for petroleum refineries. This project plans to identify the potential disproportionate benzene exposure to people of color and low-income communities from problematic refineries.⁶⁶ The second of these is for an audit of the EPA's actions regarding drinking water lead contamination in Benton Harbor, Michigan, a community with environmental justice concerns.⁶⁷ Taken together, the OIG finds these technological updates enable the public to utilize Agency data in accessible ways to understand risks and trends in the communities in which people live, play, and work.

Conclusion

The Agency has taken steps to achieve environmental justice by including ambitious performance goals in the *FY 2022–2026 EPA Strategic Plan*, as well as creating an *Action Plan* and elevating environmental justice and external civil rights to a national program office. However, environmental justice touches many of the top management challenges we have identified, and nearly every program in the EPA. The Agency will need to successfully manage environmental justice issues outside of its operational siloes to improve upon areas such as risk communication and cumulative impacts. Beyond identifying and assessing environmental justice concerns, the EPA will need to continue its enforcement efforts to ensure vulnerable communities are not disproportionately impacted by adverse human health or environmental effects. As the EPA's *Environmental Justice* webpage states:

Environmental justice will be achieved when everyone enjoys ... [t]he same degree of protection from environmental and health hazards, and [e]qual access to the decision-making process to have a healthy environment in which to live, learn, and work.

Based upon OIG work, we find that achieving environmental justice will require the EPA to harness not only program, but agencywide coordination, and will require a culture change from making decisions within a program to making cross-program decisions that weigh cumulative risk and impacts to the impacted communities the EPA serves. The Agency created the new Office of Environmental Justice and External Civil Rights to elevate equity and nondiscrimination, putting these concerns on par with other major program offices. According to Administrator Michael S. Regan, the program office's launch means that the EPA is "embedding environmental justice and civil rights into the DNA of EPA and ensuring that people who've struggled to have their concerns addressed see action to solve the problems they've been facing for generations."⁶⁸

⁶⁶ EPA OIG Notification Memorandum, *Benzene Fenceline Monitoring at Refineries Project*, Project No. [OA-FY22-0070](#) (Feb. 22, 2022).

⁶⁷ EPA OIG Notification Memorandum, *EPA's Response to Drinking Water Lead Contamination in Benton Harbor, Michigan*, Project No. [OA-FY22-0068](#) (Feb. 18, 2022).

⁶⁸ Press Release, EPA, [EPA Launches New National Office Dedicated to Advancing Environmental Justice and Civil Rights](#) (Sept. 24, 2022).

CHALLENGE 3: Providing for the Safe Use of Chemicals



Introduction and Overview

To effectively protect public health and the environment, the EPA must be able to conduct credible and timely assessments of the risks which pesticides, toxic chemicals, and other environmental chemicals pose. The Frank R. Lautenberg Chemical Safety for the 21st Century Act, enacted in 2016, expanded the EPA's regulatory authority under the TSCA (15 U.S.C. § 2601 et seq).⁶⁹ This increased the need for timely and accurate risk assessments. The EPA also must be able to continue its efforts to meet its deadlines to register and reregister hundreds of pesticides per year under the Federal Insecticide, Fungicide, and Rodenticide Act; ensure to set appropriate exposure levels for contaminants in drinking water; and work to meet requirements and deadlines to assess and control chemicals that threaten human health and the environment.

Goal 7 in the Agency's *FY 2022-2026 EPA Strategic Plan* is to ensure chemical and pesticide safety and prevent pollution at the source. The Agency sets long-term performance goals for two Goal 7 objectives, and discusses strategies, external factors, and emerging issues.

Table 3.1: Long-term performance goals for FY 2022–2026 EPA Strategic Plan Goal 7

| Objective 7.1: Ensure Chemical and Pesticide Safety | Objective 7.2: Promote Pollution Prevention |
|---|--|
| Protect the health of families, communities, and ecosystems from the risks posed by chemicals and pesticides. | Encourage the adoption of pollution prevention and other stewardship practices that conserve natural resources, mitigate climate change, and promote environmental sustainability. |

Note: The EPA commits to achieving these performance goals by September 30, 2026.

Source: *FY 2022–2026 EPA Strategic Plan*, issued March 22, 2022. (EPA OIG table)

The EPA's OCSPP work addresses many of this administration's top priorities. We have identified several statutory deadlines and requirements for the EPA. Table 3.2 shows two specific areas where statutory requirements have been established by Congress related to new and existing chemicals. If the EPA does not meet deadlines or account for statutory requirements in its plans, it might not be able to operate its TSCA and Federal Insecticide, Fungicide, and Rodenticide Act programs as Congress intended.

Providing Timely Chemical Assessments

Frank R. Lautenberg Chemical Safety for the 21st Century Act

The Lautenberg Act established deadlines for certain chemical reviews, which the Agency must complete in a timely fashion. The OCSPP—responsible for implementing the majority of TSCA provisions—has acknowledged that resource constraints hinder its ability to meet TSCA deadlines. For example, the OCSPP assistant administrator testified in October 2021 before the House Committee on Energy and Commerce about how the EPA missed some TSCA deadlines over resource constraints, how

⁶⁹ [Frank R. Lautenberg Chemical Safety for the 21st Century Act](#), Pub. L. 114-182 (2016).

the office has less than 50 percent of the necessary resources to operate the New Chemicals Program as Congress intended, and how the OCSPP frequently cannot operate the necessary IT systems for its new chemicals work.⁷⁰ In 2020, the OCSPP reorganized and, as part of its reorganization, formed the New Chemicals Division in October 2021.⁷¹ The OCSPP completed a workforce analysis and skills gap analysis. However, it did these analyses before October 2021. As such, the results of the analyses might not reflect current resource challenges, affecting its use in informing and addressing the OCSPP's identified resource constraints in its TSCA programs.

Table 3.2: Examples of deadlines associated with actions regarding new and existing chemicals

| TSCA section | Statutory requirement | New or existing chemical program |
|--------------|---|----------------------------------|
| 5* | The EPA is required to make an affirmative determination within 90 days , with an opportunity for 90 days of extensions in the aggregate, on whether each new chemical substance, for which it received a premanufacture notice, presents an unreasonable risk to human health or the environment. | New |
| 6(b)(4)(G)** | Once the EPA initiates a risk evaluation, it must be completed within three years . The administrator may extend this deadline by no more than six months. | Existing |

Source: OIG analysis of TSCA statutory provisions. (EPA OIG table)

* 15 U.S.C. § 2604(a)-(c).

** 15 U.S.C. § 2605(b)(4)(G).

We conducted an evaluation of the Agency's progress toward meeting established TSCA deadlines.⁷²

Our report focused primarily on the TSCA's existing chemicals program. We recommended that the OCSPP assistant administrator (1) publish the annual existing chemicals plan including the anticipated

implementation efforts and required resources, (2) conduct a workforce analysis to assess the Office of Pollution Prevention and Toxics' capability to implement the TSCA, and (3) specify what skill gaps must be filled in FY 2021 to meet the TSCA requirements. On February 7, 2022, the OCSPP certified that it had completed all corrective actions for the recommendations in this report.

An audit on the TSCA's New Chemicals Review Process is currently ongoing as part of our office's *Fiscal Year 2022 Oversight Plan*.⁷³ The objective of that review is to determine the extent to which the EPA is using and complying with applicable records-management and quality-assurance requirements and employee



Containers of hazardous substances. (EPA photo)

⁷⁰ Before the Committee on Energy and Commerce, 117th Cong. (2021) ([statement](#) of Michal Ilana Freedhoff, EPA Assistant Administrator for Chemical Safety and Pollution Prevention).

⁷¹ Maria Hegstad, [EPA Reorganizes OCSPP To Address Growing TSCA, Disinfectant Needs](#), INSIDE EPA (Sept. 9, 2020).

⁷² EPA OIG, [Lack of Planning Risks EPA's Ability to Meet Toxic Substances Control Act Deadlines](#), Report No. [20-P-0247](#) (Aug. 17, 2020).

⁷³ EPA OIG, [Fiscal Year 2022 Oversight Plan](#), Dec. 16, 2021.

performance standards to review and approve new chemicals under TSCA to manage human health and environmental risks.

Federal Insecticide, Fungicide, and Rodenticide Act

The EPA is responsible for regulating the distribution, sale, and use of pesticides. It must assess the use of and register every pesticide to prevent “unreasonable adverse effects on the environment.”⁷⁴ Federal Insecticide, Fungicide, and Rodenticide Act section 3(g) also requires the Agency to review each registered pesticide every 15 years or by October 1, 2022, in the case of pesticides registered prior to October 1, 2007. According to the EPA, in the past 15 years it has completed 685 draft risk assessments (94 percent of total number of cases); completed 633 proposed interim decisions or proposed final decisions (87 percent of total number of cases); issued 431 interim decisions (60 percent of total number of cases); and issued 151 final decisions (21 percent of total number of cases). Lastly, of the 582 interim or final decisions, 140 cases resulted in cancellations of some or all uses (19 percent of total number of cases). As of September 2022, there are 726 pesticide cases. However, the EPA has not been able to complete all required registration review processes. This backlog impedes the EPA’s ability to ensure safety for older pesticides.

We recently completed an evaluation of the EPA's cancer assessment review for the pesticide 1,3-dichloropropene.⁷⁵ This evaluation was to determine the extent to which the EPA followed policies and procedures to develop the cancer assessment for the 1,3-dichloropropene pesticide-registration review decision to prevent unreasonable adverse effects on human health. Originally due for completion on October 1, 2022, the EPA's updated schedule indicates that the Agency will not make an interim decision until 2023.

In a recent press release, the EPA anticipated that several challenges would extend its pesticide registration review beyond the statutorily required October 1, 2022 deadline. These challenges include delays in receiving data from registrants, the demands of responding to the coronavirus pandemic—that is, the SARS-CoV-2 virus and resultant COVID-19 disease—and a significant increase in recent years of resources for litigation. The EPA also recognized the importance of meeting statutory deadlines in our dicamba evaluation.⁷⁶ The failure to meet these deadlines may impede the Agency's



Pesticide application. (EPA photo)

⁷⁴ EPA, [About Pesticide Registration](#) (last visited Oct. 26, 2022); EPA, [Summary of the Federal Insecticide, Fungicide, and Rodenticide Act](#) (last visited Oct. 26, 2022).

⁷⁵ EPA OIG, *The EPA Needs to Improve the Transparency of Its Cancer-Assessment Process for Pesticides*, Report No. [22-E-0053](#) (July 20, 2022).

⁷⁶ EPA OIG, *EPA Deviated from Typical Procedures in Its 2018 Dicamba Pesticide Registration Decision*, Report No. [21-E-0146](#) (May 24, 2021).

effectiveness and hinder its ability to effectively carry out its mission to protect human health and the environment.

Ensuring Safety of Chemicals While Facing Resource Constraints

Per the EPA, an increased workload and the need for resources—especially staff trained in specific science skills—are major factors in not being on track to meet many of the EPA's statutory deadlines. Specifically, the OCSPP stated that it does not have the resources to address statutory requirements. The OCSPP also stated that it has not received the necessary funding to complete its mission.⁷⁷ For example, the OCSPP reports that it has approximately 310 full-time equivalent staff but estimates that it needs about 500 full-time equivalents for its mission. The EPA also cited a lack of resources for its failure to publicly post the risk reports for 1,240 new chemicals.

In FY 2022, the Agency requested an additional \$15 million and 87.6 full-time equivalents—a 35 percent increase from the FY 2021 enacted full-time equivalent level—to meet the increased responsibilities from the Lautenberg Act. However, the FY 2022 enacted budget provided for 25.6 full-time equivalents for TSCA programs. Furthermore, the OCSPP conducted a recent assessment that recommended that the office hire more staff, mitigate the workload to manage the workforce's daily stress, modernize IT systems, and eliminate the use of multiple tracking systems.

Addressing Additional Concerns Related to Ensuring Safety of Chemicals

The Endangered Species Act, or ESA, helps to ensure that federal actions—including pesticide registration and registration review decisions—do not endanger threatened or endangered species or their critical habitats. According to EPA data, the EPA does not comply with the ESA for most pesticide registration and registration review decisions.⁷⁸ Since 2007, the Office of Pesticide Programs has done limited work to complete ESA assessments for certain high-priority pesticides. According to the Office of Pesticide Programs, there are 1,100 active ingredients in need of ESA review. However, the EPA has completed only about ten as of FY 2021. Most recently, the EPA announced plans for an ESA work plan. The EPA intends for this guidance to help assess how additional pesticides affect endangered species undergoing registration review. The EPA expects this work plan to help it comply with the ESA.

⁷⁷ E.A. Cruden, [Burnout, expertise gaps plague EPA chemicals office](#), E&E News (Dec. 23, 2021).

