



**United States  
Environmental Protection Agency**

**FISCAL YEAR 2019**

**Justification of Appropriation  
Estimates for the Committee  
on Appropriations**

**Program Performance and Assessment**

EPA-190-R-18-001

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[www.epa.gov/ocfo](http://www.epa.gov/ocfo)

**Environmental Protection Agency  
2019 Annual Performance Plan and Congressional Justification**

**Table of Contents – Program Performance and Assessment**

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<b>Introduction.....</b>	<b>635</b>
<b>Goal 1-5 Performance Array .....</b>	<b>642</b>
<b>Research Performance Array .....</b>	<b>727</b>
<b>Enabling Support Programs Performance Array .....</b>	<b>736</b>
<b>Cross-Agency Strategies.....</b>	<b>740</b>



# FY 2017 Annual Performance Report

## Introduction

EPA's *FY 2017 Annual Performance Report (APR)* presents the environmental and program performance results the Agency achieved in FY 2017 against the annual budget performance measures and targets established in its *FY 2017 Annual Performance Plan and Congressional Justification*. In compliance with requirements of the Government Performance and Results Act Modernization Act of 2010 (GPRAMA) and Office of Management and Budget implementing guidance, EPA's FY 2017 APR presents the last year of reporting progress toward the goals, strategic objectives, and cross-agency strategies established in the [FY 2014–2018 EPA Strategic Plan](#). As illustrated in the performance management framework figure below, EPA analyzes annual performance results and progress toward longer-term strategic objectives, as an integral part of formulating and justifying Agency resource requests.

## EPA's Performance Management Framework



## Organization of the FY 2017 APR

This Program Performance and Assessment section (Tab 14) serves as the primary component of EPA's FY 2017 APR. Following this Introduction, it provides a detailed performance measure data table, which is organized by strategic goal along with associated strategic objectives and annual budget performance measures. The table summarizes long-term progress toward each strategic objective and presents results, explanations and additional information for annual budget

performance measures. Each strategic goal is introduced by a Goal-at-a-Glance overview, which provides high-level FY 2017 results and funding information. This section also includes a summary of progress longer term under EPA's cross-agency strategies.

Performance results from FY 2017 are also integrated in the *FY 2019 Annual Performance Plan and Congressional Justification* formulated under the new [FY 2018-2022 EPA Strategic Plan](#).

Please also refer to EPA's [FY 2017 Agency Financial Report](#) (AFR) for information on financial performance results.

## **Performance Management in FY 2017**

During FY 2017, EPA implemented a number of initiatives to further strengthen its performance management. Notable efforts included:

**Development of the *FY 2018-2022 EPA Strategic Plan*.** In FY 2017, EPA initiated development of its *FY 2018-2022 Strategic Plan* to set the Agency's direction for the next four years and advance the Administrator's priorities – refocusing the Agency on its core mission, restoring power to state and tribal partners through cooperative federalism, and leading the Agency through improved processes and toward its statutory obligations under the law. The *Plan* provides the foundation for greater efficiency and effectiveness, with the goal of accelerating progress in protecting human health and the environment. From a suite of 27 strategic measures highlighting areas in which the Agency wants to make the most progress, EPA has chosen nine for particular attention as the basis for six Agency Priority Goals – air quality attainment, Superfund and brownfields, Toxic Substances Control Act (TSCA) implementation, leveraging resources for infrastructure projects, streamlined permitting, and compliance with the law. EPA will issue its new *Strategic Plan* in final in February 2018.

**Completion of Enterprise Risk Assessments Under the *FY 2018-2022 EPA Strategic Plan*.** Following updates to OMB Circular A-123, EPA continues to integrate risk-based decision making into its planning, budgeting, and program management. In FY 2017, the Agency deployed a new risk assessment tool to engage senior leaders in evaluating risks to achieving the goals and objectives in the *FY 2018-2022 EPA Strategic Plan*. In FY 2017, senior leaders identified 114 risks, including 27 significant risks, with potential impacts on progress toward Agency strategic objectives. They then ranked the 27 significant risks and identified the top three enterprise risks. The Agency will develop strategies to mitigate the enterprise risks, and use risk information to inform annual planning and budget decisions.

**Second Year of the FY 2016-2017 National Program Manager (NPM) Guidance.** EPA completed the second year of the first 2-year NPM Guidance, advancing the approach developed by the joint NPM Guidance/National Environmental Performance Partnership System (NEPPS) Workgroup. The purpose of the two-year Guidance is to strengthen early, more meaningful state and tribal engagement, and increase flexibilities for EPA regions, states, and tribes while streamlining the workload associated with joint planning activities. The second year of work was guided by the *FY 2017 Exceptions-based Addendums to the FY 2016-2017 NPM Guidances*, which incorporated significant changes important to EPA, states, and tribes that were identified after release of the FY 2016-2017 NPM Guidance, using criteria developed in a workgroup by EPA and

the states. NPM Guidances and related material are publically available on EPA's NPM Guidances website (<https://www.epa.gov/planandbudget/national-program-manager-guidances>).

**Completed Implementation of FY 2016-2017 Agency Priority Goals (APGs).** APGs focus Agency attention on areas where leadership wants to accomplish near-term achievements or results. In FY 2017, EPA completed work on five FY 2016–2017 APGs developed in conjunction with the *FY 2014-2018 EPA Strategic Plan*. At the end of the two-year period culminating in FY 2017, the Agency achieved goals it set for two APGs, and achieved mixed results for the other three APGs, as described below.

- **Advance resilience in the nation's water infrastructure, while protecting public health and the environment, particularly in high-risk and vulnerable communities.** *By September 30, 2017, EPA will provide technical assistance and other tools to 75 urban communities to advance green infrastructure planning and implementation efforts to increase local climate resilience and water quality protections in stormwater infrastructure. EPA will also provide tools and training for 5000 operators of small water utilities to improve resilience in drinking water, wastewater, and stormwater systems. Trainings will be targeted based on regional threats, such as drought and flooding.*

In FY 2016 and FY 2017, EPA provided technical assistance and tools to 125 urban communities to advance green infrastructure planning and implementation efforts, exceeding its target of 75. The Agency also provided tools and training to more than 10,700 small water utility operators and decision officials to improve resilience in drinking water, wastewater, and stormwater systems, greatly exceeding its cumulative target of 5,000.

- **Clean up contaminated sites to enhance the livability and economic vitality of communities.** *By September 30, 2017, an additional 18,600 sites will be made ready for anticipated use (RAU) protecting Americans' health and the environment, one community at a time:*

In FY 2016 and FY 2017, EPA delivered more than 19,000 sites ready for anticipated use, exceeding its target of 18,600. While the Brownfields, Superfund, and Resource Conservation and Recovery Act (RCRA) programs narrowly missed their cleanup targets, the Leaking Underground Storage Tanks (LUST) program contributed to the overall success in meeting the APG target.

- **Assess and reduce risks posed by chemicals and promote the use of safer chemicals in commerce.** *By September 30, 2017, the EPA will complete more than 3,400 assessments of pesticides and other commercially available chemicals to evaluate risks they may pose to human health and the environment:*

In FY 2016 and FY 2017, EPA completed more than 3,200 assessments of pesticides and other commercially available chemicals, slightly missing its target of 3,400. The Agency faced challenges in completing assessments of Toxic Substances Control Act (TSCA) New Chemicals Section 5 notices, and in processing the Pesticide Registration Improvement Act (PRIA) registrant submissions. The 2016 TSCA amendments made significant changes

to the new chemical review process and required re-review of approximately 300 submissions nearing completion when the law was enacted, delaying completions in many cases. In addition, the large number of new requirements and timelines for existing chemical risk evaluation established under the TSCA amendments, combined with lower numbers of TSCA Section 5 notices and PRIA registrant submissions than were expected, contributed to the missed target.

- **Strengthen environmental protection through business process improvements enabled by joint governance and technology.** *By September 30, 2017, reduce burden by one million hours, add five new functionalities to the E-Enterprise Portal, and begin development on two projects selected through E-Enterprise Leadership Council joint governance:*

EPA added over 20 new functionalities to the E-Enterprise Portal and saved stakeholders nearly 889,000 hours of burden through business process improvements. EPA fell slightly short of its target to reduce stakeholder burden by 1 million hours, as it was partially reliant on a modernization of the Safe Drinking Water Information System (SDWIS Prime) that could not be put into production before the end of FY 2017. However, deployment of SDWIS Prime in FY 2018 is estimated to save an additional 867,000 hours of burden per year in FY 2019 once full adoption and implementation are complete.

- **Reduce greenhouse gas emissions from cars and trucks.** *Through September 30, 2017, EPA, in coordination with Department of Transportation's fuel economy and fuel consumption standards programs, will implement vehicle and commercial truck greenhouse gas standards with a focus on industry compliance to ensure the significant reductions in greenhouse gases and oil consumption called for under the standards are realized. The light-duty and heavy-duty standards for model years 2012-2025 are projected to reduce greenhouse gas (GHG) emissions by more than 6.3 billion metric tons and reduce U.S. oil consumption by more than 12.5 billion barrels over the lifetime of the affected vehicles and commercial trucks.:*

All manufacturers are in compliance with existing GHG standards for model year 2016 and are also expected to be in compliance with existing GHG standards for model year 2017. Additionally, EPA completed 261 confirmatory tests in FY 2016 and FY 2017 to validate emissions data submitted by manufacturers for light-duty vehicles, surpassing its goal of 160-200 confirmatory tests (See: <https://www.epa.gov/regulations-emissions-vehicles-and-engines/greenhouse-gas-ghg-emission-standards-light-duty-vehicles>).

## Evidence and Evaluation

Summaries of program evaluations completed during FY 2017 and other evidence use are available at <https://www.epa.gov/planandbudget/results>. Program evaluations and other evidence help provide the information EPA needs to ensure that its programs are meeting their intended outcomes. By assessing how well a program is working, a program evaluation can help EPA identify activities that benefit human health and the environment, provide the roadmap needed to replicate successes, and identify areas needing improvement. This is particularly important for fostering transparency and accountability.

## FY 2017 Performance Data

In the Agency's *FY 2017 Annual Performance Plan and Congressional Justification*, EPA committed to 184 annual performance measures/targets in support of the goals and objectives in the [FY 2014–2018 EPA Strategic Plan](#). This *APR* describes the final year of progress toward that *Strategic Plan*. These performance measures/targets and EPA's results are presented in the detailed performance measure table following this introduction, along with explanations of results and additional information about these measures.

### *FY 2017 Performance Measure Results*

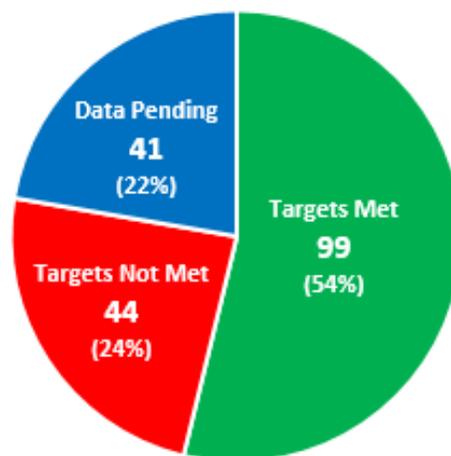
As of December 31, 2017, data are available for 143 of the 184 FY 2017 budget performance measures/targets.<sup>1</sup> Working with state and local governments, tribes, federal agencies, businesses, and industry leaders, the Agency met 99 of the performance measures, representing 69 percent of the performance measures for which data are currently available.

The Agency missed 44 of its FY 2017 performance measures/targets. As an integral part of its performance management process, EPA will continue to regularly review its performance, analyze results, and adjust FY 2018 and FY 2019 programmatic approaches and targets as appropriate.

Because final end-of-year data for some measures are not yet available, EPA is not able to report on 41 of its 184 performance measures. Often environmental results do not become apparent within a fiscal year, and assessment is a longer-term effort. Extensive quality assurance/quality control processes can also delay the reporting of performance data. EPA relies heavily on performance data obtained from state, tribal, and local agencies, all of which require time to collect and review for quality. Data lags may also result when reporting cycles do not correspond with the federal fiscal year on which this report is based, for example, data which are reported biennially. Additional FY 2017 results will be available in the Agency's FY 2018 *APR*, which will be included in the *FY 2020 Annual Performance Plan* and the "Program Performance and Assessment" section of the *FY 2020 Congressional Justification*.

### EPA's FY 2017 Performance Results

(Total measures = 184)



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<sup>1</sup> Of EPA's 184 FY 2017 performance measures, 25 measures fall under the Agency's enabling and support programs (including the Offices of Administration and Resources Management, Environmental Information, and Inspector General) and the Office of Research and Development. These measures are not reflected in the "Goal-at-a Glance" summaries which follow for each of EPA's five strategic goals.

### ***Previous Fiscal Year Data Now Available***

EPA can now report FY 2016 data that became available in FY 2017. In summary, final performance results became available for 23 of the 32 FY 2016 performance measures for which we lacked data at the end of FY 2016. Of these 23 performance measures, EPA met 16 and did not meet 7 of the Agency's targets. Data remain unavailable for 9 measures.<sup>2</sup>

### **Verification/Validation of Performance Data**

The Agency develops Data Quality Records (DQRs) to present validation/verification information for selected performance measures and information systems, consistent with guidance from the Office of Management and Budget. A DQR documents the management controls, responsibilities, quality procedures, and other metadata associated with the data lifecycle for individual performance measures, and is intended to enhance the transparency, objectivity, and usefulness of the performance result. EPA's program offices choose the measures for which to develop DQRs, consistent with the Agency's goal to document quality procedures associated with a broad range of budget measures. Each DQR can be considered current as of the most recent date for which the Agency has published results for the performance measure. All of EPA's current DQRs are available in PDF format at the following URL: <https://www.epa.gov/planandbudget/results>.

Please note the PDF file may include DQRs that reference supporting documents, which are available upon request by sending an email with the name of the document and DQR to [OCFOINFO@epa.gov](mailto:OCFOINFO@epa.gov). The email should indicate the measure number and text associated with the DQR, and the filename shown underneath the icon for the attachment.

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<sup>2</sup> Performance Measure G02: Million metric tons of carbon equivalent (MMTCO<sub>2</sub>E) of greenhouse gas reductions in the buildings sector; Performance Measure G16: Million metric tons of carbon equivalent (MMTCO<sub>2</sub>E) of greenhouse gas reductions in the industry sector; Performance Measure SM1: Tons of materials and products offsetting use of virgin resources through sustainable materials management; Performance Measure J11: Reduction in moderate to severe exposure incidents associated with organophosphates and carbamate insecticides in the general population; Performance Measure 008: Percent of children (aged 1-5 years) with blood lead levels (>5 ug/dl); Performance Measure 10D: Percent difference in the geometric mean blood level in low-income children 1-5 years old as compared to the geometric mean for non-low income children 1-5 years old; Performance Measure D6A: Reduction in concentration of PFOA in serum in the general population; Performance Measure 012: Percent reduction of children's exposure to rodenticides; and Performance Measure 143: Percentage of agricultural acres treated with reduced-risk pesticides.



E. SCOTT PRUITT  
ADMINISTRATOR

**Reliability of the EPA's Performance Data**

I attest to the reliability and completeness of the performance data presented in the U.S. Environmental Protection Agency's Fiscal Year 2017 Annual Performance Report. Because improvements in human health and the environment may not become immediately apparent, there might be delays between the actions we have taken and results we can measure. Additionally, we cannot provide results data for some of our performance measures for this reporting year. When possible, however, we have portrayed trend data to illustrate progress over time. We also report final performance results for previous years that became available in FY 2017.

