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Environmental Protection Agency

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Justification of Appropriation Estimates for the Committee on Appropriations

Tab 14: Annual Evaluation Plan and Other Evidence-Building Activities

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FY 2022 Annual Evaluation Plan and Other Evidence-Building Activities

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EPA's FY 2022 Annual Evaluation Plan

Overview

The *Foundations for Evidence-Based Policymaking Act* (Evidence Act) provides a framework to promote a culture of evaluation and continuous learning to ensure Agency decisions are made using the best available evidence. EPA's FY 2022 Evaluation Plan describes significant program evaluations the Agency plans to undertake in FY 2022. Significant evaluations include those that support EPA's ability to meet an Administrator Priority, is mandated by Congress, or being highlighted as a program priority.

Office of Chemical Safety and Pollution Prevention (OCSPP)

Title	IT Modernization of EPA Pesticide Tracking Systems		
Lead National Program	Office of Chemical Safety and Pollution Prevention		
Planned Start Date	4/2019	**Planned completion date**	9/2024

Purpose and brief description: In April 2019, EPA kicked off Phase 1 of a multi-year digital transformation to create a fully electronic workflow system for EPA registration and reevaluation activities. This effort builds on the 2016 launch of the Pesticide Submission Portal, a secure, web-based portal in EPA's Central Data Exchange (CDX) environment through which the public can electronically submit applications for EPA evaluation. In advance of the launch of the new system, EPA developed internal tracking metrics and established baselines of performance using the current Agency systems for review of applications. These metrics measure: 1) timeliness of review, 2) efficiencies realized as a result of the transformation effort, and 3) employee engagement. In July/ August 2020, a pilot of the new system went live for two of the three regulatory divisions within EPA's Office of Pesticide Programs (OPP), as well as the Information Technology and Resource Management Division (ITRMD) which in-processes all applications. The pilot is specific to registration application workflows under Pesticide Registration Improvement Act (PRIA) and its reauthorizations.

The next phase of this effort will be the development of additional workflows and expansion to all of the divisions that support registration and reevaluation regulatory activities. By 2022, the focus will shift from improving employee user experience to improving customer experience, improving the ability of the regulated community, other stakeholders, partners, and the American public to directly engage with the regulatory and science efforts.

The nature of a digital transformation, pace of technological advancements, and software development lifecycle requires IT organizations to stay in a mode of continuous improvement. Therefore, the lifecycle would mandate that EPA begin to tackle modernization of various components of it as the Agency approaches the fifth year.

Programmatic or policy decisions this activity will inform: This activity will inform additional IT systems development.

Question(s) this activity will address:

- Will the digital transformation effort and the development and implementation of the Salesforce workflow system result in improved timeliness and performance regarding the review of pesticide registration and registration review activities?
- Will the improved user experience and productivity from the IT-modernization effort result in increased employee job satisfaction?

Data, tools, method/analytical approach: Using the information from EPA's Pesticide Registration Information System (PRISM) and Office of Pesticide Program Information Network (OPPIN), EPA will establish baselines for time spent at each stage of the risk assessment and assess improvement in the overall review processes for registration and registration review cases. The Salesforce interface currently being piloted for antimicrobial and biopesticide applications will allow EPA to establish baselines for how much time is spent at each stage and assess improvements in review processes supporting new active ingredients registration determinations. The employee engagement metric will be tracked by evaluating results to specific questions and focus areas in EPA's Employee Viewpoint Survey and comparing responses before and after implementation of the IT-modernization effort.
In addition, the augmented intelligence and advance data analytics within Salesforce will allow EPA to identify stages in the review process that present bottlenecks, allowing further system development and/or resource allocation to address identified concerns. Robotic Process Automation (RPA) will enable automation of many routine tasks allowing scientists and regulatory specialists to focus on higher value work.

Anticipated challenges and proposed solutions: Challenges preventing key partners from engaging with the digitization effort are related to contract acquisition and increased workload due to COVID-19. EPA is working to address the contract award to mitigate the contract acquisition challenge. The Agency also is adding flexibility for its partners by lengthening the requirement gathering to facilitate and address the increased workload.

Dissemination of findings: Process improvements relating to pesticide registration and registration review activities, as well as information technology improvements, are described annually in the PRIA annual report (https://www.epa.gov/pria-fees/annual-reports-pria-implementation).