⁷⁸ The ESA requires that all federal agencies, including the EPA, make sure that any action they authorize, fund, or carry out will not jeopardize the existence of listed species or “destroy or adversely modify” any designated critical habitat for that species.

Generally, section 408 of the Federal Food, Drug, and Cosmetic Act authorizes the EPA to set tolerances, or maximum residue limits, for pesticide residues on foods. In 2021, we evaluated the EPA's progress in implementing section 408(p)(3)(A) of the Federal Food, Drug, and Cosmetic Act, which requires the EPA to test all pesticide chemicals for human endocrine-disruption activity.⁷⁹ We found that the EPA has not made meaningful progress in complying with the statutory requirement to test all pesticides for endocrine-disruptor activity. Since the Endocrine Disruptor Screening Program, or EDSP, was established in 1998, the EPA has only issued test orders for 52 of the estimated 10,000 chemicals that need to be screened for endocrine-disruptor activity. The EDSP has determined that 34 of these estimated 10,000 chemicals are not endocrine disruptors. The EDSP started the process of chemical testing on June 18, 2007. Although the EDSP is scheduled to complete testing of all EDSP List 1 chemicals by September 30, 2024, we found that the OCSPP's pace for testing disruption activity is insufficient to keep up with the growth in pesticide registrations.

Conclusion

Many of this administration's top priorities rely on the work of the OCSPP.⁸⁰ However, both the EPA OIG and the Agency have noted that key OCSPP programs face a steep staffing shortage and a lack of planning that could negatively impact critical chemical work. Absent the resources the OCSPP needs for its TSCA programs, the EPA will remain challenged with meeting its statutory deadlines. The Agency must also ensure to base each pesticide's registration on current scientific and other knowledge. Any delay could hamper this process. The EPA must meet deadlines and plan toward compliance with statutory requirements to accomplish its mission to protect human health and the environment. If the OCSPP is unable to balance the workload with its resource needs, the EPA will continue to face the key challenge of ensuring the safety of chemicals.



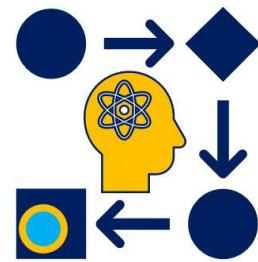
Top: Several types of butterflies are considered endangered species. However, EPA pesticide reviews do little to consider the adverse effects on endangered species. (EPA photo)

Bottom: Green frogs collected for evaluation on potential effects of endocrine-disrupting chemicals. (U.S. Geological Survey image)

⁷⁹ EPA OIG, *EPA's Endocrine Disruptor Screening Program Has Made Limited Progress in Assessing Pesticides*, Report No. [21-E-0186](#), (July 28, 2021); 21 U.S.C. § 346a(p)(3)(A).

⁸⁰ *Supra* n.77.

CHALLENGE 4: Safeguarding Scientific Integrity Principles



Introduction and Overview

The EPA states that its ability to protect human health and the environment in accordance with its mission depends upon scientific integrity.⁸¹ Further, science not only informs all aspects of the EPA's decision-making, it also impacts other domestic and international organizations' decision-making based on the EPA's science. The federal government should base its policy upon sound science; therefore, safeguarding scientific integrity is a paramount issue.⁸² The EPA has identified numerous actions it has taken to promote scientific integrity, such as conducting outreach to EPA staff to discuss leadership's commitment to scientific integrity and adding scientific integrity to job performance elements for senior officials.⁸³ In response to recent OIG recommendations, the EPA identified key actions to better implement the Agency's *Scientific Integrity Policy*.⁸⁴ Despite these Agency actions, we found examples in which some parts of the Agency did not complete required internal peer reviews of scientific documents and did not follow standard operating procedures and requirements for scientific assessments.⁸⁵ We also found examples of inappropriate data manipulation by EPA contractors.⁸⁶ We continue to receive complaints about scientific integrity concerns and have published several recent reports on high-profile scientific integrity allegations concerning the EPA's activities. Finally, the White House asserts that lapses in scientific integrity lead to an erosion of trust in the Agency's regulatory activities.⁸⁷

Safeguarding the EPA's *Scientific Integrity Policy*

In February 2012, the Agency issued its *Scientific Integrity Policy*, which seeks to:

[E]nsure scientific integrity throughout the EPA and promote scientific and ethical standards, including quality standards; communications with the public; the use of peer review and advisory committees; and professional development.⁸⁸

President Biden released a *Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking* in January 2021 to emphasize the need to safeguard scientific

⁸¹ EPA, [Scientific Integrity Policy for Transparent and Objective Science](#), 2012.

⁸² White House, [Protecting the Integrity of Government Science: A Report by the Scientific Integrity Fast-Track Action Committee of the National Science and Technology Council](#), Jan. 2022; White House, [Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking](#), Jan. 27, 2021.

⁸³ EPA, [Scientific Integrity at EPA](#) (last visited Oct. 26, 2022).

⁸⁴ EPA OIG, [Further Efforts Needed to Uphold Scientific Integrity Policy at EPA](#), Report No. [20-P-0173](#) (May 20, 2020).

⁸⁵ *Supra* n.75; EPA OIG, [EPA Deviated from Typical Procedures in Its 2018 Dicamba Pesticide Registration Decision](#), Report No. [21-E-0146](#) (May 24, 2021).

⁸⁶ EPA OIG, [Management Implication Report Concerning Inappropriate Manipulation of Air Filter Data by Office of Research and Development Contractor](#) (Feb. 18, 2022).

⁸⁷ White House, [Protecting the Integrity of Government Science: A Report by the Scientific Integrity Fast-Track Action Committee of the National Science and Technology Council](#), Jan. 2022.

⁸⁸ *Supra* n.81.

integrity.⁸⁹ This memorandum stated that “[i]t is the policy of my Administration to make evidence-based decisions guided by the best available science and data.” The president noted that “[s]cientific findings should never be distorted or influenced by political considerations.” The Agency reported that as a result of this presidential memorandum, the White House Office of Science and Technology Policy formed the Scientific Integrity Fast-Track Action Committee to support interagency coordination related to scientific integrity. The EPA’s scientific integrity official cochairs this committee. In January 2022, the committee released its first product, *Protecting the Integrity of Government Science*,⁹⁰ which identified effective practices for strengthening scientific integrity. Relevant areas include training, scientific disagreements, emerging challenges, and effective communication. According to the committee, future efforts include developing a framework with elements essential for a model scientific integrity policy that agencies may use update their own policies. The EPA’s scientific integrity official requires all agencies—including the EPA—to use the framework to update their scientific integrity policies.

The *Scientific Integrity Policy* directs employees to represent Agency scientific activities clearly, accurately, honestly, objectively, thoroughly, timely, and without political or other interference. The *Policy* also highlights the responsibility of employees to report any breach of the *Scientific Integrity Policy*. Employees still report scientific integrity complaints to the OIG, the EPA’s scientific integrity official, and the press. We are also aware that some employees may not report complaints because of fear of retaliation or reprisal.

Adhering to the EPA’s *Scientific Integrity Policy*

The EPA is at the forefront of science policy. As such, science affects all aspects of the EPA’s decision-making. On February 28, 2022, the EPA issued a memorandum at the direction of the administrator on the *Science Advisory Board Engagement Process for the Review of Science Supporting EPA Decisions* to improve the reviewing process for both the scientific and technical basis of the EPA’s proposed decisions.⁹¹ The Science Advisory Board provides independent scientific and technical peer review and advice to the EPA and is essential to assessing the science behind the EPA’s decisions. According to the EPA, the improved engagement process builds on the principle of early engagement with the Science Advisory Board, which enables the EPA to benefit from the expert advice received from the board.

The EPA administrator committed to upholding scientific integrity in an email sent to all EPA staff on March 14, 2022, marking the tenth anniversary of the EPA’s *Scientific Integrity Policy*. The administrator outlined several initiatives to enhance the EPA’s culture of scientific integrity. These initiatives included incorporating scientific integrity into performance evaluations for EPA leaders, identifying ways to prevent inappropriate interference, increasing the transparency of the EPA’s

⁸⁹ White House, [Memorandum on Restoring Trust in Government Through Scientific Integrity and Evidence-Based Policymaking](#), Jan. 27, 2021.

⁹⁰ *Supra* n.87.

⁹¹ Press Release, EPA, [EPA Announces New Science Advisory Board Process to Strengthen Science Supporting EPA Decisions](#) (Feb. 28, 2022).

decision-making, documenting decisions, and including differing scientific opinions. The administrator highlighted that all employees are responsible for scientific integrity.

The [FY 2022–2026 EPA Strategic Plan](#) includes one scientific integrity related cross-agency strategy for the EPA to carry out its mission. That involves reinforcing science as foundational to Agency decision-making and includes the following actions to accomplishing it:

- Adhere to the scientific and ethical standards in the EPA's *Scientific Integrity Policy* to advance and strengthen a culture of scientific integrity across the Agency.
- Support robust discussion of different scientific points of view, which helps to guard against inadequate science and flawed analyses.
- Renew and refocus efforts to develop the necessary science and quality data to tackle climate change, advance environmental justice, and protect children's environmental health.
- Use and communicate science with honesty, integrity, and transparency. Make this information accessible to the public, including overburdened and underserved communities.

The [FY 2022–2026 EPA Strategic Plan](#) also contains two long-term performance goals: increasing the budget for research products and implementing program and regional scientific integrity objectives.

Addressing EPA Corrective Actions from Previous OIG Reports Related to Scientific Integrity

In OIG report, *Further Efforts Needed to Uphold Scientific Integrity Policy at EPA*, we made 12 recommendations to the Agency to better implement the EPA's *Scientific Integrity Policy* and adhere to its requirements.⁹² The Agency has implemented seven recommendations and four remain unimplemented. In OIG report, *EPA Deviated from Typical Procedures in Its 2018 Dicamba Pesticide Registration Decision*, we found that the EPA's 2018 decision to extend registrations for three dicamba pesticide products did not include required internal peer reviews of scientific documents.⁹³ We made three recommendations in this report, and the corrective actions are pending. Implementing open recommendations is necessary for the Agency to ensure scientific integrity. We will continue to monitor the EPA's progress on addressing these scientific integrity-related recommendations.

Issuing Additional OIG Projects Related to Safeguarding Scientific Integrity Principles

In FY 2022, we completed two evaluations, issued one management implication report, initiated one audit, and continued FY 2021 efforts related to scientific integrity concerns.

The two OIG evaluation reports were *EPA Is Taking Steps to Update Its Federal Radiation Guidance* and *The EPA Needs to Improve the Transparency of Its Cancer-Assessment Process for Pesticides*. In OIG report, *EPA Is Taking Steps to Update Its Federal Radiation Guidance*, an OIG Hotline complaint alleged that the EPA's Office of Radiation and Indoor Air, within the Office of Air and Radiation, did not follow the best available science for low-dose radiation. We found that the EPA has no formal process to update radiation policies and guidance. However, the EPA has incorporated new data into its radiation

⁹² *Supra* n.84.

⁹³ *Supra* n.75.

guidance. The report made no recommendations. In OIG report, *The EPA Needs to Improve the Transparency of Its Cancer-Assessment Process for Pesticides*, we found that the EPA did not follow standard operating procedures and requirements for the 1,3-dichloropropene pesticide cancer-assessment process. This undermined public confidence, transparency, and scientific credibility in the Agency's scientific approaches to prevent unreasonable impacts on human health. We made nine recommendations to improve transparency and to restore the scientific credibility of this cancer classification, as well as the pesticide cancer-assessment process more broadly. An OIG Hotline complaint alleged that the EPA's Office of Radiation and Indoor Air, within the Office of Air and Radiation, did not follow the best available science for low-dose radiation.⁹⁴ We found that the EPA has no formal process to update radiation policies and guidance. However, the EPA has incorporated new data into its radiation guidance. The report made no recommendations.

In OIG report, *The EPA Needs to Improve the Transparency of Its Cancer-Assessment Process for Pesticides*, we found that the EPA did not follow standard operating procedures and requirements for the 1,3-dichloropropene pesticide cancer-assessment process.⁹⁵ This undermined public confidence, transparency, and scientific credibility in the Agency's scientific approaches to prevent unreasonable impacts on human health. We made nine recommendations to improve transparency and to restore the scientific credibility of this cancer classification, as well as the pesticide cancer-assessment process more broadly.

On February 18, 2022, we issued a management implication report where we found that an Office of Research and Development laboratory contractor inappropriately manipulated air filter data and did not follow applicable EPA and project guidance.⁹⁶ Thus, 95 air filter samples produced unusable data for ambient particulate matter from monitoring networks. The report notified the Office of Research and Development of our concerns so that the Agency may take appropriate steps.

In our continuing work, we started fieldwork on an audit of the TSCA's New Chemical Review Process in October 2021.⁹⁷ This audit will determine how much the EPA uses and complies with applicable records-management requirements, quality-assurance requirements, and employee-performance standards. The Agency uses these factors to review and approve new chemicals under the TSCA to manage human health and environmental risks. A final report is expected to be issued in FY 2023. In June 2021, we started fieldwork to evaluate the EPA's actions for development and publication of the January 2021 perfluorobutane sulfonic acid toxicity assessment to determine whether the EPA followed applicable policies and procedures.⁹⁸ A final report is expected to be issued in the fourth quarter of 2022.

We continue to receive complaints of mismanagement, misconduct, abuse of authority, and censorship related to scientific integrity through the OIG Hotline and from other sources. Scientific misconduct remains a focus area for the OIG and includes fabrication, falsification, and plagiarism.

⁹⁴ EPA OIG, *EPA Is Taking Steps to Update Its Federal Radiation Guidance*, Report No. [22-E-0016](#) (Jan. 6, 2022).

⁹⁵ *Supra* n.75.

⁹⁶ EPA OIG, *Inappropriate Manipulation of Air Filter Data by Office of Research and Development Contractor*.

⁹⁷ EPA OIG Notification Memorandum, *Toxic Substances Control Act's New Chemicals Review Process*, Project No. [OA-FY22-0025](#) (Oct. 26, 2021).

⁹⁸ EPA OIG Notification Memorandum, *EPA's January 2021 PFBS Toxicity Assessment*, Project No. [OSRE-FY21-0207](#) (June 15, 2021).

Exploring the Difference in Scientific Opinion

In October 2020, the EPA's scientific integrity program issued *Approaches for Expressing and Resolving Differing Scientific Opinions* to help implement the EPA's *Scientific Integrity Policy*. This policy encourages the expression of differing scientific opinions and suggests a progression of resolution approaches for employees and managers to express and resolve differing scientific opinions. Many scientific integrity concerns stem from differing opinions. Examples include how to apply guidance documents in particular situations, what assumptions to make, or how to select scientific approaches without explicit standard operating procedures. We have identified many cases in which scientific integrity concerns derive from different scientific opinions. In these cases, a clear mechanism for addressing these disagreements may have avoided broader allegations of misconduct. We are aware that some offices, such as the OCSPP, are developing these mechanisms. We will monitor how the EPA develops and implements these mechanisms. We believe they can reduce the number of scientific integrity concerns and maintain an environment of vigorous internal discussion and will help the OIG embrace the iterative nature of science-based decision-making.

Differing Scientific Opinions

Scientific products and decisions are strengthened by considering all pertinent evidence and exploring various plausible explanations of that evidence. Vigorous internal discussion of different points of view helps to anticipate counter arguments and alternative positions that could arise during public comment, peer review, and litigation. This process of challenging and improving ideas helps to guard against inadequate science and flawed analyses. It also creates a stimulating work environment where employees can develop professionally. Accordingly, EPA expects and encourages all employees to offer and welcome differing scientific opinions as a legitimate and necessary part of the scientific process.

—Preamble to [*Approaches for Expressing and Resolving Differing Scientific Opinions*](#), EPA Scientific Integrity Program, October 8, 2020

Coordinating on Scientific Integrity Concerns with the OIG and the EPA

In FY 2022, the Scientific Integrity Office and the OIG increased their meeting frequency from quarterly to every two weeks in an effort to encourage timely communication on scientific integrity issues. Revisions to the coordination procedures between the OIG and the Agency related to information sharing on scientific integrity have yet to be finalized. Revised coordination procedures are essential to clarify the OIG's access rights and ensure that scientific integrity concerns are routed to the proper office and addressed in the most efficient and effective manner.

The OIG has a critical role in protecting the Agency's scientific integrity. As an independent office, the OIG can receive complaints of mismanagement, misconduct, abuse of authority, or censorship, including those related to scientific or research misconduct, without fear of improper influence. Through its statutory mandate, the OIG can investigate these allegations.

Conclusion

Safeguarding scientific integrity principles remains a top management challenge for the EPA as evidenced by prior and ongoing OIG work. Further, the EPA administrator has emphasized the Agency's commitment to scientific integrity and science-based decision-making. Several initiatives to improve the culture of scientific integrity at the EPA reflect these commitments, as well as the [FY 2022–2026](#)

EPA Strategic Plan. We expect this to be a guiding principle for goals and objectives across all of the EPA's programs. We will closely monitor how the EPA implements these initiatives and its [FY 2022–2026 EPA Strategic Plan](#).

CHALLENGE 5: Ensuring Agency Systems and Other Critical Infrastructure Are Protected Against Cyberthreats



Introduction and Overview

The GAO reports that the federal government continues to face sophisticated attacks on its IT systems, to include those supporting critical infrastructure.⁹⁹ These attacks challenge current defenses and create an urgent need for a new security paradigm.¹⁰⁰ According to the Cybersecurity and Infrastructure Security Agency, or CISA, cyberattacks have debilitating effects on critical government systems and national infrastructure.¹⁰¹ In May 2021, the president issued Executive Order 14028,¹⁰² *Improving the Nation's Cybersecurity*, directing federal agencies to invest in their cybersecurity defenses.¹⁰³ Since securing critical national infrastructure is a top priority, IT and cybersecurity are of paramount importance.¹⁰⁴ The EPA reports that it relies heavily on IT to support its mission of ensuring access to clean air, land, and water and to protect its sensitive information.¹⁰⁵ Without a robust and mature cybersecurity posture, acts from malicious cyber actors could hinder the ability of the EPA to perform its mission and support its responsibility as the Sector Risk Management Agency for the water and wastewater sectors under Presidential Policy Directive-21,¹⁰⁶ which would endanger national security, as well as the health and safety of the American people.

According to the EPA, it is, like all federal agencies, vulnerable to a wide and continuously changing range of cyberthreats.¹⁰⁷ The EPA states that these threats endanger internal Agency operations, external systems, and programs the Agency oversees.¹⁰⁸ The EPA depends on IT systems for operational functions, including processing, maintaining, and reporting essential information,¹⁰⁹ which makes the systems critical to the Agency's mission.¹¹⁰ The GAO reports that without proper safeguards,

⁹⁹ GAO, *Biannual Scorecards Have Evolved and Served as Effective Oversight Tools*, No. [GAO-22-105659](#) (Jan. 2022); OMB [M-22-05](#), *Fiscal Year 2021-2022 Guidance on Federal Information Security and Privacy Management Requirements* (Dec. 6, 2021).

¹⁰⁰ OMB [M-22-05](#), *Fiscal Year 2021-2022 Guidance on Federal Information Security and Privacy Management Requirements* (Dec. 6, 2021).

¹⁰¹ Cybersecurity and Infrastructure Security Agency, [Critical Infrastructure Sectors](#) (last visited Oct. 26, 2022); GAO, *OMB Should Update Inspector General Reporting Guidance to Increase Rating Consistency and Precision*, No. [GAO-22-104364](#) (Mar. 2022).

¹⁰² Exec. Order No. [14028](#), *Improving the Nation's Cybersecurity* (May 12, 2021).

¹⁰³ *Supra* n.100.

¹⁰⁴ White House, Presidential Policy Directive: Critical Infrastructure Security and Resilience, [PPD-21](#) (Feb. 12, 2013); *supra* n.42.

¹⁰⁵ EPA, [Our Mission and What We Do](#) (last visited June 13, 2022).

¹⁰⁶ White House, Presidential Policy Directive: Critical Infrastructure Security and Resilience, [PPD-21](#) (Feb. 12, 2013).

¹⁰⁷ *Supra* n.42.

¹⁰⁸ *Id.*

¹⁰⁹ *Id.*

¹¹⁰ *Id.*

these IT systems are vulnerable to malicious actors.¹¹¹ The GAO also reports that attackers could exploit vulnerabilities to obtain sensitive information and to disrupt critical operations.¹¹² CISA states that oversight of the water and wastewater sectors' systems is also vital to prevent disease and protect the environment.¹¹³ CISA reports that these systems are increasingly vulnerable to cyberattacks that can have dangerous consequences.¹¹⁴ Hackers could gain access to critical infrastructure, allowing them to alter chemical levels used in water treatment and endanger public safety.¹¹⁵

Given the potential dangers, the White House issued a policy directive to strengthen the security and resilience of the nation's critical infrastructure against cyberthreats.¹¹⁶ The GAO included improving the management of IT operations and the cybersecurity of the nation on its High Risk List.¹¹⁷ The president's National Security Memorandum, *Improving Cybersecurity for Critical Infrastructure Control Systems*, also establishes a voluntary collaboration between the federal sector and critical infrastructure community.¹¹⁸ This collaboration would increase the use of technologies for cyber-related threat visibility, indicators, detections, and warnings.¹¹⁹ The GAO reports that recent events—such as the SolarWinds incident and the ransomware attack that shut down a major U.S. fuel pipeline—have illustrated the growing cyberthreats that face the nation's critical infrastructure and federal agencies' IT systems.¹²⁰ In March 2022, the EPA issued a cybersecurity alert level of high, reminding its employees to remain vigilant against cyberthreats. This alert was in response to the ongoing Russian invasion of Ukraine, which increased cyberthreats around the world. Cyberattacks can allow unauthorized access to IT systems, causing immeasurable damage to Agency operations. Such access could lead to removal of sensitive data or make Agency systems unworkable. The EPA faces an urgent and ongoing cybersecurity challenge to ensure effective information and operational security. The Agency must monitor and strengthen cybersecurity controls to protect Agency systems.¹²¹

Addressing Cybersecurity as an Agency Concern

According to the GAO, the federal government annually spends over \$100 billion on IT and cybersecurity investments.¹²² The EPA continues to invest substantially in IT, including its computers, network, software, and personnel.¹²³ With the continuously evolving threat landscape, the EPA has

¹¹¹ GAO, *OMB Should Update Inspector General Reporting Guidance to Increase Rating Consistency and Precision*, No. [GAO-22-104364](#) (Mar. 2022).

¹¹² *Id.*

¹¹³ Cybersecurity and Infrastructure Security Agency, [Water and Wastewater Systems Sector](#) (last visited Oct. 26, 2022); [Water and Wastewater Systems Sector-Specific Plan](#), 2015.

¹¹⁴ Bobby Magill, [Russian Cyber Threats Prompt Water Systems to Prepare for Hacks](#), BLOOMBERG LAW (Mar. 11, 2022); Cybersecurity and Infrastructure Security Agency, [Water and Wastewater Systems Sector](#) (last visited Oct. 26, 2022).

¹¹⁵ Bobby Magill, [Russian Cyber Threats Prompt Water Systems to Prepare for Hacks](#), BLOOMBERG LAW (Mar. 11, 2022).

¹¹⁶ *Supra* n.106; GAO, Biannual Scorecards Have Evolved and Served as Effective Oversight Tools, No. [GAO-22-105659](#) (Jan. 2022).

¹¹⁷ GAO, *Biannual Scorecards Have Evolved and Served as Effective Oversight Tools*, No. [GAO-22-105659](#) (Jan. 2022).

¹¹⁸ White House, National Security [Memorandum](#) on Improving Cybersecurity for Critical Infrastructure Control Systems (July 28, 2021).

¹¹⁹ *Id.*

¹²⁰ GAO, *Federal Agencies Need to Strengthen Efforts to Address High-Risk Areas*, [GAO-21-105325](#) (July 28, 2021).

¹²¹ *Supra* n.73.

¹²² *Supra* n.117.

¹²³ *Supra* n.42.

reported that it experienced an increase in cyberthreats over the past year.¹²⁴ We have reported that the relevant attack vectors are continuously becoming more sophisticated.¹²⁵ In 2021, the OIG initiated several investigations upon identifying cybercrime incidents.¹²⁶ These involved threat actors gaining access to EPA-furnished computers connected to the network.¹²⁷ Our work highlights the continuing challenge for the EPA to protect its IT systems and data and to implement an effective cybersecurity program. For example, we reported a security vulnerability in OIG report, *The EPA Lacks Documented Procedures for Detecting and Removing Unapproved Software on the Agency's Network*.¹²⁸ Specifically, we reported deficiencies in documented software management procedures to detect and remove software outside of the standard package.¹²⁹ Left uncorrected, cybercriminals could gain unauthorized access to exploit Agency systems and data.¹³⁰

Further, we found several cybersecurity issues in our report, *EPA Generally Adheres to Information Technology Audit Follow-Up Processes, but Management Oversight Should be Improved*.¹³¹ Specifically, we reported deficiencies in completing cybersecurity-related corrective actions before recommendation closure.¹³² We also noted deficiencies in verifying compliance with annual training requirements for IT contractors with significant information security responsibilities.¹³³ Further, we found the Agency needed to install security updates to expeditiously mitigate vulnerabilities.¹³⁴ The Agency's goal is undermined when deficiencies are not corrected in a timely manner, which weakens the security and integrity of its systems and data.¹³⁵

Additionally, the Federal Information Security Modernization Act of 2002, or FISMA,¹³⁶ as amended, requires federal agencies to develop, document, and implement information security programs meant to protect federal information and systems.¹³⁷ The GAO states that programs should address the increased sophistication of cybersecurity attacks and promote continuous monitoring.¹³⁸ They also should provide for improved oversight of agencies' information security programs.¹³⁹ In March 2022, our FISMA reporting found that the EPA has consistently implemented information security policies, procedures, and strategies compliant with FISMA's Cybersecurity Framework Maturity Model.¹⁴⁰

¹²⁴ EPA OIG, Management Implication [Report](#): Allowing Remote Access to Threat Actors (Dec. 9, 2021); EPA OIG, Management Implication [Report](#): Failure to Follow Agency Procedure to Report Cyber Incident (Sept. 7, 2021).