E. Scott Pruitt  
Administrator

FEB 16 2018

Date



# Goal 1 at a Glance

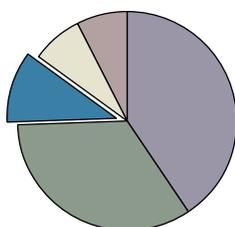
## ADDRESSING CLIMATE CHANGE AND IMPROVING AIR QUALITY

Reduce greenhouse gas emissions and develop adaptation strategies to address climate change and protect and improve air quality.

### FY 2017 Performance Measures

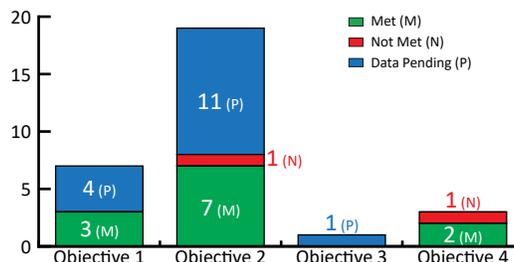
Met: 12 Not Met: 2 Data Unavailable: 16  
(Total Measures: 30)

### FY 2017 Obligations\*

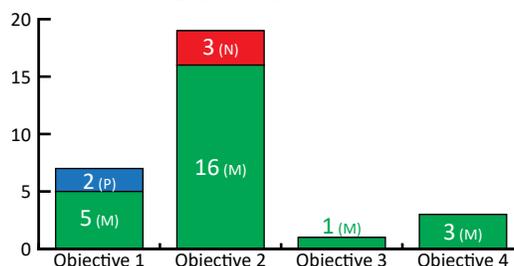


- Taking Action on Climate Change and Improving Air Quality, \$1,091,160
- Protecting America's Waters, \$4,196,956
- Cleaning Up Communities and Advancing Sustainable Development, \$3,530,571
- Ensuring the Safety of Chemicals and Preventing Pollution, \$749,419
- Enforcing Environmental Laws, \$779,531

### FY 2017 Performance Measures



### FY 2016 Performance Measures



Strategic Objective Overview	FY 2016 Obligations*	% of Goal 1 Funds
<b>Objective 1.1: Address Climate Change.</b> Minimize the threats posed by climate change by reducing greenhouse gas emissions and taking actions that help to protect human health and help communities and ecosystems become more sustainable and resilient to the effects of climate change.	\$213,042	19.5%
<b>Objective 1.2: Improve Air Quality.</b> Achieve and maintain health- and welfare-based air pollution standards and reduce risk from toxic air pollutants and indoor air contaminants.	\$822,242	75.4%
<b>Objective 1.3: Restore and Protect the Ozone Layer.</b> Restore and protect the Earth's stratospheric ozone layer and protect the public from harmful effects of ultraviolet radiation.	\$17,001	1.6%
<b>Objective 1.4: Minimize Exposure to Radiation.</b> Minimize releases of radioactive material and be prepared to minimize exposure through response and recovery actions should unavoidable releases occur.	\$38,875	3.5%
<b>Goal 1 Total</b>	<b>\$1,091,160</b>	<b>100.0%</b>

\*All figures in thousands

## **FY 2017 EPA Programs and Activities Contributing to Goal 1**

Acid Rain Program

Air Toxics

Clean Air Allowance Trading Programs

Clean Air Research

Climate Partnership Programs

Indoor Air Quality and Radon Programs

Mobile Sources

National Ambient Air Quality Standards Development and Implementation

New Source Performance Standards

New Source Review

Radiation Protection and Emergency Response Programs

Regional Haze

Stratospheric Ozone Layer Protection Program

## GOAL 1: ADDRESSING CLIMATE CHANGE AND IMPROVING AIR QUALITY

Reduce greenhouse gas emissions and develop adaptation strategies to address climate change, and protect and improve air quality

<p><b>Objective 1 - Address Climate Change:</b> Minimize the threats posed by climate change by reducing greenhouse gas emissions and taking actions that help to protect human health and help communities and ecosystems become more sustainable and resilient to the effects of climate change.</p>
<p><b>Summary of progress toward strategic objective:</b>  EPA made progress under this objective by developing greenhouse gas (GHG) programs to curb emissions and working with state and local agencies to permit larger industrial sources of GHG emissions. In addition, EPA built upon its successful partnerships in the consumer products, buildings, industry, homes, power, and transportation sectors. Performance highlights include:</p> <ul style="list-style-type: none"> <li>• Through FY 2015, EPA worked with the consumer products, building, industrial, homes, power, and transportation sectors to avoid emissions of 994 million metric tons of carbon dioxide (CO<sub>2</sub>) equivalent of GHG reductions.</li> <li>• EPA achieved its FY 2016-2017 Agency Priority Goal for GHG vehicle standards by completing the planned activities and milestones such as testing vehicles and issuing certificates of vehicle conformity.</li> <li>• Annually, EPA published comprehensive GHG data from over 8,000 of the largest facilities and suppliers in the U.S., accounting for about half of total U.S. GHG emissions through EPA's GHG Reporting Program, providing data for policy, business, and regulatory decisions.</li> </ul>
<p><b>Challenges:</b>  Overall, U.S. GHG emissions in FY 2015 were 11.5% below FY 2005 levels. This trend can be attributed to multiple factors, including year-to-year changes in weather and other changes in the electric power sector (See: <a href="https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks">https://www.epa.gov/ghgemissions/inventory-us-greenhouse-gas-emissions-and-sinks</a>). Through EPA-led efforts including the GHG Reporting Program and Clean Air Markets Program Data, EPA learned more about the sources and emissions of GHGs.</p>

Program Area	Performance Measures and Data							
(1) Address Climate Change	<b>(PM G02) Million metric tons of carbon equivalent (MMTCO<sub>2</sub>E) of greenhouse gas reductions in the buildings sector.</b>							
		<b>Y 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	168.7	182.6	196.2	188.0	201.1	210.4	MMTCO <sub>2</sub> e
	<b>Actual</b>	221.9	254.2	242.4	273.9	Data Avail 12/2018	Data Avail 12/2019	
	<i>Explanation of Results:</i> GHG emissions reductions from EPA's buildings sector programs continue to exceed programmatic targets.							
	<b>(PM G06) Million metric tons of carbon equivalent (MMTCO<sub>2</sub>E) of greenhouse gas reductions in the transportation sector through EPA's SmartWay partnership program.</b>							
		<b>Y 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	28.0	33.0	61	70	76	82	MMTCO <sub>2</sub> e
	<b>Actual</b>	38.9	51.6	61.7	72.8	84	92.1	

Program Area	Performance Measures and Data							
	<p><b>Explanation of Results:</b> The results show that in FY 2017, SmartWay helped avoid 8.1 million metric tons of CO2 for a cumulative reduction of 92.1 MMTCO2E since program inception. The results reflect the efforts of partners to continuously improve the efficiency of their goods movement operations.</p> <p><b>Additional Information:</b> SmartWay’s emissions reductions are estimated by comparing the emissions performance of trucks in SmartWay with modeled estimates of national truck emissions, which is only one component of SmartWay. In 2004, there were 0.7 million metric tons of carbon dioxide equivalent reductions from the SmartWay program. From 2004 to 2014, EPA projected forward from the 2004 baseline assuming no impact on GHG emissions from U.S. climate change programs. Beginning in 2014, heavy-duty vehicles subject to the Phase 1 Greenhouse Gas rule began to gradually penetrate the national fleet, raising the emissions performance of the national fleet, and reducing the difference between the emissions performance of SmartWay truck carrier partners and the national fleet. Activities by SmartWay’s rail, barge, and shipper partners are not captured in these estimates.</p>							
	<b>(PM G16) Million metric tons of carbon equivalent (MMTCO2E) of greenhouse gas reductions in the industry sector.</b>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	<b>Target</b>	372.9	421.9	461.8	540.3	676	702.7	MMTCO2e
	<b>Actual</b>	378.1	637.9	669.3	653	Data Avail 12/2018	Data Avail 12/2019	
	<p><b>Explanation of Results:</b> GHG emissions reductions from EPA’s industrial sector programs continue to exceed programmatic targets.</p> <p><b>Additional Information:</b> Combined, energy, agriculture, waste, manufacturing and other industrial sectors generate more than a third of the nation’s annual GHG emissions. Industrial sector emissions are produced either from a process itself, from the energy consumed during the process, or to produce electricity. EPA only reports results from those programs that are active in the reporting year.</p>							
	<b>(PM G18) Percentage of Annual Greenhouse Gas Emission Reports verified by EPA before publication.</b>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	<b>Target</b>		93	95	95	95	95	Percent
	<b>Actual</b>		96	98	97	97	96	
<p><b>Additional Information:</b> The GHG Reporting Program, established in 2009, has 41 sectors that include more than 8,000 facilities and suppliers. Both facilities and suppliers are required to report their data annually by March 31. After submission of the data, the Agency conducts a verification review that lasts approximately 150 days and includes a combination of electronic checks, staff review, and follow-up with facilities to identify any reporting errors and have them corrected before publication. The 150-day period includes 60 days for EPA to review reports and identify potential data quality issues, 75 days for reporters to resolve these issues, and 15 days for EPA to review responses or resubmitted reports. EPA typically publishes the data by October 1 each year (see: <a href="https://www.epa.gov/ghgreporting">https://www.epa.gov/ghgreporting</a>).</p>								

<b>(PM AD4) Cumulative number of state, tribal, and community partners that have integrated climate change data, models, information, and other decision-support tools developed by EPA for climate resiliency into their planning processes.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>					50	120	Number of Partners
<b>Actual</b>					50	Data Avail 12/2018	
<i>Additional Information:</i> A key goal of EPA’s work on climate resiliency is to build and strengthen the capacity of states, tribes, and local communities to anticipate, prepare, and adapt to a changing climate. This measure focuses on providing the tools, training, technical assistance, data, models, and other information they need to build their adaptive capacity.							
<b>(PM AD5) Cumulative number of state, tribal, and community partners that have incorporated climate resiliency into the implementation of their environmental programs supported by major EPA financial mechanisms (grants, loans, contracts, and technical assistance agreements).</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>					50	100	Number of Partners
<b>Actual</b>					50	Data Avail 12/2018	
<i>Additional Information:</i> This measure focuses on supporting climate-resilient investments across the nation.							
<b>(PM AD6) Cumulative number of EPA-developed training programs that incorporate climate resiliency planning for EPA staff, state, tribal, and community partners (includes programmatic and cross-programmatic trainings).</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>					3	4	Number
<b>Actual</b>					5	5	
<i>Explanation of Results:</i> EPA has completed the following training modules: (1) Introductory Climate Adaptation Training for EPA staff; (2) Office of Land and Emergency Management Climate Change Adaptation Training for EPA staff; (3) Climate Adaptation Training for Local Governments; (4) Training on Understanding Climate Change Impacts on Water Resources; and (5) Office of Land and Emergency Management Climate Change Adaptation Training for the public.							

**Objective 2 - Improve Air Quality:** Achieve and maintain health- and welfare-based air pollution standards and reduce risk from toxic air pollutants and indoor air contaminants.

**Summary of progress toward strategic objective:**

Under this objective EPA, together with its implementation partners, made progress to improve air quality by designing, developing, and implementing national programs that delivered significant reductions in harmful air pollutants. These actions include setting health-based ambient air quality standards grounded in scientific research, and setting fuel and engine standards that improve air quality in communities across the United States. Performance highlights include:

- National ambient concentrations of criteria pollutants continued to show steady improvement. From FY 2003 to FY 2016, for example, population-weighted ambient concentrations of fine particulate matter (PM2.5) and ozone decreased 37% and 20%, respectively. In addition, the number of days when the ozone standard was exceeded in nonattainment areas and the number of days when the Air Quality Index is considered to be unhealthy for sensitive groups of people is trending downward. Cleaner air prevents tens of thousands of premature deaths, reduces heart attacks and hospital visits, alleviates hundreds of thousands of asthma attacks among children and sensitive populations, and prevents millions of lost school and work days. (See: <https://www.epa.gov/air-trends>)
- EPA’s Acid Rain and Cross-State Air Pollution Rule (CSAPR) programs continued to make significant progress in reducing emissions from applicable sources. Under these two programs, in 2016, SO2 emissions fell by 33% from 2015 levels, from 2.2 to 1.5 million tons, and annual NOX emissions fell 13%, from 1.4 to 1.2 million tons. Ozone season NOX emissions fell 10% from 2015 levels, from 0.62 million tons to 0.55 million tons. (See: <https://www.epa.gov/airmarkets/clean-air-markets-progress>)
- EPA is making steady progress to fulfill its commitment to clear the existing State Implementation Plan (SIP) backlog as of October 1, 2013 and manage the timely review of all other SIPs consistent with Clean Air Act deadlines by working closely with state and local air agencies. In FY 2017, EPA took action on 385 SIPs, 211 of which were in the backlog.
- EPA equipped health, housing, environmental and health insurance programs to effectively support delivery, infrastructure and sustainable financing of environmental asthma interventions in homes and schools. The results reflect a combination of EPA supported technical training and Non-Governmental Organization partnerships. (See: <https://www.epa.gov/asthma>)

**Challenges:**

Priorities must be balanced to ensure progress on statutorily required work and court ordered deadlines. Many state, local, and tribal air agencies are finding it more and more challenging to deliver environmental and public health protection.