Office of Enforcement and Compliance Assurance (OECA)

Title	Evaluate Impact of Pre-Deadline E-reminders on Discharge Monitoring Report (DMR) Non-Receipt		
Lead National Program	Office of Enforcement and Compliance Assurance		
Planned Start Date	7/2020	**Planned completion date**	1/2022

Purpose and brief description: On-time reporting is critical for effective environmental monitoring and enforcement. Self-reporting is integral to the statutory scheme underlying the National Pollutant Discharge Elimination System (NPDES) program, but compliance with DMR submission requirements remains a challenge. DMR non-receipt accounts for about 50 percent of Significant Non-Compliance (SNC) amongst NetDMR states. While prospective reminders hold promise to increase DMR submissions by NPDES permittees, such efforts remain novel and untested within this population. EPA is proposing to empirically test if reminders improve DMR submission timeliness. Many states have already expressed interest in prospective reminders to encourage timely DMR submissions by NPDES permittees, and Stanford and EPA aim through this pilot to prototype and assess the efficacy of such reminders for helping achieve the long term performance goal: by September 30, 2022, decrease the percentage of Clean Water Act NPDES permittees in SNC with their permit limits.

Programmatic or policy decisions this activity will inform: NetDMR currently notifies facilities via email when their DMR is 7, 14, and 21 days overdue. The motivation for this trial stems from the experience of some states and academic studies in other fields that suggest prospectively providing recipients clear and credible information about due dates, penalties, and consequences of non-compliance increases compliance. This work will help determine whether this holds true for prospective reminders for DMRs.

Question(s) this activity will address:

- **What are the effects of prospective reminders on DMR Non-Receipt SNC Rate?** If the prospective notification is effective, EPA would expect to see a lower DMR non-receipt SNC rate among the facilities that receive a reminder relative to nonrecipients.
- **What are the effects of prospective reminders on DMR Late Submission Rate and Days Overdue?** EPA also might expect to see a change in the timing of submissions, which could provide insight into what appropriate notification windows are. If facilities notified before the deadline remain overdue but submit their (overdue) reports more quickly than the control group, this would suggest that an earlier pre-due date notification could help reduce DMR non-receipt.
- **What are the effects of prospective reminders on Overall SNC Rate?** The current National Compliance Initiative aims to halve the national SNC baseline rate of 29.4 percent by the end of FY 2022. Although prospective reminders may decrease SNC resulting from DMR non-receipt, increased DMR submissions may reveal effluent or other SNC violations. Even if the overall SNC rate remains unchanged because of the switch to another classification, better understanding the revealed nature of the SNC would be an important step towards achieving the NCI.

Data, tools, method/analytical approach: EPA will use a randomized control trial in which the Agency sends personalized DMR submission reminders to a randomly selected set of at least 9,000 facility operators no later than three to five days before DMR due dates. EPA will use the existing ICIS-NPDES database for determining SNC rates and will use statistical analysis to determine if there is a difference in the rates between the treatment and control group.

Anticipated challenges and proposed solutions: In the current design, EPA assumes three to five days may suffice to compile and submit the DMR while encouraging responsiveness. In practice, a sufficient time window for permits to submit DMRs would depend on many factors, including the time to obtain lab results and prepare the DMR. The behavioral science literature suggests that optimal reminder timing depends on two key factors: the capacity for task completion and behavioral features, such as forgetfulness and procrastination. EPA's proposed reminder window stems from an interest in balancing these competing objectives of permitting sufficient time to complete the reports while prompting action. The Agency can either adjust that window from the outset, or sample size permitting, can explore the feasibility of multiple treatment arms wherein EPA sends reminders at different periods prior to their due date (e.g., 3, 7, 14 days prior).

Additionally, EPA assumes that reducing DMR non-receipt by at least 15 percent among the NetDMR facilities is achievable and meaningful. The proposed study sample size of 9,000 facilities in each group (or 18,000 total between the treated and control, which represents almost all of NetDMR facilities) stems from calculations on how many facilities are needed to discern a reduction in non-receipt from the current average DMR Non-Receipt Rate of 6.6 percent to 5.6 percent (i.e., a 15 percent reduction). Although calculations suggest the Agency would be unable to detect changes smaller than 1 percentage point in one reporting period, effects could be considerably larger. Alternatively, if not enough NetDMR states participate, a longer study period may still provide sufficient power to detect a 15 percent reduction. For example, if the Agency rolls out the study for two reporting periods, EPA need about 7,900 permits in each group to detect a 1 percentage point effect.

Dissemination of findings: The aim of this work is a journal publication, with a pre-publication/working paper that would potentially be posted on EPA's website.

FY 2022 Additional Planned Activities to Support EPA's Portfolio of Evidence

Overview
The *Foundations for Evidence-Based Policymaking Act* (Evidence Act) provides a framework to promote a culture of evaluation and continuous learning to ensure Agency decisions are made using the best available evidence. EPA's FY 2022 Evidence-Building Plan describes significant evidence-building activities the Agency plans to undertake for a range of program areas.

EPA's FY 2022 Evidence-Building Plan is organized by national program. Significant evidence-building activities include those that support EPA's ability to meet an Administrator Priority, is mandated by Congress, or being highlighted as a program priority.

Additionally, EPA will execute significant evidence-building activities as part of the Agency's Learning Agenda which is currently being designed in conjunction with the development of *EPA's FY 2022 – 2026 Strategic Plan*. EPA's Learning Priorities will focus on a select set of Agency activities and operations, and will address key issues, including but not limited to, equity, environmental justice, diversity and inclusion, and climate change. The Agency plans to describe evidence-building activities that support Learning Priorities in the Learning Agenda published as part of the Strategic Plan in February 2022.

Significant Evidence-Building Activities

Office of Air and Radiation (OAR)

Activity 1:

Title	Title V Permitting Program Reviews		
Lead National Program	Office of Air and Radiation		
Planned Start Date	10/2021	**Planned completion date**	9/2022

Purpose and brief description: EPA periodically assesses state and local permitting programs, including the sufficiency of fees collected, under Title V of the Clean Air Act as part of its responsibility to oversee delegated and approved air permitting programs.

Programmatic or policy decisions this activity will inform: In general, these analyses identify good practices, document areas needing improvement, and inform how EPA can help the permitting agencies improve their performance.

Question(s) this activity will address:
- What are some good practices and areas of improvement in state and local permitting programs under Title V of the Clean Air Act?
- How can EPA help the permitting agencies improve their performance?

Data, tools, method/analytical approach: The method for the analysis includes the gathering of information through the use of questionnaires which are specifically tailored to the permitting authority being reviewed, phone calls to follow up on the questionnaire and any needs for clarification or additional information, review of permits and permit records, and overall discussion and review of program implementation activities. This information is used by EPA to identify potential areas for improvement such as timeliness of permitting actions, highlight any areas where the permitting authority is doing a good job and exhibiting best practices, and to develop a written report of the findings of the program assessment. The draft report is shared with the permitting authority to ensure there are no misunderstanding or misrepresentation of the collected information or erroneous conclusions. Once the report is completed, it is posted on the EPA Region's website. Depending on the outcome of the assessment, there may be some further interaction between the permitting authority and EPA to ensure implementation of areas for improvement and recommended actions.

Anticipated challenges and proposed solutions: The Agency conducts these analyses annually and does not anticipate challenges.

Dissemination of findings: The Title V Permit analyses are posted on EPA's website.

Activity 2:

Title	Our Nation's Air: Status and Trends Through 2021		
Lead National Program	Office of Air and Radiation		
Planned Start Date	1/2022	**Planned completion date**	6/2022

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

Programmatic or policy decisions this activity will inform: This activity provides an annual assessment of air quality in an accessible format, allowing EPA, states, and other stakeholders to understand how air quality is changing both in their local area and across the nation. Stakeholders can use this information to help inform their decisions in their air quality programs.

Question(s) this activity will address:

- Where are areas experiencing air quality above the national ambient air quality standards?
- Are these areas trending toward improving air quality?

Data, tools, method/analytical approach: Existing data is pulled to generate the report, including emissions data from the National Emission Inventory (NEI) and pollutant concentration data for the National Ambient Air Quality Standards pollutants from the Air Quality System (AQS). This data is mainly averaged and summarized. For the NAAQS, trends also are calculated to provide additional context. EPA also collects data from IMPROVE (http://vista.cira.colostate.edu/Improve/) to calculate visibility trends on the clearest days (based

on the 20% best or clearest visibility days monitored) and on the most impaired days (based on the 20% worst visibility days monitored). EPA also uses data from the Ambient Monitoring Archive (https://www3.epa.gov/ttnamti1/toxdat.html#data) to provide air toxics concentration trends. Specific methodological information can be found here: https://github.com/USEPA/Air-Trends-Report/blob/master/etrends_2020/documentation/Air_Trends_Report_Methodologies.docx.

Anticipated challenges and proposed solutions: The Agency produces this report annually and does not anticipate challenges. This activity is contingent upon air quality data availability from state, local, and tribal air pollution control agencies.

Dissemination of findings: This report is annually included on EPA's Air Trends website.

Office of Chemical Safety and Pollution Prevention (OCSPP)

Title	Reducing Use of Animals in Chemical Testing		
Lead National Programs	Office of Chemical Safety and Pollution Prevention Office of Research and Development		
Planned Start Date	10/2020	**Planned completion date**	10/2035

Purpose and brief description: On Sept, 10, 2019, EPA issued a directive to prioritize efforts to reduce animal testing, which included the goals of reducing mammal study requests and funding 30 percent by 2025 and eliminating them by 2035. The directive specifically charged the Agency to establish baselines, measurements, and reporting mechanisms to track its progress. EPA's "New Approach Methods (NAM) Work Plan: Reducing Use of Animals in Chemical Testing" was released in June 2020 and discusses the development of metrics to measure the reduction in use of mammalian laboratory animals.

From page 12 of NAM workplan (https://www.epa.gov/sites/production/files/2020-06/documents/epa_nam_work_plan.pdf): Within OCSPP, EPA will initially use the number of animals required for testing under the 40 C.F.R. Part 158 as a baseline to measure and track mammalian use for pesticide actions. As guideline requirements vary based on the type of pesticide, specific baselines are as follows: 510 animals for biochemical pesticides, 3,430 animals for microbials, 4,920 animals for antimicrobials and 6,260 animals for conventional pesticides. EPA also will establish a specific baseline for chemicals that fall under TSCA once the ATAEPI analysis is completed. For EDSP, the baseline is 1,800 animals based on the number required to complete the Tier I battery of assays. Within ORD, the average number of mammals used for research purposes between 2016 and 2018 was 8,600 per year. This number will be used as a baseline to provide both a stable and relatively recent estimate of use. OCSPP and ORD will work with EPA's other offices to establish specific baselines and calculation methods. As additional baselines and metrics are established, EPA will distribute these estimates through the established communication mechanisms.

Additionally, the U.S. Government Accountability Office (GAO) released a report to Congress in 2019 recommending that Federal agencies develop metrics to assess the progress made toward reducing, refining, and replacing animal use in testing. EPA implemented activities and policies

over the past several years that demonstrate significant reductions in the number of animals used in testing and saving resources for the Agency and stakeholders.

Programmatic or policy decisions this activity will inform: EPA primarily uses laboratory animal data for assessing the risks of pesticides and industrial chemicals under FIFRA and TSCA. This effort will support metrics that show progress towards replacing animal studies with new approach methods that are more efficient and human relevant.

Question(s) this activity will address:

- What progress is being made towards reducing mammal study requests and funding 30 percent by 2025?
- What progress is being made towards eliminating mammalian study requests and funding by 2035?

Data, tools, method/analytical approach: EPA tracks the reduction and replacement metrics through internal committees, primarily the Hazard and Science Policy Council (HASPOC) and the Chemistry and Acute Toxicology Science Advisory Council (CATSAC), and division-level processes.

EPA is in the process of an Analysis of TSCA Available, Expected and Potentially Useful Information (ATAEPI) that will provide the foundation for developing metrics for TSCA-specific activities in this area.

Anticipated challenges and proposed solutions: Under TSCA, there is no defined set of toxicology data requirements which makes establishing baselines difficult. In addition, EPA needs to develop the processes for tracking and working towards publicly accessible metrics where the submitted data are protected as TSCA Confidential Business Information (CBI).
Accelerating progress towards adopting new methods requires the availability of approaches that are "equal to or better than" the typically used animal studies. Other activities described in the June 2020 Plan will address this challenge.

Dissemination of findings: EPA efforts to reduce use of animals in chemical testing is reported in the Annual Reports on PRIA Implementation (https://www.epa.gov/pria-fees/annual-reports-pria-implementation). In the future, EPA also will publish metrics on its website.

Office of Land and Emergency Management (OLEM)

Activity 1:

Title	Population Analysis		
Lead National Program	Office of Land and Emergency Management		
Planned Start Date	5/2022	**Planned completion date**	7/2022

Purpose and brief description: This is a descriptive study. The purpose is to conduct a bi-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) site, 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.

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.

Programmatic or policy decisions this activity will inform: 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.

Question(s) this activity will address: This analysis estimates the population living within three and one mile(s) of a Superfund site, Brownfield site, RCRA CA site, LUST site and UST facility by:

- Race: people who self-identify as white, black, Asian, Native American, Hawaiian/pacific islander, or other
- Ethnicity: people of all races who self-identify as hispanic or non-hispanic
- Minority: all race and ethnicity combinations except "non-hispanic whites"
- Income: below poverty level, and incomes twice or more above poverty level
- Education: less than high school education
- Age: Under 5, Under 18, over 64
- Linguistically isolated: households where all members do not speak English as a first language or "very well"

Populations that are more minority, low income, linguistically isolated, or less likely to have a high school education than the U.S. population as a whole, may have fewer resources with which to address concerns about their health and environment. EPA includes these factors in population analyses to understand the potential for these vulnerabilities in relation to cleanup sites at the national level.

Data, tools, method/analytical approach:

- **Data**
  - Site location and status data from the Assessment, Cleanup and Redevelopment Exchange System (ACRES), Superfund Enterprise Management System (SEMS) and RCRA Info for Brownfields, Superfund and RCRA CA, respectively.
  - Site location and status data for LUST sites and UST facilities from ORD's state LUST/UST database
  - Population data from the most recent American Community Survey 5-Year Estimates
- **Methods/Analytical approach:**
  - Latitude and longitude coordinates are used to map site locations. Then 1- and 3-mile buffers are drawn from the site location. Depending on data availability, the

site location is either a point, a modeled circular site boundary based on site acreage around a point or the actual site boundaries.
    - Using census block group centroids and the 1- and 3- mile buffers, the population and characteristics are estimated. If the census block centroid falls within the buffer, then the population of that census block is included in the estimation of the near site population.
    - We compare the near site populations to the overall U.S. population to identify differences in the characteristics listed above.
- We follow the methods used in the America's Children and the Environment Report Indicators E10 and E11. For more details on the methods, see https://www.epa.gov/americaschildrenenvironment/ace-environments-and-contaminants-contaminated-lands#Methods**Tools.**
    - This spatial analysis is done using ArcGIS and R software suites

Anticipated challenges and proposed solutions: Geospatial data available to map site boundaries is limited. EPA continues to work to improve geospatial data on Superfund and RCRA Corrective Action site boundaries. The LUST/UST data used was obtained from the USTFinder. The USTFinder is a new web map application containing a comprehensive, state-sourced national map of underground storage tank (UST) and leaking UST (LUST) data. USTFinder was made possible by a large ORD data collection effort. Ability to update estimates for LUST/UST in the future depends on whether ORD updates data in the USTFinder.

Dissemination of findings: EPA will share the results of these analyses on EPA's website and include the information in Agency documents that are available to the public.

Activity 2:

Title	Annual Evidence Literature Search		
Lead National Program	Office of Land and Emergency Management		
Planned Start Date	5/2022	**Planned completion date**	8/2022

Purpose and brief description: EPA collects and maintains evidence on many programs, including programs that implement regulations and efforts under the Resource Conservation and Recovery Act (RCRA), the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), the Emergency Planning and Community Right-to-Know Act (EPCRA) and portions of the Oil Pollution Act of 1990. Each year, EPA uses a literature search protocol to identify any new research (conducted by researchers not at the Agency) that documents and describes the effectiveness, efficiency or impact of these programs.

Programmatic or policy decisions this activity will inform: Results of the evidence literature search are used to better understand the effectiveness, efficiency and impacts of EPA's programs, which may inform decision-making about program structure or policies. Results also may be used for communication to our stakeholders.

Question(s) this activity will address: The evidence literature search identifies new external research that analyzes EPA's program effectiveness, efficiency, or impacts. Studies identified are assessed for robustness, and if of high quality and relevance to an EPA's program will be shared for consideration for further evaluation or action.

Data, tools, method/analytical approach: For the search, EPA uses Scopus, Google Scholar, Science Direct, ProQuest Energy and Environment, ProQuest Dissertations and Theses, and Open Access Theses and Dissertations (OATD) along with a standard list of search terms that EPA developed for each of the following eight programmatic categories. Initial results are catalogued in an EndNote library, and then further assessed for relevance and robustness. Those of high quality and relevance are shared, and then catalogued in OLEM's Evidence Portfolio and Learning Agenda Tool.

1. Office of Superfund Remediation and Technology Innovation (OSRTI): Superfund Program
2. Office of Emergency Management (OEM): Superfund Removal
3. Office of Brownfields and Land Revitalization (OBLR): Brownfields Program
4. Office of Underground Storage Tanks (OUST): Underground Storage Tanks Program
5. Office of Resource Conservation and Recovery (ORCR): RCRA Program: RCRA Subtitle C and RCRA Subtitle D
6. ORCR: RCRA Program: Sustainable Materials Management (SMM) Practices EPA Voluntary SMM Programs
7. RE-Powering America's Land
8. OEM: Oil Spill Prevention: Spill Prevention, Control, and Countermeasures (SPCC), Regulation and Facility Response Plan (FRP) Program, and the Risk Management Plan (RMP) Regulation

Anticipated challenges and proposed solutions: There are no anticipated challenges.

Dissemination of findings: EPA does not post literature search results as a standalone document; however, EPA does cite the literature in public documents.

Activity 3:

Title	Redevelopment Economics at Remedial Sites (non-federal facility)		
Lead National Program	Office of Land and Emergency Management		
Planned Start Date	10/2021	**Planned completion date**	9/2022

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.

Programmatic or policy decisions this activity will inform: Economic data are included in budget justifications to Congress and are used in general communication with key stakeholders and the public.

Question(s) this activity will address: The analysis will provide current, reliable business-related information for a subset of 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.

Data, tools, method/analytical approach: The study estimates economic activity at Superfund sites in reuse from reputable sources based on methodology developed by EPA's Superfund Redevelopment Initiative and outlined on the public webpage: Redevelopment Economics at Superfund Sites. Information on the number of employees and sales volume for on-site businesses typically comes from Hoovers/Dun & Bradstreet, the ReferenceUSA and Manta databases.

Anticipated challenges and proposed solutions: The contract supporting this project ends July 2021 which may impact collection of the data. The new contract is expected to be awarded in July 2021. Should there be a delay in awarding the contract, a proposed solution may be a justification for other than full and open competition (JOFOC).

Dissemination of findings: The summary of the results will be shared on EPA's website.

Activity 4:

Title	Redevelopment Economics at Federal Facilities		
Lead National Program	Office of Land and Emergency Management		
Planned Start Date	10/2021	**Planned completion date**	9/2022

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) 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 encourages 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.

Programmatic or policy decisions this activity will inform: Economic data are included in budget justifications to Congress and are used in general communication with other Federal agencies and the public.

Question(s) this activity will address: 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.

Data, tools, method/analytical approach: The study estimates economic activity at federal facilities Superfund sites in reuse from reputable sources based on methodology developed by EPA's Superfund Redevelopment Initiative, which is outlined in more detail at Redevelopment Economics at Federal Facilities. Information on the number of employees and sales volume for on-site businesses typically comes from Hoovers/Dun & Bradstreet, the ReferenceUSA and Manta databases.

Anticipated challenges and proposed solutions: There are no anticipated challenges.

Dissemination of findings: The summary of the results will be shared on EPA's website.

Office of Mission Support (OMS)

Activity 1:

Title	EPA Space Reduction – Annual Review		
Lead National Program	Office of Mission Support		
Planned Start Date	10/2021	**Planned completion date**	9/2022

Purpose and brief description: This annual assessment is a continuation of the Real Property Efficiency Plan completed in FY 2016 and it supports the Long-Term Performance Goal of releasing over 850,000 square feet of space by the end of FY 2022. The purpose of the assessment is to measure the square footage of unused EPA space released each fiscal year. EPA reports space release each year, this activity helps assess and inform results.

Programmatic or policy decisions this activity will inform: Results from this evidence-building activity will inform EPA's leadership in assessing and evaluating challenges associated with consolidation and space release efforts and establishing annual targets for releasing unused office and warehouse space.

Question(s) this activity will address:

- What is EPA's progress toward meeting the LTPG?
- What are the specific challenges associated with accomplishing each space release?

Data, tools, method/analytical approach: As space is released, EPA tracks the square footage of the space release in EPA's Office of Administrative Services Information Systems (OASIS).

Anticipated challenges and proposed solutions: Milestones in space release plan are subject to change due to a number of environmental factors outside of EPA's control (e.g. lease terms, GSA actions, delays in associated consolidation efforts, funding level reductions). EPA will use findings from this activity to identify logistical challenges and assess opportunities for advancing other milestones and close the gap needed to meet the LTPG.

Dissemination of findings: This activity is considered a key component of a management strategic decision-making process and its findings will not be shared publicly. The results of this activity will be shared with internal stakeholders, including senior leaders in EPA.

Activity 2:

Title	Strategic Sourcing		
Lead National Program	Office of Mission Support		
Planned Start Date	10/2021	**Planned completion date**	9/2022

Purpose and brief description: The purpose of the annual assessment is to measure EPA's progress toward the implementation of Category Management and adoption of Federal Strategic Sourcing vehicles and Best-in-Class acquisition solutions, and to provide information that will help EPA determine the services and products most conducive to strategic sourcing.

Programmatic or policy decisions this activity will inform: Results from this evidence-building activity will inform EPA's Strategic Sourcing plan and decision-making. Based on the results from this annual assessment, EPA expects to deploy new strategic sourcing initiatives that will improve the Agency's buying power.

Question(s) this activity will address: What are the services and products most conducive to strategic sourcing that EPA can implement to maximize efficiencies and improve the Agency's buying power?

Data, tools, method/analytical approach: This annual internal assessment will build on current data provided by the General Service Administration (GSA). Methods of analysis are spend analysis, trend analysis, and data visualization.

Data is collected in the Federal Procurement Data System – Next Generation (FPDS-NG), obligations are categorized in accordance with OMB's Category Management guidelines and presented in the D2D.gov (data-to-decisions) Dashboards.

Internally, EPA tracks and displays this data in the Agency's Savings Tracker Qlik Dashboard.

Anticipated challenges and proposed solutions: Data is contingent on GSA reporting. EPA relies on FPDS data and the D2D data to track, validate, and confirm the information that is shared with and reported by OMB. EPA will continue to work with GSA to verify the information reported by GSA.

Dissemination of findings: Data used for this analysis is already accessible by the public here: https://d2d.gsa.gov/report/public-category-management-dashboards-analytics.

Office of Research and Development (ORD)

Activity 1:

Title	Research Area: Assessment and Management of Harmful Algal Blooms		
Lead National Program	Office of Research and Development		
Planned Start Date	10/2019	**Planned completion date**	09/2022

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 biota; 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.

Programmatic or policy decisions this activity will inform: EPA, states, and tribes need tools to predict toxic bloom occurrence, characterize bloom development, increase effectiveness of cyanotoxin monitoring techniques, and understand the impacts of shifting temperature patterns and hydrologic regimes on blooms. This research will inform best management practices of HABs including but not limited to refining Drinking Water Health advisories and informing Recreational Criteria for cyanotoxin exposures.

Question(s) this activity will address: This research area, under EPA's Safe and Sustainable Water Resources research program (SSWR), supports the current planned activities in the StRAP, and will expand the state of scientific understanding and best management approaches for nutrient/harmful algae bloom reduction.

Data, tools, method/analytical approach: This research area will produce a large amount of data, methods, and tools to advance the understanding of adverse health impacts among people, other animals, and plants that are associated with exposure to HABs. The data, tools, and method/ analytical approaches used to produce individual outputs and products in this research area may include, but are not limited to:

- Development and evaluation of water treatment technologies and toxin exposure levels
- Whole organism toxicity studies, computational toxicology, pharmacokinetic studies, and epidemiological studies
- Collection and analysis of satellite data, surveillance datasets, environmental, human health, and decision support work, existing data, and/or review of new literature
- Observational or field research, laboratory experiments, and modeling methods/measurements of water quality processes and nutrient management

Anticipated challenges and proposed solutions: This research area will produce a large volume of scientific deliverables which will require complex research planning, facilitation, review coordination, task prioritization, and regular interactions with the program customer to ensure deliverables/products address the customer needs. In FY 2022, EPA will continue to develop more efficient methods of project implementation and tracking.

Dissemination of findings: Research area findings will take a variety of publicly available forms including journal publications, open-access tools and models, and technical fact sheets.

Activity 2:

Title	Research Area: Waste Recovery and Beneficial Use		
Lead National Program	Office of Research and Development		
Planned Start Date	10/2018	**Planned completion date**	09/2022

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 non-hazardous landfills. This project will contribute to providing 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.

Programmatic or policy decisions this activity will inform: This research will enhance scientific understanding of material recycling, waste remediation, and potential for adverse human health and environmental impacts of beneficial material reuse.

Question(s) this activity will address: This research area, under EPA's Sustainable and Healthy Communities research program (SHC), supports the planned activities in the StRAP, and will answer questions concerning potential for recycling materials and quantify the risks and associated adverse impacts of beneficial reuse of materials. Planned FY 2022 specific topic areas include, but are not limited to, studying advanced separation technologies for recovery and reuse of industrial-use solvents, engineering soil amendments for remediation of lead and other contaminants, and remediation of industrial by-products.

Data, tools, method/analytical approach: This research area will produce numerous tools, models, and peer reviewed journal articles. These outputs and products produced will use 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)

- In situ laboratory experiments on soil amendments, including implementation of screening tools and engineered soil amendment mixtures

Anticipated challenges and proposed solutions: This research area will produce a large volume of scientific deliverables which will require complex research planning, facilitation, review coordination, task prioritization, and regular interactions with the program customer to ensure deliverables/products address the customer needs. In FY 2022, EPA will continue to develop more efficient methods of project implementation and tracking.

Dissemination of findings: Research area findings will take a variety of publicly available forms including journal publications, open access tools, and models

Office of Water (OW)

Activity 1:

Title	Drinking Water Infrastructure Revolving Fund State Reviews		
Lead National Program	Office of Water		
Planned Start Date	10/2021	**Planned completion date**	9/2022

Purpose and brief description: Annually, EPA completes reviews of each State Drinking Water Revolving Fund Program.

Programmatic or policy decisions this activity will inform: These reviews assess if states are effectively implementing the Drinking Water Revolving Fund Categorical Grant program to facilitate community water system compliance with the Safe Drinking Water Act.

Question(s) this activity will address:

- Are states effectively implementing the Drinking Water Revolving Fund Categorical Grant program to facilitate community water system compliance with the Safe Drinking Water Act and complying with the EPA's State and Tribal Assistance Grant program requirements?

Data, tools, method/analytical approach: Data are provided from each state Drinking Water State Revolving Fund (DWSRF) program review conducted by EPA headquarters and regions. The review includes elements such as state fund usage and utilization rates, financial transaction reviews, and state compliance rates with drinking water standards.

Anticipated challenges and proposed solutions: There are no anticipated challenges.

Dissemination of findings: 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.

Activity 2:

Title	Public Water System Supervision (PWSS) Program Reviews		
Lead National Program	Office of Water		
Planned Start Date	10/2021	**Planned completion date**	9/2022

Purpose and brief description: EPA annually conducts reviews of agencies with Public Water System Supervision (PWSS) primacy (55 reviews).

Programmatic or policy decisions this activity will inform: These reviews assess if primacy entities are effectively implementing the PWSS program to oversee community water system compliance with the Safe Drinking Water Act.

Question(s) this activity will address:

- 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?

Data, tools, method/analytical approach: Data are provided via program review reports by agencies with primacy for the PWSS program. The reports are reviewed by EPA and it includes elements such as state use of the funds and the associated impact, compliance and implementation of SDWA regulations, alignment of program with national enforcement and compliance priorities, and public communication efforts.

Anticipated challenges and proposed solutions: There are no anticipated challenges.

Dissemination of 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.

Activity 3:

Title	Safe Drinking Water Information System (SDWIS) National Regulation Non-Compliance Review		
Lead National Program	Office of Water		
Planned Start Date	10/2021	**Planned completion date**	9/2022

Purpose and brief description: EPA will conduct a review of the SDWIS National Public Water System Regulation Non-Compliance data.

Programmatic or policy decisions this activity will inform: The review assesses what drinking water regulation or technical, managerial, and financial state and public water system capacity-building training in support of drinking water standard compliance should be emphasized for the future term.

Question(s) this activity will address:

- Is the Agency getting the data it and the public need to understand compliance with drinking water standards?

Data, tools, method/analytical approach: Data are provided from EPA's SDWIS-Fed and states' SDWIS-State data systems, along with state program reviews mentioned above in Activity 2.

Anticipated challenges and proposed solutions: There are no anticipated challenges.

Dissemination of findings: SDWIS Fed is a publicly available database and SDWIS State, with compliance information, is managed by individual primacy agency.