¹²⁵ EPA OIG, Management Implication [Report](#): Failure to Follow Agency Procedure to Report Cyber Incident (Sept. 7, 2021).

¹²⁶ *Id.*

¹²⁷ EPA OIG, Management Implication [Report](#): Allowing Remote Access to Threat Actors (Dec. 9, 2021).

¹²⁸ EPA OIG, *The EPA Lacks Documented Procedures for Detecting and Removing Unapproved Software*, Report No. [22-E-0028](#) (Mar. 30, 2022).

¹²⁹ *Id.*

¹³⁰ *Id.*

¹³¹ EPA OIG, *EPA Generally Adheres to Information Technology Audit Follow-Up Processes, but Management Oversight Should be Improved*, Report No. [22-P-0010](#) (Dec. 8, 2021).

¹³² *Id.*

¹³³ *Id.*

¹³⁴ *Id.*

¹³⁵ *Id.*

¹³⁶ Formerly, the Federal Information Security Management Act of 2002.

¹³⁷ *Supra* n.111.

¹³⁸ *Id.*

¹³⁹ *Id.*

¹⁴⁰ *Supra* n.128.

However, the Agency still needs to improve its cybersecurity posture in order to effectively identify and manage cybersecurity risks across the enterprise.¹⁴¹ For example, the EPA achieved an overall Level 3 on FISMA's Cybersecurity Framework maturity model,¹⁴² which means the EPA's information security program lacked quantitative and qualitative measures you would expect at Level 4.¹⁴³ A Level 5 distinction represents an optimized maturity level,¹⁴⁴ which means that an agency has implemented and institutionalized policies, procedures, and strategies to address cybersecurity risks.¹⁴⁵ See Figure 5.1 for details of the different levels on the maturity.

Figure 5.1: Maturity model spectrum



Source: FY 2021 Inspector general FISMA reporting metrics. (EPA OIG image)

Further, at Level 5, the Agency would have established repeatable processes and adapted to a changing threat and technology landscape.¹⁴⁶ At the EPA's current level of maturity, Level 3, cybercriminals may target weaknesses in Agency applications and hinder the EPA's ability to detect and respond to emerging cyberthreats.¹⁴⁷ Therefore, the EPA must improve its current information security program to increase its maturity level. The OIG's oversight work continues to address IT challenges and cybersecurity risks as Agency concerns. The OIG has ongoing audit work in this challenging area, including an audit of the Integrated Risk Information System security access controls, the EPA's Central Data Exchange Access, the identification and authentication of security controls, the EPA's internal controls to account for and secure laptops, and the EPA's FISMA compliance for FY 2022.

¹⁴¹ *Id.*

¹⁴² *Id.*

¹⁴³ *Id.*

¹⁴⁴ *Id.*

¹⁴⁵ *Id.*

¹⁴⁶ *Id.*

¹⁴⁷ *Id.*

The EPA reports that it has begun implementing additional security controls and other initiatives to mitigate the risks to its information systems and critical infrastructure. These include:

- **Actions to strengthen cybersecurity controls**, such as implementing additional technical controls within the Office of Mission Support. These actions include instituting enhanced security monitoring of the EPA's IT environment and blocking viruses,¹⁴⁸ malware, and suspicious network traffic.¹⁴⁹
- **Initiatives to address enterprise risks**, such as the ongoing implementation of multifactor authentication enterprise-wide. Through this initiative, the EPA aims to modernize its cybersecurity defenses to protect Agency networks and IT assets. Other programs include zero trust architectures,¹⁵⁰ including comprehensive security monitoring, risk-based access controls, and system security automation;¹⁵¹ developing a process to store certifications for annual role-based training;¹⁵² and implementing a checklist process for audit follow-up officials. The last initiative aims to verify corrective actions are completed prior to the action official certifying completion.
- **Renewed focus on workforce planning**, such as increasing workforce resources under its cross-agency strategies. This initiative aims to enhance mission support functions toward organizational excellence,¹⁵³ and to transition the physical workplace with a hybrid workforce.¹⁵⁴ In its *FY 2022–2026 EPA Strategic Plan*, the EPA also noted challenges in meeting the resource demands of a continuously changing IT environment. Since more than 25 percent of the EPA's workforce will be eligible for retirement within the next three years, this planning will impact the operations of each region or program. Effective workforce planning is critical to the EPA's success and includes transferring knowledge, planning succession, and bridging technology gaps in operating a hybrid workplace.¹⁵⁵ In 2021, the GAO reported that effective workforce planning is key to addressing the federal government's IT challenges.¹⁵⁶

Providing Oversight of Water and Wastewater Sector Cybersecurity

The CISA reports that the Water and Wastewater Sector-Specific Plan provides that oversight of the water and wastewater sector is of national interest since water systems in this sector are essential for the security and safety of the American public.¹⁵⁷ Through direct collaboration, the Water Sector Coordinating Council and the Water Sector Government Coordinating Council developed the plan for Water Sector partners to implement to secure and strengthen the resilience of the Sector's infrastructure. The Plan further provides that EPA has oversight responsibilities including increasing

¹⁴⁸ *Supra* n.7.

¹⁴⁹ *Id.*

¹⁵⁰ The National Institute of Standards and Technology defines zero trust architectures as those that move defenses from static, network-based perimeters to focus on users, assets, and resources.

¹⁵¹ *Supra* n.7.

¹⁵² *Supra* n.131.

¹⁵³ *Supra* n.7.

¹⁵⁴ *Id.*

¹⁵⁵ *Id.*

¹⁵⁶ *Supra* n.120.

¹⁵⁷ [Water and Wastewater Systems Sector-Specific Plan](#), 2015.

resilience in this sector, protecting drinking water and wastewater infrastructure,¹⁵⁸ and improving its cybersecurity posture.¹⁵⁹ The Plan states that, currently, the EPA oversees approximately 153,000 public drinking water systems and 15,000 publicly owned wastewater treatment systems.¹⁶⁰ The EPA states that there is increased nationwide concern regarding cybersecurity in the sector and the exploitation of vulnerabilities affecting the nation's environmental infrastructure.¹⁶¹ According to the Plan, since these water systems support human life, fire protection, healthcare, and other critical services, the impact of attackers exploiting this sector's vulnerabilities could be catastrophic to the nation.¹⁶² The OIG has become increasingly aware of cybercrimes affecting water utilities across the nation.¹⁶³ These incidents have a wide scope and come in many forms. These incidents have included threat actors remotely affecting chemical concentration and system supply restrictions.¹⁶⁴

To protect critical water system infrastructure, the EPA faces an ongoing challenge of increasing its oversight over the effectiveness of cybersecurity controls at water facilities and ensuring proper notification procedures are followed when cybercrimes occur.¹⁶⁵ In its [FY 2022–2026 EPA Strategic Plan](#), the EPA noted several of its water and wastewater systems were unable to maintain compliance. This was because of a lack of technical, managerial, and financial capacity; an aging infrastructure; and workforce shortages. The Strategic Plan also states that the Agency requires a well-trained and resourced workforce to safeguard the integrity of the nation's water infrastructure.¹⁶⁶

The Agency's [FY 2022–2026 EPA Strategic Plan](#) highlighted that the water sector has limited adoption of cybersecurity practices, which escalates the urgency of federal and state engagement to improve the operational security of public water and wastewater systems. In February 2022, the GAO reported that the EPA has taken steps to determine cybersecurity framework adoption for the water and wastewater sector by conducting voluntary technical assessments of eligible utilities.¹⁶⁷ The National Institute of Standards and Technology facilitated, as required by federal law, the development of a voluntary framework of cybersecurity standards and best practices and procedures for sectors to use. This framework is designed to help organizations manage cybersecurity risks and is titled *Framework for Improving Critical Infrastructure Cybersecurity*.¹⁶⁸ EPA officials stated that they expect the data on framework adoption and usage to continue to evolve as the EPA assesses more utilities. In addition, they stated that a lack of cybersecurity knowledge among utilities continues to be a barrier to the sector's adoption of the framework.¹⁶⁹

Additionally, since the OIG is the cybercrime investigative arm of the Agency, it is crucial for the EPA to ensure compliance with internal policies and to notify the OIG immediately of a potential data breach,

¹⁵⁸ *Id.*

¹⁵⁹ *Id.*

¹⁶⁰ *Id.; supra* n.7.

¹⁶¹ *Supra* n.7.

¹⁶² *Supra* n.157.

¹⁶³ *Supra* n.127.

¹⁶⁴ *Supra* n.157.

¹⁶⁵ *Supra* n.7.

¹⁶⁶ *Id.*

¹⁶⁷ GAO, *Agencies Need to Assess Adoption of Cybersecurity Guidance*, No. [GAO-22-105103](#) (Feb. 2022).

¹⁶⁸ *Id.*

¹⁶⁹ *Supra* n.167.

cyber intrusion, or other cybercrime incident. As a participating member of Federal Bureau of Investigations cyber task force, the OIG is specially trained and possesses a unique set of tools and skills to provide immediate assistance, as well as to collect and analyze digital evidence before it is lost or unreparable damage occurs. These skills help ensure the integrity of the EPA and the nation's critical infrastructure.¹⁷⁰

The EPA noted several cybercrime incidents over the last two years. For example, in February 2021, in conjunction with the Federal Bureau of Investigations and U.S. Secret Service, the OIG investigated a potential cybercrime incident involving control of a water management system and an increase in the water's chemical levels by more than 100 times the required amount, creating hazards relating to human consumption and supply line corrosion.¹⁷¹ To address these types of incidents, numerous federal authorities and directives have aimed to create cybersecurity initiatives and reporting requirements.¹⁷² However, CISA states that water utility companies are not required to adopt these voluntary cybersecurity practices.¹⁷³

In September 2021, the OIG reported that the EPA did not follow the Agency's cybercrime procedures. Specifically, the Agency did not immediately report cybercrime incidents to the OIG.¹⁷⁴ The EPA's incident response procedures, CIO-2150-P-08.2, *EPA Information Procedure, Information Security – Incident Response Procedures*, states that the OIG shall serve as the primary point of contact for coordination with law enforcement agencies regarding incident reporting whenever there is a possibility of information system-related criminal activity. The Agency should coordinate any contact with law enforcement agencies through the OIG.¹⁷⁵ To address the fact that the EPA did not immediately report cybercrime incidents to the OIG, the OIG has taken the initiative to attend EPA conferences and training events around the nation to educate Agency employees.

The OIG continues to focus its oversight on this important challenge and is currently performing audit work regarding cybersecurity risks to community water systems under the America's Water Infrastructure Act of 2018. Specifically, the OIG is assessing the adequacy of the cybersecurity baseline information that the EPA developed to meet the requirements of section 2013 of the Act, as well as determining how community water systems use this information. Also, the OIG is assessing the adequacy of the EPA's oversight to ensure that community water systems comply with section 2013 of the Act.

The EPA reports in its Strategic Plan that it has initiated actions to address the risks with securing the water and wastewater sector infrastructure. These include:

- **Improvements in oversight processes**, such as establishing a Critical Infrastructure Protection Program that provides water utilities with access to information and training to enhance their

¹⁷⁰ *Supra* n.125.

¹⁷¹ Chris Riotta, [The EPA is Seeking Funding to Improve the Cybersecurity of America's Water Systems](#), GOVERNMENT EXECUTIVE (May 23, 2022); Andy Greenberg, [A Hacker Tried to Poison a Florida City's Water Supply](#), WIRED (Feb. 8, 2021).

¹⁷² *Supra* n.157.

¹⁷³ *Supra* n.7.

¹⁷⁴ *Supra* n.125.

¹⁷⁵ *Id.*

cybersecurity awareness,¹⁷⁶ offering technical assistance to promote the voluntary adoption of cybersecurity best practices,¹⁷⁷ and establishing a Water Workforce Initiative to collaborate with partners across the water sector to ensure the workforce is diverse and retains talented individuals.¹⁷⁸

- **Investments in the nation's water systems**, such as the EPA requesting \$25 million in its FY 2023 budget for a new Water Sector Cybersecurity Grant Program. This program will establish the necessary cybersecurity infrastructure in the water sector and support the IIJA's implementation priorities, including preparing for and responding to cybersecurity challenges to make water systems more resilient.¹⁷⁹

Conclusion

Going forward, the EPA must continue to address cybersecurity risks for its information systems and the critical infrastructure sector. The Agency must strengthen its information security programs and technical controls to identify and manage cybersecurity risks across the enterprise. Specifically, the EPA should leverage risk-based continuous improvement and monitoring approaches to detect and defend against an evolving cybersecurity threat landscape. The EPA should also comply with current federal guidelines in implementing its information security programs. It must promptly address open recommendations to cultivate a robust and mature cybersecurity posture. The EPA could better address outstanding security initiatives if the Agency fulfills its workforce planning goals.

It is critical for the EPA to provide greater oversight, in coordination with its water sector partners, and to continue to promote and monitor the adoption of cybersecurity controls across critical infrastructure. The EPA must also ensure it follows incident notification procedures to provide the OIG and law enforcement with timely information to investigate cybercrime incidents before evidence is lost. Thus, law enforcement can promptly identify and mitigate threats to the nation's water systems.

¹⁷⁶ *Supra* n.7.

¹⁷⁷ *Id.*

¹⁷⁸ *Id.*

¹⁷⁹ *Supra* n.171; A Review of the Fiscal Year 2023 President's Budget for the Environmental Protection Agency, *Before the Senate Committee on Appropriations*, 117th Cong. (2022) ([statement](#) of Michael Regan, EPA Administrator); *supra* n.9.

CHALLENGE 6: Managing Business Operations and Resources



Introduction and Overview

The EPA must have effective business operations to carry out its mission to protect human health and the environment, this depends on the Agency implementing effective internal controls to safeguard taxpayer dollars. Business operations include workforce planning; the award and maintenance of grants, assistance agreements, and contracts; financial management; and oversight of delegated program authorities. Much of the nation's environmental protection depends on effective business operations. Communities might lose key environmental benefits without scrupulous Agency management of funds and assurance that delegated program authorities adhere to EPA guidelines. Congress annually provides billions of dollars to the Agency for its mission to protect human health and the environment. In annual appropriations for FY 2022, Congress also provided the EPA over \$850 million to fund nearly 500 earmarked projects.

Addressing Workforce Planning and Management

The EPA requires a robust workforce for crucial activities like grant and contract administration, program operations, public outreach, and technical assistance. "My workload is reasonable" had the highest negative response of any *2021 EPA Employee Viewpoint Survey* question.¹⁸⁰ Over one-quarter of EPA employees responded to this statement negatively, noting that employee workloads increased with additional funding from FY 2022 annual appropriations and from IIJA. The Agency has not faced a similar workload challenge in many years. To determine the required human capital for organizational goals, the EPA must identify and address the gaps between the workforce of today and the human capital needs of tomorrow.

The process of hiring, onboarding, and training new employees to develop a capable workforce is resource intensive. In addition, the EPA competes with other employers to attract and retain talent. At the same time, preserving the Agency's institutional knowledge is critical. More than 24 percent of EPA employees were eligible to retire in 2018, and some mission-critical occupations were projected to have retirement eligibility rates as high as 44 percent by 2021. Several Agency initiatives aim to address workforce and resource management. The EPA embarked on a hiring effort in early 2022, with plans to hire more than 1,000 new employees. Individual program offices have initiatives to address workforce gaps and training. Some EPA offices employ artificial intelligence solutions to help alleviate staff workloads. Still, the Agency recognizes its challenge with resources and human-capital management. In its Human Capital Operating Plan for FY 2019 and the [*FY 2022–2026 EPA Strategic Plan*](#), the EPA addresses how to meet its workforce needs. For example, since the start of the coronavirus pandemic, the Agency has implemented workplace flexibilities and benefits to maintain and grow its workforce. Despite these efforts, the EPA's workforce may not be sufficient in the short-term to enable effective business operations. For example, for earmarked projects, the EPA must issue the funds directly to the

¹⁸⁰ EPA, [*2021 Employee Viewpoint Survey Results*](#) (last visited Oct. 26, 2022).

localities rather than processing them through states and tribes. The EPA may not have enough staff to ensure that funds are properly and effectively distributed and spent.

Recent OIG reports identify gaps in employee training, as well as workforce analyses and staffing plans that would allow the Agency to understand its workforce needs. For example, a September 2021 OIG report found that the coronavirus pandemic limited the ability of Regions 9 and 10 to provide technical and compliance assistance to drinking water systems, to conduct sanitary surveys and inspections, and to address known program deficiencies in tribal drinking water systems.¹⁸¹ Both regions have experienced a loss of institutional knowledge from staff retirements, and the pandemic prevented some EPA employees from attending necessary fieldwork training for their credentials.

Overseeing Programs Delegated to States, Tribes, and Territories

The EPA's [FY 2018-2022 U.S. EPA Strategic Plan](#) states that, to carry out its mission, EPA delegates some of its environmental programs to state and tribal partners. Specifically, states, tribes, and territories must implement 96 percent of the delegable environmental authorities under federal law. When the EPA delegates authority for federal environmental programs to its partners, the Agency retains oversight responsibility. It must monitor these programs to enforce federal standards and ensure appropriate use of funds.

Figure 6.1: Delegation of program implementation



Source: OIG summary of the EPA's business operations. (EPA OIG image)

The Agency relies on management controls to disburse funds and to ensure that programs comply with laws and regulations to accomplish their goals. Management controls are policies and procedures designed to ensure that programs achieve their intended results and that the use of resources protects against fraud, waste, and abuse. A skilled and appropriately allocated workforce must implement these controls for them to be effective.

¹⁸¹ EPA OIG, *Pandemic Highlights Need for Additional Tribal Drinking Water Assistance and Oversight in EPA Regions 9 and 10*, Report No. [21-E-0254](#) (Sept. 27, 2021).

The EPA works to improve its business operations through internal assessments. For example, the EPA annually performs risk assessments and provides assurance letters on the design and effectiveness of its management controls. Also, program offices have found the EPA Lean Management System initiative useful to assess controls and identify areas for improvement. The [FY 2022–2026 EPA Strategic Plan](#) includes a cross-agency strategy to strengthen delegated partner relationships and engagement. The EPA plans to have early and meaningful dialogue with partners, streamline and simplify processes, and share technology to improve environmental results.

Recent OIG work has identified inadequately designed or implemented management controls. These impact the Agency's ability to efficiently advance its human-health and environmental goals. The EPA should use the OIG's work to improve management controls, including risk assessments and oversight of financial transactions, contractors, and grantees. For example, the OIG found in two reports that EPA contracting officers did not perform thorough invoice reviews.¹⁸² In December 2021, the OIG found that the EPA had not performed agencywide entity-level risk assessments over its annual and supplemental appropriations.¹⁸³ Thus, the EPA failed to systematically identify high-priority risks across individual Agency programs and could not verify that the Agency strategically targeted the resources from annual and supplemental appropriations. As a result, the EPA cannot ensure that it can identify and mitigate crosscutting risks and direct Agency resources to the most critical strategic issues.

The OIG's work on delegated programs includes reviews of the effectiveness of the EPA's institutional controls at Superfund sites and contractor invoicing payment process.¹⁸⁴ The OIG has also reviewed prior OIG and GAO oversight reports to glean lessons about how the EPA can ensure effective grants administration and oversight.¹⁸⁵

Conclusion

The EPA must have effective business operations to implement its programs and achieve its goals. The Agency must simultaneously strengthen its own workforce, improve business operations, and oversee its delegated programs. The Agency must effectively implement these actions to minimize the risk of waste, fraud, and abuse. It must also maximize the environmental benefits and improved human health outcomes from its programs.

¹⁸² EPA OIG, *EPA Needs to Improve Oversight of Invoice Reviews and Contractor Performance Evaluation*, Report No. [21-E-0031](#) (Dec. 31, 2020); EPA OIG, *EPA's Lack of Oversight Resulted in Serious Issues Related to an Office of Water Contract, Including Potential Misallocation of Funds*, Report No. [20-P-0331](#) (Sept. 25, 2020).

¹⁸³ EPA OIG, *EPA Has Not Performed Agencywide Risk Assessments, Increasing the Risk of Fraud, Waste, Abuse, and Mismanagement*, Report No. [22-E-0011](#) (Dec. 15, 2021).

¹⁸⁴ EPA OIG, *The EPA Did Not Follow Agency Policies in Managing the Northbridge Contract and Potentially Violated Appropriations Law*, Report No. [22-E-0027](#) (Mar. 31, 2022); EPA OIG Notification Memorandum, *35th Avenue Superfund Site Case Study on Cumulative Impacts*, Project No. [OA-FY21-0279](#) (Sept. 16, 2021); EPA OIG, *EPA Oversight Provided Reasonable Controls to Deter and Minimize Trespassing at the Fort Ord Superfund Site*, Report No. [20-E-0169](#) (May 14, 2020).

¹⁸⁵ EPA OIG, *The EPA Failed to Complete Corrective Actions as Certified to Address OIG Recommendations*, Report No. [22-N-0061](#) (Sept. 30, 2022); EPA OIG, *Considerations from Single Audit Reports for the EPA's Administration of Infrastructure Investment and Jobs Act Funds*, Report No. [22-N-0057](#) (Sept. 14, 2022); EPA OIG, *Considerations for the EPA's Implementation of Grants Awarded Pursuant to the Infrastructure Investment and Jobs Act*, Report No. [22-N-0055](#) (Aug. 11, 2022); EPA OIG, *Lessons Identified from Prior Oversight of the EPA's Geographic and National Estuary Programs*, Report No. [22-E-0054](#) (Aug. 8, 2022).

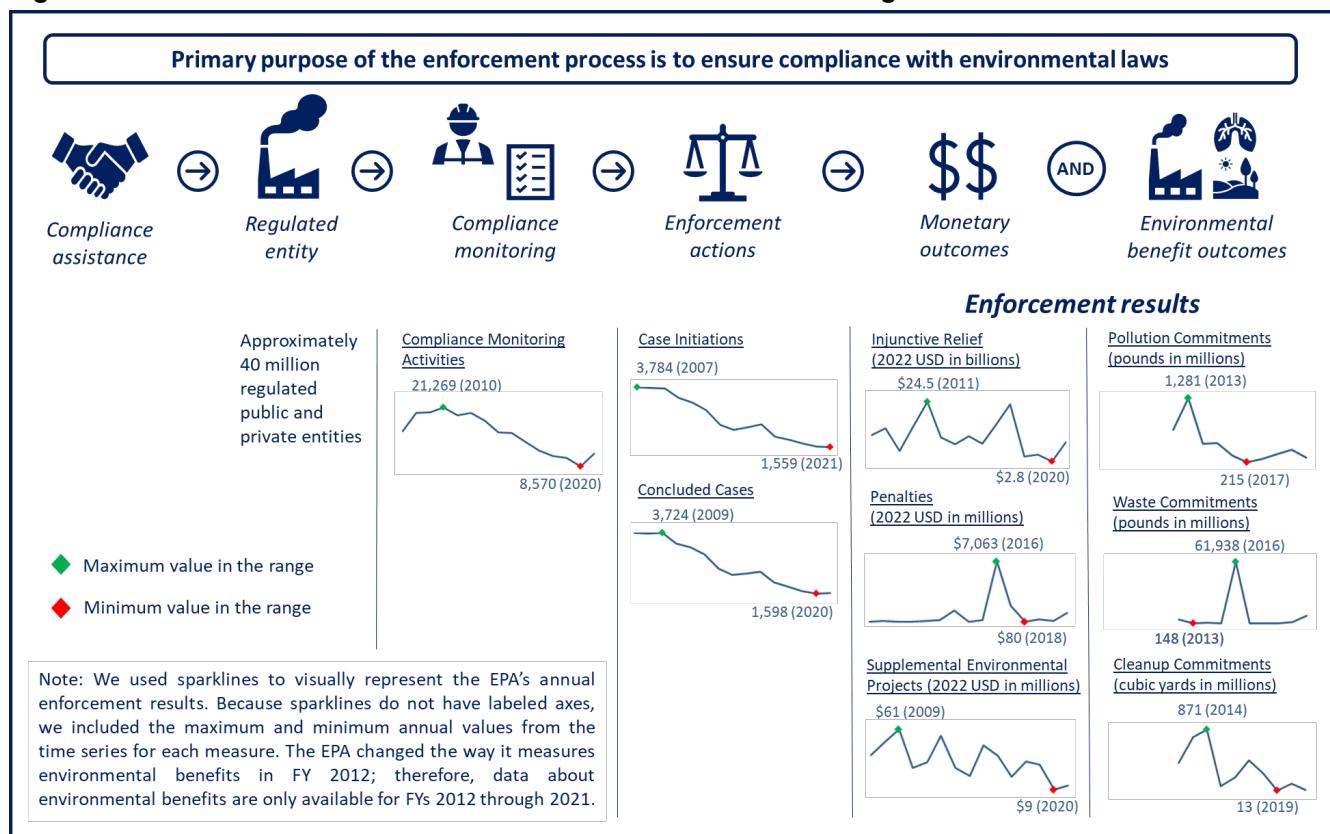
CHALLENGE 7: Enforcing Compliance with Environmental Laws and Regulations



Introduction and Overview

Enforcing environmental laws and regulations is an essential part of the EPA's operations. The [FY 2022–2026 EPA Strategic Plan](#) states, "A robust enforcement program is necessary to ensure communities get the environmental and human health benefits intended by environmental statutes that protect human health and the environment." However, the number of EPA enforcement activities, such as inspections and enforcement actions, has generally declined since 2011 largely because of funding reductions for the enforcement program. Figure 7.1 shows the decline of activity throughout the enforcement process.¹⁸⁶ Declining enforcement activities may expose the public and the environment to undetected harmful pollutants, particularly in low-income, minority, tribal, and indigenous communities. Considering its limited resources, the EPA is challenged to identify innovative and cost-effective means of detecting and deterring noncompliance.

Figure 7.1: EPA national enforcement measures from FYs 2007 through 2021



Source: EPA OIG Report No. [21-P-0132](#), updated to include FYs 2019 through 2021. (EPA OIG image)

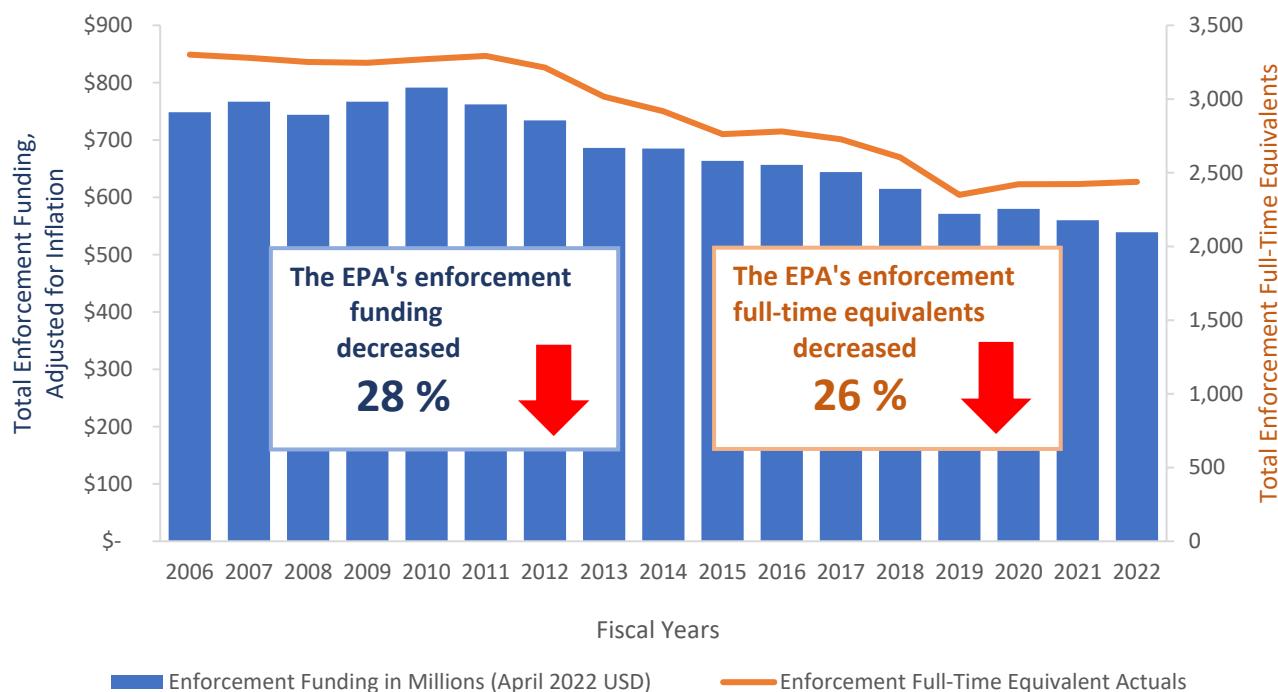
¹⁸⁶ EPA OIG, *Resource Constraints, Leadership Decisions, and Workforce Culture Led to a Decline in Federal Enforcement*, Report No. [21-P-0132](#) (May 13, 2021); EPA OIG, *EPA's Compliance Monitoring Activities, Enforcement Actions, and Enforcement Results Generally Declined from Fiscal Years 2006 Through 2018*, Report No. [20-P-0131](#) (Mar. 31, 2020).

The EPA Office of Enforcement and Compliance Assurance is responsible for the Agency's enforcement program. A robust enforcement program is vital to deter regulated entities from violating environmental laws and regulations, as well as to protect human health and the environment. The EPA implements enforcement programs for 12 federal environmental statutes and has authorized most states, some territories, and some tribes to implement many environmental programs and directly enforce many environmental laws. For simplicity purposes in this chapter, we hereafter use the term "state" to refer collectively to states, territories, and tribes. If a state does not have delegated authority from the EPA, the Agency directly implements the enforcement program in that state, territory, or tribe.

Investing in Enforcement Activities

In May 2021, we reported that the decline in the EPA's enforcement resources from FYs 2006 through 2018 drove a decline in key national enforcement results, such as the numbers of compliance-monitoring activities and concluded enforcement cases. We also reported that, within the Office of Enforcement and Compliance Assurance, the National Enforcement Investigations Center has been challenged by high staff attrition rates, losing 32 percent of its full-time equivalents from 2014 through 2020. Since that time, the decline in the Agency's inflation-adjusted enforcement funding has generally continued: from FYs 2006 through 2022, the EPA enforcement funding decreased by 28 percent, as shown in Figure 7.2. Although the total number of enforcement personnel did not decline in FY 2022, there are 26 percent fewer enforcement full-time equivalents in FY 2022 as compared to FY 2006.

Figure 7.2: Total EPA enforcement resources, FYs 2006–2022



Source: EPA OIG Report No. [21-P-0132](#), updated to include FYs 2019 through 2022. (EPA OIG image)

While the Agency's enforcement resources diminished, a growing domestic economy increased the size and level of activity of key sectors that the EPA regulates. According to EPA enforcement staff and

managers, enforcement capacity declined to the point that the EPA cannot adequately cover its major inspection obligations.

As compared to FY 2022,¹⁸⁷ the EPA requested an additional \$42 million for compliance monitoring in FY 2023, which would be a 41 percent increase. However, most of the EPA's requested increase is to modernize its enforcement-and-compliance-assurance data tracking system. The EPA did not increase its annual goal for compliance monitoring. Instead, the EPA's FY 2023 goal is to conduct 10,000 federal on-site compliance monitoring inspections and evaluations and off-site compliance monitoring activities, which is 53 percent less than the 21,269 compliance monitoring activities it completed in FY 2010. The number of compliance-monitoring activities is important because it is a leading indicator of the EPA's enforcement efforts; a change in compliance-monitoring activities subsequently leads to a corresponding change in case initiations and conclusions. Further, the overall decline in compliance-monitoring activities over time means that the Agency and the public know less about whether regulated entities are complying with environmental laws and regulations and whether facilities are emitting harmful or potentially harmful pollutants.

For FY 2023, the EPA also requested an additional \$55 million for enforcement. Of the additional \$55 million, \$42 million would be for civil enforcement, \$10 million for criminal enforcement, and \$3 million for implementation of the National Environmental Policy Act. Most of the EPA's requested increase for civil enforcement is to support the Agency's increased focus on environmental justice and climate change.

Accomplishing Strong Enforcement Starts with Effective Permitting

Permitting is a challenge for the EPA to oversee or manage because of the variability in the quality of permits issued by delegated permitting programs. These delegated permitting programs also have varying resources available to them. Permits establish the criteria against which the EPA or the delegated authority determines the performance and compliance of a regulated entity. Therefore, permits are key instruments in reducing human impacts on the environment, protecting human health, and facilitating compliance with environmental requirements by regulated entities. For example, the Clean Water Act and Clean Air Act both require entities to obtain permits that regulate the pollution they discharge or emit. The Clean Water Act prohibits any entity from discharging pollutants through a point source into a water of the United States unless it has a National Pollutant Discharge Elimination System permit.¹⁸⁸ This permit will outline limits on what the entity can discharge, requirements for monitoring and reporting, and other provisions to ensure that the discharge does not impair water quality or people's health. Similarly, the Clean Air Act requires all major sources of air pollution to obtain what are referred to as *Title V permits*. A Title V permit is a legally enforceable document designed to improve compliance by clarifying what facilities must do to control air pollution. In other words, these permits help to ensure that stationary sources of air pollution—such as factories, refineries, boilers, and power plants—comply with applicable statutory and regulatory requirements.

¹⁸⁷ *Supra* n.9, uses continuing resolution values as an FY 2022 baseline.

¹⁸⁸ EPA, [Clean Water Act Section 502: General Definitions](#) (last visited Oct. 26, 2022).

The EPA delegates authority to its governmental partners to implement the permitting process. However, delegating this authority has led to inconsistency in the quality of permits from state to state. Additionally, permits are typically issued to regulated entities in isolation, making it difficult for related EPA enforcement actions to address the cumulative impacts on a community from other local regulated entities.

In a January 2022 report, we found that declining resources have impacted Clean Air Act Title V delegated permitting programs.¹⁸⁹ Title V programs establish fee schedules that result in the collection and retention of revenues sufficient to cover program costs, including fees based on the emissions, applications, and services of the regulated entities. When this January 2022 report was issued, the EPA faced a national trend of declining Title V revenues, and nine of the ten EPA regions identified declining revenues at delegated permitting authorities as a key challenge impacting Title V permitting programs. Title V funds are used for a variety of activities to help ensure that major and certain minor sources of air pollutants comply with the Clean Air Act, including the permitting of new Title V facilities, the modification of existing Title V permits, and the compliance and enforcement of terms and conditions in Title V permits. Title V funds also support the staff salaries for a permitting authority, which directly relate to the permitting authority's ability to issue permits in a timely manner. As such, insufficient and declining fees may lead to permit backlogs and staff-retention challenges. The national trend toward decreasing Title V revenues undermines the sustainability of Title V permitting programs and their ability to protect human health and the environment. Frequent annual deficits can diminish the account balances of Title V permitting programs and may cause the programs to become unsustainable.

To help improve its oversight capabilities, the Agency set a long-term performance goal of automating its major permitting programs by September 30, 2026. According to the EPA, automation of the permit-application process will reduce the time to process and issue permits; decrease the time to engage in enforcement actions; and foster transparency by allowing communities to search, track and access permitting actions easily. Additionally, the EPA committed in its [FY 2022–2026 EPA Strategic Plan](#) to ensuring that permit decisions, including decisions to issue, renew, or deny permits, reflect the latest technology and standards and remain protective under changing conditions, such as climate change. The EPA also committed to ensuring that all communities, including those who are marginalized and overburdened, have an equitable opportunity to engage in the permitting process.

Cumulative Impacts Oversight Work

In September 2021, we notified the EPA of a new OIG audit to determine what actions the Agency has taken to identify and address any disproportionate health effects to disadvantaged communities located on or near the 35th Avenue Superfund site in Birmingham, Alabama. See further discussion in the environmental justice management challenge.

—EPA OIG Project No. OA-FY21-0279, *Notification of Audit: 35th Avenue Superfund Site Case Study on Cumulative Impacts*, issued September 16, 2021

¹⁸⁹ EPA OIG, *EPA's Title V Program Needs to Address Ongoing Fee Issues and Improve Oversight*, Report No. [22-E-0017](#) (Jan. 12, 2022).

Improving Collaboration with and Oversight of States to Ensure Compliance with Environmental Laws and Regulations

The delegation of authorities under federal environmental laws makes the EPA and states coregulators. This regulatory design requires state programs to be at least as stringent as federal requirements. It also requires the EPA to serve in an oversight role and to fill gaps in state programs, as appropriate. During our evaluation of EPA enforcement trends, many current and former EPA enforcement personnel expressed skepticism that states have the technical and operational capacity, along with the political will, to enforce environmental laws consistently and equitably across the country.¹⁹⁰ Furthermore, EPA enforcement staff commonly described a poorly functioning relationship between the EPA and states in terms of the Agency's oversight of, support of, or collaboration with states. For example, EPA enforcement staff reported that, despite the noted capacity limitations at the state level, states do not consistently contact the appropriate regional EPA office when they need technical expertise to conduct complex inspections.

In November 2021, we found that the coronavirus pandemic marginally impacted the total number of nationwide compliance-monitoring activities at facilities that emit air pollution.¹⁹¹ However, activities varied widely among states and territories, with reported changes in activities at high-emitting sources in FY 2020 ranging from an 88-percent decline to a 234-percent increase. Substantially lower levels of compliance monitoring limit the deterrent effect that consistent monitoring can have on facilities' noncompliance and increase the risk that noncompliance could go undetected at facilities. Further, state and local agencies shifted some types of compliance-monitoring activities from on-site to off-site. This shift is in accordance with guidance that the EPA issued in July 2020, which provided some flexibility to state and local agencies to count off-site compliance-monitoring activities toward the Clean Air Act Stationary Source Compliance Monitoring Strategy commitments for full compliance evaluations. At the time of the report issuance, the EPA had not yet assessed the impact of this flexibility on the use of off-site full compliance evaluations to ensure that the evaluations are consistent with the Clean Air Act Stationary Source Compliance Monitoring Strategy. In addition, while the EPA convened a workgroup to explore using remote video to conduct off-site partial compliance evaluations, the Agency had not yet determined the conditions under which remote video is technically, legally, and programmatically feasible and had not finalized its draft standard operating procedures. While the EPA did not issue pandemic-specific guidance on how state and local agencies should prioritize facilities for compliance monitoring, the three state and local agencies we reviewed told us that they prioritized activities at the largest emitters of air pollution to meet their commitments under the Clean Air Act Stationary Source Compliance Monitoring Strategy.

In December 2021, we found that authorized state Resource Conservation and Recovery Act programs continued operations, such as inspections and public meetings, during the pandemic.¹⁹² However, when compared to the prior year, the number of inspections from March 2020 through February 2021

¹⁹⁰ EPA OIG, *Resource Constraints, Leadership Decisions, and Workforce Culture Led to a Decline in Federal Enforcement*, Report No. [21-P-0132](#) (May 13, 2021).

¹⁹¹ EPA OIG, *Total National Reported Clean Air Act Compliance-Monitoring Activities Decreased Slightly During Coronavirus Pandemic, but State Activities Varied Widely*, Report No. [22-E-0008](#) (Nov. 17, 2021).

¹⁹² EPA OIG, *Authorized State Hazardous Waste Program Inspections and Operations Were Impacted During Coronavirus Pandemic*, Report No. [22-E-0009](#) (Dec. 1, 2021).

decreased by 34 percent for Resource Conservation and Recovery Act treatment, storage, and disposal facilities and by 47 percent for large-quantity generators. Decreases in inspections during the pandemic may have been due to remote work difficulties and travel restrictions. For example, eight states were initially not ready to implement telework, and two states initially had difficulties in meeting their grant commitments, such as inspections. These states did overcome these challenges. Further, seven of the eight states implemented changes, consistent with flexibilities in EPA guidance, to hold virtual meetings with the regulated community and the public.

In June 2022, we found that the EPA's eDisclosure system does not have adequate internal controls to facilitate an effective screening process for voluntary disclosures of violations of federal environmental laws and regulations. As a result, the EPA cannot ensure that significant concerns, such as criminal conduct and potential imminent hazards, are identified and addressed by the Office of Enforcement and Compliance Assurance and the EPA regional enforcement divisions.¹⁹³ The goal of the eDisclosure system is to safeguard human health and the environment by providing an efficient mechanism for regulated entities to voluntarily discover, report, and correct violations of federal environmental laws and regulations. According to the Agency, self-disclosed violations are automatically processed by the eDisclosure system using the EPA's audit policies.¹⁹⁴ EPA staff are responsible for spot-checking certain submissions for accuracy and screening other disclosures to determine whether further investigation is appropriate for potentially significant concerns.

The Safe Drinking Water Act gives the EPA emergency authority to act when a contaminant may present an "imminent and substantial endangerment" to human health and when the appropriate state and local authorities have not acted to protect the public. In two reports,¹⁹⁵ we noted programmatic deficiencies in the EPA's use of this emergency authority during the Flint water crisis. We also recently determined that, of the 11 recommendations issued in those two reports, the Agency's completed corrective actions for three recommendations did not fully address the identified deficiencies in oversight.¹⁹⁶ Specifically, the Office of Water had not established controls to require that states monitor drinking water system compliance with all Lead and Copper Rule requirements, and the Office of Enforcement and Compliance Assurance was unable to confirm which Agency staff had received training on Safe Drinking Water Act tools and authorities and had not incorporated functions into its Report a Violation system to assess risks associated with citizen tips and to track resolution of these tips.

We have additional ongoing and planned work related to this enforcement management challenge to further our understanding of the EPA oversight of state enforcement programs, including compliance monitoring and inspections conducted under the Clean Water Act; the Comprehensive Environmental

¹⁹³ EPA OIG, *Additional Internal Controls Would Improve the EPA's System for Electronic Disclosure of Environmental Violations*, Report No. [22-E-0051](#) (June 30, 2021).

¹⁹⁴ EPA, [EPA's Audit Policies](#) (last visited Oct. 26, 2022); see also [Incentives for Self-Policing: Discovery, Disclosure, Correction and Prevention of Violations](#), 65 Fed. Reg. 19618 (Apr. 11, 2000).

¹⁹⁵ EPA OIG, *Management Weaknesses Delayed Response to Flint Water Crisis*, Report No. [18-P-0221](#) (July 19, 2018); EPA OIG, *Drinking Water Contamination in Flint, Michigan, Demonstrates a Need to Clarify EPA Authority to Issue Emergency Orders to Protect the Public*, Report No. [17-P-004](#) (Oct. 20, 2016).

¹⁹⁶ EPA OIG, *The EPA Needs to Fully Address the OIG's 2018 Flint Water Crisis Report Recommendations by Improving Controls, Training, and Risk Assessments*, Report No. [22-P-0046](#) (May 17, 2022).

Response, Compensation, and Liability Act; and the Resource Conservation and Recovery Act.¹⁹⁷ We also have ongoing work related to the EPA's implementation of emergency authorities under the Safe Drinking Water Act in Benton Harbor, Michigan,¹⁹⁸ and the Agency's national compliance initiative for aftermarket defeat devices for vehicles and engines.¹⁹⁹

Incorporating Environmental Justice into the EPA's Compliance and Enforcement Program

Across the country, many low-income and minority communities are overburdened with high levels of environmental pollution and other adverse societal and economic conditions. EPA Administrator Michael S. Regan has emphasized that, with regard to protecting human health and the environment, the Agency must:

[C]onsciously and affirmatively pursue justice as [the Agency] jointly confront[s] environmental and climate challenges with our federal, state, Tribal, and local partners. This is our collective task and every office, and every EPA region, shares this responsibility.

In the EPA's FY 2022 Congressional Budget Justification, the Agency committed to developing and implementing a comprehensive plan of action for including environmental justice and climate change considerations in its civil and criminal enforcement programs, as well as in its compliance assurance work.²⁰⁰ Additionally, the acting assistant administrator for Enforcement and Compliance Assurance committed to increasing the number of facility inspections in overburdened communities and increasing engagement with communities regarding locally relevant enforcement cases to advance the Agency's environmental justice goals.²⁰¹

In FY 2023, the EPA requested \$213.2 million for civil enforcement efforts and to further develop and implement a comprehensive civil enforcement plan for addressing environmental justice, climate change, per- and polyfluoroalkyl substances issues, and coal combustion residue rule compliance.²⁰² These resources will enhance the EPA's ability to incorporate environmental justice and climate change considerations into all phases of case development. The EPA also requested \$69.5 million and 291 FTEs to expand its capacity for criminal enforcement to hold illegal polluters accountable, particularly in vulnerable communities. The EPA believes an investment of \$14.6 million and 53.5 FTEs requested for FY 2023 should advance protection of these communities by increasing inspections and compliance assistance to ensure facilities are adhering to regulations designed to protect vulnerable populations. The EPA plans to use this investment to create and expand programs to improve environmental

¹⁹⁷ *Supra* n.73.

¹⁹⁸ EPA OIG Notification Memorandum, *EPA's Response to Drinking Water Lead Contamination in Benton Harbor, Michigan*, Project No. [OA-FY22-0068](#) (Feb. 18, 2022).

¹⁹⁹ EPA OIG Notification Memorandum, *EPA's Fiscal Years 2020—2023 National Compliance Initiative: Stopping Aftermarket Defeat Devices for Vehicles and Engines*, Project [OSRE-FY21-0228](#) (July 14, 2021).

²⁰⁰ *Supra* n.9.

²⁰¹ [EPA Memorandum](#), Strengthening Enforcement in Communities with Environmental Justice Concerns (Apr. 30, 2021).

²⁰² *Supra* n.62.

protections and increase monitoring capability in low-income communities and communities of color near oil and chemical facilities and underground storage tank releases.

Conclusion

Declining resources and challenges specific to the coronavirus pandemic have directly impacted the amount of compliance monitoring, enforcement, and oversight of state programs that the EPA can complete, forcing the Agency to prioritize its enforcement work. Additionally, permitting complexities, collaboration with and oversight of states, and environmental justice considerations represent challenges to ensuring compliance with environmental laws and regulations. The EPA needs to assess its resources to determine how it will detect harmful noncompliance and develop enforcement cases that deter future noncompliance. This assessment of resource needs should consider the EPA's new work and efforts to incorporate environmental justice for low-income, minority, tribal, and indigenous communities into its enforcement program and existing oversight responsibilities.

CHALLENGE 8: Managing Increased Investment in Infrastructure



Introduction and Overview

The IIJA, passed in November 2021, provides the EPA with an unprecedented level of funding to invest in environmental infrastructure improvements—nearly \$61 billion. The IIJA funding empowers the EPA to invest in the health, resilience, and equity of communities to build a better America. This includes delegating funds to the EPA's partners to improve the nation's drinking water, wastewater, and stormwater infrastructure; clean up legacy pollution; invest in healthier air; and enhance the country's climate resilience.



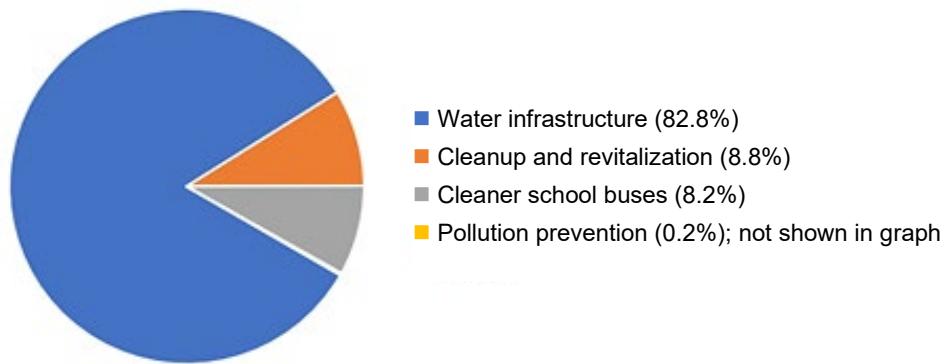
Clean school bus. (EPA Photo)

The EPA also will retain some IIJA funds to increase the Agency's workforce and improve geographic, Superfund, and recycling programs.

This appropriation represents a significant increase in the EPA's funding, which has ranged from approximately \$8 billion to \$9.6 billion annually over the past ten years. The Agency must manage its IIJA funding properly to achieve intended results. The vast majority of the EPA's IIJA funding is available until it is expended, although the EPA will receive most of the funds over five years (FYs 2022 through 2026).

About 83 percent of the IIJA funding is allocated for water infrastructure projects; 9 percent for cleanup, revitalization, and recycling efforts; 8 percent for school buses with reduced diesel emissions; and less than 1 percent for pollution prevention, as shown in Figure 8.1.

Figure 8.1: IIJA funding distribution



Source: OIG analysis of IIJA funding. (EPA OIG graphic)

Billions in IIJA infrastructure funds to the EPA highlight the importance, challenge, and need for comprehensive oversight. The EPA will pass the majority of its IIJA appropriation to its state, tribal, territorial, and local community partners to fund critical environmental infrastructure projects. The EPA must efficiently allocate the funds, conduct effective oversight, prevent fraud, promote efficiency, and ensure compliance with the many provisions within the IIJA.

The OIG will receive nearly \$270 million in IIJA funds over the same five years. This represents approximately 0.44 percent of the EPA's total IIJA appropriation. The OIG's IIJA funds will support audits, evaluations, and investigations of relevant EPA programs and operations receiving or affected by IIJA funds. Requisite OIG oversight will focus on IIJA spending, the EPA's IIJA programs' efficiency and effectiveness, and follow-up reviews of those same programs. In April 2022, the OIG released its inaugural edition of the *Infrastructure Investment and Jobs Act Oversight Plan*,²⁰³ describing the OIG's planned and ongoing projects related to IIJA oversight. As the EPA refines its plans to execute the IIJA, the OIG will refine its IIJA Oversight Plan.

Allocating Funding to EPA Partners

States, territories, and tribes are critical to supporting the EPA's duty to execute and enforce environmental laws, as the EPA has delegated authority for most environmental laws to these program partners. The IIJA allocates the majority of its EPA funding to existing partner programs, such as the Clean Water and Drinking Water State Revolving Funds. The partners must distribute funds to communities for their use in carrying out the infrastructure projects. In addition to the IIJA funds, Congress provides substantial annual funds for the program partners through the EPA. For example, the Consolidated Appropriations Act, 2022, provided \$4.35 billion for state and tribal assistance grants. Congress designated much of that funding for infrastructure efforts.

When the EPA delegates authority for federal environmental programs, the Agency maintains oversight to ensure that its partners carry out their responsibilities in a manner that protects public health and the environment, as well as expend the funds appropriately. However, the OIG and the GAO have found deficiencies with the EPA's guidance and oversight of federal funds delegated to program partners. If the EPA and its program partners do not conduct proper oversight, infrastructure projects are at increased risk of fraud, waste, abuse, and noncompliance with funding requirements. The EPA would also be at risk for failing to achieve programmatic goals. A robust oversight effort will better equip the EPA to use its infrastructure funding for human health and environmental protection goals.

In the future, the OIG plans to examine, among other infrastructure-related concerns, the EPA's actions to identify and replace lead service lines in disadvantaged communities, increase water infrastructure resilience against climate change, and oversee state public water system supervision programs.

Funding Drinking Water and Wastewater Infrastructure Programs

In the IIJA, Congress appropriated more than \$43 billion for grants to program partners pertaining to drinking water and wastewater infrastructure. This funding adds to Congress' annual appropriations to these water infrastructure programs.



Water main installation in Frederick, Maryland. (EPA image)

²⁰³ EPA OIG, *Infrastructure Investment and Jobs Act Oversight Plan—Inaugural Edition* (Apr. 29, 2022).

America's drinking water and wastewater infrastructure is critical to the human health and environmental protection goals of the Safe Drinking Water and Clean Water Acts. The EPA and its program partners work to ensure that drinking water is safe and to make the nation's waterways sufficiently clean for their designated uses. The EPA funds its partners' water and wastewater

infrastructure grant and loan programs to help meet these goals. Although the IIJA appropriation provides substantial federal investment in water infrastructure, the amount needed by the drinking water and wastewater sector is more than 15 times larger. The EPA estimated in 2018 that it needs \$472.6 billion to maintain and improve the nation's drinking water infrastructure over the next 20 years.²⁰⁴ In 2012, the EPA estimated that it needed \$271.0 billion for wastewater and stormwater management.²⁰⁵ As infrastructure needs greatly exceed federal funds, the EPA will be challenged to provide funds in the areas of greatest need.

In March 2022, the EPA issued a memorandum to state revolving fund managers.²⁰⁶ This memorandum outlined its strategy for collaborative implementation of \$43 billion in IIJA water infrastructure funding to Clean Water and Drinking Water State Revolving Funds. A significant portion of that funding is to be provided as grants or principal forgiveness loans to disadvantaged communities. This implementation memorandum highlights the flexibility of states and borrowers to address a wide variety of local water quality and human health challenges.

The IIJA also provides \$1.85 billion to the EPA's geographic programs and National Estuary Program. This will support a broad suite of eligible uses under existing program activities, as shown in Table 8.1. The EPA established partnerships for the geographic programs and National Estuary Program. It is setting up action plans to achieve goals with the respective state, local, and nonprofit agencies. The OIG recently released a report, [Lessons Identified from Prior Oversight of the EPA's Geographic and National Estuary Programs](#), describing the lessons learned from OIG and GAO oversight reports to help inform the EPA's Geographic and National Estuary Programs' future efforts to protect regional waters.²⁰⁷ Prior administrations proposed to reduce or eliminate the EPA's funding to activities at many locations. This jeopardized these programs, only to have Congress restore funding. The EPA has a legacy of understaffing the geographic programs and National Estuary Program. This leads to lapses in grant management and federal funds oversight. The EPA will need to avoid previous implementation and oversight lapses in its activities under the IIJA funding.



The brownfields redevelopment process—a contaminated site (left), a remediated site (middle), and a reused site (right). (EPA images)

²⁰⁴ EPA, [Drinking Water Infrastructure Needs Survey and Assessment: Sixth Report to Congress](#), No. EPA 816-K-17-002 (Mar. 2018).

²⁰⁵ EPA, [Clean Watersheds Needs Survey 2012: Report to Congress](#), No. EPA-830-R-15005 (Jan. 2016).

²⁰⁶ [EPA Memorandum, Implementation of the Clean Water and Drinking Water State Revolving Fund Provisions of the Bipartisan Infrastructure Law](#) (Mar. 8, 2022).

²⁰⁷ EPA OIG, [Lessons Identified from Prior Oversight of the EPA's Geographic and National Estuary Programs](#), Report No. [22-E-0054](#) (Aug. 8, 2022).

Table 8.1: IIJA funding for geographic and National Estuary programs

| Program | Total funding amount (in millions) |
|---|---------------------------------------|
| Columbia River Basin Restoration Program | \$79 |
| Great Lakes Restoration Initiative | \$1,000 |
| Gulf of Mexico | \$53 |
| Lake Champlain | \$40 |
| Lake Pontchartrain Restoration Program | \$53 |
| Long Island Sound | \$106 |
| Northwest Forest | \$4 |
| South Florida Geographic Initiatives Program | \$16 |
| Southeast New England Coastal Watershed Restoration Program | \$15 |
| Chesapeake Bay Program | \$238 |
| Puget Sound | \$89 |
| San Francisco Bay Water Quality Improvement | \$24 |
| National Estuary Program Grants | \$132 |

Source: OIG analysis based on the White House's [IIJA Guidebook](#).

Investing in Environmental Remediation

The IIJA invests \$3.5 billion in environmental remediation at Superfund sites, one of the largest investments to address legacy pollution. The IIJA also reinstates the Superfund tax, which will fund cleanup at Superfund sites through 2031. IIJA funding and the Superfund tax will likely accelerate or complete work at ongoing cleanup projects and begin cleanup at additional Superfund sites. In addition, the IIJA invests \$1.5 billion into the EPA's Brownfields program, which aims to revitalize communities—large and small, urban, and rural—and keep neighborhoods healthy.

According to the EPA's Superfund Enterprise Management System database, as of June 2022, there were 545 sites on the Superfund National Priorities List where construction had not been completed and 8,678 sites that were not on the National Priorities List that needed an assessment, had an ongoing assessment, or were referred to a cleanup program. The OIG previously identified cleaning up contaminated sites—particularly promoting and encouraging redevelopment and reuse of contaminated properties—as a management challenge in FYs 2009 through 2015. The OIG found that the EPA needed to better oversee the long-term safety of sites. This oversight was particularly important within a regulatory structure in which non-EPA parties had key responsibilities and authority but could lack resources to effectively carry out long-term oversight of reused contaminated sites.

The EPA's available workforce faces an influx of funds from the IIJA and the reinstatement of the Superfund tax, which may create new programmatic difficulties in managing the new resources. The Agency will need to avoid the management challenges that the OIG previously identified; it can do this by developing additional guidance, improving communication, and continuing to develop tools to ensure that contaminated properties are appropriately reused and that completed cleanups offer long-term protection of human health and the environment.

In addition, in [EPA's Distribution of Superfund Human Resources Does Not Support Current Regional Workload](#), the OIG recommended that the Agency address obstacles to resource allocation in the

Superfund program.²⁰⁸ In response, the EPA developed a multiyear plan and, as of September 30, 2019, was working on the timing of the plan's implementation. With the anticipated increase in work through IIJA funding and the reinstatement of the Superfund tax, the EPA may have to revisit its Superfund workload distribution across the EPA regions.

Implementing Infrastructure Funding

The IIJA and administration initiatives include several requirements or goals intended to distribute funds to where they are most needed and ensure the funds are spent in a manner that benefits the American economy. The EPA and those entities that receive funds from the EPA must expend the infrastructure funds in accordance with these requirements and goals.

One goal derives from the administration's Justice40 Initiative. In 2021, this initiative established a goal that 40 percent of the benefits of relevant climate, clean water, and other investments flow to disadvantaged communities.²⁰⁹ The Justice40 Initiative includes many EPA programs receiving IIJA funds, such as the Clean Water and Safe Drinking Water State Revolving Funds. As the EPA must rely on its partners to implement the delegated programs and execute the grants and loans for the infrastructure projects, it will be challenging to reach this benefit goal. The EPA and its partners will need guidance on how to meet the Justice40 goal.

Similarly, the IIJA established generous minimum loan subsidies to disadvantaged communities for the over \$30 billion allocated to the Drinking Water State Revolving Fund.²¹⁰ These subsidies are essentially forgivable loans or grants. However, some states already struggle with meeting even lower minimum subsidies that are established in annual appropriations. The EPA will need to work with its program partners to ensure that enough of these loans reach disadvantaged communities. The OIG is currently auditing the extent to which the states have met their past Drinking Water State Revolving Fund loan subsidy goals for disadvantaged communities.²¹¹ The OIG is also examining whether the EPA has identified and addressed barriers that hindered states from spending the maximum allowed on loan subsidies for disadvantaged communities in their Drinking Water State Revolving Fund.

The IIJA expands the Build America, Buy America Act, which established new domestic preference requirements that will impact all EPA grant and loan programs that fund infrastructure projects. The EPA must work with its partners to ensure that communities in need of infrastructure funding have the technical, managerial, and financial capacity to qualify for IIJA grants and loans. It must also ensure that they meet the new Build America, Buy America requirements. The EPA has not developed guidance on compliance with this provision, either for its own use or for implementation partners and funding recipients.

In addition to IIJA-related infrastructure projects, the EPA's FY 2022 annual appropriations included over \$850 million to fund nearly 500 new earmarked projects. Congress had not included earmarks in

²⁰⁸ EPA OIG, *EPA's Distribution of Superfund Human Resources Does Not Support Current Regional Workload*, Report No. [17-P-0397](#) (Sept. 19, 2017).

²⁰⁹ Exec. Order No. 14008, [Tackling the Climate Crisis at Home and Abroad](#) (Jan. 27, 2021).

²¹⁰ *Supra* n.206.

²¹¹ EPA OIG Notification Memorandum, *Drinking Water State Revolving Fund Loan Subsidies to Disadvantaged Communities*, Project No. [OA-FY22-0020](#) (Oct. 20, 2021).

its appropriation bills for over a decade. The Agency is responsible for issuing project funds for these earmarks directly to the intended recipients. The EPA will be challenged to efficiently process this large number of grants. Processing these earmark grants adds to the EPA's direct implementation responsibilities for other infrastructure programs, such as issuing loans under the Water Infrastructure Finance and Innovation Act program. Some of these loan programs and associated Agency operations have been audited by the OIG and been the subject of recommendations for improvement. For example, the OIG has recommended that the EPA improve its oversight of the Water Infrastructure Finance and Innovation Act loan program; perform agencywide risk assessments; mitigate its risk of fraud, waste, abuse, and mismanagement practices; and conduct risk assessments when designing and implementing programs.

With the large influx of infrastructure-related funds, the EPA will be challenged to prevent fraud and promote efficiency. The Agency needs to hire the appropriate staff in a tight labor market to conduct robust oversight of this historic investment. Furthermore, while various IIJA-funded EPA programs have developed plans and issued implementation memorandums, the documents are broad and do not establish metrics for compliance and performance. The EPA will need to advance its planning to wisely spend infrastructure funds. To that end, the EPA Office of the Chief Financial Officer announced a new program in January 2022 for an agencywide program integrity framework. This program will address concerns such as risk management, internal controls, and payment integrity. The Agency designed this framework specifically to improve its ability to manage the unprecedented infrastructure funding. Already, the framework has established processes to catalog, analyze, and mitigate the risks pertinent to IIJA funding. It has also established an agencywide program integrity workgroup to provide programmatic insight into program objectives, risks, and control offices for each office. While such a program is a critical component of IIJA management, the Agency has yet to demonstrate how senior leadership will use this information for decision-making and infrastructure funding oversight.

Conclusion

The IIJA's environmental project funds give the EPA a once-in-a-generation opportunity to advance its goal of protecting human health and the environment. As with previous comprehensive spending legislation—such as the American Recovery and Reinvestment Act and the Coronavirus Aid, Relief, and Economic Security Act—there is a risk that the EPA may mismanage the influx of infrastructure funds, not comply with funding requirements, and fail to meet programmatic goals. The EPA should improve its distribution and administration of infrastructure funds; improve and expand its available workforce; and work with its program partners to minimize the risk of waste, fraud, and abuse.

EPA leadership needs to commit the Agency to proactively address problem areas by effectively overseeing its program partners. Most of the infrastructure funding will flow through these partner programs. The Agency should thus commit to improving its oversight capacity and develop a framework for addressing oversight issues.