Program Area	Performance Measures and Data							
<b>(1) Reduce Criteria Pollutants and Regional Haze</b>	<b>(PM M9) Cumulative percentage reduction in population-weighted ambient concentration of ozone in monitored counties from 2003 baseline.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	13	15	16	16	17	19	Percent Reduction
	<b>Actual</b>	13	15	18	21	20	Data Avail 12/2018	

Program Area	Performance Measures and Data							
	<p><b>Explanation of Results:</b> The FY 2016 results show national ozone concentrations have decreased at a rate consistent with the estimated impacts of existing and future control strategies, continuing the trend of long-term improvement. The actual changes in this metric can vary from one year to the next because meteorology plays a significant role in ozone formation.</p> <p><b>Additional Information:</b> This measure shows progress in reducing ambient ozone concentrations from the 2003 baseline (population-weighted national average of 0.090 ppm). Consistent with the National Ambient Air Quality Standard (NAAQS) for ozone, it is based on a three-year average concentration. The measure assigns more weight to counties with more people by weighting each county's ozone concentration by its population. The targets for this measure are based on predictions of future year concentrations resulting from the Community Multi-Scale Air Quality model which estimates the impact of existing and future control strategies. The actuals are updated annually based on the actual monitored ozone concentrations.</p>							
	<p><b>(PM M92) Cumulative percentage reduction in the number of days with Air Quality Index (AQI) values over 100 since 2003, weighted by population and AQI value.</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	50	80	80	80	81	83	Percent Reduction
	Actual	73	74	79	82	82	Data Avail 12/2018	
	<p><b>Explanation of Results:</b> The FY 2016 results are largely driven by national ozone and PM 2.5 concentrations which have decreased at a rate consistent with the estimated impacts of existing and future control strategies, continuing the trend of long-term improvement. The actual changes in this measure can vary from one year to the next because meteorology plays a significant role in ozone and PM 2.5 formation.</p> <p><b>Additional Information:</b> This measure shows progress in reducing the number of “unhealthy” air quality days based on the Air Quality Index (AQI) relative to the 2003 baseline. The AQI is an index for reporting daily air quality. An AQI value of 100 generally corresponds to the NAAQS for each of the five pollutants included in the index. When AQI values are above 100, air quality is considered to be unhealthy for certain sensitive groups of people and then for everyone as AQI values get higher. This measure assigns more weight to higher AQI values and counties with more people. Because ozone and PM2.5 typically account for the vast majority of AQI values above 100, this measure largely tracks changes in those two pollutants. The targets for this measure are based on a regression curve using historical data. The actuals are updated annually based on the actual monitored concentrations.</p>							
	<p><b>(PM MM9) Cumulative percentage reduction in the average number of days during the ozone season that the ozone standard is exceeded in non-attainment areas, weighted by population.</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	45	50	50	50	68	70	Percent Reduction
	Actual	54	59	67	76	75	Data Avail 12/2018	

Program Area	Performance Measures and Data							
	<p><b>Explanation of Results:</b> The FY 2016 results show national ozone concentrations have decreased at a rate consistent with the estimated impacts of existing and future control strategies, continuing the trend of long-term improvement. The actual changes in this measure can vary from one year to the next because meteorology plays a significant role in ozone formation.</p> <p><b>Additional Information:</b> This measure shows progress in reducing the number of exceedance days in the 1997 ozone nonattainment areas relative to the 2003 baseline. Consistent with the NAAQS for ozone, it is based on a three-year average. The measure assigns more weight to nonattainment areas with more people by weighting each nonattainment area's exceedance count by its population. The targets for this measure are based on a regression curve using historical data. The actuals are updated annually based on the actual monitored concentrations.</p>							
	<p><b>(PM N35) Limit the increase of Carbon Monoxide (CO) emissions from mobile sources compared to a 2000 baseline.</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	2.02	2.19	2.36	2.53	2.70	2.87	Million Tons Emitted
	Actual	2.02	2.19	2.36	2.53	2.70	2.87	
	<p><b>Explanation of Results:</b> This measure is an indicator of estimated reductions with alignment between target and actuals.</p> <p><b>Additional Information:</b> As of 2010, the few areas in the U.S. that had active issues with local levels of CO had controlled their levels to or below EPA's NAAQS for CO. These areas have all been re-designated to attainment with a CAA maintenance plan (i.e., known as "maintenance areas"). In 2000, CO emissions from mobile sources were 79.2 million tons using the 2000 Mobile6 inventory.</p>							
	<p><b>(PM O33) Cumulative millions of tons of Volatile Organic Compounds (VOCs) reduced since 2000 from mobile sources.</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	2.05	2.23	2.4	2.57	2.74	2.91	Million Tons Reduced
	Actual	2.05	2.23	2.4	2.57	2.74	2.91	
	<p><b>Explanation of Results:</b> This measure is an indicator of estimated reductions with alignment between target and actuals.</p> <p><b>Additional Information:</b> Volatile organic compounds (VOCs) react in the atmosphere to form ozone and particulate matter, both of which are criteria pollutants for which EPA establishes NAAQS. In addition, some VOCs are air toxics (such as benzene) or react in the atmosphere to form ozone and particulate matter, both of which are criteria pollutants for which EPA establishes NAAQS. Reducing VOC emissions from mobile sources reduces the atmospheric concentrations and resulting health and environmental effects of these pollutants. EPA has reduced VOC emissions from mobile sources through its emissions standards promulgated since 2000 which apply to mobile sources including on-road cars and trucks, nonroad engines and equipment (such as lawn and garden equipment), locomotives, and marine engines. VOC emissions will continue to fall over time as new, cleaner vehicles and engines enter the fleet. In 2000, VOCs emissions from mobile sources were 7.7 million tons using the 2000 Mobile6 inventory.</p>							

<b>(PM O34) Cumulative millions of tons of Nitrogen Oxides (NOx) reduced since 2000 from mobile sources.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	4.07	4.41	4.74	5.08	5.42	5.76	Million Tons Reduced
<b>Actual</b>	4.07	4.41	4.74	5.08	5.42	5.76	
<p><i>Explanation of Results:</i> This measure is an indicator of estimated reductions with alignment between target and actuals.</p> <p><i>Additional Information:</i> Nitrogen oxides (NOx) react in the atmosphere to form ozone, particulate matter, and NO2, all of which are criteria pollutants for which EPA establishes NAAQS. Reducing NOx emissions from mobile sources reduces the atmospheric concentrations and resulting health and environmental effects of these pollutants as well as the ecosystem effects associated with nitrogen deposition to water bodies. EPA, in cooperation with its partners and manufacturers, has reduced NOx emissions from mobile sources including on-road cars and trucks, nonroad engines and equipment (such as construction, farming, and lawn and garden equipment), locomotives, aircraft, and marine vessels. NOx emissions will continue to fall over time as new, cleaner vehicles and engines enter the fleet. In 2000, NOx emissions from mobile sources were 11.8 million tons using the 2000 Mobile6 inventory.</p>							
<b>(PM M91) Cumulative percentage reduction in population-weighted ambient concentration of fine particulate matter (PM-2.5) in all monitored counties from 2003 baseline.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	16	20	28	29	31	32	Percent Reduction
<b>Actual</b>	26	29	29	32	37	Data Avail 12/2018	
<p><i>Explanation of Results:</i> The FY 2016 results show national PM 2.5 concentrations have decreased at a rate consistent with the estimated impacts of existing and future control strategies, continuing the trend of long-term improvement. The actual changes in results can vary from one year to the next because meteorology plays a significant role in PM 2.5 formation.</p> <p><i>Additional Information:</i> This measure shows progress in reducing ambient PM 2.5 concentrations with respect to the 2003 baseline (population-weighted national average of 14.1 ug/m3). Consistent with the NAAQS for PM 2.5, it is based on a three-year average concentration. Reducing emissions of PM 2.5 results in decreases in atmospheric concentrations of inhalable fine particles, which in turn lowers the risk of premature mortality, hospital admissions for heart and lung disease, and respiratory symptoms. The measure assigns more weight to counties with more people by weighting each county's PM 2.5 concentration by its population. The targets for this measure are based on predictions of future year concentrations resulting from the Community Multi-Scale Air Quality model which estimates the impact of existing and future control strategies. The actuals are updated annually based on the actual monitored concentrations.</p>							
<b>(PM P34) Cumulative tons of PM-2.5 reduced since 2000 from mobile sources.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	146,921	159,164	171,407	183,651	195,895	208,138	Tons Reduced
<b>Actual</b>	146,921	159,164	171,407	183,651	195,895	208,138	

**Explanation of Results:** This measure is an indicator of estimated reductions with alignment between target and actuals.

**Additional Information:** EPA, in cooperation with its partners and manufacturers, has reduced PM 2.5 emissions from mobile sources including on-road cars and trucks, nonroad engines and equipment (such as construction and farming equipment), locomotives, and marine vessels. PM 2.5 emissions will continue to fall over time as the new, cleaner vehicles and engines enter the fleet. In 2000, PM 2.5 emissions from mobile sources were 510,550 tons using the 2000 Mobile6 inventory.

**(PM A01) Annual emissions of sulfur dioxide (SO2) from electric power generation sources.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	6,000,000	6,000,000	6,000,000	6,000,000	5,000,000	5,000,000	Tons Emitted
<b>Actual</b>	3,319,000	3,210,365	3,122,921	2,231,970	1,487,542	Data Avail 04/2018	

**Explanation of Results:** Actual emissions have consistently been lower than the targets due to a number of factors including use of the large and growing bank of acid rain program allowances and uncertainty regarding market dynamics related to the mix of fuels and power generation sources in the future.

**Additional Information:** The baseline in 1980 is 17.4 million tons of SO2 emissions from electric utility sources. This inventory was developed by the National Acid Precipitation Assessment Program (NAPAP) and is used as the basis for reduction in Title IV of the 1990 Clean Air Act (CAA) Amendments. Statutory SO2 emissions capped in 2010 at 8.95 million tons, approximately 8.5 million tons below 1980 emissions level. Targets for this measure through 2010 were based on implementation of the nationwide Acid Rain Program (ARP) alone whereas the (lower) target of 6 million tons for FYs 2011-2015 recognized implementation of the Clean Air Interstate Rule (CAIR) Programs in eastern states in combination with ARP. The updated FY 2016 and 2017 targets are based on the ARP and newly established SO2 budgets under the Cross State Air Pollution Rule (CSAPR), which began implementation in January 2015. The FY 2016 and FY 2017 targets incorporate the following assumptions: 1) CSAPR states emit at the full assurance provision level allowed under the rule; 2) sources in non-CSAPR states would continue to emit at historical levels; and 3) potential use of banked ARP allowances.

**(PM MM6) Total number of backlogged SIPs remaining.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>		No Target	No Target	No Target	300-400	100-200	Number of Backlogged SIPs
<b>Actual</b>		699	649	557	322	360	

**Explanation of Results:** In FY 2017, EPA took action on 385 SIPs, 211 of which were backlogged. A new SIP-focused IT system currently under development is expected to improve SIP processing efficiency in FY 2018 and beyond.

**Additional Information:** The CAA requires states to develop a general plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for a NAAQS. These plans, known as State Implementation Plans (SIPs), are developed by state and local air quality management agencies and submitted to EPA for approval. SIPs vary in their complexity with more complex SIPs requiring more effort from EPA to act on them. Each year EPA identifies the baseline of total active SIPs, current and backlogged, and considers a range of anticipated incoming SIPs for that year. EPA then estimates the total number of SIP actions it will take in the upcoming year. The SIP baseline changes year to year depending on actions taken in the prior year. The estimated number of actions will also vary year to year depending on the status of EPA rulemakings, state priorities for which SIPs they want acted on, and potential new SIPs or SIP revisions. Targets are presented as a range to reflect this variability.

**(PM MM7) Cumulative Percent of State Implementation Plans (SIPs) removed from the historical backlog.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>		0	20	40	60	84	Cumulative Percentage Removed
<b>Actual</b>		0	25	48	65	93	

**Explanation of Results:** In FY 2017, EPA took action on 385 SIPs, 211 of which were backlogged. A new SIP-focused IT system currently under development is expected to improve EPA review and tracking of SIP submittals and EPA action on SIPs in FY 2018 and beyond. EPA will continue to receive new SIPs such as 2015 ozone NAAQS infrastructure SIPs, ozone attainment plans, and SO2 attainment plans. In addition, a portion of the submittals remaining in the backlog have particularly complex policy, technical and legal issues which contributes to the time it takes EPA to develop an approvable and defensible action on those submittals.

**Additional Information:** The CAA requires states to develop a general plan to attain and maintain the NAAQS in all areas of the country and a specific plan to attain the standards for each area designated nonattainment for a NAAQS. SIPs are developed by state and local air quality management agencies and submitted to EPA for approval. SIPs vary in their complexity with more complex SIPs requiring more effort from EPA to act on them. Each year through regional SIP Management Plans, EPA identifies the baseline of total active SIPs, current and backlogged, and considers a range of anticipated incoming SIPs for that year. EPA then estimates the total number of SIP actions it will take in the upcoming year. The SIP baseline changes year to year depending on actions taken in the prior year and the number of incoming SIPs. The estimated number of actions will also vary year to year depending on the status of EPA rulemakings, state priorities for which SIPs they want acted on, and the complexity of the priority SIPs. Targets are presented as a range to reflect this variability.

**(PM M94) Percent of major NSR permits issued within one year of receiving a complete permit application.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	78	78	78	78	78	78	Percent
<b>Actual</b>	80	90	59	80	87	Data Avail 04/2018	

**Explanation of Results:** Most of the completed permit applications involved activities that could be addressed within the one year timeframe. Only the most complicated permits took longer than one year to issue. Permitting authorities (state and local air agencies) continue to issue timely permits.

**Additional Information:** New Source Review (NSR) requires stationary sources to obtain permits before they start construction. NSR permits are usually issued by state or local air pollution control agencies; EPA issues permits in some cases (such as in Indian country). States that issue permits are not required by law to report all major source permitting actions to an EPA administered database. EPA calculates the annual percentage based only on the states that choose to report and occasionally the state reports lag by 12 months or more from the end of each reporting year. This measure shows progress against the CAA requirement that NSR prevention of significant deterioration (PSD) permits are issued within one year of determination of complete application.

**(PM M95) Percent of significant Title V operating permit revisions issued within 18 months of receiving a complete permit application.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	88	88	88	88	Percent
<b>Actual</b>	86	91	91	88	93	Data Avail 12/2018	

**Explanation of Results:** Most significant revisions to Title V permits are less complex than newly issued permits because revisions address only a subset of applicable requirements. Performance for this measure has historically been in the 80-90% range with only the most difficult of significant Title V permit revisions taking longer than 18 months to issue.

**Additional Information:** Stationary Source operating permits issued under Title V of the CAA are legally enforceable documents that permitting authorities issue to air pollution sources after the source has begun to operate and must be renewed every five years. Title V permits are usually issued by state or local air pollution control agencies; EPA issues the permit in some cases (such as in Indian country). Additionally, when a source (or facility) undergoes a major or "significant" revision to its operations that affects emissions, a revision to the Title V operating permit must be sent to the permitting agency for review. This measure tracks timeliness of significant permit revision issuance within 18 months.

**(PM M96) Percent of new Title V operating permits issued within 18 months of receiving a complete permit application.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	99	99	75	75	75	75	Percent
<b>Actual</b>	76	60	59	67	61	Data Avail 12/2018	

**Explanation of Results:** The FY 2016 target was not met. The majority of Title V permits are issued by state air agencies and it is difficult to estimate targets for state work. The variation in actual performance is partly attributable to the increasing complexity of permits.

**Additional Information:** Operating permits are legally enforceable documents that permitting authorities issue to air pollution sources after the source has begun to operate. Usually, Title V permits are issued by state or local air pollution control agencies; EPA issues the permit in limited cases. Title V permits must be renewed every five years. When a new source (or facility) begins operations and has the potential to emit air pollution beyond a certain threshold, a new Title V operating permit must be sent to the permitting agency for review.

<b>(2) Reduce Air Toxics</b>	<b>(PM 001) Cumulative percentage reduction in tons of toxicity-weighted (for cancer risk) emissions of air toxics from 1993 baseline.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	37	42	42	42	41	41	Percent Reduction
	<b>Actual</b>	45	45	40	40	40	Data Avail 12/2020	
	<p><i><b>Explanation of Results:</b></i> The FY 2014-2016 results are slightly below their target. The increases in toxicity weighted (for cancer risk) emissions over the FY 2011-2014 values are largely attributable to a change in the toxicity (nearly 60 times more potent) for ethylene oxide based on a new Integrated Risk Information System (IRIS) value released in December 2016. The non-weighted total air toxic emissions continue to decrease. In 2011, the National Emissions Inventory (NEI) showed a reduction from 1990 emissions of 61% and in 2014, the emissions are down 66% from 1990 levels.</p> <p><i><b>Additional Information:</b></i> The toxicity-weighted emission inventory utilizes the NEI for air toxics along with EPA’s compendium of cancer and non-cancer health risk criteria to develop a risk metric that can be tabulated on an annual basis. Air toxics emissions data are revised every three years. The out-year targets are based on expected emissions derived from the 2011 NEI inventory and adjusted for expected air toxic reductions from proposed or anticipated national air toxic rules. Targets also incorporate population and industry growth estimates, which result in increased air toxic emissions over time. Further, targets are also adjusted based on health benchmark changes resulting from updated science.</p>							
	<b>(PM 002) Cumulative percentage reduction in tons of toxicity-weighted (for non-cancer risk) emissions of air toxics from 1993 baseline.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	59	59	59	58	57	57	Percent Reduction
	<b>Actual</b>	55	55	51	51	51	Data Avail 12/2020	
	<p><i><b>Explanation of Results:</b></i> The FY 2014-2016 results are below their target. The increases in toxicity weighted (for non-cancer risk) emissions over the FY 2011-2014 values primarily pertain to changes to emissions factors for nonroad mobile sources leading to increased acrolein emissions. The non-weighted total air toxic emissions continue to decrease. In 2011, the NEI showed a reduction from 1990 emissions of 61% and in 2014, the emissions are down 66% from 1990 levels.</p> <p><i><b>Additional Information:</b></i> The toxicity-weighted emission inventory utilizes the NEI for air toxics along with EPA’s compendium of cancer and non-cancer health risk criteria to develop a risk metric that can be tabulated on an annual basis. Air toxics emissions data are revised every three years. The out-year targets are based on expected emissions estimates derived from the 2011 NEI inventory and adjusted for expected air toxic reductions from proposed or anticipated national air toxic rules. Targets also incorporate population and industry growth estimates, which result in increased air toxic emissions over time. Further, targets are also adjusted based on health benchmark changes resulting from updated science.</p>							

<b>(4) Reduce Exposure to Indoor Air Pollutants</b>	<b>(PM R50) Percentage of existing homes with an operating radon mitigation system compared to the estimated number of homes at or above EPA's 4pCi/L action level.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	13.3	13.9	13.9	14.9	14.9	14.9	Percent
	<b>Actual</b>	14.1	15	15.9	16.9	17.4	18.2	
	<p><i>Explanation of Results:</i> Prior to FY 2014, results derived from voluntary reporting of mitigation fan sale data by the radon fan manufacturing industry that is no longer available. FY 2014-2017 results are estimated using historical mitigation fan sale data and trends in the housing market.</p> <p><i>Additional Information:</i> Radon is the leading cause of lung cancer in nonsmokers and the second leading cause overall (smokers and nonsmokers). About one in 15 U.S. homes have radon above EPA's action level.</p>							
	<b>(PM R51) Percentage of all new single-family homes (SFH) in high radon potential areas built with radon reducing features.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	36.0	37.5	37.5	40.5	40.5	40.5	Percent
	<b>Actual</b>	44.6	38.9	44.1	42.4	49	Data Avail 10/2018	
	<p><i>Explanation of Results:</i> Results are derived from the Home Innovation Research Lab's Annual Builder Practices Survey. This measure shows that the percentage of homes being built in radon areas with radon-resistant features has been relatively steady and consistently exceeded EPA projections. The results were achieved through progress by leading state programs; increased action on radon, through the National Radon Action Plan expanded from the Federal Radon Action Plan; and through an increased awareness and interest in healthy homes.</p> <p><i>Additional Information:</i> Radon is the leading cause of lung cancer in nonsmokers and 2nd leading cause overall (smokers and nonsmokers). Areas with the highest radon potential (Zone 1 on EPA radon map) have a predicted average indoor radon screening level greater than 4 pCi/L.</p>							
	<b>(PM R19) Cumulative number of programs supporting the delivery, infrastructure, and sustainable financing of environmental asthma interventions at home and school.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>					300	600	Programs	
<b>Actual</b>					563	884		

	<p><b><i>Explanation of Results:</i></b> The results reflect a combination of EPA supported technical training (e.g., webinars, stakeholder training events, etc.) and funded NGO partnerships (focused on tribes, school-based health centers, health insurance plans, and states).</p> <p><b><i>Additional Information:</i></b> The FY 2015 baseline for this new initiative is zero. Through this effort, EPA is equipping health, housing, environmental, and health insurance programs to support delivery, infrastructure and sustainable financing of environmental asthma interventions at home and school. Environmental pollutants in homes can cause and exacerbate asthma. Further evidence indicates that investment in home interventions will improve health outcomes and reduce and/or shift health care costs from medical treatment to secondary prevention.</p>
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**Objective 3 - Restore and Protect the Ozone Layer:** Restore and protect the earth's stratospheric ozone layer and protect the public from the harmful effects of ultraviolet (UV) radiation.

**Summary of progress toward strategic objective:**

EPA made progress under this objective through domestic commitments and leadership in international efforts to restore and protect the ozone layer. The natural layer of ozone in the stratosphere shields and protects the Earth's surface from the sun's harmful ultraviolet (UV) rays, which can lead to more cases of skin cancer, cataracts and other health problems. Stratospheric ozone depletion is the result of a complex set of circumstances and chemistry. All nations recognized by the United Nations have ratified the Montreal Protocol and continue to phase out the production of chemicals that deplete the ozone layer while transitioning to ozone-friendly alternatives.

In FY 2016, hydrochlorofluorocarbons (HCFCs) consumption (production and import) were well below levels required by the Montreal Protocol, showing that the U.S. continues to outperform international commitments and is on track to meet future obligations. Under the Montreal Protocol and the Clean Air Act, total U.S. HCFC production and consumption is capped, and will be completely phased out by 2030. The results are achieved primarily through EPA rulemakings that establish limits on the amount of HCFCs that can be produced and imported in a given year. Additionally, reviewing and listing alternatives for HCFCs under the Significant New Alternatives Policy (SNAP) program, as well as regulations establishing refrigerant management, labeling, and other requirements, have supported this transition. Importantly, industry innovation in developing new alternatives to meet the needs of consumers and industry sectors continues to be critical as the U.S. adopts and promotes these new alternatives in the transition from ozone-depleting substances (ODS).

**Challenges:**

Implementing an allocation plan that both supports a steady phase out of ODS and meets the needs of a diverse group of stakeholders is complex and continues to pose challenges. As the amount of ODS produced declines, the demands for flexibility and specific, tailored solutions to unique situations grow. EPA manages ongoing exemption programs to allow low-quantity continued production of ODS in areas of critical need.

Program Area	Performance Measures and Data							
(1) Reduce Consumption of Ozone-Depleting Substances	<b>(PM S01) Remaining US Consumption of hydrochlorofluorocarbons (HCFCs), chemicals that deplete the Earth's protective ozone layer, measured in tons of Ozone Depleting Potential (ODP).</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	<3,700	<3,700	<3,700	<1,520	<1,520	<1,520	ODP Tons
	<b>Actual</b>	1,450	1,640	1,374	584	486	Data Avail 12/2018	

Program Area	Performance Measures and Data
	<p><b><i>Explanation of Results:</i></b> FY 2016 results show that the U.S. continues to outperform international commitments under the Montreal Protocol, and is on track to meet future obligations. The results are achieved primarily through limits achieved by EPA in cooperation with industry on the amount of HCFCs that can be produced and imported in a given calendar year. Additionally, actions reviewing and listing alternatives for HCFCs under EPA’s SNAP, as well as regulations establishing refrigerant management, labeling, and other requirements, have supported this transition. Additionally, industry innovation in developing new alternatives to meet the needs of consumers and industry sectors continue to be critical as the U.S. adopts and promotes these new alternatives in the transition from ODS.</p> <p><b><i>Additional Information:</i></b> The base of comparison for assessing progress is the domestic consumption cap of Class II HCFCs as set by the Parties to the Montreal Protocol. Each ODS is weighted based on the damage it does to the stratospheric ozone - this is, its ozone-depletion potential (ODP). Beginning on January 1, 1996, the cap was set at the sum of 2.8% of the domestic ODP-weighted consumption of chlorofluorocarbons (CFCs) in 1989 plus the ODP-weighted level of HCFCs in 1989 (a total of 15,240 tons). Consumption equals production plus import minus export.</p>

**Objective 4 - Minimize Exposure to Radiation:** Minimize releases of radioactive material and be prepared to minimize exposure through response and recovery actions should unavoidable releases occur.

**Summary of progress toward strategic objective:**

EPA made progress under this objective by maintaining a high level of readiness to support federal radiological emergency response and recovery operations. In addition, EPA’s regulatory and non-regulatory activities supported our mission to protect human health and the environment by minimizing unnecessary exposures to radiation, including operating and maintaining RadNet and developing protective rules and guidance documents. Performance highlights include:

- EPA continued to demonstrate a high level of radiological emergency response readiness, scoring 96% in FY 2017 for the level of readiness.
- EPA made improvements to RadNet that increased the number of air monitors installed from 135 to 139 and increased the average percentage of operational monitors from 80% in March 2011 to over 90% in FY 2017 (monitors are taken down and brought back up for maintenance and/or repair on a routine basis). EPA also deployed dose rate meters on more than 20% of the RadNet monitors. Improvements in data processing, review, and quality assurance processes have reduced the time that data are in the review process and are thus available for release during emergencies in less time.

**Challenges:**

Maintaining scientific, technical, and policy expertise in the radiation field continues to be a challenge across the federal government and in organizations requiring this specialized expertise. Unlike many other science, technology, and mathematics fields that are growing, health physics is a unique field of expertise that was born in the Atomic Age in the 1940s. As that original workforce ages, the nation is experiencing a shortage of professionals in the field of radiation protection, nuclear power, and radiobiology.

Responding to radiation incidents is complex and requires coordination of assets across all levels of government. EPA has built working relationships in the National Response Framework (NRF), which provides context for how the response community works together and how response efforts relate to other parts of national preparedness.

Program Area	Performance Measures and Data							
<b>(1) Prepare for Radiological Emergencies</b>	<b>(PM R35) Level of readiness of radiation program personnel and assets to support federal radiological emergency response and recovery operations.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	90	90	93	93	93	93	Percent
	<b>Actual</b>	92	99	94	93	95	96	
<p><i><b>Explanation of Results:</b></i> The Core National Approach to Response (NAR) process currently measures select aspects of EPA’s radiological emergency response program and shows a continued high radiological emergency response readiness within EPA.</p> <p><i><b>Additional Information:</b></i> The level of readiness is measured as the percentage of response team members and assets that meet scenario-based response criteria.</p>								

<b>(PM R36) Average time before availability of quality assured ambient radiation air monitoring data during an emergency.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	0.5	0.5	0.5	0.3	0.3	0.3	Days
<b>Actual</b>	0.4	0.3	0.3	0.3	0.1	0.1	
<p><i>Explanation of Results:</i> Over time, improvements in data processing and review processes have reduced the time that data are in the review process and are thus available for release in less time.</p> <p><i>Additional Information:</i> In 2005, the average time between collection and availability of data for release by EPA during emergency operations was 2.5 days.</p>							
<b>(PM R37) Time to approve site changes affecting waste characterization at DOE waste generator sites to ensure safe disposal of transuranic radioactive waste at WIPP.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	70	70	70	70	70	70	Days
<b>Actual</b>	73	64	66	67	65	73	
<p><i>Explanation of Results:</i> In FY 2017, EPA made a unique legal determination about the classification of nuclear waste within the Department of Energy (DOE) complex as either spent nuclear fuel or transuranic waste, and then made a determination about its disposition based on that regulatory analysis. Given the complexity of this issue, including legal issues, more time was required for EPA and DOE to come to resolution and as a result, the target was missed.</p>							

# Goal 2 at a Glance

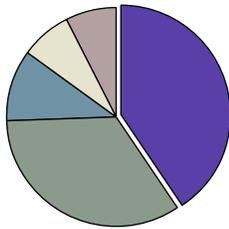
## PROTECTING AMERICA'S WATERS

Protect and restore waters to ensure that drinking water is safe and sustainably managed, and that aquatic ecosystems sustain fish, plants, wildlife, and other biota, as well as economic, recreational, and subsistence activities.

### FY 2017 Performance Measures

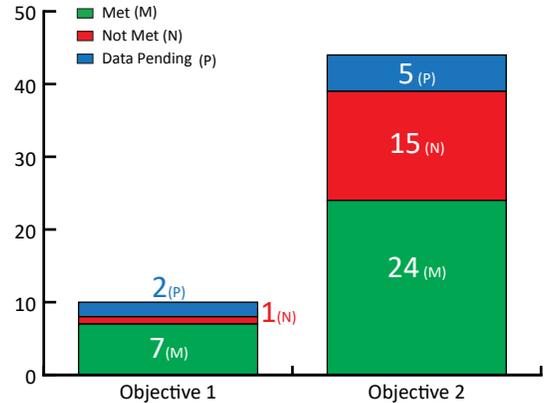
Met: 31 Not Met: 16 Data Unavailable: 7  
(Total Measures: 54)

#### FY 2017 Obligations\*



- Taking Action on Climate Change and Improving Air Quality, \$1,091,160
- **Protecting America's Waters, \$4,196,956**
- Cleaning Up Communities and Advancing Sustainable Development, \$3,530,571
- Ensuring the Safety of Chemicals and Preventing Pollution, \$749,419
- Enforcing Environmental Laws, \$779,531

### FY 2017 Performance Measures



Strategic Objective Overview	FY 2016 Obligations*	% of Goal 2 Funds
<b>Objective 2.1: Protect Human Health.</b> Achieve and maintain standards and guidelines protective of human health in drinking water supplies, fish, shellfish, and recreational waters, and protect and sustainably manage drinking water resources.	\$1,348,235	32.1%
<b>Objective 2.2: Protect and Restore Watersheds and Aquatic Ecosystems.</b> Protect, restore and sustain the quality of rivers, lakes, streams, and wetlands on a watershed basis, and sustainably manage and protect coastal and ocean resources and ecosystems.	\$2,848,721	67.9%
<b>Goal 2 Total</b>	<b>\$4,196,956</b>	<b>100.0%</b>

\*All figures in thousands

## FY 2016 EPA Programs and Activities Contributing to Goal 2

Beach Program	National Pollutant Discharge Elimination System
Coastal and Ocean Programs	Nonpoint Source Pollution Control
Chesapeake Bay	Other Geographic Programs (including Lake Pontchartrain and Northwest Forest), Lake Champlain, San Francisco Bay Delta
Children's Health Protection	Estuary, South Florida
Clean Water State Revolving Fund	Persistent Organic Pollutants
Columbia River Estuary Partnership	Puget Sound
Commission for Environmental Cooperation	Surface Water Protection Program
Drinking Water and Ground Water Protection Programs	Sustainable Infrastructure Program
Drinking Water Research	Total Maximum Daily Loads
Drinking Water State Revolving Fund	Underground Injection Control Program
Effluent Guidelines	U.S.-Mexico Border
Fish Consumption Advisories	Wastewater Management
Great Lakes	WaterSense
Gulf of Mexico	Water Monitoring
Human Health and Ecosystem Protection Research	Water Quality Research
Human Health Risk Assessment	Water Quality Standards and Criteria
Long Island Sound	Watershed Management
Mercury Research	Wetlands Marine Pollution
National Environmental Monitoring Initiative	
National Estuary Program/Coastal Waterways	

## GOAL 2: PROTECTING AMERICA'S WATERS

Protect and restore waters to ensure that drinking water is safe and sustainably managed, and that aquatic ecosystems sustain fish, plants, wildlife, and other biota, as well as economic, recreational, and subsistence activities.

**Objective 1 - Protect Human Health:** Achieve and maintain standards and guidelines protective of human health in drinking water supplies, fish, shellfish, and recreational waters, and protect and sustainably manage drinking water resources.

### Summary of progress toward strategic objective:

EPA has made significant progress towards this strategic objective by protecting and preserving our nation's drinking and recreational waters. In FY 2017, the Drinking Water program provided 92.8% (284.8 million) of the nation's population served by community water systems with drinking water that met standards. This year, EPA continued to work with states by releasing a data portal which improves the efficiency and accuracy with which water systems report data. EPA also worked with a variety of stakeholders to conduct resilience workshops to better characterize risk, determine vulnerable assets, identify mitigation strategies and implement recommendations.

EPA has advanced in the realms of resiliency and reporting while simultaneously supporting states in crisis. This year EPA conducted activities to support states on [Lead and Copper Rule](#) (LCR) compliance including working with EPA's Region 5 office to disperse \$100M in [Drinking Water State Revolving Funds](#) (DWSRF) funding to Flint, Michigan. This effort will enable Flint to accelerate and expand its work to replace lead service lines and make other critical infrastructure improvements. Further, EPA released the "[LCR Requirements for Optimal Corrosion Control Treatment for Large Drinking Water Systems](#)" and the "[Clarification of Recommended Tap Sampling Procedures for the Purposes of the LCR](#)" to help drinking water systems reduce lead levels. EPA also continues to manage the Headquarters [Emergency Operation Center](#) (EOC) Water Desk in response to Hurricanes Harvey, Irma and Maria, working closely with Regional EOC staff in tracking impacts to water and wastewater plant operations and conveying this information to DHS's [National Infrastructure Coordination Center](#).

### Challenges:

While EPA has made strides in protecting human health, the Agency still faces challenges in drinking water protection. One such challenge is states' capacity to implement and oversee new and existing drinking water rules and keep up with emerging concerns. State programs continue to balance numerous issues while addressing contaminant challenges outside the bounds of routine work plan activities, including lead contamination, natural disaster response and emerging chemicals, particularly [Per- and Polyfluoroalkylated substances](#) (PFAS). PFAS chemicals have been detected at sites across the country, often in drinking water causing substantial concerns about the effects of PFAS on public health.

Program Area	Performance Measures and Data							
(1) Water Safe to Drink	(PM aa) Percent of population served by CWSs that will receive drinking water that meets all applicable health-based drinking water standards through approaches including effective treatment and source water protection.							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	91	92	92	92	92	92	Percent
	Actual	94.7	92	93	91	91.2	92.8	

Program Area	Performance Measures and Data						
<p><b>Additional Information:</b> In FY 2005, 89 percent of the population served by community water systems received drinking water that met applicable drinking water standards.</p>							
<p><b>(PM apc) Fund utilization rate for the DWSRF.</b></p>							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	89	89	89	89	89	89	Percent
<b>Actual</b>	90	91	92	94	95	96	
<p><b>Explanation of Results:</b> The utilization rate has consistently increased over the last few years. From FY 2014 - FY 2017 states signed a record amount of funds into new loans. This resulted from EPA and state implementation of the FY 2014 Unliquidated Obligation (ULO) Strategy, which led many states to develop agile cash flow models to more accurately balance fund inflows and outflows.</p>							
<p><b>Additional Information:</b> In FY 2005, 89 percent of the population served by community water systems received drinking water that met applicable drinking water standards.</p>							
<p><b>(PM aph) Percent of community water systems that have undergone a sanitary survey within the past three years (five years for outstanding performance or those ground water systems approved by the primacy agency to provide 4-log treatment of viruses).</b></p>							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	95	95	83	79	79	85	Percent
<b>Actual</b>	89	93	87	90.8	91.2	90.8	
<p><b>Additional Information:</b> In FY 2007, 92 percent of community water systems had undergone a sanitary survey. Prior to FY 2007, this measure tracked states rather than community water systems in compliance with this regulation. Starting in FY 2014, this measure includes ground water systems in addition to surface water systems. Ground water systems that have been approved by the primacy agency to provide 4-log treatment of viruses or have outstanding performance based on prior sanitary surveys may have sanitary surveys conducted no less than every five years (per 40 CFR 142.16(o)(2)(iii)). Because the universe is larger, the targets starting in FY 2014 have been adjusted accordingly.</p>							
<p><b>(PM apm) Percent of community water systems that meets all applicable health-based standards through approaches including effective treatment and source water protection.</b></p>							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	90	90	90	90	90	90	Percent
<b>Actual</b>	91	91	91	90	90.4	93	
<p><b>Additional Information:</b> In FY 2005, 89 percent of community water systems met all applicable health-based drinking water standards.</p>							

<b>(PM aps) Percent of Classes I, II and III salt solution mining wells that have lost mechanical integrity and are returned to compliance within 180 days, thereby reducing the potential to endanger underground sources of drinking water.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	90	85	85	85	85	85	Percent
<b>Actual</b>	85	89	89	88	86	Data Avail 03/2018	
<i>Additional Information:</i> There is no fixed point that can be used as a baseline for this measure, since the activity that we are monitoring - "Mechanical Integrity Loss" - has not yet occurred. The universe of wells losing mechanical integrity is not static.							
<b>(PM apt) Number of Class V motor vehicle waste disposal wells (MVWDW) and large capacity cesspools (LCC) [approximately 23,640 in FY 2010] that are closed or permitted (cumulative).</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	20,840	25,225	25,225	25,225	27,783	28,390	Wells
<b>Actual</b>	25,225	26,027	26,560	27,383	28,187	28,134	
<i>Explanation of Results:</i> The target was missed due to an error in the FY 2015 reporting which led the program to establish an artificially high target for FY 2017. The error has since been resolved.							
<i>Additional Information:</i> FY 2012 was the first year of reporting for the measure. EPA is finding fewer and fewer wells suitable for closure or that have not already been permitted.							
<b>(PM dw2) Percent of person months during which community water systems provide drinking water that meets all applicable health-based standards.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	95	95	95	95	95	95	Percent
<b>Actual</b>	97.8	96.9	97	96	96	96.1	
<i>Additional Information:</i> "Person months" for each community water system are calculated as the number of months with any health-based violation, multiplied by the retail population served. In FY 2005, community water systems provided drinking water that met all applicable health-based drinking water standards during 95 percent of "person months."							

	<b>(PM pi1) Percent of population in each of the U.S. Pacific Island Territories (served by community water systems) that meets all applicable health-based drinking water standards, measured on a four-quarter rolling average basis.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>	
<b>Target</b>	80	82	80	80	80	80	Percent	
<b>Actual</b>	80	81	98	97.7	82.1	82		
<i>Additional Information:</i> In FY 2005, 95 percent of the population in American Samoa, 10 percent in the Commonwealth of the Northern Mariana Islands (CNMI) and 80 percent in Guam were served by Community Water Systems (CWSs) that received drinking water that met all applicable health-based standards.								
	<b>(PM E) Percent of the population in Indian Country served by community water systems that receive drinking water that meets all applicable health-based drinking water standards.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>	
<b>Target</b>	87	87	87	87	87	87	Percent	
<b>Actual</b>	84	77	89	88	88	90.5		
<i>Additional Information:</i> In FY 2005, 86 percent of the population served by community water systems received drinking water that met applicable drinking water standards.								
<b>(2) Fish and Shellfish Safe to Eat</b>	<b>(PM fs1) Percent of women of childbearing age having mercury levels in blood above the level of concern.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	4.9	No Target Established	4.9	No Target Established	2.3	No Target Established	Percent
	<b>Actual</b>	2.8	Biennial	2.1	Biennial	3.3	Biennial	
<i>Explanation of Results:</i> There are no statistical differences between the FY 2016 result and previous years' percentages that were reported.								
<i>Additional Information:</i> In 1999-2000, 7.8 percent of women of childbearing age had mercury levels in blood above the level of concern.								

**Objective 2 - Protect and Restore Watersheds and Aquatic Ecosystems:** Protect, restore, and sustain the quality of rivers, lakes, streams, and wetlands on a watershed basis, and sustainably manage and protect coastal and ocean resources and ecosystems.

**Summary of progress toward strategic objective:**

EPA has made progress toward protecting and restoring watersheds and aquatic ecosystems through restoration efforts across the country. This year, EPA began work on reviewing and potentially revising the definition of "[Waters of the United States](#)" and collaborated with the Department of Defense (DoD) to publish the [Uniform National Discharge Standards Rule which](#) will establish distinct discharge performance standards for vessels of the Armed Forces. EPA also made progress on critical actions such as the [Analytical Methods Update Rule](#) and [Dental Mercury rule](#). Further, EPA drafted criteria and implementation materials regarding toxic algal blooms and fish consumption to protect human health and the environment.

EPA also made significant progress in water quality improvement in various water bodies through implementation of [Total Maximum Daily Loads](#) (TMDLs). To date, the EPA and states have developed over 74,000 TMDLs that address over 78,000 causes of impairments. The Long Island Sound reached a major environmental milestone in FY 2017 by attaining the wasteload allocations of the nitrogen TMDL, an annual reduction of 44 million pounds of nitrogen in the watershed. Similarly, Vermont adopted a [phosphorus reduction plan](#) to reduce phosphorus entering Lake Champlain. EPA has been working with Vermont to provide technical and financial assistance to support their efforts through stabilizing streambanks, issuing new wastewater and stormwater permits, and working with farmers, town officials and foresters to implement new land management practices. In FY 2017, Chesapeake Bay was also on track to meet phosphorus and sediment reduction goals set by the 2010 TMDL. Results of the 2014 to 2016 assessment period estimate that water quality in Chesapeake Bay and its tidal tributaries improved by 5% from the previous assessment period.

EPA, along with state managers, continue to prioritize impaired waters and have improved conditions such that 4,162 waterbodies (identified by states in 2002 as not attaining standards) fully meet water quality standards as of FY 2017. EPA played a large role in the Puget Sound Pollution Identification and Correction programs which contributed to the openings of several large shellfish bed areas in Puget Sound and improved water quality in terms of nutrients, sediments, and temperature. EPA also worked to protect and restore aquatic ecosystems through the [National Estuary Program](#), restoring 52,257 acres of habitat. Restoration success stories also include Georgia's Piscola Creek, which has been listed as impaired for oxygen since 2000 and as of FY 2017 meets its water quality standard for dissolved oxygen after the installation of 9,811 acres of agricultural conservation practices. Finally, in FY 2017, EPA progressed toward improved water quality in tribal areas by holding its first [Wetland Program Development Grant](#) Tribal set-aside competition, awarding 17 grants to tribes.

**Challenges:**

EPA and the states still face a variety of challenges in water quality protection. The rate at which new waters are listed for water quality impairments exceeds the pace at which restored waters are removed from the list. Additionally, multiple hurricanes damaged aquatic ecosystems and affected EPA's restoration and protection efforts.. While EPA successfully protected and/or restored 52,000 acres, the Agency was still 48,000 below the target.

EPA continues to provide financial and technical assistance to states to support their efforts to reduce nutrient pollution, which continues to be a challenge affecting many streams, rivers, lakes, bays and coastal waters. EPA and the U.S. Department of Agriculture are collaborating through the National Water Quality Initiative to accelerate conservation practices to control nutrients, sediment and pathogens, and provide additional funding, technical assistance, and direction to states to increase rate of implementation of conservation practices that control these pollutants.

Program Area	Performance Measures and Data							
<b>(1) Improve Water Quality on a Watershed Basis</b>	<b>(PM L) Number of water body segments identified by states in 2002 as not attaining standards, where water quality standards are now fully attained (cumulative).</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	3,324	3,727	3,829	4,016	4,082	4,089	Segments
	<b>Actual</b>	3,527	3,679	3,866	3,944	4,009	4,162	
	<p><i>Explanation of Results:</i> Beginning in FY 2019, EPA will be using a new approach for measuring local improvements in water quality. The goal is to provide a consistent method for measuring progress. This new approach will enable EPA to more effectively track water quality outcomes from investments in protection and restoration.</p> <p><i>Additional Information:</i> In FY 2002, 39,798 water bodies were identified by states and tribes as not meeting water quality standards. Water bodies where mercury is among multiple pollutants causing impairment may be counted toward this target when all pollutants but mercury attain standards but must be identified as still needing restoration for mercury; In FY 2002, 1,703 impaired water bodies were impaired by multiple pollutants, including mercury, and 6,501 were impaired by mercury alone.</p>							
	<b>(PM bpb) Fund utilization rate for the CWSRF.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	94.5	94.5	94.5	94.5	95	95	Percent
	<b>Actual</b>	98	97	98	98	98	98	
	<p><i>Additional Information:</i> In FY 2002, the fund utilization rate was 91 percent. It is calculated using data collected annually from all 51 state CWSRF programs (50 states and Puerto Rico).</p>							
	<b>(PM bpf) Estimated annual reduction in millions of pounds of phosphorus from nonpoint sources to water bodies (Section 319 funded projects only).</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	4.5	4.5	4.5	4.5	4.5	4.5	Pounds (Million)
	<b>Actual</b>	4.4	3.5	2.7	2.1	2.6	Data Avail 03/2018	

Program Area	Performance Measures and Data																													
	<p><b>Explanation of Results:</b> (FY 2016 Results) In FY 2016, an estimated 2.6 million pounds of phosphorus originating from nonpoint sources were prevented from entering waterbodies. This load reduction failed to meet the FY 2016 target of 4.5 million pounds. Over the past six fiscal years, the program has only succeeded in reaching the phosphorus target in one of those years. There are several reasons for missing this target load reduction, including: (1) phosphorus loadings vary greatly from year to year based on weather patterns; and (2) state priorities could have shifted to watersheds where phosphorus is not a key/target pollutant.</p> <p>(FY 2017 Results) EPA collects this information in its Grants Reporting and Tracking System (GRTS) for Section 319-funded on-the-ground implementation projects that will reduce phosphorus-loads to waterbodies. States are not required to enter this information into GRTS until after one full year of project implementation, so that field data can be collected to support the model calculations. Results are reported in GRTS by mid-February for the past 12 months. Therefore, FY 2017 results will be available March 2018.</p> <p><b>Additional Information:</b> In 2005, there was a reduction of 558,000 lbs. of phosphorus from nonpoint sources.</p>																													
	<p><b>(PM bpg) Estimated annual reduction in million pounds of nitrogen from nonpoint sources to water bodies (Section 319 funded projects only).</b></p> <table border="1" data-bbox="317 638 1978 808"> <thead> <tr> <th></th> <th>FY 2012</th> <th>FY 2013</th> <th>FY 2014</th> <th>FY 2015</th> <th>FY 2016</th> <th>FY 2017</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td><b>Target</b></td> <td>8.5</td> <td>9.1</td> <td>9.1</td> <td>9.1</td> <td>9.1</td> <td>9.1</td> <td rowspan="2">Pounds (Million)</td> </tr> <tr> <td><b>Actual</b></td> <td>9</td> <td>10.4</td> <td>11.3</td> <td>9.6</td> <td>12.7</td> <td>Data Avail 03/2018</td> </tr> </tbody> </table>								FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit	<b>Target</b>	8.5	9.1	9.1	9.1	9.1	9.1	Pounds (Million)	<b>Actual</b>	9	10.4	11.3	9.6	12.7	Data Avail 03/2018
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit																							
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	<p><b>(PM bph) Estimated annual reduction in thousands of tons of sediment from nonpoint sources to water bodies (Section 319 funded projects only).</b></p> <table border="1" data-bbox="317 1076 1978 1243"> <thead> <tr> <th></th> <th>FY 2012</th> <th>FY 2013</th> <th>FY 2014</th> <th>FY 2015</th> <th>FY 2016</th> <th>FY 2017</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td><b>Target</b></td> <td>700</td> <td>1,100</td> <td>1,200</td> <td>1,200</td> <td>1,200</td> <td>1,200</td> <td rowspan="2">Tons (Thousand)</td> </tr> <tr> <td><b>Actual</b></td> <td>1,100</td> <td>1,169</td> <td>1,674</td> <td>897</td> <td>900</td> <td>Data Avail 03/2018</td> </tr> </tbody> </table>								FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit	<b>Target</b>	700	1,100	1,200	1,200	1,200	1,200	Tons (Thousand)	<b>Actual</b>	1,100	1,169	1,674	897	900	Data Avail 03/2018
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<b>Actual</b>	1,100	1,169	1,674	897	900	Data Avail 03/2018																								

Program Area	Performance Measures and Data						
	<p><b>Explanation of Results:</b> (FY 2016 Results) In FY 2016, an estimated 900,000 tons of sediment-siltation originating from nonpoint sources were prevented from entering waterbodies. This load reduction failed to meet the FY 2016 target of 1.2 million tons. This fiscal year marks the second consecutive year the program has missed the sedimentation-siltation target. There are several reasons for missing this target load reduction, including: (1) sediment-siltation loadings vary greatly from year to year based on weather patterns; and (2) state priorities could have shifted to watersheds where sediment-siltation loadings is not a key/target pollutant.</p> <p>(FY 2017 Results) EPA collects this information inGRTS for Section 319-funded on-the-ground implementation projects that will reduce sediment-loads to waterbodies. States are not required to enter this information into GRTS until after one full year of project implementation, so that field data can be collected to support the model calculations. Results are reported in GRTS by mid-February for the past 12 months. Therefore, FY 2017 results will be available March 2018.</p> <p><b>Additional Information:</b> In 2005, there was a reduction of 1.68 million tons of sediment from nonpoint sources.</p>						
	<b>(PM bpl) Percent of high-priority state NPDES permits that are issued in the fiscal year.</b>						
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	100	80	80	80	80	80	Percent
<b>Actual</b>	130	55	80	82	80	77.7	
	<p><b>Explanation of Results:</b> States issued 467 priority permits within the fiscal year (<math>467/601 = 77.7\%</math>). In many cases, significant progress was made toward issuing these remaining priority permits, but they did not get finalized before the end of the fiscal year. Some of these were finalized soon after the end of the fiscal year, while some others were carried over as priority permits for FY 2018. Timing for the issuance for these priority permits can be hard to predict as they are often the permits with the most complex technical issues, significant interest from the public, or involvement of other agencies.</p> <p><b>Additional Information:</b> Priority Permits are permits in need of reissuance that have been identified by states as environmentally or programmatically significant. The annual universe of Priority Permits includes the number of permits selected as priority, from which a subset will be issued in the current fiscal year. In 2005, 104% of the designated priority permits were issued in the fiscal year. Starting in FY 2013, results can no longer exceed 100% issuance due to an adjustment of the measure definition, and the targets were revised accordingly. The universe used to calculate percentage results changed from the number of permits committed to issuance in the current fiscal year to the total number of permits selected as priority.</p>						
	<b>(PM bpv) Percent of high-priority EPA and state NPDES permits (including tribal) that are issued in the fiscal year.</b>						
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	100	80	80	80	80	80	Percent
<b>Actual</b>	128	55	77	81	78	74.3	

Program Area	Performance Measures and Data						
	<p><b>Explanation of Results:</b> Regions and states issued 508 priority permits within the fiscal year (508/683 = 74.3%), 38 permits below the goal of 80%. In many cases, significant progress was made toward issuing these remaining priority permits, but they did not get finalized before the end of the fiscal year. Some of these were finalized soon after the end of the fiscal year, while some others were carried over as priority permits for FY 2018. Timing for the issuance for these priority permits can be hard to predict as they are often the permits with the most complex technical issues, significant interest from the public, or involvement of other agencies. Some Regions have seen an increase in the amount of staff time required to issue permits. In part, this has been due to lengthy processes to complete consultations related to the Endangered Species Act, National Historic Preservation Act, and Coastal Zone Management Act, as well as tribal consultations and obtaining state or tribal water quality certifications under Section 401 of the Clean Water Act (CWA). Additionally, some Regions are dealing with increasing work outside of issuing permits, such as supporting and negotiating appeals resolution, defending other lawsuits, modifying permits, designing adaptive management monitoring programs for permitting, conducting water monitoring to have the data to support allocations and Water Quality-based Effluent Limitations (WQBELs) in permits, and responding to requests from permittees and states. Overall, issuing permits has become more difficult and the level of scrutiny from the public is increasing..</p> <p><b>Additional Information:</b> Priority Permits are permits in need of reissuance that have been identified by states or EPA Regions as environmentally or programmatically significant. The annual universe of Priority Permits includes the number of permits selected as priority, from which a subset will be issued in the current fiscal year. In 2005, 104% of the designated priority permits were issued in the fiscal year. Starting in FY 2013, results can no longer exceed 100% issuance due to an adjustment of the measure definition, and the targets were revised accordingly. The universe used to calculate percentage results changed from the number of permits committed to issuance in the current fiscal year to the total number of permits selected as priority.</p>						
	<p><b>(PM bpw) Percent of states and territories that, within the preceding 3-year period, submitted new or revised water quality criteria acceptable to the EPA that reflect new scientific information from the EPA or sources not considered in previous standards.</b></p>						
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
Target	64.3	64.3	66.1	67.9	67.9	73.2	Percent
Actual	69.6	58.9	51.8	64.3	69.6	67.9	
	<p><b>Explanation of Results:</b> EPA and states may face significant challenges because of the technical complexity of adopting new numeric water quality criteria for pollutants such as nutrients and toxic pollutants and keeping them up to date. EPA expects continued improvement in coming years as states come into compliance with EPA's 2015 regulatory requirement for states to conduct more thorough triennial reviews of their standards.</p> <p><b>Additional Information:</b> In FY 2004, 70% of states and territories submitted acceptable water quality criteria reflecting new scientific information.</p>						
	<p><b>(PM bpx) Percent of areas associated with state-identified priority waters that are addressed by an EPA-approved TMDL or accepted plan or approach designed to achieve or maintain water quality standards.</b></p>						
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
Target				8	8	31	Percent
Actual				Data Not Reported	9	14	

Program Area	Performance Measures and Data							
	<p><b>Explanation of Results:</b> EPA continues to implement the Water Quality Framework to streamline assessment and reporting under the Clean Water Act Section 303(d) Program by using consistent methods in national and state-level surveys along with state site-specific assessment conclusions to provide a more complete picture of our nation's water quality and to demonstrate progress in water quality restoration. The Program saw regular dialogue among states and territories, across Clean Water Act Programs, and among various stakeholders about how best to develop plans for addressing impaired and healthy waters to demonstrate progress over time in achieving environmental results. This performance measure was the first one to transition to using the Assessment and Total Maximum Daily Load Tracking and Implementation System (ATTAINS) database as the data source and the catchment area as the unit of measure to report results. In spite of widespread impacts to staffing and resources, as well as a significant reduction in court-supervised deadlines, states continue making progress to achieve or maintain water quality standards. EPA continues to work across programs to ensure that states have robust and realistic long-term priorities that result in Total Maximum Daily Loads (TMDLs) and alternatives that are more successful in achieving water quality goals, and protection approaches.</p> <p><b>Additional Information:</b> The measure provides the extent of priority areas identified by each state that have been addressed by EPA-approved Total Maximum Daily Loads (TMDLs) or alternative restoration approaches for impaired waters, or protection approaches for high quality waters, at the beginning of the year when the baseline is established. A TMDL is a technical plan for reducing pollutants to a body of water in order to attain water quality standards. The terms "approved" and "established" refer to the completion and approval of the TMDL itself. The universe for the measure is all watershed areas corresponding to priority waters identified by each state.</p>							
	<b>(PM wq2) Remove the specific causes of water body impairment identified by states in 2002 (cumulative).</b>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	<b>Target</b>	10,161	11,634	12,134	12,788	12,990	13,110	Causes
	<b>Actual</b>	11,134	11,754	12,288	12,640	12,910	13,140	
	<p><b>Explanation of Results:</b> Beginning in FY 2019, EPA will be using a new approach for measuring local improvements in water quality. The goal is to provide a consistent method for measuring progress. This new approach will enable EPA to more effectively track water quality outcomes from investments in protection and restoration.</p> <p><b>Additional Information:</b> In FY 2002, an estimate of 69,677 specific causes of water body impairments were identified by states.</p>							
	<b>(PM uw1) Number of urban water projects initiated addressing water quality issues in the community.</b>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	<b>Target</b>	3	10	30	22	49	25	Projects
	<b>Actual</b>	46	9	65	28	48	24	

Program Area	Performance Measures and Data							
	<p><b>Explanation of Results:</b> The initiated awards target is an estimate based on past awards. The actual awards made depends on a variety of factors including the quality of proposed projects and, for the National Fish and Wildlife Foundation grants, the interest of the funding partners. EPA awarded fewer grants in FY 2017 primarily because of the interest of the funding partners.</p> <p><b>Additional Information:</b> This measure tracks progress in grants that help communities access, improve, and benefit from their urban waters and surrounding land. Projects are initiated under the Five-Star and Urban Waters Restoration Program managed by the National Fish and Wildlife Foundation (sub-grants with EPA and leveraged public and private funds). Projects under both programs advance water quality improvement and EPA investments are consistent with CWA Section 104(b)(3) authority.</p>							
	<p><b>(PM uw2) Number of urban water projects completed addressing water quality issues in the community (cumulative).</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target				61	78	175	Projects
	Actual				60	110	158	
	<p><b>Explanation of Results:</b> EPA did not achieve 65 completions in FY 2017 to reach a cumulative number of 175, in part because some grantees requested extensions for unforeseen reasons. The number of projects completed can vary widely because it is comprised of two grant programs with different targeted project schedules.</p> <p><b>Additional Information:</b> Results include completed Urban Waters Small Grants and grants funded in part by EPA through the Five Star and Urban Waters Restoration Program managed by the National Fish and Wildlife Foundation.</p>							
	<p><b>(PM wq3) Improve water quality conditions in impaired watersheds nationwide using the watershed approach (cumulative).</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	312	370	408	446	484	519	Watersheds
	Actual	332	376	411	450	485	509	
<p><b>Explanation of Results:</b> The target was missed due to: (1) Meeting standards in a single waterbody segment impaired by multiple pollutants is more difficult than if just one or a few pollutants are impairing the single segment; (2) Many of the impairments which remain in waters identified in 2002 require many years before restoration strategies accomplish full recovery of the waterbody segments. Beginning in FY 2019, EPA will no longer be reporting on this measure. EPA is switching to a new approach for measuring local improvements in water quality. The goal is to provide a consistent method for measuring progress. This new approach will enable EPA to more effectively track water quality outcomes from investments in protection and restoration.</p> <p><b>Additional Information:</b> In FY 2002, there were zero watersheds improved of an estimated 4,800 impaired watershed of focus having 1 or more water bodies impaired. The watershed boundaries for this measure are those established at the "12-digit" scale by the U.S. Geological Survey. Watersheds at this scale average 22 square miles in size. "Improved" means that that one or more of the impairment causes identified in FY 2002 are removed for at least 40 percent of the impaired water bodies or impaired miles/acres, or there is significant watershed-wide improvement, as demonstrated by valid scientific information, in one or more water quality parameters associated with the impairments.</p>								

Program Area	Performance Measures and Data							
	<b>(PM Opb) Percent of serviceable rural Alaska homes with access to drinking water supply and wastewater disposal.</b>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	93	93	93.5	92.5	93	93.5	Percent
	Actual	91	91	94.4	94.6	93.5	Data Avail 03/2018	
	<p><i>Explanation of Results:</i> Data is calculated by the State of Alaska after the Alaska construction season ends in late Fall, and is usually available the following March.</p> <p><i>Additional Information:</i> In 2003, 77 percent of serviceable rural Alaska homes had access to drinking water supply and wastewater disposal.</p>							
<b>(2) Improve Coastal and Ocean Waters</b>	<b>(PM sf3) At least seventy-five percent of the monitored stations in the near shore and coastal waters of the Florida Keys National Marine Sanctuary will maintain Chlorophyll a(CHLA) levels at less than or equal to 0.35 ug l-1 and light clarity (Kd) levels at less than or equal to 0.20 m-1.</b>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	75	75	75	75	75	75	Percent
	Actual	CHLA: 70.9; KD: 72.5	>75 (CHLA: 84.5; KD: 80.4)	CHLA = 86.0; Kd = 87.2	CHLA = 82.0; Kd = 77.3	CHLA = 70.9; Kd = 78.5	CHLA = 76.2%; Kd = 75.9%	
	<p><i>Explanation of Results:</i> Water column turbidity (cloudiness) has declined throughout the Florida Keys National Marine Sanctuary during the last 22 years. The decline in turbidity increases the clarity and the amount of light (Kd) able to penetrate which is beneficial to corals, seagrass, and algae. Chlorophyll (CHLA) levels have remained relatively consistent throughout the Sanctuary with the exception of a decline at the reef tract sites.</p> <p><i>Additional Information:</i> In 2005, total water quality was at CHLA &lt; 0.2 ug/l, light attenuation &lt; 0.13/meter.</p>							
	<b>(PM sf4) At least seventy-five percent of the monitored stations in the near shore and coastal waters of the Florida Keys National Marine Sanctuary will maintain dissolved inorganic nitrogen (DIN) levels at less than or equal to 0.75 uM and total phosphorus (TP) levels at less than or equal to 0.25 uM.</b>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
Target	75	75	75	75	75	75	Percent	
Actual	DIN: 81; TP: 89.5	<75 (DIN: 60.0; TP: 82.3)	DIN=72.6; TP=87.6	DIN=61.7; TP=78.3	DIN = 70.8; TP = 89.1	< 75		

Program Area	Performance Measures and Data							
	<p><b>Explanation of Results:</b> DIN = 62.2%; TP = 89.1%. Beginning in 1996, the EPA-supported Florida Keys National Marine Sanctuary Water Quality Monitoring Program funded quarterly monitoring to 155 stations in the Sanctuary. Budget reductions (\$530K to \$350K) in FY 2011 reduced the monitoring stations to the current 112. The FY 2014-2018 targets were calculated using baseline data collected from 1995 – 2005 at 155 stations. To accommodate the funding reduction, the decision was made to drop the expensive, difficult to reach Dry Tortugas and reef tract stations at the western end of the Sanctuary. The sites dropped were in areas not heavily affected by human activities and of good water quality. The remaining stations are nearer to shore and potentially exposed to increased land-based sources of pollution.</p> <p><b>Additional Information:</b> In 2005, total water quality was at CHLA &lt; 0.2 ug/l, light attenuation &lt; 0.13/meter.</p>							
	<p><b>(PM sf6) The number of Everglades Stormwater Treatment Areas (STAs) with the annual total phosphorus (TP) outflow less than or the same as the five-year annual average TP outflow, working towards the long-term goal of meeting the 10 parts per billion annual geometric mean.</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target				3	3	3	Stormwater Treatment Areas
	Actual				4	4	1	
	<p><b>Explanation of Results:</b> The South Florida Water Management District (SFWMD) is under a NPDES consent order negotiated with EPA that requires them to expand the Stormwater Treatment Areas (STAs) systems. Once all the projects are completed (cost \$800M), all five STAs are expected to discharge at the 10 parts per billion water quality standards.</p> <p><b>Additional Information:</b> This was a new measure for FY 2015. The baseline period is the most recent five years. The 5-year baseline takes into account variability due to climatic conditions including extremely wet or dry years which are common in South Florida. For FY 2015, the 5-year baseline, 2010 to 2015, was 36 parts per billion (ppb) for STA-1E, 35 ppb for STA-1W, 21 ppb for STA-2, 17 ppb for STA-3/4, and 54 ppb for STA-5/6. The universe is 5 STAs.</p>							
	<p><b>(PM co5) Percent of active dredged material ocean dumping sites that will have achieved environmentally acceptable conditions (as reflected in each site's management plan).</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	95	95	95	95	95	95	Percent
	Actual	97	96	95	95	97	98	
<p><b>Explanation of Results:</b> In FY 2017, 69 sites had achieved environmentally acceptable conditions (69/71=97%). Environmentally acceptable conditions for each of the ocean dumping sites is defined in the site's management plan and is measured through on-site monitoring. In 2017, two of our sites were not meeting the conditions as described in their individual site management plans. At the Gulfport West Ocean Dredged Material Disposal Site (ODMDS), the northern portion of the site exceeds the minimum depth limitation. At the Miami ODMDS, sampling had identified elevated levels of PCBs.</p>								

	<b>(PM 202) Acres protected or restored in National Estuary Program study areas.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>	
<b>Target</b>	100,000	100,000	100,000	100,000	100,000	100,000	Acres	
<b>Actual</b>	114,575	127,594	93,557	111,584	70,462	52,257		
	<p><b>Explanation of Results:</b> Factors contributing to the number of acres protected and restored each year by the National Estuary Programs (NEPs) and their partners are numerous and complex making it difficult to accurately forecast with any degree of certainty. Some of the challenges that resulted in missing our target include:</p> <p>1) delays in funding, increased cost, permits, or contracts. The costs to design and implement restoration projects are increasing and require more time to find and leverage the necessary finances to bring a project to fruition. Protection efforts involving real estate transactions often have legal issues that need to be carefully and responsibly worked through taking a long time to complete.</p> <p>2) timing to pull together multiple partners and coordinate implementing activities. Some NEPs are working on fairly large restoration projects (over 1,000 acres) which take more time and effort to design, get various environmental clearances which can require going through a complicated and expensive process involving: technical analysis, hydrologic &amp; hydraulics systems performance analysis, geotechnical analysis, National Environmental Policy Act (NEPA), real estate requirements, permitting, etc., and then implementation.</p> <p>3) weather-related events. A number of NEPs were hit by hurricanes this Fall including San Juan Bay, Charlotte Harbor, Coastal Bend Bays and Galveston Bay. The hurricanes affected the ability of the NEPs to report because their offices were closed and without power. NEP staff homes and cars were flooded so they were not able to come into the offices and report.</p> <p><b>Additional Information:</b> A total of 1,640,463 acres of habitat were protected or restored from FY 2002-2017.</p>							
<b>(3) Increase Wetlands</b>	<b>(PM 4E) In partnership with the U.S. Army Corps of Engineers, states, and tribes, achieve no net loss of wetlands each year under the Clean Water Act Section 404 regulatory program. ("No net loss" of wetlands is based on requirements for mitigation in CWA 404 permits and not the actual mitigation attained.)</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	No Net Loss	No Net Loss	No Net Loss	No Net Loss	No Net Loss	No Net Loss	Acres
	<b>Actual</b>	No Net Loss	No Net Loss	No Net Loss	No Net Loss	No Net Loss	No Net Loss	
		<b>Additional Information:</b> EPA receives data for this measure from the Army Corps of Engineers (ACE).						
		<b>(PM 4G) Number of acres restored and improved under the 5-Star, NEP, 319, and great water body programs (cumulative).</b>						
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	170,000	190,000	220,000	230,000	290,000	305,000	Acres	
<b>Actual</b>	180,000	207,000	221,000	275,555	291,055	301,463		

	<p><b>Explanation of Results:</b> The results for this measure primarily come from the NEP habitat acres. The EPA missed its target for protecting and restoring the NEP habitat acres primarily because of response to the Hurricanes Maria and Irma, delays in funding, and timing to pull together multiple partners and coordinate implementing activities.</p> <p><b>Additional Information:</b> This measure describes the wetland acres restored through only EPA programs. Information on the national status of wetland gains and losses regardless of the cause is provided every five years by the U.S. Fish and Wildlife Service (USFWS). The most recent report (U.S. Fish and Wildlife Service, Status and Trends of Wetlands in the Conterminous United States 2004 to 2009: <a href="http://www.fws.gov/wetlands/Status-And-Trends-2009/index.html">http://www.fws.gov/wetlands/Status-And-Trends-2009/index.html</a>) noted an annual net loss of 13,800 acres.</p>							
<b>(4) Great Lakes</b>	<b>(PM 625) Areas of Concern Beneficial Use Impairments removed (cumulative).</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	33	41	46	60	65	72	BUIs
	<b>Actual</b>	33	41	52	60	65	73	
	<p><b>Explanation of Results:</b> Beneficial Use Impairments (BUIs) were removed at: Black River, OH (2); St. Marys, MI; Lower Menominee River, MI/WI (2); St. Clair River, MI (2); and Rochester Embayment, NY.</p> <p><b>Additional Information:</b> Results from this measure are achieved through Great Lakes Restoration Initiative (GLRI) funding as well as other non-GLRI federal and/or state funding. Universe is 255. Reviews of this measure conducted during the preparation of GLRI Action Plan II in FY 2014 identified overstatements of the number of beneficial use impairments removed. The cumulative results shown above are two less than were achieved through FY 2012 and FY 2013. Corrected results are shown from FY 2014 onward.</p>							
	<b>(PM 626) Number of Areas of Concern in the Great Lakes where all management actions necessary for delisting have been implemented (cumulative).</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	3	4	5	8	9	11	AOCs
	<b>Actual</b>	2	3	7	7	8	11	
	<p><b>Explanation of Results:</b> Areas of Concern (AOC) Management Actions were completed at the River Raisin, MI (12/5/2016), St. Marys River, MI (8/28/2017), and Lower Menominee, MI/WI (5/17/2017).</p> <p><b>Additional Information:</b> Universe of 31. Results from this measure are achieved through GLRI funding as well as other non-GLRI federal and/or state funding.</p>							
	<b>(PM 628) Number of acres controlled by GLRI-funded projects (cumulative).</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	15,500	34,000	38,000	94,500	110,000	120,000	Acres	
<b>Actual</b>	31,474	35,924	84,500	101,392	115,889	134,856		

**Additional Information:** There were zero acres managed for populations of invasive species controlled to a target level in 2005.

**(PM 629) Number of GLRI-funded Great Lakes rapid responses or exercises conducted.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
Target	8	14	9	8	8	8	Responses/Exercises
Actual	15	7	8	21	11	25	

**Explanation of Results:** The 8 Great Lakes States have committed to conducting annual training exercises, but prioritize activities to respond to detections of new invasive species. In FY 2017, multiple state agencies and others completed 25 actual responses.

**Additional Information:** There were zero multi-agency rapid response plans established, mock exercises to practice responses carried out under those plans, and/or actual response actions in 2005.

**(PM 638) Projected phosphorus reductions from GLRI-funded projects in targeted watersheds (measured in pounds).**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
Target				130,000	310,000	525,000	Pounds
Actual				160,117	402,943	767,864	

**Additional Information:** Cumulative measure of average annual projected reduction, starting in FY 2015.

**(PM 639) Projected volume of untreated urban runoff captured or treated by GLRI-funded projects (cumulative).**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
Target				30	70	120	Gallons (millions)
Actual				37	116	239	

**Explanation of Results:** GLRI agencies have learned more about which management practices work best and have used opportunities to implement projects with these best management practices, yielding better results than originally projected.

**Additional Information:** Cumulative measure of average annual projected reduction, starting in FY 2015.

**(PM 640) Number of miles of Great Lakes tributaries reopened by GLRI-funded projects (cumulative).**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
Target				2,200	4,200	4,900	Miles
Actual				3,855	4,615	4,967	

**Additional Information:** As of October 1, 2014, 3,475 miles of tributaries were reopened by GLRI-funded projects. Universe: N/A.

<b>(PM 641) Number of miles of Great Lakes shoreline and riparian corridors protected, restored, and enhanced by GLRI-funded projects (cumulative).</b>								
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>	
<b>Target</b>				75	350	725	Miles	
<b>Actual</b>				313	662	947		
<i>Explanation of Results:</i> Agencies continued to accelerate projects to protect, restore, and/or enhance targeted coastal habitats and key river corridors in the Great Lakes. Significant achievements were realized in small tributaries and shorelines addressing invasive or nuisance species resulting in greater miles than expected.								
<i>Additional Information:</i> As of October 1, 2014, 3,475 miles of tributaries were reopened by GLRI-funded projects. Universe: N/A.								
<b>(PM 642) Number of acres of Great Lakes coastal wetlands protected, restored, and enhanced by GLRI-funded projects (cumulative).</b>								
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>	
<b>Target</b>				7,000	15,000	30,000	Acres	
<b>Actual</b>				7,033	17,540	24,306		
<i>Explanation of Results:</i> In addition to significant on-the-ground restoration, significant planning and design activities were initiated in order to greatly accelerate acres of coastal wetlands to be restored in FY 2018 and FY 2019. Acreage from several projects that were delayed in FY 2017 are expected to be realized in FY 2018.								
<i>Additional Information:</i> As of October 1, 2014, there were zero miles of wetlands known to have been protected, restored, and enhanced by GLRI-funded projects. Universe is 260,000 acres.								
<b>(PM 643) Number of acres of other habitats in the Great Lakes basin protected, restored, and enhanced by GLRI-funded projects (cumulative).</b>								
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>	
<b>Target</b>				127,000	167,000	187,000	Acres	
<b>Actual</b>				146,815	167,218	201,075		
<i>Additional Information:</i> As of October 1, 2013, there were 117,000 acres of other habitats protected, restored, and enhanced by GLRI-funded projects. Universe is 1,290,000 acres.								
<b>(5) Chesapeake Bay</b>	<b>(PM cb6) Percent of goal achieved for implementing nitrogen reduction actions to achieve the final TMDL allocations, as measured through the phase 5.3 watershed model.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	15	22.5	30	37.5	45	52.5	Percent
<b>Actual</b>	21	25	27	21	31	33		

**Explanation of Results:** The nitrogen measure is well below the target value principally due to the lack of new implementation of Best Management Practices (BMPs) in Pennsylvania, particularly in the agricultural sector. The remaining six watershed jurisdictions are either on the right trajectory to achieve their 2017 targets (DC, VA, WV) or less than a million pounds above their 2017 reduction target (DE, MD, NY). Pennsylvania is currently 18 million pounds above their 2017 reduction target and 34 million pounds above their 2025 goal. Among jurisdictions, about 55% of the needed nitrogen load reductions to achieve the basinwide 2015 target are from PA and the state's Watershed Implementation Plan calls for 71% of the state reductions to come from agriculture. The Chesapeake Bay watershed portion of Pennsylvania is at 9% of their needed load reductions when they should be at 53% of the total TMDL reductions. PA's efforts have not been enough over several years to improve the rate of load reductions. Monitoring trends are leveling out and it will likely take many years for PA to make adequate progress to meet targets. Historic improving water quality trends in Susquehanna River's nitrogen loads being delivered to Chesapeake Bay have been leveling off for several years. EPA and the United States Department of Agriculture (USDA) have been working together to provide more funding, technical assistance, and direction to Pennsylvania to increase rate of implementation of practices to reduce nitrogen. EPA has also increased its oversight of Pennsylvania's programs and the use of federal actions in the agriculture and urban/suburban sectors.

**Additional Information:** As of October 1, 2013, there were 117,000 acres of other habitats protected, restored, and enhanced by GLRI-funded projects. Universe is 1,290,000 acres.

**(PM cb7) Percent of goal achieved for implementing phosphorus reduction actions to achieve final TMDL allocations, as measured through the phase 5.3 watershed model.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	15	22.5	30	37.5	45	52.5	Percent
<b>Actual</b>	19	27	43	71	81	81	

**Additional Information:** In FY 2010 (the baseline year), zero percent of the goal was achieved.

**(PM cb8) Percent of goal achieved for implementing sediment reduction actions to achieve final TMDL allocations, as measured through the phase 5.3 watershed model.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	15	22.5	30	37.5	45	52.5	Percent
<b>Actual</b>	30	32	37	25	48	57	

**Additional Information:** In FY 2010 (the baseline year), zero percent of the goal was achieved.

**(6) Gulf of Mexico (PM xg2) Restore, enhance, or protect a cumulative number of acres of important coastal and marine habitats.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	30,600	30,600	30,600	30,800	30,800	31,426	Acres
<b>Actual</b>	30,248	30,306	30,319	30,574	31,276	31,554	

	<i><b>Additional Information:</b></i> The Gulf of Mexico program counts acres once projects are in place and results are recognized. As of FY 2008 (the baseline year), 25,515 acres were restored, enhanced, or protected in the Gulf of Mexico.							
	<b>(PM xg3) Improve and/or restore water and habitat quality to meet water quality standards in watersheds throughout the five Gulf States and the Mississippi River Basin.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>	
<b>Target</b>					2	2	Watersheds (12 digit HUC)	
<b>Actual</b>					2	2		
	<i><b>Additional Information:</b></i> New measure replaced PM xg1 in FY 2016. The measure tracks improved and/or restored watershed annually. A 12-digit Hydrologic Unit Code (HUC) watershed counts as having an improvement when there is a five percent or more positive change in at least one water quality parameter. Water quality parameter(s) appropriate to the 12-digit HUC watershed include dissolved oxygen, temperature, pH, turbidity, total suspended solids, salinity, chlorophyll, freshwater inflow, oil/grease, floatables, nutrients, and invasive species.							
<b>(7) Long Island Sound</b>	<b>(PM li5) Percent of goal achieved in reducing trade-equalized (TE) point source nitrogen discharges to Long Island Sound from the 1999 baseline of 59,146 TE lbs/day.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>	
	<b>Target</b>	74	76	85	91.5	95	100	Percent
	<b>Actual</b>	83	88	94	99.8	111	Data Avail 03/2018	
		<i><b>Explanation of Results:</b></i> Nitrogen discharge data is collected by the states of New York and Connecticut on a calendar year basis from the 106 treatment plants discharging to Long Island Sound. December data is reported with a 30-day lag time and that data is reviewed for quality assurance and confirmed then entered into EPA's Discharge Monitoring Report system by the states in early March. Full calendar year data is required in order to capture seasonal variations in processing nitrogen through biological means. Temperature variations (fall/winter vs spring/summer) and precipitation levels affect the ability of the treatment plant operators to control nitrogen discharges.						
		<i><b>Additional Information:</b></i> The 2000 TMDL baseline is 59,146 Trade-Equalized (TE) pounds/day. The ongoing TMDL target is 22,774 TE pounds/day. The Long Island Sound Nitrogen TMDL is an enforceable document with a 15-year implementation timetable that completed in 2014. There are no annual targets in the TMDL. The 'annual targets' in the strategic plan are for presentation purposes only and are estimates based on the 15-year total nitrogen reduction target. New York City and Westchester County Sewage Treatment Plants (STPs) are under Consent Orders that extended their TMDL compliance deadline to 2017. EPA monitored these for compliance, as well as Connecticut STPs for anti-backsliding compliance with their final TMDL limits, or as renegotiated with EPA.						
	<b>(PM li8) Restore, protect or enhance acres of coastal habitat from the 2010 baseline of 2,975 acres.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>	
<b>Target</b>	218	420	410	135	95.8	398	Acres	
<b>Actual</b>	537	336	410	1,678	532	669		

	<p><b>Explanation of Results:</b> A major 100-acre coastal forest project completed in the Bronx, NY accounted for much of the greater-than-expected accomplishment.</p> <p><b>Additional Information:</b> EPA revised this measure in FY 2012 to measure acres instead of percent of goal achieved. EPA established annual targets with partners to measure annual progress. Out-year estimates are based on continued state progress, feasibility, and funding for habitat restoration projects.</p>							
	<p><b>(PM li9) Reopen miles of river and stream corridors to diadromous fish passage from the 2010 baseline of 17.7 river miles by removal of dams and barriers or by installation of bypass structures.</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	28	75	1.5	30	76.95	30	Miles
	Actual	72.3	56	21.6	0	50	22	
	<p><b>Explanation of Results:</b> Four projects forecast to be completed in FY 2017 have incurred delays in design review, logistics, or state and federal permitting: 1) Noroton River fishway (4.7 miles), 2) Heminway Pond Dam Removal (1.7 miles), 3) Flock Process Dam Removal (3.5 miles), and 4) Blackledge River Dam Removal (2 miles). These account for the shortfall. The first two projects will be completed by the end of calendar year 2017 or early in 2018.</p> <p><b>Additional Information:</b> EPA revised this measure in FY 2012 to report river miles instead of percent of goal achieved. EPA established annual targets with partners to measure annual progress. Out-year estimates are based on continued state progress, feasibility, and funding for fish passage and bypass projects.</p>							
(8) Puget Sound Basin	<p><b>(PM ps1) Improve water quality and enable the lifting of harvest restrictions in acres of shellfish bed growing areas impacted by degrading or declining water quality (cumulative).</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	3,878	7,758	4,000	4,700	4,750	6,350	Acres
Actual	2,489	3,203	3,249	3,277	3,887	5,083		
	<p><b>Explanation of Results:</b> The annual Puget Sound shellfish performance measure is a cumulative measure that aggregates the net gain in acres that are upgraded to approved status minus any loss of currently approved acres. In FY 2017, there were 1,935 acres that were upgraded to “approved” status due to improvements to water quality. However, there were 739 acres downgraded to “conditional” status due to recurrence of bacterial pollution predominantly from nonpoint source pollution contributing to missing our target.</p> <p><b>Additional Information:</b> The annual Puget Sound shellfish performance measure is a cumulative measure that aggregates the net gain in acres that are upgraded to approved status minus any loss of currently approved acres. Federal state, local, and tribal partners work together to protect Puget Sound’s approximately 143,000 acres of approved shellfish harvest beds, and improve its approximately 10,000 acres of potentially recoverable shellfish beds, by ensuring that adjacent water quality and safe harvesting conditions are preserved.</p>							

	<b>(PM ps3) Protect or restore acres or shoreline miles of aquatic habitats including: estuaries, floodplains, marine and freshwater shorelines, riparian areas, stream habitats, and associated wetlands (cumulative).</b>						
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	19,063	31,818	33,818	43,006	45,500	48,000	Acres
<b>Actual</b>	23,818	30,128	41,006	43,002	45,360	49,752	
<i>Additional Information:</i> The protection and restoration of habitat is one of the three priority areas for the Puget Sound Program. These activities supported salmon recovery goals of viable, harvestable populations of this tribal treaty protected resource. In FY 2008, 4,413 acres (cumulative) of tidally- and seasonally-influenced estuarine wetlands were restored. Between FY 2008 - FY 2017 49,752 acres have been protected and/or restored.							
	<b>(PM 4pg) Loading of biochemical oxygen demand (BOD) removed (million pounds/year) from the U.S.-Mexico border area since 2003 (cumulative).</b>						
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	115	121.5	137.3	141.1	150.3	151.9	Million Pounds/Year
<b>Actual</b>	119	128.3	131	142.9	151.8	152	
<i>Additional Information:</i> As of FY 2003, zero pounds of biochemical oxygen demand (BOD) had been removed.							
	<b>(PM xb2) Number of additional homes provided safe drinking water in the U.S.-Mexico border area that lacked access to safe drinking water in 2003.</b>						
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	1,000	3,000	1,700	600	500	1,500	Homes
<b>Actual</b>	5,185	3,400	1,468	878	3,700	1,599	
<i>Additional Information:</i> "Additional homes" represents the number of existing households that are provided access (i.e., connected) to safe drinking water as a result of Border Environment Infrastructure Fund (BEIF)-supported projects. The known universe is the number of existing households in the U.S.-Mexico border area lacking access to safe drinking water in FY 2003 (98,515 homes). The known universe was calculated from U.S. Census and the Mexican National Water Commission (CONAGUA) sources. This measure was modified from cumulative to annual beginning in FY 2012 to better capture annual program progress.							
	<b>(PM xb3) Number of additional homes provided adequate wastewater sanitation in the U.S.-Mexico border area that lacked access to wastewater sanitation in 2003.</b>						
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	10,500	27,000	39,500	40,750	40,720	450	Homes
<b>Actual</b>	31,092	25,695	12,756	44,070	45,000	495	

<p><b><i>Additional Information:</i></b> "Additional homes" represents the number of existing households that are provided access (i.e., connected) to adequate wastewater sanitation as a result of Border Environment Infrastructure Fund (BEIF)-supported projects. The known universe is the number of existing households in the U.S.-Mexico border area lacking access to adequate wastewater sanitation services in FY 2003 (690,723). The known universe of unconnected homes was calculated from U.S. Census and the Mexican National Water Commission (CONAGUA) sources. This measure was modified from cumulative to annual beginning in FY 2012 to better capture annual program progress.</p>
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## Goal 3 at a Glance

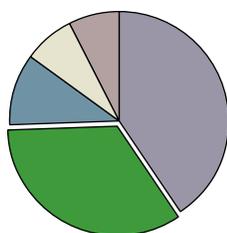
### CLEANING UP COMMUNITIES AND ADVANCING SUSTAINABLE DEVELOPMENT

*Clean up communities, advance sustainable development, and protect disproportionately impacted low-income and minority communities. Prevent releases of harmful substances and clean up and restore contaminated areas.*

#### FY 2017 Performance Measures

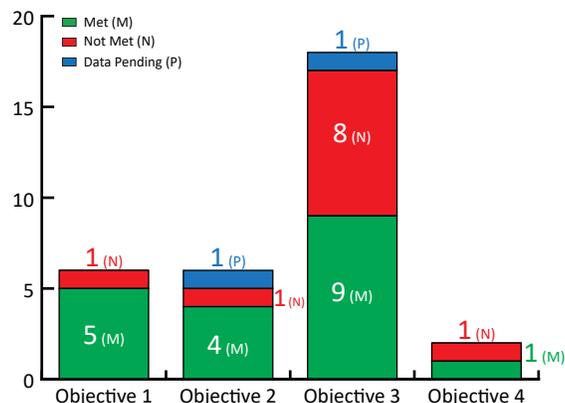
Met: 19 Not Met: 11 Data Unavailable: 2  
(Total Measures: 32)

#### FY 2017 Obligations\*



- Taking Action on Climate Change and Improving Air Quality, \$1,091,160
- Protecting America's Waters, \$4,196,956
- **Cleaning Up Communities and Advancing Sustainable Development, \$3,530,571**
- Ensuring the Safety of Chemicals and Preventing Pollution, \$749,419
- Enforcing Environmental Laws, \$779,531

#### FY 2017 Performance Measures



Strategic Objective Overview	FY 2016 Obligations*	% of Goal 3 Funds
<b>Objective 3.1: Promote Sustainable and Livable Communities.</b> Support sustainable, resilient, and livable communities by working with local, state, tribal, and federal partners to promote smart growth, emergency preparedness and recovery planning, redevelopment and reuse of contaminated and formerly contaminated sites, and the equitable distribution of environmental benefits.	\$485,934	13.8%
<b>Objective 3.2: Preserve Land.</b> Conserve resources and prevent land contamination by reducing waste generation and toxicity, promoting proper management of waste and petroleum products, and increasing sustainable materials management.	\$1,296,617	36.7%
<b>Objective 3.3: Restore Land.</b> Prepare for and respond to accidental or intentional releases of contaminants and clean up and restore polluted sites for reuse.	\$1,655,377	46.9%
<b>Objective 3.4: Strengthen Human Health and Environmental Protection in Indian Country.</b> Directly implement federal environmental programs in Indian Country and support federal program delegation to tribes. Provide tribes with technical assistance and support capacity development for the establishment and implementation of sustainable environmental programs in Indian Country.	\$92,643	2.6%
<b>Goal 3 Total</b>	<b>\$3,530,571</b>	<b>100.0%</b>

\*All figures in thousands

### **FY 2016 EPA Programs and Activities Contributing to Goal 3**

Brownfields and Land Revitalization  
Environmental Response Laboratory Network  
Federal Facilities Restoration and Reuse  
Global Change Research  
Homeland Security  
Homeland Security Research  
Human Health and Ecosystem Protection Research  
Human Health Risk Assessment  
Leaking USTs  
National Environmental Monitoring Initiative  
Oil Spill Prevention Preparedness and Response  
RCRA Corrective Action  
RCRA Waste Management  
RCRA Waste Minimization and Recycling  
Research Fellowships  
Risk Management Program  
Sector Grant Program  
Smart Growth  
State and Local Prevention and Preparedness  
Superfund Emergency Preparedness  
Superfund Emergency Response and Removal  
Superfund Enforcement  
Superfund Remedial  
Tribal Capacity-Building  
Tribal General Assistance Program  
UST Prevention and Compliance  
U.S.–Mexico Border

### GOAL 3: CLEANING UP COMMUNITIES AND ADVANCING SUSTAINABLE DEVELOPMENT

Clean up communities, advance sustainable development, and protect disproportionately impacted low-income and minority communities. Prevent releases of harmful substances and clean up and restore contaminated areas

<p><b>Objective 1 - Promote Sustainable and Livable Communities:</b> Support sustainable, resilient, and livable communities by working with local, state, tribal, and federal partners to promote smart growth, emergency preparedness and recovery planning, brownfield redevelopment, and the equitable distribution of environmental benefits.</p>
<p><b>Summary of progress toward strategic objective:</b> EPA continued to make progress under this objective. The Brownfields program showed strong results in FY 2017, including more than 8,400 jobs created and \$1.7 billion leveraged from public and private sources (more than recent years). As of the end of FY 2017, cumulatively Brownfields federal funding has leveraged more than 124,072 jobs and raised \$26.47 billion from both public and private sources, advancing environmental and human health protection while stimulating economic development by returning sites to productive use. Data from local governments near 48 brownfield sites show that these entities collected an estimated total of \$29 to \$97 million in additional taxes in a single year after cleanup (two to seven times the \$12.4 million EPA contribution).</p>
<p><b>Challenges:</b> Challenges include meeting the demand for Brownfields assistance, and making sure the funds from Brownfields revolving loan funds are available for additional projects. In addition, EPA inspects less than 4% of the universe of risk management facilities and expects this low inspection rate to continue.</p>

Program Area	Performance Measures and Data							
(2) Assess and Clean Up Brownfields	<b>(PM B29) Brownfield properties assessed.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	1,200	1,200	1,200	1,300	1,400	1,400	Properties
	<b>Actual</b>	1,444	1,528	1,659	1,320	1,392	1,419	
	<i>Explanation of Results:</i> EPA narrowly met the FY 2017 target as EPA regions continue to work through several years of backlogged work packages and additional assessments are reported from earlier work.							
	<i>Additional Information:</i> This measure tracks the number of properties that have been cleaned up to a regulatory risk based standard using EPA Brownfields funding, as reported by cooperative agreement recipients. EPA awards competitive grants to communities to assess, clean up, and reuse of Brownfields properties that are contaminated or perceived to be contaminated.							
	<b>(PM B32) Number of properties cleaned up using Brownfields funding.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	120	120	120	120	130	130	Properties
	<b>Actual</b>	120	122	132	150	136	137	

Program Area	Performance Measures and Data						
	<p><b>Additional Information:</b> This measure tracks the number of properties that have been cleaned up to a regulatory risk based standard using EPA Brownfields funding, as reported by cooperative agreement recipients.</p>						
	<b>(PM B33) Acres of Brownfields properties made ready for reuse.</b>						
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	3,000	3,000	3,000	4,000	5,500	5,500	Acres
<b>Actual</b>	3,314	4,644	6,389	7,817	7,354	5,677	
	<p><b>Explanation of Results:</b> Acres made ready for reuse varies from year-to-year as there is no programmatic control over the size of any particular brownfield site. Acreage levels fluctuate greatly from year to year, but loosely correlate with the number of anticipated cleanups and assessments.</p>						
	<p><b>Additional Information:</b> This measure tracks the number of acres associated with properties benefiting from EPA Brownfields funding that have been assessed and determined not to require cleanup, or where cleanup has been completed and institutional controls are in place if required, as reported by cooperative agreement recipients.</p>						
	<b>(PM B34) Jobs leveraged from Brownfields activities.</b>						
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	5,000	5,000	5,000	5,000	7,000	7,000	Jobs
<b>Actual</b>	5,593	10,141	12,376	11,229	9,661	8,472	
	<p><b>Explanation of Results:</b> Jobs leveraged varies from year-to-year as it is dependent on the final use of the brownfield sites. The relatively large accomplishment numbers in FYs: 2013, 2014, and 2015 were due to improved reporting and several very large projects. Likewise, FY 2017 result still exceeded the target and this is because it is difficult to predict the result due to the variety of factors that play a role in the redevelopment of a brownfield site, such as larger development projects producing more jobs than anticipated, and data cleanup efforts in all of the regions resulting in the reporting of more jobs.</p>						
	<p><b>Additional Information:</b> This measure tracks the number of cleanup and redevelopment jobs leveraged by assessment or cleanup activities conducted with EPA Brownfields funding, as reported by cooperative agreement recipients at a specific property.</p>						
	<b>(PM B37) Billions of dollars of cleanup and redevelopment funds leveraged at Brownfields sites.</b>						
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	1.2	1.2	1.2	1.1	1.1	1.1	Dollars (Billions)
<b>Actual</b>	1.2	1.54	1.29	1.71	1.47	1.7	

Program Area	Performance Measures and Data							
	<p><b>Explanation of Results:</b> Target was significantly exceeded due to larger development projects in FY 2017, as well as data cleanup in the EPA Regions. Specifically, due to the difficulty of predicting the annual dollars leveraged accomplishment level, economic impacts vary greatly and are impacted by many factors beyond a brownfield site cleanup.</p> <p><b>Additional Information:</b> This measure tracks the number of additional dollars leveraged by assessment or cleanup activities conducted with EPA Brownfields funding, as reported by cooperative agreement recipients at a specific property.</p>							
<b>(3) Reduce Chemical Risks at Facilities and in Communities</b>	<b>(PM CH2) Number of risk management plan inspections conducted.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	530	500	460	460	460	460	Inspections
	<b>Actual</b>	652	539	466	376	343	397	
<p><b>Explanation of Results:</b> Competing priorities make it difficult for EPA regions to set higher targets for conducting inspections. Between FY 2000 and FY 2017, more than 9,297 RMP inspections were completed. