FY 2022 EPA Program Evaluations and Other Evidence Building Activities

March, 2023

EPA

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Office of Enforcement and Compliance Assurance (OECA)

Activity 1:

Title	EPA Learning Agenda: Drinking Water Systems Out of Compliance
Lead National Program	OECA
FY 2022-2026 Strategic Goal and Objective supported	Goal 3: Enforce Environmental Laws and Ensure Compliance Objective 3.1: Hold Environmental Violators and Responsible Parties Accountable
Estimated Completion date	2026

Purpose and brief description: The Agency Learning Agenda includes Drinking Water Systems out of Compliance as a learning priority area. EPA has been working to reduce noncompliance through guidance, grants, technical assistance, enforcement, and oversight. Building and using evidence under the Evidence Act to evaluate the effectiveness of these tools and identify ways to make them more effective will help EPA and the states better understand the factors and program elements that improve compliance with drinking water regulations.

Policy, programmatic, and/or operational questions the activity is intended to address:

a. Does EPA have ready access to data to reliably and accurately measure drinking water compliance?

b. What factors determine system noncompliance and continuous compliance?

c. Does increased use of compliance assurance tools (inspections and enforcement) improve system compliance, and if so under what circumstances?

d. How can we determine if a system has the technical, managerial, and financial capacity to provide safe water on a continuous basis to its customers?

e. What EPA oversight activities are effective at assessing and improving state programs' ability to drive compliance?

Brief list of results/conclusions/findings: The interim findings from each Drinking Water Learning Agenda priority question are detailed below:

1. *Does EPA have ready access to data to reliably and accurately measure drinking water compliance?*

a. Identified documentation of quality control checks built into SDWIS-Fed that ensures incoming state data conforms. Completed comparison of 2 state databases to SDWIS-Fed to assess data transfer errors. Found very high agreement.

b. Reviewed available state file review reports to identify compliance determination errors. Not able to quantify or draw conclusions about frequency of compliance determination errors nationally.

c. Conducted an analysis of monitoring and reporting violations in SDWIS-Fed, taken at face value, to determine percent of M&R violations that are more or less likely to be indicative of serious noncompliance. Adds a level of precision to our understanding of what is not known due to failure to monitor and/or report.

d. Work on Question 1 is ongoing and final results/conclusions/findings are not available to use for decision-making and planning purposes.

2. *What factors determine system noncompliance and continuous compliance?*

    a. Identified and synthesized three existing predictive tools that have been tested and proven successful at identifying systems of concern (each organization defined different endpoints). Evaluation of those tools confirmed key public water system characteristics that are important to focus on for maintaining or improving compliance: source water quality; sound financial management; operator and technical capacity; management plans in place.

    b. The Question 2 evaluation is ongoing and final results/conclusions/findings are not available to use for decision-making and planning purposes.

3. *Does increased use of compliance assurance tools (inspections and enforcement) improve system compliance, and if so under what circumstances?*

    a. EPA started evaluating Question 3 in the third quarter of FY 2022. The Agency consulted with GSA about conducting a prospective study on the impact of EPA inspections at public water systems and designed a generic study method to recruit participants, but have not yet determined if the inspection work will be ripe for study.

    b. For the enforcement part of the question, EPA established an agreement with an academic institution to help evaluate existing enforcement data and potentially conduct a prospective study to determine how and when enforcement improves compliance.

    c. Work on Question 3 is ongoing and final results/conclusions/findings are not available to use for decision-making and planning purposes.

How EPA used the results/conclusions/findings/interim findings:

Work on Questions 1, 2, and 3 is ongoing and final results/conclusions/findings are not yet available to use for decision-making and planning purposes. When all priority questions are answered, EPA will use findings to evaluate the efficacy of components of EPA's drinking water program (and may, by extension, also be applicable to policies or practices used in state and tribal programs).

Link for findings: Results are not yet published.

Activity 2:

Title	Assessing the effectiveness of offsite compliance monitoring (OfCM)
Lead National Program	OECA
FY 2022-2026 Strategic Goal and Objective	Goal 3: Enforce Environmental Laws and Ensure Compliance Objective 3.2: Detect Violations and Promote Compliance
Estimated completion date	2023

Purpose and brief description: The COVID-19 pandemic restricted OECA's ability to carry out onsite inspections, which helped OECA recognize that a broader portfolio of Offsite Compliance Monitoring (OfCM) activities may provide EPA with additional tools for enforcement and compliance programs. These tools might include Desk Audits, Clean Air Act (CAA) Stack Test Reviews, Information Request Response Reviews, among others. To assess what the office learned from the extended use of OfCM over the past two years and gain insight into the efficacy of OfCM tools in finding and deterring noncompliance (in comparison to onsite inspections), EPA conducted a preliminary, short-term assessment of EPA's use of OfCM using readily available data and information to inform interim guidance and best practices. The Agency now seeks to use those results to guide a longer-term assessment and research into OfCM and the best uses of these tools moving forward. OECA anticipates that the answers to these questions will involve multiple research efforts given the range of programs and OfCM tools that will need to be assessed.

Policy, programmatic, and/or operational questions the activity is intended to address:

Research questions:

1. How does the effectiveness of Offsite Compliance Monitoring (OfCM) activities compare to onsite inspections?
    - Can OfCM identify the same violations, provide the same specific and general deterrence, and promote and maintain compliance in the same way as onsite inspections?
    - What are the attributes of OfCM activities and onsite inspections required to assess their effectiveness?
2. What outcomes does OfCM provide?
    - Does compliance depend on which monitoring tool is used or on whether there is OfCM activity that includes subsequent enforcement action?
3. Do OfCM tools support enforcement activities?
    - Can evidence collected using only OfCM tools support an impactful enforcement action?
    - What are the key attributes of an effective OfCM tool?

4. What is the best use for OfCM?
    - Does it depend on the tool, the program, and/or on the compliance history of the facility?

Brief list of results/conclusions/findings including interim findings:

The Agency conducted a short-term study that included a regional questionnaire and preliminary analysis with collected answers and other available data to begin to answer: 1. Do OfCM activities lead to enforcement. 2. Are OfCM activities effective? 3. Can OfCM replace onsite inspections?

These short-term findings include:

- OfCM activities do not supplant the need for onsite inspections.
    - In many cases the OfCM activity is performed in addition to, or identifies the need for, onsite inspections.
- Formal enforcement rates from OfCM activities estimated between 0% to 43%, depending on the program.
- The assessment identified trends for when OfCM activities were most useful/effective and when were not:

When is OfCM *most* useful/effective?	**When is OfCM *not* as useful/effective?**
With large, target-rich universe of regulated entities (e.g., TSCA LBP)	To identify deficiencies that rely upon visual observations and/or contemporaneous conversation
To narrow the scope of the investigation for onsite inspections	To identify activities with a temporal component (time-sensitive activities) (e.g., SW BMPs)
For efficient use of limited resources	To identify facilities which have failed to apply for permit coverage (non-filers)
To screen and target facilities in remote locations	To identify facilities which have never met reporting requirements and exist under the radar
To review multiple facilities with a common operator/owner	To confirm implementation of plans
To review settlements or correct previously identified violations	When facility personnel are less sophisticated and not technology savvy
To perform audits, document-heavy compliance reviews	When facility/regulated entity has history of noncompliance or inspector questions the facility's statements
To assess reporting requirements and planning documents	

How EPA used the results/conclusions/findings/interim findings: These preliminary findings, when supplemented by longer-term studies, will help inform and shape enforcement and compliance strategies.

Link for findings*:* Results are not yet published.

Office of Water (OW)

Activity 1:

Title	National Estuary Program
Lead National Program	OW
FY 2022-2026 Strategic Goal and Objective supported	Goal 5: Ensure Clean and Safe Water for All Communities Objective 5.2: Protect and Restore Waterbodies and Watersheds
Completion date	September 2022

Purpose and brief description: The primary purpose of the Program Evaluation (PE) process is to help EPA assess how the National Estuary Programs (NEPs) are making progress in achieving programmatic and environmental results through implementation of their Comprehensive Conservation and Management Plans (CCMPs). The PE process has proven to be an effective, interactive management process that ensures national program accountability and transparency, while incorporating local priority considerations. It also demonstrates the value of federal investment in estuarine and coastal watershed restoration and protection at the local and regional levels. The PE process was revised, and new guidance distributed to the 28 NEP locations at the end of 2021.

The PE process is also useful for:

- Transferring lessons learned among NEPs, EPA, and stakeholders through the sharing of case studies and transferable examples;
- documenting the value added to environmental management of estuarine systems using the partnership model of the national program and its individual NEPs, including their role in convening stakeholders for decision-making and interpreting science for management actions;
- demonstrating continued stakeholder commitment; and
- highlighting achievements and successes of each NEP, as well as suggestions for continued program improvements.

Policy, programmatic, and/or operational questions the activity is intended to address: Five PEs were conducted in FY 2022. The evaluation process for NEP locations informs the Agency on the progress of the NEP program. It also ensures the locations are delivering environmental results and are well-managed programs so that they can continue to receive annual grants from EPA which are matched 1:1 with non-federal dollars.

The program evaluation is focused on the National Estuary Program as described in Section 320 of the Clean Water Act. The PE goals are to:

- ensure submissions enable objective and consistent evaluations among the different NEPs;

- ensure a consistent and transparent process to determine NEP CCMP implementation progress;
- further align the PEs with individual NEP CCMP priorities and related NEP annual work plan goals and accomplishments;
- determine progress in achieving programmatic and environmental results by documenting NEP contributions to improving or reducing pressures on their coastal watersheds and enabling all NEPs to successfully serve as local implementation partners for EPA programs; and
- identify areas of improvement to assist NEPs in becoming stronger programs and achieving environmental results.

Brief list of results/conclusions/findings including interim findings: The NEP Program Evaluation is an ongoing process that occurs each year. Each location within the NEP is evaluated every five years. The PE process uses a two-category determination of Proficient and Progressing, as defined in the 2021 NEP Program Evaluation Guidance. Proficient means a NEP is adequately meeting programmatic and environmental results. A Progressing determination means there are missing criteria that need to be addressed before the next PE cycle. A Progressing determination will catalyze a timeline to address those missing elements or opportunities for improvement before the next PE cycle. This determination is informed by the entire PE package (narrative submission, National Estuary Program Online Reporting Tool (NEPORT) data, annual work plans, and EPA required annual end of year reports), on-site visit, and through discussions with the NEP under review.

How EPA used the results/conclusions/findings/interim findings: The regular PE process examines each NEP location on a variety of topics as listed below. Each presents a potential challenge and can be addressed through the discussions between the PE team and NEP location. The results include recommendations for improvement based upon the following categories below and are submitted to each program as a final PE letter.

- NEP Administration and Governance Structure
- Grant Obligations and Finance including budget summary
- Healthy Ecosystems (e.g., fish, shellfish, plant, eelgrass, and wildlife populations; habitat protection/restoration, natural resources, land use, hydrological and ecological restoration, invasive species)
- Community and Stakeholder Engagement
- Education and Outreach
- Monitoring and Assessment
- Clean Water Act Programs Relationship
- EPA Priorities (nutrient pollution, water reuse and conservation, marine litter reduction, green infrastructure, environmental justice, climate change)

Summary information on the NEP is available on the EPA's NEP website. We acknowledge the importance of NEP partnerships and proactive actions of most NEP location activities which are mostly non-regulatory

and highly leveraged offering EPA an average value of $22 for every $1 of EPA investment. Individual PE results are typically not made available to the public.

Activity 2:

Title	Report to the Principals' Staff Committee on the status and vulnerabilities of existing and future Chesapeake Bay monitoring networks
Lead National Program	OW
FY 2022-2026 Strategic Goal and Objective supported	Goal 5: Ensure Clean and Safe Water for All Communities Objective 5.2: Protect and Restore Waterbodies and Watersheds
Estimated completion date	October 2022

Purpose and brief description: In March 2021, the Principals' Staff Committee (PSC) requested a study and recommendations on how to improve Chesapeake Bay Program (CBP) monitoring networks. The monitoring networks include (1) CBP core networks supported primarily by EPA Chesapeake Bay Program funding, and (2) partnership networks supported by multiple federal and state agencies. The monitoring review was guided by leadership from the CBP Scientific, Technical Assessment and Reporting (STAR) team, the Chesapeake Bay Program Office Monitoring Team, with input from the CBP Scientific and Technical Advisory Committee (STAC) leadership.

Policy, programmatic, and/or operational questions the activity is intended to address: The report addressed shortcomings or needed resources to fill existing gaps and to provide recommendations on monitoring enhancement to support the Chesapeake Bay Program.

Brief list of results/conclusions/findings including interim findings: The estimate to enhance the CBP core networks is $5.4 million in the first year ($1.8 million in capital costs and $3.6 million for operation and maintenance). It is an estimate that could rise subject to operational and inflationary pressures.

How EPA used the results/conclusions/findings/interim findings: With the additional funding that came to CBPO through the Infrastructure Investment and Jobs Act funds, EPA was able to partially fund the monitoring needs identified in this report.

Link for findings*:* https://www.epa.gov/system/files/documents/2022-04/enclosure1_epa_evaluation_of_pennsylvanias_amended_phase_iii_wip_final_0.pdf

Additional FY 2022 Contributions to EPA's Portfolio of Evidence

Office of the Administrator (OA)

Activity 1:

Title	EPA Learning Agenda: Grant Commitments Met
Lead National Program	OA
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 4: Strengthen Tribal, State, and Local Partnerships and Enhance Engagement
Estimated completion date	Year 2 activities completed September 2022. EPA anticipates completing all activities by September 2024.

Purpose and brief description: Historically, EPA annually awarded over $4 billion in grants and other assistance agreements. With these grants, EPA helps to protect human health and the environment through the work of its grantees. The management and tracking of the individual awards are dispersed amongst thousands of staff throughout headquarters and EPA's ten regional offices, which makes tracking results at the national level challenging. This Learning Agenda's focus is to better understand how EPA's grant programs track, report, and analyze its outputs and outcomes achieved to assess and communicate the environmental results accomplished.

The importance and visibility of this effort has increased with the additional funding provided by American Rescue Plan (ARP), Bipartisan Infrastructure Law (BIL), and, most recently, the Inflation Reduction Act (IRA). The potential funding level for EPA's programs could reach over $100 billion, making it critical to have mechanisms in place to track, report and assess the agency's progress in protecting human health and the environment through its grant programs.

This learning priority area outlines work to establish the baseline, assess the current state, and define the future state of grant result reporting. The effort spans multiple fiscal years, beginning in FY 2021. In FY 2021, EPA used a survey instrument to establish a baseline knowledge of grant results reporting practices at the agency. In FY 2022, EPA focused on interviewing regional and NPM contacts to collect best practices. Efforts in FY 2023 and FY 2024 will focus on using the gathered data to implement grant program reviews and inform grant result tracking systems to better communicate and assess the environmental results achieved through EPA's grant programs.

Policy, programmatic, and/or operational questions the activity is intended to address:

- What data and information exists to provide a baseline assessment of the agency's grant and tracking systems?
- Which criteria are used to assess the ability of programs to successfully monitor grantee performance?
- How are the agency's grant programs meeting their intended purpose?

Brief list of results/conclusions/findings including interim findings:

- EPA surveyed all active EPA grant programs to determine the universe of existing grant reporting and tracking systems. The surveys provided the data and information needed to understand existing Agency approaches and processes for collecting, monitoring, reporting, and evaluating grant commitments.
- EPA learned that 99 percent of programs collect output data, but only 31 percent collect long-term outcomes.
- Word documents are the most common method of collecting grantee data.
- Common challenges to grantee data collection include labor intensity, poor communication with grantees, and capacity issues internal to grantees.

How EPA used the results/conclusions/findings/interim findings: EPA used the findings to determine a research strategy for FY 2022. Using the FY 2021 results as a launching point, EPA identified and interviewed 31 regional and NPM staff. Interview criteria included prioritizing programs receiving additional BIL or ARP funding, programs that reported best practices, and programs that addressed administrative priorities. In FY 2023, EPA will analyze the Agency's ability to review progress made in protecting human health and the environment through its grant programs and demonstrate how EPA's grants programs are achieving the intended environmental results. A report outlining the findings from the interviews will be published in FY 2023.

Link for findings*:* Findings from FY 2021 were published on the Agency's Evidence Act site, linked below. Findings from FY 2022 will be published in FY 2023.

https://www.epa.gov/system/files/documents/2022-09/learning-agenda-grants-commitments-met.pdf

Office of Air and Radiation (OAR)

Activity 1:

Title	Inventory of U.S. Greenhouse Gas Emissions and Sinks: 1990-2020
Lead National Program	OAR
FY 2022-2026 Strategic Goal and Objective supported	Goal 1: Tackle the Climate Crisis Objective 1.1: Reduce Emissions that Cause Climate Change
Completion date	April 2022

Purpose and brief description: EPA has prepared the Inventory of U.S. Greenhouse Gas Emissions and Sinks since the early 1990s, which is submitted to the United Nations in accordance with the Framework Convention on Climate Change. This annual activity provides a comprehensive accounting of total greenhouse gas emissions from all man-made sources in the United States. New in 2022, EPA has also

released the Inventory of U.S. Greenhouse Gas Emissions and Sinks by State, which provides state-by-state data consistent with the national greenhouse gas inventory and with international standards. As with the national inventory, the state-level greenhouse gas inventory provides annual data and will be updated each year. This effort helps inform a variety of questions related to EPA policy, regulations, and program design as it relates to GHG emissions.

Policy, programmatic, and/or operational questions the activity is intended to address: Specific questions of interest include:

- What are the annual trends in US greenhouse gas emissions and sinks?
- How do emissions for 2020 compare to previous years and the long-term trend? What are the drivers behind any changes in trends?
- What is the relative contribution of different emission sources and greenhouse gases to climate change?

Brief list of results/conclusions/findings including interim findings: In 2020, total gross U.S. greenhouse gas emissions were 5,981 million metric tons of carbon dioxide equivalent (MMT CO_2 Eq.). Net emissions (including sinks) were 5,222 MMT CO_2 Eq. From 2005 to 2020, net emissions declined 21.4 percent, reflecting the combined impacts of long-term trends in many factors including population, economic growth, energy markets, technological changes including energy efficiency, and energy fuel choices. The decline in recent years is due to an increasing shift to use of less CO_2-intensive natural gas for generating electricity and a rapid increase in the use of renewable energy in the electric power sector. Between 2019 and 2020, greenhouse gas emissions decreased by 10.6 percent due to multiple factors. The primary driver for the decrease was due to an 11 percent decrease in CO_2 emissions from fossil fuel combustion which was due to a 13 percent decrease in transportation emissions driven by decreased demand due to the ongoing COVID-19 pandemic. Electric power sector emissions also decreased 10 percent, reflecting both a slight decrease in demand from the COVID-19 pandemic and a continued shift from coal to less carbon intensive natural gas and renewables. Total U.S. emissions in 2020 were 7.3 percent lower than in 1990, down from a high of 15.7 percent above 1990 levels in 2007.

How EPA used the results/conclusions/findings/interim findings: An emissions inventory that identifies and quantifies a country's anthropogenic sources and sinks of greenhouse gases is essential for addressing climate change. This inventory adheres to both (1) a comprehensive and detailed set of methodologies for estimating sources and sinks of anthropogenic greenhouse gases, and (2) a common and consistent format that enables Parties to the United Nations Framework Convention on Climate Change (UNFCCC) to compare the relative contribution of different emission sources and greenhouse gases to climate change. EPA prepares the official U.S. Inventory of Greenhouse Gas Emissions and Sinks to fulfill annual existing commitments under the United Nations Framework Convention on Climate Change (UNFCCC).

Link for findings*:* https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks-1990-2020

Activity 2:

Title	2021 Power Sector Programs – Progress Report
Lead National Program	OAR
FY 2022-2026 Strategic Goal and Objective supported	Goal 4: Ensure Clean and Healthy Air for All Communities Objective 4.1: Improve Air Quality and Reduce Localized Pollution and Health Impacts
Completion date	July 2022

Purpose and brief description: Under the Clean Air Act, EPA implements regulations to reduce emissions from power plants, including the Acid Rain Program (ARP), the Cross-State Air Pollution Rule (CSAPR), the CSAPR Update, the Revised CSAPR Update, and the Mercury and Air Toxics Standards (MATS). These programs require fossil fuel-fired electric generating units to reduce emissions of sulfur dioxide (SO_2), nitrogen oxides (NO_X), and hazardous air pollutants including mercury (Hg) to protect human health and the environment. This reporting year marks the seventh year of CSAPR implementation, the fifth year of the CSAPR Update implementation, the first year of Revised CSPAR Update Implementation, the twenty-seventh year of the ARP, and the fifth year of MATS implementation. This report summarizes annual progress through 2021, highlighting data that EPA systematically collects on emissions for all five programs and on compliance for the ARP and CSAPR. Commitment to transparency and data availability is a hallmark of these programs, and a cornerstone of their success.

Policy, programmatic, and/or operational questions the activity is intended to address: This annual activity assesses implementation of multiple regulations to reduce air pollution from power plants. Specific questions of interest include:

- Have the regulations met their emission reduction goals?
- What is the compliance record of air pollution sources controlled under these regulations?
- What is the air quality and environmental response of implementing these regulations?

Brief list of results/conclusions/findings including interim findings: The ARP, CSAPR, CSAPR Update, Revised CSPAR Update, and MATS have delivered substantial reductions in power sector emissions of SO_2, NO_X, and hazardous air pollutants, along with significant improvements in air quality and the environment. Program highlights include, but are not limited to:

- Annual SO_2 emissions:
    - CSAPR – 592,000 tons (93 percent below 2005)
    - ARP – 936,000 tons (94 percent below 1990)
- Annual NO_X emissions:
    - CSAPR – 440,000 tons (80 percent below 2005)
    - ARP – 763,000 tons (85 percent below 2000)

- CSAPR ozone season NO_X emissions:
    - 242,000 tons (46 percent below 2015)
- Compliance:
    - 100 percent compliance for power plants in the market-based ARP and CSAPR allowance trading programs
- Emissions reported under MATS: Mercury – 3.0 tons (90 percent below 2010)

In addition to the demonstrated reductions achieved by the power sector emission control programs described in this report, SO_2, NO_X, and hazardous air pollutant emissions have declined steadily in recent years due to a variety of power industry trends that are expected to continue.

How EPA used the results/conclusions/findings/interim findings: The ARP, CSAPR and the CSAPR Update are implemented through trading programs[1] designed to reduce emissions of SO_2 and NO_X from power plants. Established under Title IV of the 1990 Clean Air Act Amendments, the ARP was a landmark nationwide cap and trade program, with a goal of reducing the emissions that cause acid rain. The success of the program in achieving significant emission reductions in a cost-effective manner, as demonstrated through past progress reports, led to the application of the market-based emissions trading tool for other regional environmental problems, namely interstate air pollution transport, or pollution from upwind emission sources that impacts air quality in downwind areas. MATS set limits on emissions of hazardous air pollutants from power plants. EPA published the final standards in February 2012, and the compliance requirements generally went into effect in April 2015, with extensions for some plants until April 2016 and a small number until April 2017. As such, 2021 is the fifth full year for which most sources covered by MATS have reported emissions data to EPA. Exposure to mercury and other hazardous air pollutants at certain concentrations and durations can increase chances of neurological and developmental effects, cancer, and reproductive, respiratory, and other health problems. NOX emissions contribute to the formation of ground-level ozone and fine particle pollution, which cause a variety of adverse human health effects, while SO_2 emissions are linked with a number of adverse effects to human health and ecosystems. These adverse effects underline the continued need for pollution reduction under the ARP, CSAPR, CSAPR Update, the Revised CSAPR Update and MATS. These reports are critical for monitoring these programs to ensure they are continuing to deliver substantial environmental and human health benefits.

Link for findings: https://www3.epa.gov/airmarkets/progress/reports/

Activity 3:

Title	U.S. State-level Non-CO_2 Greenhouse Gas Mitigation Potential: 2025-2050
Lead National Program	OAR
FY 2022-2026 Strategic Goal and Objective supported	Goal 1: Tackle the Climate Crisis Objective 1.1: Reduce Emissions that Cause Climate Change
Completion date	March 2022

Purpose and brief description: This report is a follow-on to the 2019 EPA technical report, Global Non-CO_2 Greenhouse Gas (GHG) Emission Projections & Mitigation Potential: 2015-2050. The *U.S. State-level Non-CO_2 Mitigation Potential* provides states with improved data to better understand the costs and opportunities for reducing emissions of potent greenhouse gases, including methane, nitrous oxide, and fluorinated gases from anthropogenic sources at the state level. This report looks at projected emissions of these gases through 2050 and provides comprehensive technical and economic data on the opportunities and costs for reducing non-CO_2 greenhouse emissions.

Policy, programmatic, and/or operational questions the activity is intended to address: This report and its web-based summary are intended to provide analysis of the abatement potential and costs of implementing specific abatement technologies for reducing non-CO_2 greenhouse emissions. The analysis and accompanying dataset provide information that can be used by state and local policymakers to understand mitigation opportunities in areas that may not have received the same attention as electricity generation and transportation.

Brief list of results/conclusions/findings including interim findings:

- U.S. energy-sector non-CO_2 GHG emissions are projected to be 285 $MtCO_2e$ in 2030
- Industrial process emissions are projected to reach 307 $MtCO_2e$ in 2030
- National agriculture-sector emissions are projected to reach 625 $MtCO_2e$ in 2030
- Through 2030 emissions from landfills and wastewater are projected to grow at similar rates, reaching 174 $MtCO_2e$ in 2030

How EPA used the results/conclusions/findings/interim findings: The analysis and accompanying dataset are intended for use by state and local policymakers to understand mitigation opportunities in areas that may not have received the same attention as electricity generation and transportation including sub-national contributions to GHG emissions, as well as the costs and opportunities for various mitigation measures. The report presents technical information that can be useful in economic modeling and climate mitigation analysis. The accompanying dataset is an input into the Non-CO_2 Greenhouse Gas Data Tool, a data exploration tool for viewing non-CO_2 GHG projections and mitigation assessments.

Link for findings*:* https://www.epa.gov/global-mitigation-non-co2-greenhouse-gases/us-state-level-non-co2-ghg-mitigation-report

Activity 4:

Title	Seasonality and Climate Change: A Review of Observed Evidence in the United States
Lead National Program	OAR
FY 2022-2026 Strategic Goal and Objective supported	Goal 1: Tackle the Climate Crisis Objective 1.1: Reduce Emissions that Cause Climate Change
Completion date	December 2021

Purpose and brief description: This technical report summarizes observed changes related to seasonality in the United States, discusses how climate change affects the timing and nature of seasonal events, and describes some of the related implications of those changes. To accomplish this, EPA analyzed a subset of indicators based on long-term observations to explore the interconnectedness of seasonal changes, including the cascading effect of physical climatic changes and downstream biological, ecological, and social responses.

The report aims to summarize the current state of the science related to historical changes in seasonality and provide tangible examples of the ways in which climate change is altering the nature of seasonal events—and how these changes affect ecological and societal systems.

Policy, programmatic, and/or operational questions the activity is intended to address: Specific questions of interest for the activity include:

- What are the seasonal impacts of climate change?
- What seasonality changes have been observed in the United States?
- What are the downstream effects of these seasonal changes?

Brief list of results/conclusions/findings including interim findings: Indicators reveal that warming temperatures have shortened frost seasons, led snowmelt to occur earlier in the year, and contributed to a decline in snowpack. Similarly, wildfire and heat wave seasons have increased in duration and severity, impacting ecosystems, human health, and economies. Leaf and bloom dates are occurring earlier than before, and the growing season has extended to cover a greater portion of the year. Subsequent sections of this report explore how changes in one season cascade across and impact events in other seasons (e.g., winter conditions affect harvests in the following fall).

How EPA used the results/conclusions/findings/interim findings: Examining indicators of seasonal processes and systems sensitive to seasonality provides a framework for better understanding the implications of a changing climate through time. EPA intends for this report to be used as a tool for the public, scientists, analysts, decision-makers, educators, and others to communicate the seasonal impacts of climate change and their downstream effects.

Link for findings*:* https://www.epa.gov/climate-indicators/seasonality-and-climate-change

Activity 5:

Title	Climate Change Indicators in the United States
Lead National Program	OAR
FY 2022-2026 Strategic Goal and Objective supported	Goal 1: Tackle the Climate Crisis Objective 1.1: Reduce Emissions that Cause Climate Change
Completion date	The Climate Change Indicators Page is Regularly Updated

Purpose and brief description: EPA's Climate Change Indicators in the United States were created with the primary goal of informing readers' understanding of climate change, specifically the public, scientists, analysts, decision-makers, and educators. The climate change indicators can also be used as a tool for communicating climate change science. EPA partners with more than 50 data contributors from various government agencies, academic institutions, and other organizations to compile a key set of indicators related to the causes and effects of climate change. These indicators also provide important input to the National Climate Assessment and other efforts to understand and track the science and impacts of climate change.

Policy, programmatic, and/or operational questions the activity is intended to address: The Climate Change Indicators serve to increase understanding of the impacts of climate change and track trends. They also provide a tool to improve communication on climate change science. By increasing understanding and improving communication the Climate Change Indicators help inform science-based decision making.

Brief list of results/conclusions/findings including interim findings: These indicators characterize observed changes from long-term records related to the causes and effects of climate change; the significance of these changes; and their possible consequences for people, the environment, and society. Examples of indicators include:

- Heat waves: trends in the number of heat waves per year (frequency); the average length of heat waves in days (duration); the number of days between the first and last heat wave of the year (season length); and how hot the heat waves were, compared with the local temperature threshold for defining a heat wave (intensity).
- Coastal flooding: tracks periodic inundation based on measurements from tide gauges at locations along U.S. coasts.
- Glaciers: examines the balance between snow accumulation and melting in glaciers and describes how glaciers in the United States and around the world have changed over time.
- Growing season: looks at the impact of temperature on the length of the growing season in the contiguous 48 states, as well as trends in the timing of spring and fall frosts.
- Wildfire: tracks four aspects of wildfires over time: the total number of fires (frequency), the total land area burned (extent), the degree of damage that fires cause to the landscape (severity), and the acreage burned by fires starting in each month of the year (seasonal patterns).

How EPA used the results/conclusions/findings/interim findings: EPA uses the findings of the Climate Change Indicators in the United States to:

- Effectively communicate relevant climate science information in a sound, transparent, and easy-to-understand way.
- Assess trends in environmental quality, factors that influence the environment, and effects on ecosystems and society.
- Inform science-based decision-making.

EPA also uses the data gathered through this activity to produce technical reports including the above report: Seasonality and Climate Change: A Review of Observed Evidence in the United States.

Link for findings: https://www.epa.gov/climate-indicators

Activity 6:

Title	Our Nation's Air: Status and Trends Through 2021
Lead National Program	OAR
FY 2022-2026 Strategic Goal and Objective supported	Goal 4: Ensure Clean and Healthy Air for All Communities Objective 4.1: Improve Air Quality and Reduce Localized Pollution and Health Impacts
Completion date	June 2022

Purpose and brief description: EPA is committed to protecting public health and the environment by improving air quality and reducing air pollution. In this review and annual report, EPA presents the trends in the nation's air quality and summarizes the detailed information found at EPA's Air Trends website.

Policy, programmatic, and/or operational questions the activity is intended to address: Specific questions of interest include:

- What are the national trends in air quality, including unhealthy air days and air pollutant emissions?

Brief list of results/conclusions/findings including interim findings: Nationally, concentrations of the criteria air pollutants dropped significantly since 1970. Between 1970 and 2021, the combined emissions of the six common pollutants (particulate matter (PM2.5 and PM10), sulfur dioxide (SO2), nitrogen oxides (NOx), volatile organic compounds (VOCs), carbon monoxide (CO) and lead (Pb)) dropped by 78%. This progress occurred while the U.S. economy continued to grow, Americans drove more miles, and population and energy use increased.

How EPA used the results/conclusions/findings/interim findings: Annual emissions estimates are used as one indicator of the effectiveness of the Air Program. EPA and states track direct emissions of air pollutants and emissions that contribute to the formation of key pollutants, also known as precursor emissions. Emissions data are compiled from many different organizations, including industry and state, tribal, and local agencies. Understanding emission sources helps EPA and states control air pollution.

Link for findings: https://gispub.epa.gov/air/trendsreport/2022/#home

Activity 7:

Title	Title V Permitting Program Reviews
Lead National Program	OAR

FY 2022-2026 Strategic Goal and Objective supported	Goal 4: Ensure Clean and Healthy Air for All Communities Objective 4.1: Improve Air Quality and Reduce Localized Pollution and Health Impacts
Completion date	September 2022

Purpose and brief description: EPA periodically reviews state and local permitting programs, including fees, under Title V of the Clean Air Act as part of its responsibility to oversee delegated and approved air permitting programs. In general, the purpose of these program reviews is to identify good practices, document areas needing improvement, and learn how EPA can help the permitting agencies improve their performance.

Policy, programmatic, and/or operational questions the activity is intended to address: N/A (same as above).

Brief list of results/conclusions/findings including interim findings: Results varied and were specific to the program being reviewed.

How EPA used the results/conclusions/findings/interim findings: The reviews assess the overall effectiveness of the planning, permitting, monitoring and compliance, and enforcement programs to identify good practices implemented by the state/tribal agency, areas needing improvement within the state/tribal program, and ways in which EPA can improve oversight.

Link for findings: https://www.epa.gov/title-v-operating-permits/epa-oversight-operating-permits-program

Activity 8:

Title	2021 EPA Automotive Trends Report
Lead National Program	OAR
FY 2022-2026 Strategic Goal and Objective supported	Goal 1: Tackle the Climate Crisis Objective 1.1: Reduce Emissions that Cause Climate Change
Completion date	November 2021

Purpose and brief description: This annual report is part of EPA's commitment to provide the public with information about new light-duty vehicle greenhouse gas (GHG) emissions, fuel economy, technology data, and auto manufacturers' performance in meeting the Agency's GHG emissions standards. The data that EPA gets from our compliance and testing programs are important to the transportation and research communities for setting the baseline to inform policy and regulatory discussions.

Policy, programmatic, and/or operational questions the activity is intended to address: Specific questions include:

- What are the new light-duty vehicle greenhouse gas (GHG) emissions, fuel economy, and technology data?
- What is the auto manufacturers' performance in meeting the agency's GHG emissions standards?

Brief list of results/conclusions/findings including interim findings: The report found that since 2004, CO2 emissions have decreased 24%, or 112 g/mi, and fuel economy has increased 32%, or 6.1 mpg. The EPA Automotive Trends Report found that all large car manufacturers have achieved compliance with the Model Year (MY) 2020 light-duty GHG standards.

How EPA used the results/conclusions/findings/interim findings: The data collected as part of this report support several important national programs, including EPA criteria pollutant and GHG standards, the U.S. Department of Transportation's National Highway Traffic Safety Administration (NHTSA) Corporate Average Fuel Economy (CAFE) standards, and vehicle Fuel Economy and Environment labels. The analysis is a snapshot of the data collected by EPA in support of several important regulatory programs and is presented with the intent of providing as much transparency to the public as possible. The data show the change and innovation in the industry since model year 1975, and the manufacturers' performance under EPA's GHG standards.

Link for findings*:* https://www.epa.gov/automotive-trends/download-automotive-trends-report#Full%20Report

Activity 9:

Title	Office of Inspector General (OIG) Report: EPA Needs to Develop a Strategy to Complete Overdue Residual Risk and Technology Reviews and to Meet the Statutory Deadlines for Upcoming Reviews
Lead National Program	OAR
FY 2022-2026 Strategic Goal and Objective supported	Goal 4: Ensure Clean and Healthy Air for All Communities Objective 4.1: Improve Air Quality and Reduce Localized Pollution and Health Impacts
Completion date	March 2022

Purpose and brief description: The U.S. Environmental Protection Agency's Office of Inspector General initiated this evaluation to determine whether EPA has conducted residual risk and technology reviews, or RTRs, in a timely manner, as required for EPA to revise standards, as needed, to protect the public from air toxics emitted by stationary sources. Through these reviews, EPA determines whether more health-protective standards are necessary. If the reviews are delayed or not performed, public health may be impacted.

Policy, programmatic, and/or operational questions the activity is intended to address: The report addressed the following question:

- Has EPA conducted residual risk and technology reviews in a timely manner, as required for EPA to revise standards, as needed, to protect the public from air toxics emitted by stationary sources?

Brief list of results/conclusions/findings including interim findings: EPA needs to complete overdue RTRs or TRs to ensure that National Emission Standards for Hazardous Air Pollutants (NESHAPs) are updated to protect the public from air toxics emissions, including minority and low-income communities that are disproportionately impacted by industrial facilities and other pollution sources cited in their communities. EPA needs to determine the workforce needed to meet its statutory mandate. In addition, rather than being driven by court orders and consent decrees, as well as by administration priorities that may detract from the Agency's ability to meet statutory deadlines, EPA should develop a strategy incorporating the results of its workforce analysis to ensure that overdue reviews are completed in as timely a manner as practicable and that future reviews are conducted in accordance with statutory deadlines.

How EPA used the results/conclusions/findings/interim findings: The OIG has 2 recommendations for OAR: Recommendations 1 and 2 are both resolved. The OIG's recommendations are as follows:

- Perform a workforce analysis to determine the staff and resources needed to meet the statutory deadlines for residual risk and technology reviews, initial technology reviews, and recurring eight-year technology reviews, as well as to complete any such reviews that are overdue.
- Develop and implement a strategy to conduct (a) residual risk and technology reviews and recurring technology reviews by the applicable statutory deadlines and (b) any overdue residual risk and technology reviews and recurring technology reviews in as timely a manner as practicable. The strategy should take into account the Agency's environmental justice responsibilities under Executive Order 12898 and other applicable EPA and executive branch policies, procedures, and directives.

Link for findings*:* https://www.epa.gov/office-inspector-general/report-epa-needs-develop-strategy-complete-overdue-residual-risk-and-0

Activity 10:

Title	OIG Report: EPA's Title V Program Needs to Address Ongoing Fee Issues and Improve Oversight
Lead National Program	OAR
FY 2022-2026 Strategic Goal and Objective supported	Goal 4: Ensure Clean and Healthy Air for All Communities Objective 4.1: Improve Air Quality and Reduce Localized Pollution and Health Impacts
Completion date	January 2022

Purpose and brief description: The U.S. Environmental Protection Agency's Office of Inspector General initiated this evaluation to determine the extent to which EPA has conducted evaluations of state and local Title V programs and identified insufficient collection or misuse of fees in accordance with two

guidance documents published in 2018: Updated Guidance on EPA Review of Fee Schedules for Operating Permit Programs Under Title V, and the Program and Fee Evaluation Strategy and Guidance for 40 CFR Part 70.

Policy, programmatic, and/or operational questions the activity is intended to address: The report addressed the following question:

- To what extent has EPA conducted evaluations of state and local Title V programs and identified insufficient collection or misuse of fees in accordance with relevant guidance?

Brief list of results/conclusions/findings including interim findings: The nation's Title V permitting authorities continue to face many Title V fee challenges, and EPA regional oversight has varied significantly because of a lack of criteria for when to conduct Title V fee evaluations, as well as a lack of a standard minimum level of review. Further, many regions struggle with a lack of resources and financial expertise. Without adequate fee evaluations, regions may not identify and resolve Title V fee issues, resulting in Title V programs that are not self-sufficient and unable to conduct Title V activities, including permit renewals, compliance monitoring, and enforcement. As Title V activities diminish, there is an increased risk of noncompliance with the requirements of the Clean Air Act, which could result in increased pollution and other impacts to human health and the environment.

How EPA used the results/conclusions/findings/interim findings: The OIG has 6 recommendations for OAR: All 6 recommendations are resolved. The OIG's recommendations are as follows:

- Coordinate with EPA regions to provide recurring training on Clean Air Act Title V fee laws and regulations to permitting agencies.
- In collaboration with EPA regions, develop and implement a plan to address declining Clean Air Act Title V revenues.
- Update EPA's guidance documents to require regions to establish time frames for permitting authorities to complete corrective actions in program and fee evaluation reports and clear, escalating consequences if timely corrective actions are not completed.
- Update the Clean Air Act Title V guidance documents to establish criteria for when regions must conduct Title V fee evaluations and require a minimum standard of review for fee evaluations.
- Provide training to EPA regional staff on the updated Clean Air Act Title V fee guidance and how to conduct fee evaluations.
- Collaborate with regional staff to identify and make available the regional resources and expertise necessary to conduct fee evaluations.

Link for findings: https://www.epa.gov/office-inspector-general/report-epas-title-v-program-needs-address-ongoing-fee-issues-and-improve

Activity 11:

Title	OIG Report: EPA Is Taking Steps to Update Its Federal Radiation Guidance

Lead National Program	OAR
FY 2022-2026 Strategic Goal and Objective supported	Goal 4: Ensure Clean and Healthy Air for All Communities Objective 4.2: Reduce Exposure to Radiation and Improve Indoor Air
Completion date	January 2022

Purpose and brief description: The U.S. Environmental Protection Agency's Office of Inspector General initiated this evaluation to address an OIG Hotline complaint that alleged EPA is not following the best-available science regarding low-dose radiation because it continues to use the linear no-threshold (LNT) model to inform its radiation guidance. The objective was to determine the extent to which EPA has effectively implemented a process for reviewing and updating its federal radiation policies and guidance, specifically those that rely on the LNT model.

Policy, programmatic, and/or operational questions the activity is intended to address: The report addressed the following question:

- To what extent has EPA effectively implemented a process for reviewing and updating its federal radiation policies and guidance, specifically those that rely on the LNT model?

Brief list of results/conclusions/findings including interim findings: The report found that EPA does not have a formal process for updating its federal radiation guidance, some of which relies on the LNT model, but instead updates the guidance pursuant to its strategic plan and annual priority goals. EPA relies on the Office of Radiation and Indoor Air's strategic plan, as well as on new models, peer-reviewed information, and updated data identified by the Center for Radiation Protection Knowledge, to keep its radiation guidance current. By issuing FGR 15, developing FGR 16, and requesting that the Scientific Advisory Board review the draft FGR 16, EPA has taken steps to ensure that its radiation guidance, including that regarding low-dose radiation exposure, is updated and informed by the best-available and peer-reviewed science.

How EPA used the results/conclusions/findings/interim findings: The OIG had no recommendations for OAR.

Link for findings*:* https://www.epa.gov/office-inspector-general/report-hotline-epa-taking-steps-update-its-federal-radiation-guidance

Activity 12:

Title	U.S. Government Accountability Office (GAO) report: Oil and Gas: Federal Actions Needed to Address Methane Emissions from Oil and Gas Development
Lead National Program	OAR

FY 2022-2026 Strategic Goal and Objective supported	Goal 1: Tackle the Climate Crisis Objective 1.1: Reduce Emissions that Cause Climate Change
Completion date	April 2022

Purpose and brief description: GAO reviewed methane emissions from oil and gas development on federal lands. This report (1) describes the steps federal agencies have taken to reduce methane emissions from oil and gas, and implementation challenges; (2) examines actions selected industry entities are taking to reduce methane emissions; and (3) examines how selected states regulate methane emissions and to what extent those efforts could inform federal actions.

Policy, programmatic, and/or operational questions the activity is intended to address: The evaluation addressed the following questions:

- What steps have federal agencies taken to reduce methane emissions from oil and gas?
    - What have been the implementation challenges for federal agencies in taking these steps?
- What actions are industry entities taking to reduce methane emissions?
- How do selected states regulate methane emissions?
    - To what extent can those efforts inform federal actions?

Brief list of results/conclusions/findings including interim findings: Methane is a substantial contributor to global greenhouse gas emissions, results in air pollution, and constitutes a lost source of revenue for the federal government when emitted from sources on federal lands. While EPA and BLM have taken steps in an array of rules to reduce methane emissions, administrative and legal challenges have hindered their implementation. In the midst of federal uncertainty, the oil and gas industry is voluntarily taking actions to reduce methane emissions, but federal regulations can impede adoption of alternative technologies for detecting methane emissions. Without greater flexibility in its process for approving alternative technologies, EPA may hinder the adoption of innovative approaches by operators for detecting and reducing methane emissions. Large oil- and gas-producing states are taking steps to regulate methane that go beyond what BLM demands, such as requiring operators to submit gas capture plans prior to drilling and to establish and meet goals for gas capture. Without BLM taking steps to institute similar requirements for operators on federal lands, operators will continue to vent or flare methane that contributes to pollution and greenhouse gas emissions, and the federal government will continue to lose revenues from the production of oil and gas.

How EPA used the results/conclusions/findings/interim findings: The report included one recommendation for EPA:

- EPA Administrator should provide greater flexibility to operators for using alternative technologies to detect methane emissions.

Link for findings: https://www.gao.gov/products/gao-22-104759

Activity 13:

Title	GAO Report: Refined Coal Production Tax Credit: Coordinated Agency Review Could Help Ensure the Credit Achieves Its Intended Purpose
Lead National Program	OAR
FY 2022-2026 Strategic Goal and Objective supported	Goal 4: Ensure Clean and Healthy Air for All Communities Objective 4.1: Improve Air Quality and Reduce Localized Pollution and Health Impacts
Completion date	December 2021

Purpose and brief description: GAO examined (1) the extent to which producers have claimed the refined coal production tax credit since tax year 2010; (2) what the federal government knows about the extent to which producers have demonstrated the emissions reductions required to claim the credit; and (3) the extent to which the federal government's implementation of the credit aligned with selected criteria for assessing tax expenditure performance.

Policy, programmatic, and/or operational questions the activity is intended to address: GAO's assessment addressed the following question:

- To what extent have producers claimed the refined coal production tax credit since tax year 2010?
- What does the federal government know about the extent to which producers have demonstrated the emissions reductions required to claim the credit?
- To what extent has the federal government's implementation of the credit aligned with selected criteria for assessing tax expenditure performance?

Brief list of results/conclusions/findings including interim findings: Congress considered whether to extend the tax credit period, which expired on December 31, 2021, for refined coal production facilities. However, federal agencies do not have a good understanding of the credit's effectiveness in reducing emissions of certain harmful pollutants. This limited understanding stems in part from producers' use of pilot-scale testing—one of the three methods allowed by IRS guidance—to demonstrate emissions reductions. GAO recommended that if Congress extended the credit period, a coordinated review by Treasury, IRS, EPA, and DOE could help determine whether changes are warranted to improve the credit's performance.

How EPA used the results/conclusions/findings/interim findings: The assessment included one recommendation for EPA:

- The GAO recommended that if Congress would have extended the refined coal production tax credit, the Administrator of EPA should coordinate with Treasury, IRS, and DOE to review the performance of the credit in achieving its intended purpose and identify and implement, as appropriate, any improvements towards achieving that intended purpose, such as adjustments to allowable emissions testing methods.

Link for findings: https://www.gao.gov/products/gao-22-104637

Office of the Chief Financial Officer (OCFO)

Activity 1:

Title	OIG Report: The EPA Was Not Compliant with the Payment Integrity Information Act for Fiscal Year 2021 – P00050
Lead National Program	OCFO
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	June 2022

Purpose and brief description: The Office of Inspector General conducted this audit to determine whether the U.S. Environmental Protection Agency met the requirements of the Payment Integrity Information Act of 2019 as they relate to the formulation and inclusion of payment integrity information in the Fiscal Year 2021 Agency Financial Report and accompanying materials.

Policy, programmatic, and/or operational questions the activity is intended to address: The Payment Integrity Information Act of 2019 requires inspectors general to determine and report their agencies' compliance with the Act every fiscal year. The Act also requires the heads of each agency to periodically review and identify all programs and activities with costs exceeding the $10-million statutory threshold that may be susceptible to significant improper payments. Prior to fiscal year 2021, the EPA had designated its grants payments as susceptible to significant improper payments.

Brief list of results/conclusions/findings including interim findings: The EPA was not compliant with the Payment Integrity Information Act of 2019 because the Agency did not adhere to all of the Office of Management and Budget's improper payment reporting requirements for fiscal year 2021. Specifically, the EPA did not adequately conclude whether its programs with annual outlays greater than $10 million were likely to make improper payments above or below the statutory threshold.

How EPA used the results/conclusions/findings/interim findings: The OIG made four recommendations:

1. Review the OIG-identified questioned costs for the grants payment stream, determine the payment allowability, recover costs as appropriate, and recalculate the error rate.

2. Conduct an off-cycle risk assessment, applying the Standard Operating Procedure Grants Improper Payment Review, dated September 2021, and include the risk assessments in the Agency's Fiscal Year 2023 Agency Financial Report, ensuring that the risk assessments contain:

    a. An assessment of all programs and activities with outlays greater than $10 million.

    b. An identification of which programs and activities with annual outlays exceeding the statutory threshold are included in each risk assessment.

c. A mechanism for identifying, accounting for, estimating, and reporting improper and unknown payments and for detailing efforts taken to prevent and reduce such payments.

2. For payment streams other than the grants payment stream, update the standard operating procedures so that they establish a sufficient methodology for programs and activities with outlays of more than $10 million to adequately conclude whether they are susceptible to significant improper payments. The standard operating procedures should identify which programs or activities are included.

4. Periodically train Agency personnel on and provide completed course training certificates for:

a. The Standard Operating Procedure Grants Improper Payment Review, dated September 2021, which includes the Payment Integrity Information Act Review Checklist. Such training should include any updates to these documents and emphasize the application of the cost-allowance principles and adherence to the terms and conditions of federal awards.

b. All standard operating procedures, as well as any updates to them, implemented for other payment streams.

Link for findings: https://www.epa.gov/system/files/documents/2022-06/_epaoig_20220627-22-P-0050.pdf

Activity 2:

Title	OIG Report: The EPA's Fiscal Years 2021 and 2020 (Restated) Hazardous Waste Electronic Manifest System Fund Financial Statements – P0062
Lead National Program	OCFO
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	September 2022

Purpose and brief description: The OIG performed this audit pursuant to the Hazardous Waste Electronic Manifest Establishment Act. The Act requires the U.S. Environmental Protection Agency to prepare and the Office of Inspector General to audit the accompanying financial statements of the EPA's Hazardous Waste Electronic Manifest System Fund.

Policy, programmatic, and/or operational questions the activity is intended to address: The objectives were to determine whether:

- The fund's financial statements were fairly stated in all material respects.
- The EPA's internal controls over financial reporting were in place.
- EPA management complied with applicable laws, regulations, contracts, and grant agreements.

The Act also requires the OIG to analyze the fees collected and disbursed, fee structure, level of use of the system, and success of the system in operating on a self-sustaining basis.

Brief list of results/conclusions/findings including interim findings: The OIG rendered a qualified opinion on the EPA's fiscal years 2021 and 2020 (restated) Hazardous Waste Electronic Manifest System Fund, known as the e-Manifest Fund, financial statements, meaning that, except for material errors in accounts receivable and earned revenue, the fiscal year 2021 financial statements were fairly presented. The OIG made two recommendations:

1. Correct the accounts receivable and earned revenue balances.
2. Assess EPA's procedures for recording eManifest delinquent amounts and implement controls to prevent accounts receivable and earned revenue duplication.

How EPA used the results/conclusions/findings/interim findings: EPA concurred with both recommendations: The balances have been corrected and controls in the new e-Manifest system have been designed to prevent these types of issues in the future. In addition, an interface between the e-Manifest system and Compass was implemented in April 2022 which properly records the accounts receivable and earned revenue in the accounting month in which they are earned. Controls were implemented in the new system to properly record delinquent amounts and prevent duplicate reporting

Link for findings: https://www.epa.gov/office-inspector-general/report-epas-fiscal-years-2021-and-2020-restated-hazardous-waste-electronic

Activity 3:

Title	OIG Report: EPA's Fiscal Years 2020 and 2019 Hazardous Waste Electronic Manifest System Fund Financial Statements – F00015
Lead National Program	OCFO
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	December 2021

Purpose and brief description: The OIG performed this audit pursuant to the Hazardous Waste Electronic Manifest Establishment Act. The Act requires the U.S. Environmental Protection Agency to prepare and the Office of Inspector General to audit the accompanying financial statements of the EPA's Hazardous Waste Electronic Manifest System Fund.

Policy, programmatic, and/or operational questions the activity is intended to address: The primary objectives were to determine whether:

- The financial statements were fairly stated in all material respects.
- The EPA's internal controls over financial reporting were in place.
- EPA management complied with applicable laws, regulations, contracts, and grant agreements.

The Act also requires the OIG to analyze the fees collected and disbursed, fee structure, level of use of the system, and success of the system in operating on a self-sustaining basis.

Brief list of results/conclusions/findings including interim findings: The OIG rendered a qualified opinion on the EPA's fiscal years 2020 and 2019 Hazardous Waste Electronic Manifest System Fund, known as the e-Manifest Fund, financial statements, meaning that, except for material differences in accounts receivable and earned revenue, the fiscal year 2020 financial statements were fairly presented. The OIG noted the following material weaknesses:

- The EPA continued to make errors in its financial statement preparation process.
- The EPA did not have adequate internal control over accounts receivable and earned revenue. We noted the following significant deficiency: the EPA misstated its appropriated balances.

How EPA used the results/conclusions/findings/interim findings: The report contains two recommendations for the Office of the Chief Financial Officer. The OCFO does not agree with the categorization of the issue presented by the Office of Inspector General as a significant deficiency but concurs with the recommendations and has provided corrective actions.

1. In coordination with the assistant administrator for Land and Emergency Management, enhance internal controls over accounting for expenses recorded under fund codes so that appropriation balances are accurate. Specifically, EPA needs to implement preventative controls, so fund expenses are properly coded when processed, and implement detective controls at the fund level to ensure fee-based expenses and appropriations-based expenses are properly segregated, reconciled, and recorded in the general ledger.
2. Correct the expenses recorded in excess of appropriated balances.

Link for findings: https://www.epa.gov/system/files/documents/2022-08/_epaoig_20211229-22-F-0015.pdf

Activity 4:

Title	OIG Report: EPA's Fiscal Years 2020 and 2019 Financial Statements for the Pesticide Registration Fund 22-F-0014
Lead National Program	OCFO
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	December 2021

Purpose and brief description: The Pesticide Registration Improvement Act requires that the U.S. Environmental Protection Agency's Office of Inspector General perform an annual audit of the financial statements for the Pesticide Registration Fund.

Policy, programmatic, and/or operational questions the activity is intended to address: To expedite the registration of certain pesticides, the Pesticide Improvement Act requires the EPA to assess and collect pesticide registration fees. The fees collected are deposited into the Pesticide Registration Fund. The Agency is required to prepare financial statements that present financial information about the fund. The Pesticide Registration Fund also requires that decision-time review periods be established for pesticide

registration actions and that the OIG perform an analysis of the Agency's compliance with those review periods.

Brief list of results/conclusions/findings including interim findings: The OIG did not identify any instances of noncompliance that would result in a material misstatement to the audited financial statements. In addition, the Agency was in substantial compliance with the statutory decision-time review periods

How EPA used the results/conclusions/findings/interim findings: The OIG made three recommendations which were both accepted and implemented by the Agency.

1. Correct the calculation in its Pesticide Registration Improvement Act 20-04 on-top adjustment to accurately capture the amounts for footnote 10, "Income and Expenses from Other Appropriations."
2. Document the control activities and procedures for calculating the income and expense amounts for footnote 10, "Income and Expenses from Other Appropriations."
3. Develop a plan to strengthen and improve the preparation and management review of the Pesticide Registration Improvement Act Fund financial statements and adjustments entered into the accounting system so that errors and misstatements are detected and corrected in a timely manner.

Link for findings: https://www.epa.gov/system/files/documents/2021-12/_epaoig_20211221-22-f-0014.pdf

Activity 5:

Title	OIG Report: EPA's Fiscal Years 2020 and 2019 (Restated) Financial Statements for the Pesticides Reregistration and Expedited Processing Fund - 22-F00012
Lead National Program	OCFO
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	December 2021

Purpose and brief description: The Food Quality Protection Act requires that the U.S. Environmental Protection Agency's Office of Inspector General perform an annual audit of the financial statements for the Pesticides Reregistration and Expedited Processing Fund, also known as the Federal Insecticide, Fungicide, and Rodenticide Act Fund. The EPA is responsible for reassessing the safety of older pesticide registrations against modern health and environmental testing standards.

Policy, programmatic, and/or operational questions the activity is intended to address: To expedite the reregistration process, Congress authorized the EPA to collect fees from pesticide manufacturers. These fees are deposited into the fund. Each year, the Agency prepares financial statements that present information about the fund, along with information about the EPA's progress in reregistering pesticides.

Brief list of results/conclusions/findings including interim findings: The OIG noted one material weakness: the EPA materially misstated the FIFRA income and expenses from other appropriations and

one significant deficiency: the EPA needs to improve its financial statement preparation process. The significant deficiency was initially reported in OIG Report No. 21-F-0014, EPA's Fiscal Year's 2020 and 2019 (Restated) Consolidated Financial Statements, issued November 16, 2020. The OIG is reporting this significant deficiency for the FIFRA Fund financial statements.

How EPA used the results/conclusions/findings/interim findings: The OIG made three recommendations which were accepted by the Agency and corrective actions have been completed.

1. Correct the calculation in the Federal Insecticide, Fungicide, and Rodenticide Act 20-03 on-top adjustment to accurately capture the amounts for footnote 10, "Income and Expenses from Other Appropriations."
2. Document the control activities and procedures for calculating the income and expense amounts for footnote 10, "Income and Expenses from Other Appropriations."
3. Develop a plan to strengthen and improve the preparation and management review of the Federal Insecticide, Fungicide, and Rodenticide Act Fund financial statements and adjustments entered the accounting system so that errors and misstatements are detected and corrected in a timely manner.

Link for findings: https://www.epa.gov/office-inspector-general/report-epas-fiscal-years-2020-and-2019-restated-financial-statements

Activity 6:

Title	OIG Report: EPA's Fiscal Years 2021 and 2020 (Restated) Consolidated Financial Statements 22-F-0007
Lead National Program	OCFO
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	November 2021

Purpose and brief description: The OIG performed this audit in accordance with the Government Management Reform Act of 1994, which requires the U.S. Environmental Protection Agency's Office of Inspector General to audit the financial statements prepared by the Agency each year.

Policy, programmatic, and/or operational questions the activity is intended to address: The primary objectives were to determine whether:

- The EPA's consolidated financial statements were fairly stated in all material respects.
- The EPA's internal controls over financial reporting were in place.
- EPA management complied with applicable laws, regulations, contracts, and grant agreements.

Brief list of results/conclusions/findings including interim findings: The OIG noted the following significant deficiencies:

- The EPA did not reconcile cash differences with the U.S. Department of the Treasury.

- The EPA did not recognize revenue for the Water Infrastructure Finance and Innovation Act of 2014 fee fund expenses.
- Accounts receivable source documentation was not provided in a timely manner by EPA regions.
- The Office of the Chief Financial Officer needs to conduct periodic reviews of user s' accounts within the EPA's Contract Payment System.

The OIG also noted the following instance of noncompliance with laws and regulations: the EPA did not comply with Office of Management and Budget Circular A-136 form and content requirements for the balance sheet.

How EPA used the results/conclusions/findings/interim findings: The OIG made four recommendations to OCFO:

1. Timely reconcile EPA cash differences with the U.S. Department of the Treasury.
2. Update the Water Infrastructure Finance and Innovation Act accounting model to properly recognize earned revenue and unearned revenue as fee fund expenses are incurred. OCFO/ OC Concur.
3. Reclassify unearned revenue to earned revenue for Water Infrastructure Finance and Innovation Act fee fund expenses incurred during fiscal years 2021 and 2020.
4. Record the three receivables totaling approximately $8.1 million in the fiscal year 2021 financial statements.

OCFO concurred with the recommendations and has completed the corrective actions.

Link for findings: https://www.epa.gov/system/files/documents/2021-11/_epaoig_20211115-22-f-0007.pdf

Activity 7:

Title	OIG Report: EPA Has Not Performed Agencywide Risk Assessments, Increasing the Risk of Fraud, Waste, Abuse, and Mismanagement - 22-E-0011
Lead National Program	OCFO
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	December 2021

Purpose and brief description: The OIG conducted this evaluation to determine whether the U.S. Environmental Protection Agency's Office of the Chief Financial Officer is conducting agencywide entity-level risk assessments and implementing internal controls for annual and supplemental appropriations that comply with federal and Agency requirements.

Policy, programmatic, and/or operational questions the activity is intended to address: The Office of Management and Budget Circular A-123, Management's Responsibility for Enterprise Risk Management and Internal Control, dated July 2016, requires federal agencies to integrate internal control activities under the umbrella of an enterprise risk-management program through a risk-assessment process. The U.S. Government Accountability Office's GAO-14-704G, Standards for Internal Control in the Federal Government, dated September 2014, provides the overall framework for establishing and maintaining an effective internal control system. The OIG assessed evidence to determine whether the Agency's actions were consistent with:

- FMFIA requirement to establish an internal control system that provides reasonable assurance of achieving internal control objectives.
- OMB Circular A-123 requirement to integrate and coordinate risk management with other internal control-related activities.
- Green Book framework to establish and maintain an effective internal control system.
- Resource Management Directives System Policy Manual 2520 requirement to manage funds effectively and efficiently while following applicable rules, statutes, and regulations.
- 44 U.S.C. chapter 31, "Records Management by Federal Agencies," requirement to make and maintain accurate and proper documentation of activities, decisions, policies, and procedures.
- EPA Records Schedule 1006, Administrative Management, requirement to retain administrative management records for six years.

Brief list of results/conclusions/findings including interim findings: The OIG determined that the OCFO has not performed agencywide entity-level risk assessments over the EPA's annual and supplemental appropriations. Specifically, the OCFO has not developed or implemented an agencywide entity-level risk-assessment process—in which executive officials are fully engaged in entity-level risk activities—to identify high-priority risks that cut across individual Agency programs. In addition, the OCFO has not performed agencywide entity-level risk assessments over the EPA's annual and supplemental appropriations.

How EPA used the results/conclusions/findings/interim findings: The OIG made two recommendations which the Agency accepted. Corrective actions have been completed.

1. Develop and communicate a strategy to implement, direct, and oversee agencywide enterprise risk management, as required by the 2016 revision of Office of Management and Budget Circular A-123.
2. After developing the strategy from Recommendation 1, establish agency policies and procedures, including updates to Resource Management Directives System 2520, Administrative Control of Appropriated and Other Funds, EPA Order 1000.24, and EPA Delegation 1-16, to comply with Office of Management and Budget Circular A-123 requirements.

Link for findings: https://www.epa.gov/system/files/documents/2021-12/_epaoig_20211215-22-e-0011.pdf.

Office of Chemical Safety and Pollution Prevention (OCSPP)

Activity 1:

Title	OIG Report: EPA's Safer Choice Program Would Benefit from Formal Goals and Additional Oversight
Lead National Program	OCSPP
FY 2022-2026 Strategic Goal and Objective supported	Goal 7: Ensure Safety of Chemicals for People and the Environment Objective 7.2: Promote Pollution Prevention
Completion date	June 2022

Purpose and brief description: EPA's Office of Inspector General (OIG) conducted this audit to determine whether the Safer Choice program effectively meets its goals and whether the program achieves quality standards through its product qualification, renewal, and required audit processes.

Policy, programmatic, and/or operational questions the activity is intended to address:

- Does the Safer Choice program effectively meet its goals?
- Does the Safer Choice program achieve quality standards through its product qualification, renewal, and required audit processes?

Brief list of results/conclusions/findings including interim findings: OIG recommended that the assistant administrator for Chemical Safety and Pollution Prevention:

- Develop goals and performance measures that capture the impacts of the Safer Choice program.
- Publish or otherwise notify Congress and the public of the goals and performance measures for the EPA Safer Choice program, as well as the annual results of the program.
- Establish and implement procedures to conduct periodic oversight reviews of audits conducted by the third-party profilers (TPP) to include physical oversight of the third-party profilers' on-site audits.
- Amend memorandums of understanding with the third-party profilers, requiring that EPA conduct performance reviews of third-party profilers. Recommendation 4 is resolved with no corrective actions pending.
- Collect and document all information that third-party profilers review in their audits in the Safer Choice Community database.

EPA agreed with each of these recommendations and has implemented all promised corrective actions as described below.

1. Develop goals and performance measures that capture the impacts of the Safer Choice program. For Recommendation 1, EPA did not commit to state any goals for the program. The performance measures currently tracked for the Safer Choice program – including the number of products certified and the number of chemicals added to the Safer Chemical Ingredients List (SCIL) – are good measures of the impact of the Safer Choice program in voluntarily helping the marketplace adopt safer chemicals in cleaning product formulations. To fulfill **Recommendation 1a**, on October 1, 2020, the Agency implemented the following performance measures:

    - Number of Products Certified by the Safer Choice Program
    - Number of chemicals added to SCIL
    - Timeliness of EPA reviews of Safer Choice products

To fulfill **Recommendation 1b**, on October 1, 2020, EPA began collecting the following data from Safer Choice partner companies, and implemented the following performance measures on October 1, 2021:

- Total volume of Safer Choice-marketed products
- Total volume of Safer Choice-marketed products, by category
- Reformulations Ultimately Qualifying for the Safer Choice Label

2. Publish or otherwise notify Congress and the public of the goals and performance measures for the EPA Safer Choice program, as well as the annual results of the program. To fulfill Recommendation 2, on January 21, 2021, the Agency published the first set of performance measures from Corrective Action 1a on a new Safer Choice webpage (https://www.epa.gov/saferchoice/safer-choice-performance-measures). The second set of performance measures from Corrective Action 1b were incorporated into this webpage on January 3, 2022.

3. Establish and implement procedures to conduct periodic oversight reviews of audits conducted by the third-party profilers (TPP) to include physical oversight of the third-party profilers' on-site audits. EPA agreed to conduct yearly oversight reviews of TPP desk and on-site audits. To fulfill Recommendation 3, on November 10, 2020, the Agency developed a standard operating procedure (SOP) to annually conduct oversight reviews of audits conducted by TPPs, including physical oversight of those audits. For 2021-2022, on-site-product-manufacturer audits were conducted remotely because of the ongoing Covid-19 pandemic. By December 2, 2021, Safer Choice conducted two desk audits per TPP (NSF International and ToxServices LLC; note that new TPP Gradient does not yet have clients at the audit stage).

4. Amend memorandums of understanding with the third-party profilers, requiring that EPA conduct performance reviews of third-party profilers. To fulfill Recommendation 4, on September 9, 2020, the Agency finalized amendments to the TPP Memorandums of Understanding to indicate that EPA will conduct performance reviews for each of the three TPPs: NSF International; ToxServices LLC; and Gradient.

5. Collect and document all information that third-party profilers review in their audits in the Safer Choice Community database. EPA proposed to incorporate a checklist in the data system that will confirm that TPPs collected and reviewed all audit documentation. Documentation will then be available for EPA to conduct yearly oversight reviews of TPP desk and on-site audits. To fulfill Recommendation 5, on December 2, 2020, the Agency incorporated a checklist in the Safer

Choice Community that TPPs will include with each audit summary, confirming that the TPP has collected and reviewed all the audit documentation required by the Safer Choice Standard. On June 13, 2021, the Agency confirmed that the TPPs have incorporated the checklist into their submitted audit summaries.

How EPA used the results/conclusions/findings/interim findings: EPA used the findings of the report to strengthen its oversight of TPPs and to re-establish a more transparent measures-tracking system.

Link for findings*:* https://www.epa.gov/office-inspector-general/report-epas-safer-choice-program-would-benefit-formal-goals-and-additional

Activity 2:

Title	GAO Report: Persistent Chemicals
Lead National Program	OCSPP
FY 2022-2026 Strategic Goal and Objective supported	Goal 7: Ensure Safety of Chemicals for People and the Environment Objective 7.1: Ensure Chemical and Pesticide Safety
Completion date	July 2022

Purpose and brief description: In Persistent Chemicals: Technologies for PFAS Assessment, Detection, and Treatment (GAO-22-105088), GAO reported on technologies to detect and treat per- and polyfluoroalkyl substances (PFAS) contamination and assess its health effects. GAO also offered policymakers additional actions to consider.

PFAS are a large group of heat and stain resistant chemicals, first developed in the 1940s. PFAS are used in a wide range of products, including carpet, nonstick cookware, waterproof clothing, and firefighting foam used at airports and military bases. PFAS can persist in the environment, including in water, soil, and air, for decades or longer. The Centers for Disease Control and Prevention has found that most people in the U.S. have been exposed to two of the most widely studied PFAS, perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS). Both have been linked to human health problems.

Policy, programmatic, and/or operational questions the activity is intended to address:

GAO was asked to conduct a technology assessment on PFAS assessment, detection, and treatment. This report examines (1) technologies for more efficient assessments of the adverse health effects of PFAS and alternative substances; (2) the benefits and challenges of current and emerging technologies for PFAS detection and treatment; and (3) policy options that could help enhance benefits and mitigate challenges associated with these technologies.

Brief list of results/conclusions/findings including interim findings: GAO identified three challenges associated with PFAS assessment, detection, and treatment technologies:

- PFAS chemical structures are diverse and difficult to analyze for health risks, and machine learning requires extensive training data that may not be available.
- Researchers lack analytical standards for many PFAS, limiting the development of effective detection methods.

- The effectiveness and availability of disposal and destruction options for PFAS are uncertain because of a lack of data, monitoring, and guidance.

GAO developed the following three policy options that could help mitigate these challenges.

- Policymakers could support development of technologies and methods to more efficiently research PFAS health risks.
- Policymakers could collaborate to improve access to standard reference samples of PFAS, known as analytical standards and increase the pace of method and reference sample development for PFAS detection.
- Policymakers could encourage the development and evaluation of full-scale technologies and methods to dispose of or destroy PFAS.

How EPA used the results/conclusions/findings/interim findings: The three policy options provided in the report are not pertinent to OCSPP's work.

Link for findings*:* https://www.gao.gov/products/gao-22-105088

Activity 3:

Title	OIG Report: EPA Needs to Improve the Transparency of Its Cancer-Assessment Process for Pesticides
Lead National Program	OCSPP
FY 2022-2026 Strategic Goal and Objective supported	Goal 7: Ensure Safety of Chemicals for People and the Environment Objective 7.1: Ensure Chemical and Pesticide Safety
Completion date	September 2022

Purpose and brief description: The OIG performed this evaluation to examine the extent to which the EPA followed policies and procedures in developing the cancer assessment for the 1,3-Dichloropropene (1,3-D) pesticide registration-review decision to prevent unreasonable adverse effects on human health. EPA initiated this evaluation based on multiple complaints submitted to the Office of Inspector General Hotline.

Policy, programmatic, and/or operational questions the activity is intended to address: The Federal Insecticide, Fungicide, and Rodenticide Act requires EPA to review every pesticide registration no later than 15 years after the active ingredient's initial registration to determine whether the pesticide continues to meet the statutory standard—that is, whether the pesticide performs its intended function without unreasonable adverse effects on human health and the environment.

Brief list of results/conclusions/findings including interim findings: The OIG found that EPA did not adhere to all standard operating procedures and requirements for the 1,3-D pesticide cancer-assessment process. OIG recommended that the Assistant Administrator for Chemical Safety and Pollution Prevention:

- Issue guidances on when and how to conduct kinetically derived maximum (KMD) approach and weight of evidence approach in cancer risk assessments for pesticides.

- Update the docket for 1,3-D to include all required materials, including meeting minutes and list of participants for meetings between the EPA and the registrant related to the 1,3-Dichloropropene pesticide registration review and cancer assessment.
- Develop guidance to clarify when to docket meetings related to a registration review for other related activities that occur concurrent to the pesticide registration review process.
- Conduct an additional literature search that identifies all published scientific studies concerning the potential carcinogenicity of 1,3-Dichloropropene, including a methodology to reconcile inconsistencies in the scientific data, and publish the results of the literature search and reconciliations.
- Develop procedures to ensure independence of Cancer Assessment Review Committee (CARC) members from the work products they review, ensure appropriate expertise is represented on CARC and when to include ad hoc scientists, and regularly assess CARC to ensure internal peer review standards are met.
- Conduct an external peer review of the 1,3-D cancer risk assessment.
- Develop and implement specific criteria requiring external peer review of Office of Pesticide Programs risk assessments that use scientifically or technically novel approaches, or are likely to have precedent-setting influence, on future risk assessments, in accordance with the Office of Management and Budget's 2005 Final Information Quality Bulletin for Peer Review.

How EPA used the results/conclusions/findings/interim findings: The OIG made nine recommendations to improve the transparency of the 1,3-D cancer-assessment process and restore the scientific credibility of the Agency's 1,3-D cancer classification. These recommendations address the lack of guidance for EPA's use of the kinetically derived maximum dose and weight-of-evidence approaches, an incomplete public docket, an incomplete literature search, noncompliance with internal peer review standards, and the need for an external peer review.

EPA has agreed to implement corrective actions for 8 of the 9 recommendations, and the OIG has accepted Agency corrective actions. OIG and the Agency remain in discussions about Recommendation 8 (peer review). To fulfill the OIG recommendations for the 8 agreed upon corrective actions:

- EPA is currently working in conjunction with other international regulatory authorities to develop guidance on the integration of kinetic information (i.e., KMD) in the Joint FAO/WHO Meeting on Pesticide Residues (JMPR) pesticide risk assessments.
- EPA has agreed to develop guidance on the use of weight of evidence approach in cancer assessments for pesticides. Once developed, EPA will post a link to the guidance on an EPA's pesticide website.
- EPA will complete its search of any available existing meeting materials and/or meeting notes on the 1,3-D cancer assessment and add any additional materials found to the1,3-D registration review docket.
- EPA will develop and implement internal guidance to clarify when to docket meetings related to pesticide registration review for the specific related activity of a cancer assessment that occurs concurrent to the registration review process.

- EPA conducted an updated comprehensive literature search to inform the carcinogenic potential of 1,3-D. The results of the search will be posted to the registration review docket for 1,3-D.
- The SOP for CARC will be updated to reflect the OIG recommendations specifically addressing the independence of CARC members from the work products they review, ensuring there is the appropriate expertise on the CARC for each meeting, including ad hoc voting scientists when needed. EPA will continue to regularly assess CARC processes and procedures and update the SOP as needed.
- OCSPP will develop a Standard Operating Procedure to determine when an external peer review is required for assessments using scientifically or technically novel approaches or likely to have precedent-setting influence. This guidance will be used to ensure consistency in the external peer review process across OSCPP.

The implementation of the 8 OIG recommendations will help to improve transparency and consistency in the review process to conduct cancer assessments for pesticides.

Link for findings: https://www.epa.gov/office-inspector-general/report-epa-needs-improve-transparency-its-cancer-assessment-process

Activity 4:

Title	OIG Report: Long-Chain PFAS Rule
Lead National Program	OCSPP
FY 2022-2026 Strategic Goal and Objective supported	Goal 7: Ensure Safety of Chemicals for People and the Environment Objective 7.1: Ensure Chemical and Pesticide Safety
Completion date	July 2022

Purpose and brief description: EPA's Office of Inspector General conducted this assessment to determine the extent to which EPA followed applicable policies, procedures, and guidance for changes made to the Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances Significant New Use Rule (LCPFAC SNUR) after signature by the EPA Administrator.

Policy, programmatic, and/or operational questions the activity is intended to address: Did EPA follow all applicable policies, procedures, and guidance when making changes to the LCPFAC SNUR between the EPA Administrator's signing of the final rule on June 22, 2020, and publication of the final rule in the Federal Register on July 27, 2020?

Brief list of results/conclusions/findings including interim findings: EPA did not follow all applicable policies, procedures, and guidance when making changes to the LCPFAC SNUR after signature by the EPA Administrator and before publication in the Federal Register. In accordance with the procedure outlined in the "Changes to Rule Documents Prepared for the Administrator's Signature" memorandum, the Agency developed a post-signature change memorandum identifying the changes, but EPA did not docket that memorandum as stipulated by the Docketing FAQs. OIG could not determine whether EPA complied with

the transparency provisions of E.O. 12866. EPA followed the Office of the Federal Register's Document Drafting Handbook guidance for requesting changes to the final rule.

How EPA used the results/conclusions/findings/interim findings: OIG made three recommendations in its audit, which EPA has agreed with and have completed out as described below:

1. The Assistant Administrator for Chemical Safety and Pollution Prevention should update the docket for the Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances Significant New Use Rule by posting the decision memorandum, Corrections to the Final Rule for Long-Chain Perfluoroalkyl Carboxylate and Perfluoroalkyl Sulfonate Chemical Substances; Significant New Use Rule (Tier 3; SAN 5684; RIN 2070-AJ99; FRL- 10010-44; EPA-HQ-OPPT-20 13-0225) - DECISION MEMORANDUM, which outlines the changes 8 22-E-0052 made to the final rule after the EPA administrator signed it but before it was published in the Federal Register. EPA agreed with and completed this recommendation. EPA added to the final rule docket a copy of the EPA Administrator memorandum signed on July 13, 2020, with accompanying attachments.

2. The Associate Administrator for Policy should update Creating and Managing Dockets: Frequently Asked Questions for EPA Action Developers (Docketing FAQs), dated October 2011, and other applicable policies, procedures, and guidance as needed to require the docketing of any decision memorandum that outlines substantive changes made to a final rule after the EPA Administrator signs it, but before it is published in the Federal Register. EPA agreed to revise the 2011 Docketing FAQs, the 2006 EPA memorandum Changes to Rule Documents Prepared for the Administrator's Signature, and the ADP Guidance to clarify expectations regarding the docketing of final post signature change memos that have been signed by the Administrator.

3. The Associate Administrator for Policy should update applicable policies, procedures, and guidance as needed to require that—when EPA makes changes to a regulatory action as a result of a suggestion or recommendation received from the Office of Information and Regulatory Affairs between the time the action is submitted to the Office of Information and Regulatory Affairs for review and the time the action is published in the Federal Register— EPA identify those changes for the public, consistent with Executive Order 12866 section 6(a)(3)(E)(iii). EPA agreed to address this recommendation by March 21, 2023, by updating the introductory Action Development Process training for EPA senior leadership to explicitly address post-signature changes to regulatory documents, the importance of documenting any verbal decisions and instructions that occur post-signature, and the need for adequate documentation and records management consistent with Executive Order 12866.

Link for findings*:* https://www.epa.gov/office-inspector-general/report-epa-was-not-transparent-about-changes-made-long-chain-pfas-rule

Office of Enforcement and Compliance Assurance (OECA)

Activity 1:

Title	Discharge Monitoring Report (DMR) Integrity Screening Project
Lead National Program	OECA
FY 2022-2026 Strategic Goal and Objective supported	Goal 3: Enforce Environmental Laws and Ensure Compliance Objective 3.1: Hold Environmental Violators and Responsible Parties Accountable
Completion date	Preliminary Results: March 2022. Update to come.

Purpose and brief description: Discharge Monitoring Report (DMR) Integrity Screening is an Enforcement and Compliance History Online (ECHO) search tool that uses statistical filters to look for signs of possible misreporting in NPDES DMRs. Facilities with high scores may be candidates for further review and possible on-site investigation, compliance assistance, or civil or criminal enforcement. OECA piloted the application with eight states that agreed to test the tool and report back on their use and findings.

Policy, programmatic, and/or operational questions the activity is intended to address: The results from the pilot will help to improve the tool and gather information about what methods are effective at finding misreporting. This effort will support the goal of reducing significant non-compliance (SNC) in the NPDES program.

Brief list of results/conclusions/findings including interim findings: The pilot concluded in 2021. Initial results from two states (AR, MD) indicated that they used the tool to help target inspections or inform inspections that were already planned. One finding at a specific facility seemed likely to result in civil or criminal enforcement for intentional misreporting.

As of March 2022, the analysis concluded that notifications increased the timeliness of submission but did not make a notable impact on moving submissions from the category of late to on time. Permittees who had a record of submitting on time began submitting earlier, but permittees with a record of submitting late continued to do so. EPA's analysis showed a larger effect from notifications including information about potential penalties for non-submission. Researchers plan to assess additional factors like municipal budget data or depopulation that may show correlation to chronic non-submission. A formal conclusions paper is underway, and an expected completion date is November 2022.

How EPA used the results/conclusions/findings/interim findings: EPA plans to use the results of this pilot to make improvements to the tool. The tool itself will help EPA identify misreporting in NPDES DMRs and investigate the cause of misreporting as needed.

Link for findings: Information on the pilot and tool can be found on the ECHO website (DMR Integrity Screening | ECHO | US EPA), with restricted access sign on needed.

Activity 2:

Title	OIG Report: "Total National Reported Clean Air Act Compliance-Monitoring Activities Decreased Slightly During Coronavirus Pandemic, but State Activities Varied Widely"
Lead National Program	OECA
FY 2022-2026 Strategic Goal and Objective supported	Goal 3: Enforce Environmental Laws and Ensure Compliance Objective 3.2: Detect Violations and Promote Compliance
Completion date	November 2021

Purpose and brief description: The U.S. Environmental Protection Agency's Office of Inspector General (OIG) initiated this assessment to assess how the coronavirus pandemic—that is, the SARS-CoV-2 virus and resultant COVID-19 disease— has impacted air compliance-monitoring activities undertaken by EPA-delegated state and local agencies to confirm that facilities that emit air pollution are complying with the Clean Air Act, or CAA, and federal air regulations.

Policy, programmatic, and/or operational questions the activity is intended to address: The EPA OIG conducted this assessment to:

- Assess the impacts of the coronavirus pandemic on the number and type of compliance-monitoring activities taken by state and local agencies at facilities that emit air pollution.
- Determine what guidance the U.S. Environmental Protection Agency provided to state and local agencies to target or prioritize compliance-monitoring activities at facilities and how agencies conducted those tasks during the pandemic. EPA's Clean Air Act Stationary Source Compliance Monitoring Strategy recommends the frequency and type of activities to be conducted by delegated state and local agencies, which then report those activities to EPA; OIG relied on those reported activities for its findings and recommendations.

Brief list of results/conclusions/findings including interim findings: The OIG report stated the following:

- The coronavirus pandemic marginally impacted the total number of nationwide compliance monitoring activities at facilities that emit air pollution. However, activities varied widely among states and territories, with reported changes in activities at high-emitting sources in fiscal year 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.
- State and local agencies shifted some types of compliance-monitoring activities from on-site to off-site. This shift is in accordance with guidance 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 (CAA CMS) commitments for full

compliance evaluations. EPA, however, has not yet assessed the impact of this flexibility on the use of off-site full-compliance evaluations to ensure that evaluations are consistent with the CAA CMS. In addition, while EPA convened a workgroup to explore using remote video to conduct off-site partial-compliance evaluations, the Agency has not yet determined the conditions under which remote video is technically, legally, and programmatically feasible and has not finalized its draft standard operating procedures.

How EPA used the results/conclusions/findings/interim findings: The EPA OIG recommended that EPA address the needs of agencies that had significant declines in compliance-monitoring activities. They also recommended internal controls to strengthen EPA's oversight of off-site compliance-monitoring activities. EPA provided corrective actions and planned completion dates for the six recommendations, which were agreed to by the OIG. All recommendations have planned completion dates of 12/30/22, with the exception of one which has a planned completion date of 9/30/23 (see table, below).

Rec No.	Page No.	Subject	Action Official	Planned Completion Date
1	18	In coordination with the EPA regional offices, evaluate the needs of the state and local agencies in states and territories that had significant declines, as determined by the EPA, in their total compliance-monitoring activities for fiscal year 2020 to determine whether technical assistance is needed and provide it as appropriate.	Assistant Administrator for Enforcement and Compliance Assurance	9/30/23
2	18	Assess a portion of off-site full-compliance evaluations reported by state and local agencies during the coronavirus pandemic to determine whether they meet the requirements of a full compliance evaluation	Assistant Administrator for Enforcement and Compliance Assurance	12/30/22
3	18	After assessing a portion of the off-site full-compliance evaluations reported by state and local agencies during the coronavirus pandemic, determine whether additional guidance on what constitutes an off-site full-compliance evaluation, the types of facilities where an off-site full-compliance evaluation is appropriate, and when a remote visual component is necessary. If such a determination is made, issue updated guidance on off-site full-compliance evaluations.	Assistant Administrator for Enforcement and Compliance Assurance	12/30/22
4	18	Determine and document the conditions or parameters under which the use of remote video to conduct off-site partial compliance	Assistant Administrator for	12/30/22

Rec No.	Page No.	Subject	Action Official	Planned Completion Date
		evaluations is feasible from a legal, technical, and programmatic perspective.	Enforcement and Compliance Assurance	
5	18	Finalize the Remote Video Partial Compliance Evaluation workgroup's standard operating procedures.	Assistant Administrator for Enforcement and Compliance Assurance	12/30/22
6	18	Determine whether and how remote video can be used in conjunction with a document review to qualify as a full compliance evaluation for purposes of the Clean Air Act Stationary Source Compliance Monitoring Strategy and provide instruction to state and local agencies.	Assistant Administrator for Enforcement and Compliance Assurance	12/30/22

Link for findings: Link

Activity 3:

Title	OIG Report: "Additional Internal Controls Would Improve EPA's System for Electronic Disclosure of Environmental Violations"
Lead National Program	OECA
FY 2022-2026 Strategic Goal and Objective supported	Goal 3: Enforce Environmental Laws and Ensure Compliance Objective 3.1: Hold Environmental Violators and Responsible Parties Accountable
Completion date	June 2022

Purpose and brief description: The U.S. Environmental Protection Agency's Office of Inspector General (OIG) initiated this assessment to determine whether EPA's process for screening regulated entities' self-disclosed environmental violations reported through the eDisclosure system is effective and ensures that significant concerns, such as criminal conduct and potential imminent hazards, are addressed by the Office of Enforcement and Compliance Assurance, or OECA.

Policy, programmatic, and/or operational questions the activity is intended to address: The goal of the eDisclosure system is to provide an efficient mechanism for regulated entities to self-disclose—that is, voluntarily discover, report, and correct—violations of federal environmental laws and regulations. Self-disclosed violations are automatically processed under EPA's audit policies. EPA subsequently screens

certain eDisclosure submissions to ensure that significant concerns, such as criminal conduct and potential imminent hazards, are properly addressed.

Brief list of results/conclusions/findings including interim findings: The OIG report stated the following:

- EPA's Audit Policy Program does not have adequate internal controls to ensure that the screening process for eDisclosure submissions is effective and that significant concerns are identified and addressed by the regions and OECA. While EPA has committed to screening submissions, there is no formal, written national guidance or training on how staff should conduct this screening. As a result, some regional staff are not screening eDisclosure submissions or are screening them inconsistently. Additionally, EPA has not conducted any monitoring or established any performance measures to determine whether the eDisclosure system and screening procedures are being consistently and effectively implemented. The eDisclosure system could also be improved to offer real-time notifications of new eDisclosure data and robust data analyses. By implementing these internal controls, EPA can reduce the risk that significant concerns are not being addressed while also enhancing the impacts of the eDisclosure system.

How EPA used the results/conclusions/findings/interim findings: EPA OIG recommend that the assistant administrator for Enforcement and Compliance Assurance develop national guidance that includes a process for screening eDisclosure submissions for significant concerns; provide eDisclosure-specific training to EPA headquarters and regions to clarify expectations, establish staff responsibilities, and communicate best practices; develop performance measures for the eDisclosure system, as well as a monitoring plan to track its effectiveness; and assess eDisclosure system functionality to identify and implement improvements.

Rec No.	Page No.	Subject	Action Official	Planned Completion Date
1	10	Develop national guidance that includes a process for screening eDisclosure submissions for significant concerns, such as criminal conduct and potential imminent hazards.	Assistant Administrator for Enforcement and Compliance Assurance	9/30/23
2	10	Provide eDisclosure-specific training to EPA Headquarters and regions to clarify expectations, establish staff responsibilities, and communicate best practices.	Assistant Administrator for Enforcement and Compliance Assurance	9/30/23
3	10	Develop performance measures for the eDisclosure system and a monitoring plan to track its effectiveness.	Assistant Administrator for Enforcement and Compliance Assurance	9/30/23
4	10	In coordination with EPA regions, assess eDisclosure system functionality to identify and implement improvements.	Assistant Administrator for Enforcement and	9/30/23

Rec No.	Page No.	Subject	Action Official	Planned Completion Date
			Compliance Assurance	

OECA agreed with all four recommendations and corrective actions and estimated completion dates agreed to by the OIG. All recommendations have planned completion dates of 9/30/23 (see table, below). EPA OIG revised the report based on technical comments provided by OECA.

Link for findings: https://www.epa.gov/system/files/documents/2022-06/_epaoig_20220630-22-E-0051.pdf

Office of Land and Emergency Management (OLEM)

Activity 1:

Title	OLEM Population Analysis
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.1: Clean Up and Restore Land for Productive Uses and Healthy Communities
Completion date	July 2022

Purpose and brief description: This is a descriptive study. The purpose is to conduct an annual analysis to support evidence-based descriptions of who benefits from EPA's cleanup and prevention work, by collecting data on the population living within three and one mile(s) of a Superfund site, Brownfields site, Resource Conservation and Recovery Act (RCRA) Corrective Action (CA) facility, Leaking Underground Storage Tank (LUST) site, and Underground Storage Tank (UST) facility that exist in thousands of communities across the United States ranging from remote to large urban settings. Many of them are located in economically distressed communities.

This analysis also supports EPA's *America's Children and the Environment Report*, by estimating the number of children and their socioeconomic/demographic characteristics who live within one mile of a RCRA CA or Superfund site that may not have had all human health protective measures in place at the time of the analysis.

Policy, programmatic, and/or operational questions the activity is intended to address: Who benefits from EPA's cleanup and prevention work related to Superfund sites, Brownfields sites, Resource Conservation and Recovery Act (RCRA) Corrective Action (CA) facility, Leaking Underground Storage Tank (LUST) sites, and Underground Storage Tank (UST) facilities?

Brief list of results/conclusions/findings including interim findings: To help describe who benefits from our cleanup work, EPA collected data on the population living within three and one mile(s) of these sites. Using census data, EPA found that approximately 207 million people live within three miles of a Superfund remedial site, RCRA Corrective Action facility, or Brownfields site, roughly 63 percent of the U.S. population, including 64 percent of all children in the U.S. under the age of five. While there is no single way to characterize communities located near our sites and facilities, this population is more minority, low income, linguistically isolated, and less likely to have a high school education than the U.S. population as a whole. As a result, these communities may have fewer resources with which to address concerns about their health and environment. OLEM also works with states, territories, tribes and industry to protect the environment and human health from potential releases at Underground Storage Tank (UST) facilities. The greatest potential threat from a leaking UST is contamination of groundwater, the source of drinking water for nearly half of all Americans. Approximately 94 percent of the US population lives within 3 miles of an active UST facility, and 75 percent of the US population lives within 3 miles of an open LUST release.

How EPA used the results/conclusions/findings/interim findings: Results are included in EPA's annual budget reviews with OMB, and in budget justifications for Congress. Results also are used in general communications with press, other government agencies, and the public. Results are also compared with previous years to identify whether there are any emerging or changes in trends from year-to-year. Results also indicate populations sub-groups that are disproportionately located near to our sites, which may indicate a need for intervention.

Link for findings*:* https://www.epa.gov/aboutepa/office-land-and-emergency-management-olem-program-benefits#Programs

Activity 2:

Title	Redevelopment Economics at Remedial Sites (non-federal facility)
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.1: Clean Up and Restore Land for Productive Uses and Healthy Communities
Completion date	February 2022

Purpose and brief description: Cleaning up contaminated sites can serve as a catalyst for economic growth and community revitalization. The Superfund Remedial Program facilitates the redevelopment of sites across the country while protecting human health and the environment. Collaborative efforts among state, local, and tribal partners, redevelopers and other federal agency programs encourage restoration of sites. Since Superfund sites often encompass buildings, roads, and other infrastructure, their effective and efficient cleanup and reuse can play a pivotal role in a community's economic growth. EPA has initiated efforts to collect economic data at a subset of Superfund sites. The analysis will provide current, reliable business-related information for a subset of Superfund sites in reuse and continued use. These uses can help economically revitalize communities near Superfund sites.

Policy, programmatic, and/or operational questions the activity is intended to address: What are the economic outcomes of reuse of non-federal Superfund remedial sites?

Brief list of results/conclusions/findings including interim findings: Over the last 11 years (2011-2021) for Superfund sites in reuse where EPA has economic data, businesses have generated at least $478 billion in sales, which is 27 times the $17.3 billion EPA has spent cumulatively to clean up those sites. In 2022, data EPA collected at 650 sites in reuse indicate these sites supported approximately 10,230 businesses. These businesses' ongoing operations generate annual sales of $65.8 billion. They also employ more than 246,000 people who earned a combined income of $18.6 billion.

How EPA used the results/conclusions/findings/interim findings: Economic data are included in budget justifications to Congress and are used in general communication, including the annual Superfund Accomplishment Reports, with key stakeholders, state and local government, external partners, and the public. Community development organizations, local government, developers etc. can use this data to illustrate potential returns from Superfund site reuse. Internally, EPA considers these findings to be a key data point and results are also compared with previous years to identify whether there are any emerging or changes in trends from year-to-year.

Link for findings: https://www.epa.gov/superfund-redevelopment/redevelopment-economics-superfund-sites

Activity 3:

Title	Redevelopment Economics at Federal Facilities
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.1: Clean Up and Restore Land for Productive Uses and Healthy Communities
Completion date	January 2022

Purpose and brief description: Cleaning up contaminated sites at federal facilities can serve as a catalyst for economic growth and community revitalization. The Superfund Federal Facilities Program facilitates the redevelopment of federal facility sites across the country by assisting other federal agencies (OFAs) to expedite activities related to CERCLA response actions, while protecting human health and the environment. Collaborative efforts among OFAs; developers; and state, local, and tribal partners encourage restoration of sites. Since federal facility Superfund sites often encompass thousands of acres with buildings, roads, and other infrastructure, their effective and efficient cleanup and reuse can play a pivotal role in a community's economic growth. EPA has initiated efforts to collect economic data at a subset of federal facility Superfund sites which is outlined on the public webpage Redevelopment Economics at Federal Facilities. The analysis will provide current, reliable business-related information for a subset of federal facility Superfund sites in reuse and continued use. Some innovative business owners and organizations reuse Superfund sites for a variety of purposes. These uses can help economically revitalize communities near Superfund sites. EPA has initiated efforts to collect economic data at a subset of federal facility Superfund sites.

Policy, programmatic, and/or operational questions the activity is intended to address: What are the economic outcomes of reuse of federal facility Superfund sites?

Brief list of results/conclusions/findings including interim findings: An economic analysis of 50 Federal Facility Superfund Sites identified over 2,000 businesses that generated $17 billion in annual sales, provided over 220,000 jobs and $19 billion in estimated annual employment income. Readily available internet and database sources are utilized to create estimates of national totals related to the beneficial effects of Superfund sites in reuse. Without more extensive research it is not always possible to identify all business names and addresses on site.

How EPA used the results/conclusions/findings/interim findings: Economic data are included in budget justifications to Congress and are used in general communication with other Federal agencies and the public. Economic Data results are also be used to highlight projects that demonstrate that the restoration of Superfund sites protects public health and serves as a catalyst for community revitalization and economic growth. The highlighted projects can serve as models for future redevelopment projects.

Link for findings: https://www.epa.gov/fedfac/redevelopment-federal-facilities

Activity 4:

Title	Analyses of Economic Benefits at RCRA Corrective Action Facilities, After Cleanup
Lead National Program	OLEM
FY 2018-2022 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.1: Clean Up and Restore Land for Productive Uses and Healthy Communities
Completion date	June 2022

Purpose and brief description: Cleaning up contaminated sites serves as a catalyst for economic growth and community revitalization and can help to preserve existing business operations. The RCRA economic benefits study provides information on currently active businesses now operating at former RCRA Corrective Action (CA) facilities that are now in reuse or continued use after cleanup and remediation. Economic impacts associated with facilities in reuse highlight how cleanup performed under RCRA CA can set the stage for a wide range of new development. These developments can often attract new businesses and bolster local economies. In some cases, reuse priorities are incorporated into the remedial design process, resulting in cleanups that directly facilitate future reuse. Such facilities can serve as models of what is possible when EPA and RCRA-authorized states, other state and local entities, and facility stakeholders work together to address cleanup and consider reuse priorities early in the cleanup process. Additionally, this study reveals how cleanup performed under RCRA CA can also facilitate safe, continued operations of long-time facility businesses, while also protecting human health and the environment through remediation.

Policy, programmatic, and/or operational questions the activity is intended to address: The ongoing analysis of economic benefits provides current, reliable business-related information for a subset of RCRA

Corrective Action Facilities now in reuse or continued use after they have been cleaned up. The study helps to highlight the significant economic benefits that can occur when such facilities are remediated. The analyses furthermore help the RCRA cleanup program characterize the many types of redevelopments that can occur at RCRA Corrective Action facilities. To leverage these economic findings, the program is also producing facility case studies that showcase the cleanup and current uses so that they may be used as examples of what may be replicable at other RCRA cleanups.

Brief list of results/conclusions/findings: EPA's analyses of 79 RCRA cleanups revealed that these cleaned up facilities support 1,028 on-site businesses, which provide economic benefits including: $39 billion in annual sales revenue; over 82,000 jobs; and $7.9 billion in estimated annual employment income. Additionally, the RCRA program also sought to further assess potential environmental justice disparities as part of this study. These analyses revealed that approximately 25% of the 79 study facilities are located within communities with potential environmental justice concerns. With these facilities now having been cleaned up, more than 170 businesses are operating at these same locations, helping to generate 7,900 jobs and more than $522 million in annual income for these communities.

How EPA used the results/conclusions/findings: Economic data are included in budget justifications to Congress and are used in general communication with key stakeholders and the public. The most recent results were released in an EPA Press Release, and a new webpage was launched to make these findings and associated facility case studies broadly available to the public (See link below). Going forward, these analyses are being expanded for additional purposes. For example, the results are being used to assess environmental justice concerns and to identify the economic impacts from cleanups located in disadvantaged communities. Further utilization of the results will involve the assessment of Energy Production, GHG Mitigation, and Climate Change Impacts at these facilities.

Links for findings: https://www.epa.gov/hw/redevelopment-economics-rcra-corrective-action-facilities#method

Activity 5:

Title	Superfund Remedial Socioeconomic Business Utilization Improvement Workgroup
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 2: Take Decisive Action to Advance Environmental Justice and Civil Rights Objective 2.1: Promote Environmental Justice and Civil Rights at the Federal, Tribal, State, and Local Levels Objective 2.2: Embed Environmental Justice and Civil Rights into EPA's Programs, Policies, and Activities
Completion date	September 2022

Purpose and brief description: The Remedial Acquisition Framework (RAF) has been successful with small businesses, but limited in the number of procurements awarded to socioeconomic businesses, such as small- disadvantaged businesses (SDBs), women-owned small businesses (WOSBs), small

businesses located in Historically Underutilized Business Zones (HUBZones), and service-disabled veteran owned small businesses (SDVOSBs

With the influx of the Bipartisan Infrastructure Law funding and an increase in large construction projects, the percentage of work going to socioeconomic businesses which equated to 6% in FY21 may continue to decrease in future years. Without a strategic focus on increasing opportunities to socioeconomic firms it is unlikely that the Superfund Remedial Program will meet EPA's socioeconomic utilization targets.

This project involved developing a toolkit for the utilization under the Superfund RAF and the best approaches to procuring remedial activities for socioeconomic businesses (i.e. using targeted standalone contracts). To further support these efforts training materials were developed that will familiarize the Regions with the use of the toolkit's resources. Additionally, the Superfund Remedial program is tracking procurements to assess the changes in the use of socioeconomic businesses.

Policy, programmatic, and/or operational questions the activity is intended to address:

1. Is socioeconomic business utilization in the remedial program projected to increase or decrease in the coming fiscal years?
2. What are the root causes of any potential decrease in utilization?
3. What can be done to increase socioeconomic business utilization in the remedial program?
4. How can OSRTI leverage its partnerships (both internal to EPA and external to other federal agencies) to increase socioeconomic business utilization?

Brief list of results/conclusions/findings including interim findings:

1. Socioeconomic business utilization in the remedial program is projected to decrease without intervention due to the increased funding on preplaced contracts that do not include socioeconomic businesses.
2. To increase socioeconomic business participation, the Superfund Remedial program must focus on options within the RAF which includes standalone (site-specific) contracts to socioeconomic businesses.
3. Socioeconomic business utilization can be promoted by providing training and support to EPA regions.

How EPA used the results/conclusions/findings/interim findings: Based on our findings, we developed a toolkit to provide EPA regions with resources and best practices that will enhance their ability to utilize socioeconomic businesses. We also developed plans to implement recurring trainings/refreshers to ensure that both new and experienced regional staff will have frequent chances to familiarize themselves with developments regarding socioeconomic business utilization. We further developed our internal and external partnerships with relevant groups (EPA-OSDBU and USACE), which allows all three groups to better assist each other in our ongoing socioeconomic business utilization efforts.

Link for findings*:* https://work.epa.gov/small-business/toolkit-socioeconomic-business-utilization-under-superfund-remedial-acquisitions

Activity 6:

Title	Recycling Infrastructure and Market Opportunities Map
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.2: Reduce Waste and Prevent Environmental Contamination
Completion date	September 2022

Purpose and brief description: The national recycling sector lacks an accessible, comprehensive resource for understanding opportunities related to material recovery. In response to this, and in support of the Bipartisan Infrastructure Law (BIL) and EPA's National Recycling Goal of increasing the U.S. recycling rate from the current 32% to 50% by 2030, EPA has developed the Recycling Infrastructure and Market Opportunities Map. This interactive map identifies and displays information on estimated generation, recycling and recycling potential by zip code and material; locations of recycling infrastructure; potential primary and secondary end markets for recycled materials; market factors such as landfill tipping fees and bottle bill deposit prices; and MSW infrastructure such as landfills and transfer stations. Users can leverage this tool to better understand the intersection of recycling and solid waste management, end market opportunities, and environmental justice.

While several data visualization tools exist within the recycling industry, they are primarily tailored to discrete regions or product sectors and provide limited use for understanding the overall national recycling sector. EPA's Recycling Infrastructure and Market Opportunities Map uncovers opportunities for recycling infrastructure investment and recycling market development by visually presenting data estimates from all phases of the recycling process, including generation, collection, sortation, and end use. This aims to address the lack of an accessible, comprehensive resource for understanding opportunities related to material recovery.

Policy, programmatic, and/or operational questions the activity is intended to address:

- How can we better understand the overall national recycling sector?
- How can we comprehensively understand opportunities related to material recovery?

Brief list of results/conclusions/findings including interim findings: This interactive map identifies and displays multiple layers of data on information such as estimated generation, recycling and recycling potential by zip code and material; locations of recycling infrastructure; potential primary and secondary end markets for recycled materials; market factors such as landfill tipping fees and bottle bill deposit prices; and MSW infrastructure such as landfills and transfer stations.

How EPA used the results/conclusions/findings/interim findings: The Recycling Infrastructure and Market Opportunities Map can be used for a variety of purposes, including:

- Assisting developers with recycling infrastructure site selection;
- Visualizing the distribution of available recycled material generated by geographic region to inform facility development and expansion sites, including environmental justice considerations;

- Identifying recycled material feedstocks for circular economy entrepreneurs;
- Developing or expanding hub-and-spoke collection systems to help provide economies of scale to rural recycling programs; and
- Helping local governments design recycling programs by estimating gaps in required recycling capacity.

Link for findings*:* To be released for public comment January 2023.

Activity 7:

Title	Drum Reconditioner Damage Case Report
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.2: Reduce Waste and Prevent Environmental Contamination
Completion date	September 2022

Purpose and brief description: On September 8, 2022, EPA published a drum reconditioner report to improve Agency understanding of how the drum reconditioning industry operates and document damage case incidents at facilities that have caused significant harm to human health and the environment. The report also serves to inform domestic policymakers, enforcement officials, and the public about the regulatory and waste issues surrounding drum reconditioning facilities. EPA plans to use information gathered from this report to engage stakeholders on approaches to address and mitigate these issues. This analysis examined the existing Resource Conservation and Recovery Act (RCRA) regulations, particularly the empty container provision found in Title 40 of the Code of Federal Regulations in section 261.7, which exempts from regulation hazardous waste residues that remain in a drum or other container if certain conditions are met. Both RCRA empty containers (that can still have small amounts of residues) and non-empty containers are shipped to drum reconditioners creating compliance challenges. Even when in compliance, drum reconditioners are receiving and managing large quantities of hazardous waste residues. This report begins the process of examining this industry to see what further Agency action, regulatory or otherwise, is needed to protect human health and the environment.

Policy, programmatic, and/or operational questions the activity is intended to address: What further Agency action, regulatory or otherwise, is needed in the drum reconditioning industry to protect human health and the environment?

Brief list of results/conclusions/findings including interim findings: The report's findings indicate an estimated national drum reconditioning universe of 181 facilities, of which 106 are presumed to still be operating, with approximately 40 million total drums being processed each year and 47.5 percent of all facilities having experienced one or more reported damage case. This analysis helped identify common types of incidents within this industry and their underlying causes, the populations most at risk to damage cases at these facilities, and the current and future risks to human health and the environment.

How EPA used the results/conclusions/findings/interim findings: This report began the process of examining the drum reconditioner industry to see what further Agency action, regulatory or otherwise, is needed to protect human health and the environment by documenting damage cases and releases into the environment. EPA will use this report and its evidence to increase awareness of issues at drum reconditioners and serve as the first step in a larger data gathering and formal engagement process to work towards mitigation of future damage to human health and the environment from these facilities.

Link for findings: https://www.epa.gov/hw/drum-reconditioner-damage-case-report

Activity 8:

Title	OIG Report: Authorized State Hazardous Waste Program Inspections and Operations Were Impacted During Coronavirus Pandemic Report No. 22-E-0009
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.2: Reduce Waste and Prevent Environmental Contamination
Completion date	December 2021

Purpose and brief description: The OIG conducted this review to determine the ability of authorized state RCRA hazardous waste programs to continue operations during the coronavirus pandemic. Under RCRA, states and territories may be authorized to implement the federal hazardous waste program under U.S. Environmental Protection Agency regional oversight. EPA has authorized the program in 48 states and two territories. States received EPA guidance to assist in maintaining adequate regulatory oversight during the pandemic. Issues addressed included holding virtual public meetings, adjusting state inspection commitments, and conducting off-site compliance monitoring activities.

Brief list of results/conclusions/findings including interim findings: The OIG found that the pandemic impacted state RCRA program operations and resulted in a lower number of inspections and violations. The OIG reports that a number of inspections from March 2020 through February 2021 for RCRA treatment, storage, and disposal facilities, known as TSDFs, decreased by 34 percent and for large quantity generators, or LQGs, decreased by 47 percent when compared to the prior year. The number of violations found per inspection also decreased. After a sharp initial reduction in TSDF inspections in April 2020, states neared normal inspection rates by July 2020, but the number of inspections decreased again in October 2020 and remained below historical levels through February 2021. LQG inspections followed a similar pattern except that the decrease in inspections was more significant from October 2020 through February 2021. In addition, states did not consistently use EPA guidance on Off-site compliance monitoring.

How EPA used the results/conclusions/findings/interim findings: The OIG issued five recommendations to the agency. The OIG recommends that the Agency review inspection data and determine why the rate of inspections and violations was reduced during the coronavirus pandemic. The Agency should also support the ability of authorized state RCRA programs to respond to future pandemic

events and disasters. OLEM was responsible for two recommendations and provided corrective actions which have been completed.

Link for findings: Authorized State Hazardous Waste Program Inspections and Operations Were Impacted During Coronavirus Pandemic Report No. 22-E-0009

Activity 9:

Title	Leaking Underground Storage Tank (LUST) Cleanup Cost Study
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.1: Clean Up and Restore Land for Productive Uses and Healthy Communities
Completion date	March 2022

Purpose and brief description: There are approximately 544,000 underground storage takes (USTs) nationwide and approximately 62,000 releases that are currently in cleanup. These cleanups employ a number of technologies and, due to a wide range of factors, cleanup costs of LUSTs vary substantially. Due to this variability, state LUST programs asked OUST for help in calculating the lifecycle cost of different LUST cleanup technologies and approaches with the goal of making better, more cost-effective cleanup decisions. This project's goals were to establish ranges of costs for various cleanup phases and technologies used in LUST cleanups and to identify additional cost drivers by analyzing projection duration assessment versus total costs.

Policy, programmatic, and/or operational questions the activity is intended to address: Which LUST cleanup technology is the most cost effective? For example, is it better to employ a technology that has larger upfront costs and a greater potential of attaining cleanup goals quickly or a seemingly less expensive longer-term technology that may involve more O&M costs over time?

Brief list of results/conclusions/findings including interim findings: Differences in cleanup programs between the pilot states (Kansas, South Carolina, and Virginia) prevented detailed comparisons of cleanup program costs and durations, although more detailed analysis was possible within individual states. Within each state, the median phase and total costs were lower than average costs, which suggests that a small number of the most expensive sites represent major drivers of average total project costs. Specifically, total project costs averaged $300,241, $135,636, and $88,274 in Kansas, South Carolina and Virginia, respectively, compared to median costs of $265,883, $94,195, and $27,120. The higher costs reported for Kansas can largely be attributed to our data for Kansas being limited to remedial action sites, which means these total costs are not comparable to those in South Carolina and Virginia, whose data included a large number of (less-expensive) non-remedial action sites. Across the states, assessment costs were similar across projects of various sizes although, for sites that underwent remedial action, typical project costs varied across the states. Site assessment in South Carolina, Virginia, and Kansas made up 37, 44, and 52 percent of total projects costs, respectively for projects costing over $100,000. At sites with costs

totaling less than $100,000, site assessment made up an average of 83 percent of the total in South Carolina and 87 percent in Virginia.

Finally, non-remedial sites were often closed very quickly, however, remedial site cleanups lasted an average of more than five years. Ultimately, project duration was a significant driver of remedial action costs and, therefore, overall site costs. A one day increase in project duration corresponds with a $116 increase in total project cost.

How EPA used the results/conclusions/findings/interim findings: Based on key findings from this study, EPA was able to provide states with several factors to consider as they plan the future direction of their LUST cleanup programs. A key finding from this study was that even states with robust data still lack the granularity and connectedness across datasets to conduct a comprehensive analysis of key cost drivers. A follow up study, "Best Practices for High Resolution Site Characterization at Petroleum Underground Storage Tank Release Sites,' is currently underway.

Link for findings*:* Leaking Underground Storage Tank Cleanup Cost Study.pdf (epa.gov)

Activity 10:

Title	OIG Report: Brownfields Program-Income Monitoring Deficiencies Persist Because EPA Did Not Complete All Certified Corrective Actions Report No. 22-P-0033
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.1: Clean Up and Restore Land for Productive Uses and Healthy Communities
Completion date	March 2022

Purpose and brief description: The Office of Inspector General (OIG) conducted this audit to determine whether the corrective actions taken by the U.S. Environmental Protection Agency's Office of Brownfields and Land Revitalization (OBLR), under the Office of Land and Emergency Management, effectively addressed the program deficiencies identified in OIG Report No.17-P-0368, Improved Management of the Brownfields Revolving Loan Program Is Required to Maximize Cleanups, issued August 23, 2017

Brief list of results/conclusions/findings including interim findings: The OIG determined that OBLR continues to lack current, accurate, and complete data necessary for effective post-closeout monitoring of program income. Without such data, the EPA is unable to determine whether an estimated $46.6 million of program income under closed cooperative agreements was used timely and for the purposes authorized under the closeout agreements, as required by federal regulation, or whether actions are needed to address noncompliance with closeout agreement terms and conditions.

How EPA used the results/conclusions/findings/interim findings: In its December 2021 response to the OIG's 2021 draft report, EPA addressed the 5 recommendations, which included an explanation of how the Agency implemented their recommendations and limitations to implementing them to the extent the OIG expected. In the time since the OIG's 2017 recommendations, the Agency determined that it

needs to take a few additional actions on some of the recommendations. EPA agreed with the report recommendations and provided corrective actions and milestone dates. The OIG accepted the proposed corrective actions.

Link for findings: Brownfields Program-Income Monitoring Deficiencies Persist Because EPA Did Not Complete All Certified Corrective Actions

Activity 11:

Title	OIG Report: The Coronavirus Pandemic Caused Schedule Delays, Human Health Impacts, and Limited Oversight at Superfund National Priorities List Sites Report No. 22-E-0049
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.1: Clean Up and Restore Land for Productive Uses and Healthy Communities
Completion date	June 2022

Purpose and brief description: The OIG conducted this assessment to determine the impact of the coronavirus pandemic on long-term cleanups at Superfund National Priorities List sites.

Brief list of results/conclusions/findings including interim findings: The OIG found that the coronavirus pandemic caused schedule delays and changed or extended exposure to human health or ecological receptors at 31 Superfund National Priorities List, or NPL, sites. The OIG reported that the pandemic also prolonged human health and environmental exposures and disproportionate impacts on some communities.

How EPA used the results/conclusions/findings/interim findings: The OIG recommends that EPA develop and implement guidance about how to use virtual technologies for community involvement activities and how to conduct oversight for Superfund sites when travel or site access is limited. The OIG also recommends that EPA develop and implement a policy to provide the necessary tools—such as appropriate testing, vaccination, and supplies—to safely deploy remedial project managers (RPMs) during a pandemic or other emergency. Multiple offices share responsibility for the report recommendations. The Agency agreed with the recommendations and provided corrective actions and milestone dates. The Agency is awaiting the OIG Management Decision on the proposed corrective actions.

Link for findings: The Coronavirus Pandemic Caused Schedule Delays, Human Health Impacts, and Limited Oversight at Superfund National Priorities List Sites

Activity 12:

Title	GAO Report: Household Hazardous Waste Removal: EPA Should Develop a Formal Lessons Learned Process for Its Disaster Response (GAO-22-104726)
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.3: Prepare for and Respond to Environmental Emergencies
Completion date	March 2022

Purpose and brief description: The U.S. Government Accountability Office (GAO) began their work for this engagement in May 2020 under the title: EPA Disaster Debris Removal (104276) in response to a congressional mandate. GAO's key questions for review are: What steps did EPA take to plan and carry out debris removal for the November 2018 wildfires in California, including coordination with intergovernmental partners?; To what extent did EPA oversee debris removal, including coordinating contractor activities, in response to the 2018 wildfires?; and, To what extent has EPA identified lessons learned from its response to the 2018 wildfires, and what steps, if any, has EPA taken to address lessons learned?

Region 9 was the lead for EPA due to GAO's focus of the 2018 and 2020 California wildfires.

Brief list of results/conclusions/findings including interim findings: GAO believes EPA plays a significant role in responding to wildfires under the National Response Framework as a primary agency for helping to provide a coordinated federal response, including removing household hazardous waste, to incidents involving hazardous materials. As a result, GAO advised the Agency to develop a formal lessons learned process for disaster responses—similar to EPA's lessons learned process following exercises—that incorporates the key practices of a lessons learned process may enable EPA to be better prepared to respond to wildfires. Specifically, a formal lessons learned process for disaster responses would provide EPA with a consistent process to identify lessons learned and implement needed corrective actions following actual events.

How EPA used the results/conclusions/findings/interim findings: GAO made one recommendation for EPA as follows: The Director of the Office of Emergency Management at EPA should develop a formal lessons learned process with written guidelines for disaster responses, including responses to Stafford Act disasters, that incorporates the key practices of a lessons learned process. EPA agreed with the GAO recommendation and provided a corrective action with a December 2022 completion date.

Link for findings: Household Hazardous Waste Removal: EPA Should Develop a Formal Lessons Learned Process for Its Disaster Response (GAO-22-104276)

Activity 13:

Title	GAO Draft report: Chemical Accident Prevention: EPA Should Ensure Regulated Facilities Consider Risks from Climate Change (GAO-22-104494)
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.2: Reduce Waste and Prevent Environmental Contamination Goal 1: Tackle the Climate Crisis Objective 1.2: Accelerate Resilience and Adaption to Climate Change
Completion date	February 2022

Purpose and brief description: Pursuant to its authority under 31 U.S.C. 717 and at the request of Senator Tom Carper, Ranking Member, Senate Committee on Environment and Public Works; and Senator Cory Booker, Ranking Member, Subcommittee on Superfund, Waste Management, and Regulatory Oversight, GAO was asked to review climate change risks at Risk Management Plan (RMP) facilities.

This GAO report examines, among other things, (1) what available federal data indicate about RMP facilities in areas with natural hazards that may be exacerbated by climate change; and 2) challenges RMP facilities face in managing risks from natural hazards and climate change, and opportunities for EPA to address these challenges. GAO analyzed federal data on RMP facilities and four natural hazards (flooding, storm surge, wildfire, and sea level rise) that may be exacerbated by climate change, reviewed Agency documents, and interviewed Agency officials and stakeholders, such as industry representatives.

Brief list of results/conclusions/findings including interim findings: GAO's position is RMP facilities face several challenges, including insufficient information and direction, in managing risks from natural hazards and climate change, according to some EPA officials and stakeholders. By issuing regulations, guidance, or both to clarify requirements and provide direction on how to incorporate these risks into risk management programs, EPA can better ensure that facilities are managing risks from all relevant hazards. When developing any such regulation, EPA should, pursuant to executive orders, conduct a cost-benefit analysis.

How EPA used the results/conclusions/findings/interim findings: GAO made a total of six (6) recommendations. OLEM bears partial or full responsibility for three of these, including that EPA issue regulations, guidance, or both to clarify requirements and provide direction to facilities on incorporating natural hazards and climate change into risk management programs. EPA concurred with the recommendations and noted that these are long term actions that will require a multi-year approach.

Link for findings*:* GAO Draft report: Chemical Accident Prevention: EPA Should Ensure Regulated Facilities Consider Risks from Climate Change (GAO-22-104494)

Activity 14:

Title	GAO Report: Offshore Oil Spills: Additional Information Is Needed to Better Understand the Environmental Tradeoffs of Using Chemical Dispersants (project no. GAO-22-104153).
Lead National Program	OLEM
FY 2022-2026 Strategic Goal and Objective supported	Goal 6: Safeguard and Revitalize Communities Objective 6.2: Reduce Waste and Prevent Environmental Contamination
Completion date	December 2021

Purpose and brief description: In April 2010, an explosion onboard the Deepwater Horizon drilling rig in the Gulf of Mexico resulted in 11 deaths and the release of approximately 206 million gallons of oil. During the Deepwater Horizon oil spill, responders applied dispersants to the oil slick at the ocean surface as well as at the wellhead more than 1,500 meters below the surface. The subsurface use of dispersants was unprecedented and controversial.

GAO was asked to review what is known about the use of chemical dispersants. This report examines, among other things, what is known about the effectiveness of dispersants, what is known about the effects of chemically dispersed oil on the environment, and the extent to which federal agencies have taken action to help ensure decision makers have quality information to support decisions on dispersant use. GAO reviewed scientific studies, regulations, and policies. GAO also interviewed Agency officials and stakeholders from academia and industry.

Brief list of results/conclusions/findings including interim findings: GAO found that when an oil spill occurs, responders have several options to manage the environmental impacts, including using chemical dispersants (see figure). Chemical dispersants used on a surface oil slick can be effective at breaking up floating oil, which can help prevent the oil from reaching shore and harming sensitive ecosystems, according to studies GAO reviewed and stakeholders GAO interviewed. However, the effectiveness of applying dispersants below the ocean surface—such as when responding to an uncontrolled release of oil from a subsurface wellhead—is not well understood. Various reasons account for this. For example, measurements for assessing effectiveness of dispersants applied at the subsurface wellhead during the Deepwater Horizon oil spill had limitations and were inconclusive. In addition, there are limited experimental data on the effectiveness of subsurface dispersants that reflect conditions found in the deep ocean.

How EPA used the results/conclusions/findings/interim findings: GAO made four recommendations, including that the Coast Guard and EPA assess the potential environmental effects of the subsurface use of dispersants. EPA concurred with the recommendation issued to the agency and corrective action activities are underway.

Link for findings*:* Offshore Oil Spills: Additional Information Is Needed to Better Understand the Environmental Tradeoffs of Using Chemical Dispersants (project no. GAO-22-104153).

Office of Mission Support (OMS)

Activity 1:

Title	EPA Learning Agenda: Workforce
Lead National Program	OMS
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion Date	September 2023

Purpose and brief description: EPA's mission to protect human health and the environment requires a highly skilled and dedicated workforce. Almost forty percent of EPA's workforce is or will be eligible for retirement within five years. This, along with changing workforce demographics, will impact every region and program. EPA has a unique opportunity to transform its human capital processes, including workforce planning, knowledge transfer and succession management to prepare itself for the future of work. EPA is carrying out evidence-building activities to address priority questions related to workforce planning, one of EPA's Learning Agenda priority areas. The Agency will use the results to inform and develop policies and approaches that equip employees with the needed competencies, knowledge, and most up-to-date tools to advance EPA's mission.

OMS assessed: 1) overall effectiveness of EPA's existing workforce planning tools (Workforce Demographics Dashboard, Diversity Dashboard, Succession Management Guide and Workforce Plan); 2) consistent use of the tools; 3) alignment of the tools with stakeholder needs; and 4) effectiveness of EPA communications and training for these tools.

Policy, programmatic, and/or operational questions the activity is intended to address: To what extent does EPA have access to the tools and strategies needed to analyze and understand the Agency's near and long-term workforce needs?

Brief list of results/conclusions/findings including interim findings: OMS administered a workforce planning/succession management survey to the Human Resource Officer (HRO)/Program Management Officer (PMO) Community. The survey captured current workforce planning efforts and assessed respondent's knowledge and use of EPA's corresponding resources and tools. OMS shared results from the survey with the HRO/PMO community during a stakeholder call. Additionally, insights from the survey helped shape guidance and educational and training material supporting organizations in their succession management plan development in FY 2023.

OMS developed and administered a workforce planning-related survey to help organizations prioritize immediate staffing needs for the Infrastructure Investment and Jobs Act (IIJA) while also considering long-term workforce goals. OMS shared results from the IIJA survey with the HRO/PMO community during a stakeholder call. Survey results helped organizations assess immediate needs in the context of shifting or

new strategic priorities and facilitated more accurate planning for the influx of recruitment designed to support new IIJA related activities for EPA.

Several organizations within OMS completed a workforce planning pilot in FY 2022. The pilot walked organizations through EPA's process and templates for each of the five steps on OPM's workforce planning model: 1) Set strategic direction; 2) Analyze workforce, identify skill gaps and conduct workforce analysis; 3) Develop action plan; 4) Implement action plan; and 5) Monitor, evaluate and revise. Each organization will use the information gathered to monitor and track actions designed to close perceived competency gaps.

How EPA used the results/conclusions/findings/interim findings: The data collected through the workforce planning/succession management baseline survey, IIJA survey, and workforce planning informs EPA's current succession management initiative. The survey and pilot data served as starting points in understanding office perceptions of and experience with workforce planning. The information also helped improve support material and guidance for the tools facilitating succession management plan development. All EPA first-level offices have been asked to complete a succession management plan by the end of FY 2023. Templates and training materials from the workforce planning pilot have been modified as needed for the current (FY 2023) succession management initiative.

Activity 2:

Title	OIG Report: EPA Should Consistently Track Coronavirus Pandemic-Related Grant Flexibilities and Implement Plan for Electronic Grant File Storage (22-P-0018)
Lead National Program	OMS
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Estimated Completion Date	December 2023

Purpose and brief description: The OIG is conducting this audit to determine the extent to which the U.S. Environmental Protection Agency has implemented the coronavirus pandemic-related grant flexibilities permitted by the Office of Management and Budget. Specifically, OIG is assessing the extent to which EPA modified work plans, adjusted budgets, and extended periods of performance for grants; granted administrative relief or continued to compensate grant recipients whose work had been interrupted; and provided regulatory exceptions on a case-by-case basis. In response to the coronavirus pandemic, the Office of Management and Budget issued several memorandums that provided temporary administrative, financial management, and audit requirement flexibilities for grants. EPA manages over $20 billion in cumulative grant awards annually.

Policy, programmatic, and/or operational questions the activity is intended to address: The activity is intended to address efficiency and effectiveness, and a top EPA management challenge – managing infrastructure funding and business operations. Specific questions include:

- To what extent has EPA implemented the coronavirus pandemic-related grant flexibilities permitted by the Office of Management and Budget?
- To what extent has EPA modified work plans, adjusted budgets, and extended periods of performance for grants; granted administrative relief or continued to compensate grant recipients whose work has been interrupted; and provided regulatory exceptions on a case-by-case basis?

Brief list of results/conclusions/findings including interim findings: The OIG states that EPA Office of Grants and Debarment does not know the full extent to which program offices and regions have implemented grant flexibilities and exceptions permitted by the Office of Management and Budget due to the coronavirus pandemic—that is, the SARS-CoV-2 virus and resultant COVID-19 disease.

The OIG states that EPA risks mismanaging over $20 billion in cumulative grant funds by inconsistently tracking grants that were modified during the coronavirus pandemic and lacking an electronic data storage plan.

How EPA used the results/conclusions/findings/interim findings: The OIG recommends that the assistant administrator for Mission Support develop a standard operating procedure that instructs program offices and regions on tracking and documenting grant flexibilities and exceptions for unanticipated events to ensure consistency in the information needed to manage grants, as well as develop a plan to implement, by December 2022, a uniform electronic record-keeping system for grants to meet the Office of Management and Budget's direction that all federal records be created, retained, and managed in electronic formats. EPA and the OIG reached agreement on corrective actions for all three recommendations.

Link for findings: https://www.epa.gov/system/files/documents/2022-02/_epaoig_20220222-22-p-0018.pdf

Activity 3:

Title	OIG Report: EPA Needs to Complete Implementation of Religious Compensatory Time Training for Supervisors and Employees (22-P-0019)
Lead National Program	OMS
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	June 2023

Purpose and brief description: The U.S. Environmental Protection Agency's Office of Inspector General conducted this follow-up audit to determine whether EPA's corrective actions effectively addressed the weaknesses identified in EPA OIG Report No. 16-P-0333, Enhanced Controls Needed to Prevent Further Abuse of Religious Compensatory Time, issued September 27, 2016. The purpose of this report is to follow up recommendations from the previous report. The activity is intended to address efficiency and effectiveness, as well as address a top EPA management challenge – managing infrastructure funding and business operations.

Policy, programmatic, and/or operational questions the activity is intended to address: The activity addresses the following question: To what extent have EPA's corrective actions addressed the weaknesses identified in EPA OIG Report No.16-P-0333, Enhanced Controls Needed to Prevent Further Abuse of Religious Compensatory Time?

Brief list of results/conclusions/findings including interim findings: Report No. 16-P-0333 contained four recommendations: x Recommendations 1, 2, and 3 were issued to the assistant administrator for Administration and Resources Management. The Office of Administration and Resources Management was merged into the Office of Mission Support in November 2018. x Recommendation 4, which was issued to the chief financial officer, is no longer applicable due to regulatory changes and is, therefore, not addressed in this follow-up report. EPA's Office of Human Resources, within the Office of Mission Support, took corrective actions to address Recommendations 1, 2, and 3 issued in OIG Report No. 16-P-0333. The Agency completed corrective actions for Recommendations 1 and 2 that met the intent of those recommendations. However, although the Agency agreed with Recommendation 3, the related corrective action that the Agency certified as complete did not fully implement the recommendation. Specifically, training was provided to EPA's human resources community, but it was not provided to all employees who use Religious Compensatory Time and all supervisors who approve such time.

Providing training on religious compensatory time to all EPA supervisors and employees would decrease the potential for employee misuse, as well as the Agency's monetary liability.

How EPA used the results/conclusions/findings/interim findings: The OIG recommend that EPA train all employees and supervisors who earn, use, or approve Religious Compensatory Time on the U.S. Office of Personnel Management's current regulatory requirements for, and EPA's current policy and procedures related to, Religious Compensatory Time. EPA and OIG reached agreement on the corrective actions for the three applicable recommendations,

Link for findings: https://www.epa.gov/system/files/documents/2022-03/_epaoig_20220307-22-p-0019.pdf

Activity 4:

Title	OIG Report: Considerations from Single Audits Reports for EPA's Administration of Infrastructure Investment and Jobs Act Funds (22-N-0057)
Lead National Program	OMS
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	September 2022

Purpose and brief description: The OIG performed this review to highlight findings identified in single audit reports that are relevant to the U.S. Environmental Protection Agency's administration of programs under the Infrastructure Investment and Jobs Act. The review covered fiscal years 2019 through 2021. The project number for this review was OA-FY22-0099. OIG performed this review to help EPA prepare to

administer an additional $60 billion in funds pursuant to the Infrastructure Investment and Jobs Act, or IIJA.

The activity is intended to address compliance with the law, partnering with states and other stakeholders, operating efficiency and effectiveness, and addressing a top management challenge – managing infrastructure funding and business operations.

Policy, programmatic, and/or operational questions the activity is intended to address: Specific questions addressed include:

- Which areas of noncompliance with applicable federal laws, regulations and program requirements were most frequently noted in single audit reports conducted from FY 2019 through FY 2021?
- Which programs have the most instances of noncompliance noted in single audit reports conducted from FY 2019 through FY 2021?

Brief list of results/conclusions/findings including interim findings: During the review of single audit findings from fiscal years 2019 through 2021, the OIG identified 364 instances of noncompliance with applicable federal laws, regulations, and program requirements by nonfederal entities expending EPA grant dollars. OIG found that most instances of noncompliance were associated with two programs: the Clean Water State Revolving Fund (CWSRF) program and the Drinking Water State Revolving Fund (DWSRF) program.

How EPA used the results/conclusions/findings/interim findings: N/A (No recommendations received)

Link for findings: https://www.epa.gov/system/files/documents/2022-09/_epaoig_20220914-22-N-0057.pdf

Activity 5:

Title	OIG Report: EPA Lacks Documented Procedures for Detecting and Removing Unapproved Software on the Agency's Network (22-E-0028)
Lead National Program	OMS
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Estimated completion date	January 2023

Purpose and brief description: The OIG performed this assessment to assess the U.S. Environmental Protection Agency's compliance with the FY 2021 Inspector General Federal Information Security Modernization Act of 2014 (FISMA) Reporting Metrics and determine whether EPA followed its processes to investigate and remove unapproved software from the network. The activity is intended to address

compliance with the law, operating effectively and efficiently, as well as address a top EPA management challenge – protecting information technology and systems against cyberthreats.

Policy, programmatic, and/or operational questions the activity is intended to address: The activity addresses the following question:

- To what extent is EPA in compliance with FISMA reporting metrics?
- To what extend has EPA followed FISMA processes to investigate and remove unapproved software from the network?

Brief list of results/conclusions/findings including interim findings: The OIG concluded that EPA achieved an overall maturity level of Level 3 (Consistently Implemented) for the five security functions and nine domains outlined in the FY 2021 Inspector General Federal Information Security Modernization Act of 2014 (FISMA) Reporting Metrics. This means that EPA consistently implemented its information security policies and procedures, but quantitative and qualitative effectiveness measures are lacking. The OIG identified that EPA has deficiencies in documenting software management procedures on the detection and removal of nonbase software, which is software that is not part of the standard Agency package.

Without documented procedures governing software management and vulnerability remediation processes, EPA continues to be at risk of outsiders gaining access to compromise and exploit Agency systems and data.

How EPA used the results/conclusions/findings/interim findings: The Agency developed a software triage team in response to an August 2019 chief information officer memorandum to senior information officers asking them to certify software on EPA network. The software triage team maintains an agencywide dashboard available to all information management officers that shows all software loaded on program office and regional computers. The team meets regularly to discuss the justification for unapproved software discovered on the network or the information management officers' plans for software removal and updates the dashboard accordingly.

Link for findings: https://www.epa.gov/system/files/documents/2022-03/_epaoig_20220330-22-e-0028.pdf

Activity 6:

Title	OIG Report: EPA Established a Web Management Program, but Improvements Are Needed in Deploying Web Analytics (22-P-0013)
Lead National Program	OMS
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	March 2022

Purpose and brief description: The OIG conducted this audit to determine whether the U.S. Environmental Protection Agency's public websites and digital services complied with federal laws and policies, as outlined in Office of Management and Budget Memorandum M-17-06, Policies for Federal Agency Public Websites and Digital Services. The activity is intended to address efficiency and effectiveness, as well as a top EPA management challenge – integrating and leading environmental justice, including communicating risks.

Policy, programmatic, and/or operational questions the activity is intended to address: The activity addresses the following question:

- Do EPA public websites and digital services comply with federal laws and policies?

Brief list of results/conclusions/findings including interim findings: The OIG concluded that EPA has established a program to manage its public websites and digital services in accordance with federal laws and policies outlined in Office of Management and Budget M-17-06. EPA has developed a digital strategy, governance structure, Web Council, and policy, as well as procedures and standards, but it has not deployed the required web analytics tracking code for 14 of the 308 public websites that provide essential environmental information to communities. The required code captures website traffic data, such as the number of visitors, the type of web browser used, the length of time visitors remains on each webpage, the documents downloaded from a webpage, and the visitors' locations.

Without fully implementing web analytics, EPA could be without vital usage information to meet the needs of the public, regulatory agencies, industries, and other stakeholders when conveying environmental issues.

How EPA used the results/conclusions/findings/interim findings: During the audit, the OIG identified broken links in six of the ten websites reviewed. The OIG notified the Agency of these issues, and Agency personnel indicated that actions were taken to fix the broken links. The OIG revisited the websites and verified that the Agency fixed the links.

Link for findings: https://www.epa.gov/system/files/documents/2021-12/_epaoig_20211220-22-p-0013.pdf

Activity 7:

Title	OIG Report: EPA Generally Adheres to Information Technology Audit Follow-Up Processes, but Management Oversight Should Be Improved (22-P-0010)
Lead National Programs	OMS, OCSPP
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	December 2021

Purpose and brief description: The Office of Inspector General conducted this audit to determine whether the (1) U.S. Environmental Protection Agency completed corrective actions for agreed-to cybersecurity audit recommendations in OIG reports issued from fiscal year 2017 through fiscal year 2020

and (2) corrective actions effectively resolved the weaknesses identified. The OIG has identified Enhancing Information Technology Security to Combat Cyberthreats as a key management challenge confronting EPA. The activity is intended to address efficiency and effectiveness, as well as top EPA management challenges – enhancing information technology security and complying with key internal control requirements (data quality; policies and procedures).

Policy, programmatic, and/or operational questions the activity is intended to address: The activity addressed the following questions:

- To what extent has EPA completed corrective actions for agreed-to cybersecurity audit recommendations in OIG reports issued from FY 2017 through FY 2020?
- To what extent have corrective actions effectively resolved weaknesses identified?

Brief list of results/conclusions/findings including interim findings: The OIG concluded that EPA completed the 13 corrective actions for cybersecurity audit recommendations in the OIG reports that were reviewed as part of this audit. However, for one of the 13 corrective actions, EPA inaccurately reported its timely completion. For two of the 13 corrective actions, EPA lacked management oversight to effectively resolve identified weaknesses. EPA's goal to provide its workforce and the public with accurate information is undermined when the Agency does not correct deficiencies in a timely manner, which weakens the integrity of its systems and data.

How EPA used the results/conclusions/findings/interim findings: The OIG recommended that the assistant administrator for Chemical Safety and Pollution Prevention develop a strategy to validate that corrective actions are completed before closing them in the Agency's audit tracking system and implement controls to comply with federal and Agency required time frames to install patches. In addition, the OIG recommended that the assistant administrator for Mission Support develop and implement processes for storing certifications collected for annual role-based training requirements in a centralized restricted location. EPA agreed with all four audit recommendations; completed corrective actions for two of them; and provided corrective actions and estimated milestone dates for the remaining two, which are consider resolved with corrective actions pending.

Link for findings: https://www.epa.gov/system/files/documents/2021-12/_epaoig_20211208-22-p-0010.pdf

Activity 8:

Title	OIG Report: Considerations For EPA'S Implementation of Grants Awarded Pursuant to the Infrastructure Investment and Jobs Act (22-N-0055)
Lead National Program	OMS
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	August 2022

Purpose and brief description: The OIG performed this review to highlight findings from prior U.S. Environmental Protection Agency Office of Inspector General and U.S. Government Accountability Office audit reports that are relevant to EPA's administration and oversight of grant awards pursuant to the Infrastructure Investment and Jobs Act. The project number for this review was OA-FY22-0080. The activity is intended to address efficiency and effectiveness, as well as address a top EPA management challenge – managing infrastructure funding and business operations.

Policy, programmatic, and/or operational questions the activity is intended to address: The activity addresses the following question:

- What are key areas for EPA to consider as it prepares to administer and oversee IIJA grants, based on findings from prior OIG and GAO audit reports?

Brief list of results/conclusions/findings including interim findings: The OIG concluded that prior OIG and GAO findings of deficiencies in EPA's grant administration and oversight can be grouped into three broad areas for improvement for EPA to consider as it prepares to administer and oversee IIJA grants: Enhancing the grants oversight workforce and strengthening monitoring and reporting, Establishing and implementing comprehensive guidance and detailed work plans, as well as improving communications, and acquiring adequate documentation to support grant payments.

How EPA used the results/conclusions/findings/interim findings: N/A (No recommendations given)

Link for findings: https://www.epa.gov/system/files/documents/2022-08/_epaoig_20220811-22-N-0055.pdf

Activity 9:

Title	OIG Report: The Coronavirus Pandemic Caused Schedule Delays, Human Health Impacts, and Limited Oversight at Superfund National Priorities List Sites (22-E-0049)
Lead National Program	OMS
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Estimated completion date	April 2023

Purpose and brief description: The U.S. Environmental Protection Agency's Office of Inspector General conducted this assessment to determine the impact of the coronavirus pandemic—that is, the SARS-CoV-2 virus and resultant COVID-19 disease—on long-term cleanups at Superfund National Priorities List sites. The activity is intended to address EPA mission-related efforts to clean up and revitalize land, as well as address a top EPA management challenge – integrating and leading environmental justice, including communicating risks.

The Comprehensive Environmental Response, Compensation, and Liability Act, informally called Superfund, authorizes EPA to oversee the cleanup of contaminated sites. The National Priorities List identifies the worst hazardous waste sites that warrant further investigation and cleanup.

Policy, programmatic, and/or operational questions the activity is intended to address: The audit addresses the following question:

- What impact did the coronavirus pandemic have on long-term cleanups at Superfund National Priorities list sites?

Brief list of results/conclusions/findings including interim findings: OIG sent surveys to 457 remedial project managers in February 2021 and received 279 responses, a 61-percent response rate. OIG also interviewed EPA regional Superfund and Emergency Management Division directors, as well as directors from EPA headquarters. The coronavirus pandemic caused schedule delays and changed or extended the exposure of human health and ecological receptors to hazardous substances, pollutants, or contaminants at 31 Superfund National Priorities List, or NPL, sites. The pandemic also prolonged such human health and environmental exposures, as well as contributed to disproportionate impacts on some communities. Furthermore, some communities that do not use or cannot access electronic communications were unable to participate in community-involvement activities. Conversely, the pandemic did steer some positive changes, such as improved health and safety protocols, increased community participation in virtual meetings, and reduced EPA travel costs. Also, as of February 2021, there were no known impacts to cleanup costs at a large majority of Superfund NPL sites.

Coronavirus pandemic restrictions delayed work and limited on-site oversight, with disproportionate impacts to some communities.

How EPA used the results/conclusions/findings/interim findings: The OIG made three recommendations to improve community involvement, Superfund site oversight, and safe deployment of RPMs during a pandemic or other emergency. Based on additional information provided by EPA gave to the OIG in its response to the draft report, Recommendation 1 was revised. The OIG agreed with the Agency's proposed corrective action for Recommendation 3, which is resolved. Recommendations 1 and 2 are unresolved with resolution efforts underway. The report was updates as appropriate based on EPA's technical comments.

Link for findings: https://www.epa.gov/system/files/documents/2022-06/_epaoig_20220623-22-E-0049.pdf

Activity 10:

Title	OIG Report: EPA's Reporting of Its Financial and Award Data in Accordance with the Digital Accountability And Transparency Act (DATA ACT) Of 2014 (22-P-0001)
Lead National Program	OMS
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity

Estimated completion date	September 2023

Purpose and brief description: The Digital Accountability and Transparency Act of 2014 requires the inspector general to review a statistically valid sample of the U.S. Environmental Protection Agency's spending data submitted under the Act to assess the completeness, accuracy, timeliness, and quality of the data sampled, as well as EPA's implementation and use of the data standards established by the Office of Management and Budget and U.S. Department of the Treasury. To satisfy this requirement, the OIG performed this audit on fiscal year 2020 fourth-quarter financial and award data submitted to the Department of the Treasury by EPA's Office of the Chief Financial Officer. The activity is intended to address compliance with the law, and effectiveness and efficiency, as well as address top EPA management challenges – complying with key internal control requirements (data quality) and fulfilling mandated reporting requirements.

Policy, programmatic, and/or operational questions the activity is intended to address:. The activity addresses the following question:

- To what extent is EPA in compliance with the requirements of the Digital Accountability and Transparency Act of 2014?
- To what is extent is EPA spending data complete, accurate, and timely?

Brief list of results/conclusions/findings including interim findings: The OIG found that EPA substantially complied with the requirements of the Digital Accountability and Transparency Act of 2014 and submitted financial and award data to the Department of the Treasury's DATA Act Broker on time. The OIG's nonstatistical and statistical tests of EPA's DATA Act submissions—including those tests that assessed the data attributes of completeness, accuracy, and timeliness—determined that EPA's fiscal year 2020 fourth-quarter financial and award data were of "higher" quality, as defined by the CIGIE FAEC Inspectors General Guide to Compliance under the DATA Act, dated December 4, 2020.

How EPA used the results/conclusions/findings/interim findings: The OIG recommended that the assistant administrator for Mission Support update EPA's policies and procedures to address the errors identified in this audit, as well as update EPA's grants management system to align with the DATA Act data standards and provide training to improve the consistency of data entry. EPA agreed with the six recommendations and provided acceptable planned corrective actions and estimated completion dates. The recommendations are considered resolved with corrective actions pending.

Link for findings: https://www.epa.gov/system/files/documents/2021-11/_epaoig_20211108-22-p-0001.pdf

Activity 11:

Title	OIG Report: EPA Did Not Follow Agency Policies in Managing the Northbridge Contract and Potentially Violated Appropriations Law (22-E-0027)
Lead National Program	OMS

FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	September 2022

Purpose and brief description: The U.S. Environmental Protection Agency's Office of Inspector General conducted this assessment of EPA Contract EP-C-16-001, awarded to Northbridge, to follow up on funding and invoice irregularities in Region 9 for the States of Hawaii and California identified in OIG Report No. 20-P-0331. The purpose of this assessment was to determine whether (1) EPA properly approved, paid for, and accounted for charges submitted by Northbridge for work in Region 9 for the States of Hawaii and California under EPA Contract EP-C-16-001 and (2) Northbridge provided acceptable deliverables, as specified in EPA Contract EP-C-16-001 and the associated work plans. This contract provided support services to states for their municipal drinking water and wastewater programs.

Policy, programmatic, and/or operational questions the activity is intended to address: Specific questions the activity addressed include:

- Did EPA properly approve, pay for and account for charges submitted by Northbridge for work in Region 9 for the States of Hawaii and California under EPA Contract EP-C-16-001?
- Did Northbridge provide acceptable deliverables, as specified in EPA Contract EP-C-16001?

Brief list of results/conclusions/findings including interim findings: The OIG found that the Agency did not follow estimated split-funding policy when allocating $6.8 million for the entire contract during the period analyzed. Staff did not follow protocols nor obtain proper approvals when paying invoices for the contract according to EPA's Administrative Control of Appropriated Funds, Release 3.2, known as the 2008 Funds Control Manual, and EPA Acquisition Guide. These issues occurred because management in the Office of Water and in the Office of Acquisition Solutions, within the Office of Mission Support, did not ensure that EPA's contract staff understood and adhered to EPA accounting policies. By not following these policies, the staff increased the risk of expending appropriated funds in ways that were inconsistent with the funds' purposes and beyond the amounts available, which could have violated 31 U.S.C. § 1301(a), known as the Purpose Statute, and increased the likelihood of the Agency violating the Antideficiency Act, 31 U.S.C. § 1341(a)(1)(A).

Because key accounting policies were not adhered to, EPA cannot ensure that $6.8 million in appropriated dollars went toward their intended purposes, potentially violating laws.

How EPA used the results/conclusions/findings/interim findings: The OIG recommended that the assistant administrators for Water and for Mission Support, in coordination with the general counsel and chief financial officer, (1) assess whether and to what extent EPA staff failed to comply with 31 U.S.C. §§ 1301(a) and 1341(a)(1)(A); (2) annually train staff on requirements applicable to funding contract activity using multiple appropriations; (3) review and update internal controls to ensure the segregation of duties between staff, as well as the proper review and tracking of the completion of contractor deliverables. EPA and the OIG reached agreement on corrective actions for the three recommendations.

Link for findings: https://www.epa.gov/system/files/documents/2022-03/_epaoig_20220331-22-e-0027.pdf

Office of Research and Development (ORD)

Activity 1:

Title	Assessing End User Satisfaction of ORD's Research Products
Lead National Program	ORD
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 1: Ensure Scientific Integrity and Science-Based Decision Making
Completion date	August 2022

Purpose and brief description: To measure ORD's progress on its Long-Term Performance Goal of the percentage of research products that meet partner's needs, ORD distributed 273 surveys to research product users in EPA Program Offices, Regions, other federal and non-federal partners to solicit feedback on the products. This survey seeks to gather input from partners to address any potential quality, usability, and/or timeliness issues that may have been experienced with ORD product use and delivery. The activity is meant to be a catalyst to identify and improve operational inefficiencies during research product development and provide data to further the continuous improvement of ORD research.

Policy, programmatic, and/or operational questions the activity is intended to address:

This survey seeks to gather input from partners to address any potential quality, usability, and/or timeliness issues that may have been experienced with ORD product use and delivery. The activity is meant to be a catalyst to identify and improve operational inefficiencies during research product development and provide data to further the continuous improvement of ORD research. The results from this survey have highlighted the need for consistent engagement with ORD partners throughout the product life cycle and the importance of communicating products to the partner once it has been delivered.

Brief list of results/conclusions/findings including interim findings: ORD found that 94% of ORD's research products assessed in FY 2022 had met partner needs.

How EPA used the results/conclusions/findings/interim findings: The survey data collected provided important insights into ORD's contributions to its partners' missions and the data was used to support research planning and engagement activities. The data collected will inform staff-level and management discussions with ORD's partners ranging from technical improvements to the quality, usability, and timeliness of ORD's research products to broader improvements to ORD's relationship with its product user base. This measure has also provided an additional mechanism for managers to ensure that peer review and clearance processes are strictly adhered to for each product prior to its delivery.

Link for findings*:* Results are published in the Annual Performance Report.

Activity 2:

Title	GAO Report: Small Business Research Programs: Agencies Should Further Improve Award Timeliness
Lead National Program	ORD
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 1: Ensure Scientific Integrity and Science-Based Decision Making
Completion date	October 2021

Purpose and brief description: This engagement occurs on an annual basis to ensure agency-wide timely issuance of Small Business Innovation Research (SBIR) and Small Business Technology Transfer (STTR) awards. Timely issuance can affect the speed with which small businesses receive funds and begin work. Participating agencies have awarded over $3 billion to small businesses to develop and commercialize new technologies.

Policy, programmatic, and/or operational questions the activity is intended to address: GAO's audit examines: (1) agencies' timeliness in notification and issuance, (2) the extent to which agencies have addressed risks to award timeliness, and (3) the extent to which DOD established a pilot program to improve timeliness.

Brief list of results/conclusions/findings including interim findings: GAO found that less than 30 percent of awards have been issued on time during the 5-year review periods. However, EPA commented that GAO's report lacks acknowledgment that efforts have been undertaken resulting in progress not covered during this audit review period. For example, EPA implemented new procedures to substantially improve identified timeliness issues for the current Small Business Innovative Research (SBIR) Request for Application (RFS) cycle. EPA expects further improvements following the full implementation of these procedures. In October 2022, the GAO released a timeliness report that stated the following, "*After evaluating the impact of previous steps taken to improve timeliness, EPA is formalizing a structure for establishing, tracking, and reviewing significant milestones in the SBIR award process in order to meet SBA time frames*."

How EPA used the results/conclusions/findings/interim findings: GAO issued one recommendation: EPA (ORD) should evaluate the effectiveness of steps taken to improve SBIR award timeliness and take any necessary additional steps to consistently meet SBA award timeliness guidelines. EPA agreed with the recommendation and during the engagement, steps were taken to assess best practices, leading to the discovery that a formalized plan will further enhance EPA's ability to improve SBIR award timeliness. This comprehensive plan will create a structure for establishing, tracking, and reviewing significant milestones in the SBIR process to determine compliance with timeliness goals. In October 2022, the GAO released their most recent report and stated, "Other civilian agencies—U.S. Department of Agriculture (USDA) and the Environmental Protection Agency (EPA) in particular—have shown timeliness improvements over the last few years." ORD submitted the completed timeliness plan to the GAO in July 2022. The GAO will assess EPA's timeliness data for the current and subsequent fiscal years' award timeliness data to

determine whether the efforts outlined in the plan led to "consistently meet SBA award timelines guidelines" as called for by the recommendation before closing out the recommendation as implemented.

Link for findings: https://www.gao.gov/assets/gao-22-104677.pdf

Activity 3:

Title	GAO Report: Persistent Chemicals: Technologies for PFAS Assessment, Detection, and Treatment
Lead National Program	ORD
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 1: Ensure Scientific Integrity and Science-Based Decision Making
Completion date	July 2022

Purpose and brief description: This engagement was initiated as a technology assessment on the Federal Government's capabilities concerning PFAS assessment, detection, and treatment. The technology assessment examined technologies for more efficient assessments of the adverse health effects of PFAS and alternative substances; the benefits and challenges of the current and emerging technologies for PFAS detection and treatment, and policy options that could help enhance benefits and mitigate challenges associated with these technologies.

Policy, programmatic, and/or operational questions the activity is intended to address: The GAO did not audit the Environmental Protection Agency (EPA) or its programs, but rather conducted a review and assessment of PFAS detection and removal technologies and the assessment of PFAS alternatives under GAO's Technology Assessment product line.

Brief list of results/conclusions/findings including interim findings: The GAO found that current and promising technologies and methods could accelerate the assessment of human health effects caused by per- and polyfluoroalkyl substances (PFAS) and improve the detection and treatment of PFAS in the environment. The GAO identified three policy options that could help to mitigate issues caused by PFAS. GAO states that policymakers can promote research, expand method development, and support full-scale treatment to help mitigate challenges associated with PFAS assessment, detection, and treatment technologies. These policy options did not constitute recommendations.

How EPA used the results/conclusions/findings/interim findings: Recommendations are not issued as part of a technology assessment.

Link for findings: https://www.gao.gov/assets/gao-22-105088-highlights.pdf

Activity 4:

Title	GAO Report: Offshore Oil Spills: Additional Information Is Needed to Better Understand the Environmental Tradeoffs of Using Chemical Dispersants
Lead National Program	ORD
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 1: Ensure Scientific Integrity and Science-Based Decision Making
Completion date	December 2021

Purpose and brief description: In 2020, the GAO initiated an engagement to understand the use and effectiveness of chemical dispersants. In April 2010, an explosion onboard the Deepwater Horizon drilling rig in the Gulf of Mexico resulted in eleven deaths and the release of approximately 206 million gallons of oil. During the Deepwater Horizon oil spill, responders applied dispersants to the oil slick at the ocean surface as well as at the wellhead more than 1,500 meters below the surface. The subsurface use of dispersants was unprecedented and controversial due to the unknown effects of dispersants below sea-level.

Policy, programmatic, and/or operational questions the activity is intended to address: This audit examined the following: (1) what is known about the effectiveness of dispersants, (2) what is known about the effects of chemically dispersed oil on the environment, (3) what is known about the effects of dispersants on human health, and (4) the extent to which federal agencies have taken action to help ensure decision makers have quality information to support decisions about the use of chemical dispersants.

Brief list of results/conclusions/findings including interim findings: The GAO found that while agencies have supported research, there is limited quality information about the effectiveness of subsurface dispersants and the toxicity and biodegradation of chemically dispersed oil. This is due to a variety of factors, including a wide variation in modeling results, inconsistent test designs, and experiments that may not reflect ocean conditions. The GAO concluded that by assessing the potential environmental efforts of the subsurface use of dispersants, the Coast Guard and EPA could help ensure that decision makers are fully equipped with information about the environmental tradeoffs.

How EPA used the results/conclusions/findings/interim findings: GAO issued one recommendation to EPA (the Office of Research and Development and the Office of Land and Emergency Management). EPA should work with the Coast Guard and other agencies to conduct assessments—such as biological assessments or ecological risk assessments—examining the potential effects of the subsurface use of dispersants on ocean ecosystems in regions where this is considered a viable response option. EPA agrees with this recommendation, understanding it provides flexibility for conducting these assessments as part of contingency planning in regions where subsurface dispersant is considered amongst the viable response options. EPA will support the U.S. Coast Guard (USCG) in identifying assessment methodologies to examine potential environmental and ecological effects of subsurface use of dispersants on ocean systems for select regions, and, as appropriate, coordinate with the National Oceanic and Atmospheric Administration and other federal agencies. EPA anticipates completing this recommendation in 2026.

Link for findings: https://www.gao.gov/assets/gao-22-104153.pdf

Activity 5:

Title	ORD External Webinar Series Planning Process
Lead National Program	ORD
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 1: Ensure Scientific Integrity and Science-Based Decision Making
Completion date	August 2022

Purpose and brief description: ORD establishes an annual external webinar series schedule to track webinar dates, series, topics, presenters, and other relevant information for the upcoming year. A draft process has been developed in an effort to standardize the process, however, not all relevant stakeholders have been involved. The current process requires repetitive topic gathering and submission of information for review.

Policy, programmatic, and/or operational questions the activity is intended to address: This kaizen event served as a catalyst to develop a process of selecting and approving annual topics for each of ORD's established external webinar series.

Brief list of results/conclusions/findings including interim findings: ORD identified issues with the current selection process and created process steps to identify and select potential webinar topics, and schedule and coordinate approval. ORD found that developing a standardized process eliminated the burden when selecting topics and improved engagement with management and branding/messaging both internally and externally.

How EPA used the results/conclusions/findings/interim findings: ORD developed a centralized process to select webinar topics and series which

Link for findings: *N/A*

Activity 6:

Title	Research Area: Assessment and Management of Harmful Algal Blooms
Lead National Program	ORD
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 1: Ensure Scientific Integrity and Science-Based Decision Making
Completion date	February 2022

Purpose and brief description: Harmful algal blooms (HABs) are increasing in frequency, intensity, and geographic range. Potential impacts from blooms and associated toxins include health risks to humans, pets, livestock, wildlife, and other biotas; restricted recreational activities; increased treatment costs and

decreased economic revenue. HABs are complex ecological processes that are affected by various conditions (i.e., physical-chemical, biological, hydrological, and meteorological) and therefore are difficult to predict. This research area focuses on toxicity and impacts to humans and biota, mitigation of blooms and their effects in source and drinking waters, and the characterization of bloom-impacted environments.

Policy, programmatic, and/or operational questions the activity is intended to address: EPA, states, and tribes need tools to predict toxic bloom occurrence, characterize bloom development, increase the effectiveness of cyanotoxin monitoring techniques, and understand the impacts of shifting temperature patterns and hydrologic regimes on blooms. This research informed best management practices to mitigate HABs including but not limited to refining Drinking Water Health advisories and informing Recreational Criteria for cyanotoxin exposures.

Brief list of results/conclusions/findings including interim findings: This research area, under EPA's Safe and Sustainable Water Resources research program (SSWR), supported planned activities in the FY19-23 Strategic Research Action Plan (StRAP) and expanded the state of scientific understanding and best management approaches for nutrient/harmful algae bloom reduction. ORD developed predictive and forecasting models that may identify the top drivers that promote or deter cyanobacteria bloom development in lakes and reservoirs. The tools will be used to predict toxic bloom occurrence, characterize bloom development, and increase the effectiveness of cyanotoxin monitoring techniques.

How EPA used the results/conclusions/findings/interim findings: EPA publications such as the Cyanobacteria in Lakes indicator in the Report on the Environment, produced data to estimate cyanobacteria concentrations in water to describe trends in detectable cyanobacteria in more than 2,000 lakes and reservoirs across the U.S.

Link for findings: https://www.epa.gov/water-research/cyanobacteria-assessment-network-cyan; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC8843926/

Activity 7:

Title	Research Area: Waste Recovery and Beneficial Use
Lead National Program	ORD
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 1: Ensure Scientific Integrity and Science-Based Decision Making
Completion date	May 2022

Purpose and brief description: Many existing materials considered as waste for disposal could potentially be reused, recycled, or reprocessed to reduce the consumption of natural resources, decrease waste generation, and reduce the volume of materials disposed into hazardous and nonhazardous landfills. This project provided methodologies that can be used to determine whether the potential for adverse impacts to human health and the environment from a proposed beneficial use is comparable to or lower than that posed by an analogous product, or at or below relevant health-based and regulatory benchmarks.

Policy, programmatic, and/or operational questions the activity is intended to address: This research enhanced scientific understanding of material recycling, waste remediation, and the potential for adverse human health and environmental impacts of beneficial material reuse.

Brief list of results/conclusions/findings including interim findings: This research area, under EPA's Sustainable and Healthy Communities research program (SHC), supported the planned activities in the FY 2019-22 StRAP, and identified potential for recycling materials and quantified the risks and associated adverse impacts of beneficial reuse of materials. FY 2022 specific topic areas include studying advanced separation technologies for recovery and reuse of industrial-use solvents, engineering soil amendments for remediation of lead and other contaminants, remediation of industrial by-products, and Polyethylene Terephthalate (PET) Recycling Processes Research into the PET reclamation and converting steps found that the amounts of materials represent opportunities for recycling, with a fraction of PET bottles collected and almost no non-bottle PET collected. While 29.0% of PET bottles are collected for recycling, collected material is processed for conversion to products at a 65.5% efficiency. Mismanaged waste represents 2.66% of PET that would go to disposal, totaling 183 million pounds.

How EPA used the results/conclusions/findings/interim findings: This research area produced numerous tools, models, and peer-reviewed journal articles. These outputs and products used a variety of data, tools, and method/analytical approaches including, but not limited to:

- Evaluation and characterization of emerging technologies, policies, sorting, and identification trends in reuse, recycling, and demolition activities.
- Collection and analysis of data from ORD colleagues, existing data, and/or review of new literature to address issues related to leaching of organics into groundwater
- LEAF methods and software (i.e., LeachXS-Lite) to measure organic and inorganic Constituents of Potential Concern (COPCs) 745
- In situ laboratory experiments on soil amendments, including implementation of screening tools and engineered soil amendment mixtures

Link for findings: https://www.epa.gov/smm/sustainable-management-industrial-non-hazardous-secondary-materials; https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9065037/

Activity 8:

Title	Leadership for Inclusion (L4I) Survey
Lead National Program	ORD
FY 2022-2026 Cross-Agency Strategy supported	Cross-Agency Strategy 3: Advance EPA's Organizational Excellence and Workforce Equity
Completion date	August 22

Purpose and brief description: Ensuring a diverse, equitable, inclusive, and accessible environment within the workplace is one the Agency's, and ORD's top priorities. ORD is continually looking for

innovative ways to improve its Diversity, Equity, Inclusion, and Accessibility (DEIA) program. ORD is partnering with the Office of Personnel Management (OPM) to administer the Leadership for Inclusion (L4I) Survey. This survey is designed to help agencies develop a climate of diversity, equity, inclusion, and accessibility.

Policy, programmatic, and/or operational questions the activity is intended to address: The survey seeks input from all staff, with the results informing leadership on the DEIA climate across ORD. The survey focuses on the measurement of five categories of leadership behaviors that result in a positive DEIA climate:

- Openness
- Team Stewardship
- Individual Support
- Consistency
- Advocacy

Brief list of results/conclusions/findings including interim findings: OPM administered the survey and sent results to Managers in September 2022.

How EPA used the results/conclusions/findings/interim findings: Feedback received improves ORD and provides leaders with insights into what they are doing well and where they should improve upon on in our DEIA efforts. This survey allowed ORD employees to provide anonymous feedback on ORD leadership, their efforts toward inclusion, and areas they may improve upon. There was a 48% response rate (737 of 1530 employees responded). 90% of ORD employees are proud to be a part of their team, 87% of employees are satisfied with their time, and 85% felt integral to their team.

Link for findings*: N/A*

Office of Water (OW)

Activity 1:

Title	EPA's Annual Assessment of the Jurisdictions' Progress toward Meeting the Chesapeake Bay Total Maximum Daily Load (Bay TMDL)
Lead National Program	OW
FY 2022-2026 Strategic Goal and Objective	Goal 5: Ensure Clean and Safe Water for All Communities Objective 5.2: Protect and Restore Waterbodies and Watersheds
Completion date	June 2022

Purpose and brief description: Through the *2014 Chesapeake Bay Watershed Agreement*, the Chesapeake Bay Program has committed to having 100% of pollution-reducing practices in place that would achieve all of the nitrogen, phosphorus and sediment reductions necessary to meet the goals outlined in the Bay TMDL by 2025. These estimates are generated by the Chesapeake Bay Watershed Model and are derived from land use data, implementation and effectiveness of best management practices and the most up-to-date water quality monitoring data. The Chesapeake Bay Program assesses water quality by the amount of dissolved oxygen in the Bay, chlorophyll a (a measure of algae growth) and water clarity (using underwater grass acreage).

Policy, programmatic, and/or operational questions the activity is intended to address: The seven watershed jurisdictions, in coordination with local governments, businesses, non-governmental organizations and individuals have installed pollution-reducing best management practices to lower the amount of nitrogen, phosphorus and sediment entering tributaries of the Chesapeake Bay. The conservation practices reported by the seven watershed jurisdictions, along with land use, manure and fertilizer information, are entered into a sophisticated suite of modeling tools to estimate the progress that each jurisdiction is making in meeting their individual nitrogen, phosphorus and sediment goals as outlined in the Bay TMDL. By incorporating the best available data into the computer simulations and pollution load estimates, EPA can more accurately track the jurisdictions' progress toward their pollution-reducing goals. Assessing the progress that each jurisdiction is making toward reducing nitrogen, phosphorus and sediment pollution entering not only the Chesapeake Bay, but also their local waterways, gives EPA and the larger partnership a more holistic view of how conservation practice installation and improved management actions are helping to improve Bay water quality.

Brief list of results/conclusions/findings including interim findings: As of 2021, the best management practices in place to reduce pollution are estimated to achieve 49% of the nitrogen reductions, 64% of the phosphorus reductions and 100% of the sediment reductions needed to attain applicable water quality standards when compared to 2009 levels. The jurisdictions are off track for nitrogen and phosphorus since BMPs are not in place to achieve the 2021 target for nitrogen and phosphorus. The 2021 target is essentially 80% of the needed nitrogen, phosphorus, and sediment pollution load reductions to attain water quality standards (the difference between the 2009 pollution load and the 2025 pollution load). While BMPs are in place to achieve 80% of the needed sediment load reductions, marking the sediment goal complete, the pollution control measures are not in place to achieve the 2021 target for nitrogen and phosphorus loads.

Over the past year, it was determined that 77% of nitrogen reductions came from the agricultural sector. Declines in phosphorus and sediment pollution came primarily from the natural (forests, scrub and brush, stream beds and banks, wetlands and shorelines) and agricultural sectors. While historically, nitrogen and phosphorus reductions have come from the wastewater sector, in 2021, nitrogen and phosphorus entering the Bay actually increased in the wastewater sector, mainly due to permit violations at select Maryland wastewater facilities.

How EPA used the results/conclusions/findings/interim findings: EPA uses these estimates to evaluate whether jurisdictions are on track to meet the reduction goals as reflected in the Bay TMDL, the Watershed Implementation Plans, and two-year milestones, and whether increased levels of oversight are needed in order to assist the jurisdictions in meeting their water quality goals. In addition, funding and

technical assistance is greater targeted towards those sectors (e.g., agriculture or stormwater) that may be off track.

Link for findings: https://www.chesapeakeprogress.com/clean-water/watershed-implementation-plans and https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/2021-2022-Bay-Barometer_2022-10-10-202922_hdrd.pdf

Activity 2:

Title	Clean Water State Revolving Fund Reviews
Lead National Program	OW
Strategic Goal and Objective supported	Goal 5: Ensure Clean and Safe Water for All Communities. Objective 5.1: Ensure Safe Drinking Water and Reliable Water Infrastructure.
Estimated Completion Date	September 2023

Purpose and brief Description: EPA completes annual reviews of each Clean Water State Revolving Fund Program (CWSRF).

Policy, programmatic, and/or operational questions the activity is intended to address: These reviews will help assess if states are effectively implementing the CWSRF Categorical Grant Program by increasing the amount of non-federal dollars leveraged. The reviews will also be used to encourage states to direct funding to projects that address climate resiliency and equity.

Brief list of results/conclusions/findings including interim findings: EPA CWSRF review results are reported out in 51 State specific Performance Evaluation Reports annually. The reports function similarly to base line monitoring reports for grant programs. Because reports are state specific, there is not a national report of overall program evaluation. Examples of items included in the review include:

- Are states effectively implementing the CWSRF Categorical Grant Program by leveraging non-federal funds?
- Are the states complying with the EPA's State and Tribal Assistance Grant Program requirements?
- What steps are the states taking to promote climate resiliency and equity through CWSRF funding?

How EPA used the results/conclusions/findings/interim findings: EPA makes publicly available an annual report on the status of the national CWSRF program. EPA also shares project and financial data at the national and state level.

Link for findings: The findings from the annual state reviews are documented in Program Evaluation Reports, which are provided to EPA Headquarters by the regional offices. EPA Headquarters periodically updates our guidance based on these findings. Revised guidance is made available to states and stakeholders through EPA's CWSRF website.

Activity 3:

Title	Great Lakes Restoration Initiative Environmental Accomplishments in the Great Lakes (EAGL2) Data System Audit Procedures and Results
Lead National Program	OW
FY 2022-2026 Strategic Goal and Objective supported	Goal 5: Ensure Clean and Safe Water for All Communities Objective 5.2: Protect and Restore Waterbodies and Watersheds
Completion date	September 2022

Purpose and brief description: Annual review of Great Lakes Restoration Initiative (GLRI) Action Plan III reported results through an audit of information reported to EPA through the Environmental Accomplishments in the Great Lakes 2 (EAGL 2) data system.

Policy, programmatic, and/or operational questions the activity is intended to address: The annual system-wide audit of the EAGL 2 data system is conducted to assess the accuracy, completeness, consistency, and currency (respective to the Data Call for which the results were submitted) of reported results for audited Measures of Progress. The audit identifies sources of error so EPA and Regional Working Group (RWG) agencies may implement systematic and procedural changes to improve the data quality of future reporting. The system-wide audit, unlike internal audits conducted by individual RWG agencies, reviews data entered in the EAGL 2 system by all RWG agencies.

The EAGL 2 system-wide audit assesses whether stored records and documentation, uploaded to EAGL 2, support results entered in the system, and whether the reported results meet GLRI Action Plan III Measure of Progress definitions.

Brief list of results/conclusions/findings including interim findings: Findings of the most recent audit continue to indicate improvements to the quality of GLRI project data and results in EAGL2. Inconsistencies were found in 3-6% of audited projects in FY 2021 and FY 2022 vs 27% in FY 2020. Improvements have been made through implementation of additional agency reviews, data entry improvements, and training. All instances where the results did not match supporting documentation were examined and corrective actions were taken.

How EPA used the results/conclusions/findings/interim findings: To further improve data collection, EPA has continued to make improvements to the EAGL2 Information System: the system is a more robust database system than the previous spreadsheet-based system, providing improved control over data, better verification and documentation, and help in maintaining and enhancing the reliability of reported results in line with GAO recommendations in its July 2015 Report (GAO-15-526). As a result of audit findings, EPA is improving the EAGL2 Information System by: (i) using the system to enforce a requirement for all agencies to include supporting documentation when entering results and (ii) improving the workflow to ensure reviewers can more quickly and easily verify results, make changes, or send a request for changes to the project officer who did data entry.

Link for findings: N/A

Activity 4:

Title	Great Lakes Restoration Initiative Report to Congress
Lead National Program	OW
FY 2022-2026 Strategic Goal and Objective supported	Goal 5: Ensure Clean and Safe Water for All Communities Objective 5.2: Protect and Restore Waterbodies and Watersheds
Completion date	December 2022

Purpose and brief description: The EPA Administrator is required by Clean Water Act Section 118 (c)(7)(H)(iii) to provide annually the Great Lakes Restoration Initiative (GLRI) Report to Congress (RTC) to the Committee on Transportation and Infrastructure of the House of Representatives and the Committee on Environment and Public Works of the Senate. The RTC is to provide a detailed description of the progress of the GLRI and amounts transferred to participating Federal departments and agencies. To satisfy these requirements, the RTC provides examples of progress within each of the five GLRI focus areas (Toxic Substances and Areas of Concern; Invasive Species; Nonpoint Source Pollution Impacts on Nearshore Health; Habitats and Species; and Foundations for Future Restoration Actions) and provides details on annual results for each of the 23 measures of progress pertaining to the focus areas. The RTC also identifies annual funding to participating Federal departments and agencies over time.

Policy, programmatic, and/or operational questions the activity is intended to address:

- What progress has been made under each of five focus areas and their associated measures and annual targets?
- What resources have been transferred to participating Federal departments and agencies over a five-year period?

Brief list of results/conclusions/findings including interim findings: Since its inception in 2010, the GLRI has greatly accelerated efforts to protect and restore the Great Lakes – the largest system of fresh surface water in the world. The GLRI continues to address the most persistent and challenging environmental problems facing this vital ecosystem. Under EPA's leadership, the GLRI has been a catalyst for unparalleled coordination among the federal agencies and departments that make up the GLRI Interagency Task Force and the GLRI Regional Working Group. This unprecedented coordination has produced unprecedented results. Through March of 2022, GLRI has funded over 6,800 projects focused on the most important Great Lakes environmental issues, including cleaning up highly contaminated Areas of Concern (AOCs), protecting, and restoring native habitat and species, and preventing and controlling invasive species. In FY 2022 all management actions were completed at the Buffalo River AOC; 16 U.S. AOCs (out of 31) now have either been delisted or have achieved "all management actions complete" status.

How EPA used the results/conclusions/findings/interim findings: EPA is using results to influence outyear planning and funding decisions. Results are informing development of a new GLRI Action Plan IV, covering FY 2025 – FY 2029. For example, assuming continued use of an invasive species measure regarding the reported amount of acreage on which invasive species is controlled, the result from that

measure will be used to establish ambitious, yet achievable, targets for that measure from FY 2025 – FY 2029. Reported results would be similarly used to establish ambitious, yet achievable targets for the corresponding measures for pounds of phosphorus reductions from conservation practices, gallons of untreated stormwater runoff captured or treated, and habitat acreage protected or restored.

Link for findings: https://www.glri.us/documents. Results under Action Plan III measures are also tracked at https://www.glri.us/results.

Activity 5:

Title	Review of Great Lakes Long-Term Monitoring Programs
Lead National Program	OW
FY 2022-2026 Strategic Goal and Objective supported	Goal 5: Ensure Clean and Safe Water for All Communities Objective 5.2: Protect and Restore Waterbodies and Watersheds
Completion date	September 2022

Purpose and brief description: Great Lakes National Program Office (GLNPO) annually monitors Great Lakes water quality, aquatic life, sediments, air, and coastal wetlands.

Policy, programmatic, and/or operational questions the activity is intended to address: Monitoring results are used to help determine the overall health of the Great Lakes ecosystem and fulfill some of the requirements of Clean Water Act Section 118 and the obligations under the Great Lakes Water Quality Agreement. GLNPO uses a variety of internal and external mechanisms to maintain the integrity of these long-term programs and ensure the timely and accurate reporting on the health of the Great Lakes ecosystem. Quality documentation and standard operating procedures are frequently reviewed and updated as necessary. Datasets undergo a vigorous validation and verification process before they are reported and shared publicly. Further, GLNPO intermittently reviews the sampling and analytical frameworks for each monitoring activity using external technical experts.

Brief list of results/conclusions/findings including interim findings: Monitoring datasets continue to be uploaded to the Great Lakes Environmental Database portal on EPA's Central Data Exchange. Data continues to be reported for monitored Great Lakes water quality, aquatic life, sediments, air, and coastal wetlands. Data from the EPA long-term monitoring surveys have played a major role in tracking Great Lakes ecosystem health and emerging threats to Great Lakes water quality. As a result of these monitoring programs, EPA is able to assess and report on lake-wide and basin-wide ecological improvements and on potential ecosystem threats that could require management attention. Examples of the results from these programs include the following:

- A 50+ year dataset of Polychlorinated Biphenyls (PCBs) in Lake Trout collected by the EPA Great Lakes Fish Monitoring and Surveillance Program reveal significant decreases in PCBs in Lake Michigan Lake Trout since the late 1970s when PCB manufacture and use was phased out. These data have supported model forecasts by EPA Office of Research and Development that predict continued declines in PCB concentrations in Lake Trout as a result of long-term decreases of PCBs in other media including air, water and sediment as a result of management actions.

- Long term monitoring of the Great Lakes phytoplankton and zooplankton community through EPA's Great Lakes Biology Monitoring program has documented changes in taxa, biomass and depth distributions due to environmental stressors associated with invasive species introductions and changes in climate. Actions taken by environmental managers are informed by the results of the program such as identification of a major shift in the Lake Huron zooplankton community structure that impacted forage fish and the recreational fishery. The Great Lakes Biology Monitoring Program also searches for new aquatic non-native species, helping to identify newly introduced species even when they are at low abundances.
- GLNPO's Great Lakes Water Quality Monitoring Program includes monitoring of Spring Total Phosphorus (TP) concentrations in Lake Erie open waters since 1983 that allows EPA to assess whether those concentrations meet Great Lakes Water Quality Agreement objectives. Program monitoring indicates that exceedances of TP concentration objectives in the three Lake Erie basins have been particularly evident since the early 2000s, and most consistently so in the western and central basins.

How EPA used the results/conclusions/findings/interim findings: EPA is using results to report on the health of Great Lakes ecosystem and identify the current and emerging challenges impacting the health of the ecosystem. Results also influence outyear planning and funding decisions.

Link for findings*:* Great Lakes Monitoring | US EPA.

Activity 6:

Title	Gulf of Mexico Performance Metrics
Lead National Program and Region	Office of Water/Region 4
FY 2022-2026 Strategic Goal and Objective supported	Goal 5: Ensure Clean and Safe Water for All Communities Objective 5.2: Protect and Restore Waterbodies and Watersheds
Completion date	September 2022

Purpose and brief description: Gulf of Mexico Division (GMD) quarterly monitors Gulf of Mexico water quality, habitat restoration, community resilience, and environmental education.

Policy, programmatic, and/or operational questions the activity is intended to address: Environmental results (water quality, habitat restoration, community resilience, and environmental education), are used to help determine the overall health of the Gulf of Mexico ecosystem and to improve resiliency levels and environmental education of communities throughout the Gulf of Mexico watershed to fulfill requirements of Clean Water Act 104B3. GMD uses a variety of internal and external mechanisms to maintain the integrity of environmental results and ensure the timely and accurate reporting on the health of the Gulf of Mexico ecosystem. Quality documentation and standard operating procedures are frequently reviewed and updated as necessary.

Brief list of results/conclusions/findings including interim findings: The GMD has a target for each metric mentioned above and uses these to assess performance and to identify possible ways to focus resources. During this fiscal year, GMD exceeded its annual target for all metrics:

Measure	Target	Actual	Unit of Measure
Habitat Restoration	350	253,195	Acres Restored, Enhanced, or Protected
Environmental Education	10,000	31,199	Individuals Reached
Community Resilience	40	155	Communities Impacted
Water Quality	6	70	Segments Improved

It should be noted the actual numbers could change due to the two-month quality assurance and control period. Final FY 2022 metrics will be reported in December 2022.

How EPA used the results/conclusions/findings/interim findings: GMD reviews quarterly and final reports from recipients of assistance agreements to determine project effectiveness and to narrow foci of Federal Funding Opportunities. These data aid innovation and highlight geographically prone contributors of issues impacting the Gulf of Mexico. We used data from quarterly reports and our engagement with partners to expand GMD's nutrient reduction efforts that concentrated mostly on agricultural environmental degradation to work on non-agricultural rural and urban communities. This allows for a broader focus on improving habitat to reduce nutrient pollution (projects to enhance or restore riparian and near coastal areas in rural, urban, and suburban communities) and managing urban runoff (projects to capture, store, filter, and treat runoff to reduce nutrient loads and improve water quality consistent with a broader strategy for watershed protection or restoration).

To ensure Federal Funding Opportunities address stakeholders needs and concerns, GMD hosted virtual and in-person listening sessions to collect input on activities or projects. GMD also assessed partnership opportunities and identified gaps in our outreach and engagement with Minority Serving Institutions. As a result, we specifically reached out to institutions of higher learning in Mississippi and will be expanding engagement to academia across the Gulf of Mexico.

Link for findings: N/A

Activity 7:

Title	GAO Report: Long Island Sound Restoration: Improved Reporting and Cost Estimates Could Help Guide Future Efforts
Region	EPA Region 1 and Region 2
FY 2022-2026 Strategic Goal and Objective supported	Goal 5: Ensure Clean and Safe Water for All Communities Objective 5.2: Protect and Restore Waterbodies and Watersheds
Completion date	November 2021

Purpose and brief description: In 2017 the GAO conducted a review of the Long Island Sound Study (LISS) as part of a larger review that GAO was conducting of EPA's National Estuary Program (NEP). GAO

reviewed a total of four NEPs, including Puget Sound, Columbia River, San Francisco Bay, and the LISS. The LISS final report was issued on July 12, 2018.

Policy, programmatic, and/or operational questions the activity is intended to address: The objectives for this GAO review were to assess:

- What roles the federal, state, and other groups play in restoring the Long Island Sound;
- What federal funds have been spent to date;
- What progress has been made in restoring the Long Island Sound; and,
- What remains to be done.

Brief list of results/conclusions/findings including interim findings: In July 2018, GAO issued the final report *Improved Reporting and Cost Estimates Could Help Guide Future Efforts*, which included three recommendations for the program:

- The Director should ensure that as the Study finalizes its reporting format, it fully incorporates leading practices of performance reporting. (Recommendation 1)
- The Director should develop cost estimates that include analyses of uncertainties for each of the targets in the 2015 plan. (Recommendation 2)
- The Director should estimate the range of potential costs for all implementation actions and include the estimates in future supplements to the 2015 plan. (Recommendation 3)

How EPA used the results/conclusions/findings/interim findings: The EPA Long Island Sound Office (LISO – Region 2 and Region 1) worked to fully implement all GAO recommendations and updated the GAO tracking system in November 2021 to confirm that the Agency considered all recommendations to be fully implemented.

Recommendation #1: The Long Island Sound Study's online reporting and tracking system is completed and in full use by the Study. Data has been added to the online tracking and reporting system to show progress in implementing the 2020-2024 implementation actions. Data will be added to the tracking and reporting system approximately every six months to allow the Study to evaluate progress toward goal implementation. As reported previously, the Study has already implemented two leading practices into its reporting format. The Study website shows the past condition and progress over time toward ecosystem targets compared to the recovery plan. The online reporting and tracking system addresses the leading practice of reporting recommended by the GAO, which is to evaluate actions for unmet goals. By tracking the 2020-2024 implementation actions, the Study will be able to explain why goals are not being met and create plans and schedules to achieve the goals. With the online tracking system in place, the Study has fully incorporated the three leading practices of performance reporting and considers this recommendation to be fully implemented.

Recommendation #2: In June 2020, the Study hired a contractor to develop a report that included the estimated cost (with a high and low range) needed to attain each of the targets in the 2015 plan. The contractor estimated costs for each ecosystem target by adding up the existing cost ranges for each of the implementation actions in the 2015 plan. The report is posted and accessible to the public on the Long Island Sound Study website (https://longislandsoundstudy.net/2019/11/addressing-gaos-

recommendations-liss-performance-reporting-and-cost-estimating/). The report contained recommendations for the Study to continue estimating costs in future reports. In September 2020, EPA stated that the cost ranges for the implementation actions would be updated as the Study updated the CCMP implementation actions for the period 2020-2024. This information was developed and contained in the CCMP supplemental documents completed in 2020.

Recommendation #3: In June 2020, the Study said that the Plan 2020-2024 implementation action update would include a range of costs for implementation actions. The Study received concurrence from the EPA Regional Administrators (Region 1 and Region 2) and EPA Office of Water on the 2020-2024 CCMP Update. In January 2021, the CCMP Update was completed and posted on the LISS website, including the Technical Supporting Documents that indicate the range of cost estimates for each Implementation Action. See: https://longislandsoundstudy.net/2021/01/ccmp-implementation-actions-supplemental-documents/ to view the CCMP Update and associated Technical Supporting Documents.

Link for findings*:* The public version of the LISS online reporting and tracking system is available at: https://longislandsoundstudy.net/program-implementation-and-progress/

Activity 8:

Title	Long Island Sound Study 2022 Report to Congress "Returning the Urban Sea to Abundance"
Region	EPA Region 1 and Region 2
FY 2022-2026 Strategic Goal and Objective supported	Goal 5: Ensure Clean and Safe Water for All Communities Objective 5.2: Protect and Restore Waterbodies and Watersheds
Estimated completion date	January 2023

Purpose and brief description: The purpose of the Long Island Sound Study Report to Congress is to meet the statutory requirement under the Clean Water Act Section 119 for the Long Island Sound Office to issue biennial reports to Congress summarizing the progress made in implementing the Comprehensive Conservation and Management Plan (CCMP), any modifications to the CCMP, and recommendations concerning the CCMP. To accomplish this, the program will use grant progress report data that is entered into an internal EPA SharePoint site. That data is used to compare intended to actual performance in accomplishing the targets and actions in the CCMP

Policy, programmatic, and/or operational questions the activity is intended to address: The objectives for this review were to assess:

- Progress made toward meeting the goals, actions, and schedules of the CCMP.
- Overview on the status of the Ecosystem Targets.
- Demonstrate investments in Implementation Actions.
- Feature success stories in New York and Connecticut highlighting progress towards goals under each CCMP theme.

- Overview of the FY 2020 and FY 2021 investments by budget categories.
- Areas of focus in the near future under each CCMP theme.

Brief list of results/conclusions/findings including interim findings: The report provides a summary of the progress made toward achieving the goals in each of the CCMP themes.

Program Results: Program investments have allowed the LISS partners to better characterize the health of the Long Island Sound watershed and waterbody. Water quality monitoring has expanded from the open sound to embayments (bays and harbors). Researchers have been able to document water quality improvements due to decreased nitrogen loading from wastewater treatment facilities despite the increasing climate change impacts that make it harder to maintain water quality standards. The program continues to support wildlife and fish by investing in the protection of open space habitat; this led to 1,007 habitat acres preserved from 2020 to 2021. Public involvement and education activities, such as the International Coastal Cleanup events, enhance the sustainability and resiliency of the watershed by reducing the amount of marine debris that flows into the waterbody. These activities collectively contribute to the overall health of Long Island Sound.

How EPA used the results/conclusions/findings/interim findings: The EPA Long Island Sound Office will use the assessment of Implementation Action investments to target implementation actions where further progress needs to be made. The assessment of the status of ecosystem targets will also be used to focus efforts on program activities and projects to bring ecosystem targets on track or keep them on schedule. The sections focused on future areas of investment will help guide program priorities.

Link for findings*:* A link will be provided once the report is made final.

Activity 9:

Title	Public Water System Supervision (PWSS) Program Reviews & Drinking Water State Revolving Fund State Reviews
Lead National Program	OW
FY 2022-2026 Strategic Goal and Objective supported	Goal 5: Ensure Clean and Safe Water for All Communities Objective 5.1: Ensure Safe Drinking Water and Reliable Water Infrastructure
Completion date	September 2022

Purpose and brief description: EPA annually conducts reviews of agencies with Public Water System Supervision (PWSS) primacy (55 reviews) and reviews of each state Drinking Water State Revolving Fund program (51 reviews).

Policy, programmatic, and/or operational questions the activity is intended to address: These reviews evaluate if primacy entities are effectively implementing the PWSS program to oversee community water system compliance with the Safe Drinking Water Act and evaluate if states are effectively implementing the Drinking Water State Revolving Fund program to facilitate public water system compliance with the Safe Drinking Water Act (SDWA). Questions addressed include:

Are primacy entities effectively implementing the range of activities in the PWSS program to oversee community water system compliance with the Safe Drinking Water Act?

Are states effectively implementing the Drinking Water State Revolving Fund program to facilitate public water system compliance with the Safe Drinking Water Act, addressing public health protection and affordability, and complying with the EPA's State and Tribal Assistance Grant program requirements?

Brief list of results/conclusions/findings including interim findings: EPA DWSRF review results are reported out in 51 State specific Performance Evaluation Reports annually. The reports function similarly to base line monitoring reports for grant programs. Because reports are state specific, there is not a national report of overall program evaluation. Examples of items included in the review include

- The results of reviews of state program files for system compliance with DWSRF rules and cross cutting requirements
- The results of regional transaction testing for federal cash draws
- State performance in key DWSRF program metrics
- Success (or lack of success) in addressing past issues raised

How EPA used the results/conclusions/findings/interim findings: EPA's regional offices engage and share results with primacy agencies under their purview. EPA shares PWSS information on water system compliance rates across and within states. EPA makes publicly available an annual report on the status of the national DWSRF program. EPA also shares project and financial data at the national and state level.

Link for findings: For the most recent annual report, 2019 DWSRF annual report, is available here: https://www.epa.gov/sites/default/files/2020-10/documents/2019_annual_report_final_508compliant.pdf

Activity 10:

Title	Safe Drinking Water Information System (SDWIS) National Community Water System Non-Compliance Review
Lead National Program	OW
FY 2022-2026 Strategic Goal and Objective supported	Goal 5: Ensure Clean and Safe Water for All Communities Objective 5.1: Ensure Safe Drinking Water and Reliable Water Infrastructure
Completion date	September 2022

Purpose and brief description: EPA conducts a review quarterly of the Safe Drinking Water Information System (SDWIS) National Community Water System (CWS) health-based non-compliance data.

Policy, programmatic, and/or operational questions the activity is intended to address: This review evaluates the trends and causes of non-compliance to information technical, managerial and financial state and public water system capacity building training or future drinking water regulation needs, in support regulatory drinking water compliance. The question addressed was:

What are the barriers and challenges of CWS systems maintaining compliance with health-based drinking water standards?

Brief list of results/conclusions/findings including interim findings: Annual Program Reviews provide a management level review of each SDWA primacy agency's (55 total) accomplishments and challenges. Some notable accomplishments include efforts to reduce the number of health-based violations especially those for the Stage 2 DBPR, state programs to require asset management plans for their PWS, and programs that states have developed for lead testing in schools. Challenges often include documenting programs with resources constraints, for example programs with a significant number of vacancies, that impact performance on key implementation actions, such as timely completion of sanitary surveys.

How EPA used the results/conclusions/findings/interim findings: Data are provided from the EPA's SDWIS database. There is a non-compliance review of CWS systems with health-based violations by regulation type, geographical distribution, and system source type**.**

Link for findings*:* The findings from the program reviews will be publicly shared. Quarterly data reports are shared publicly via the SDWIS FED Data Warehouse.[1]

[1] https://ofmpub.epa.gov/apex/sfdw/f?p=108%3A200%3A%3A%3A%3A%3A%3A.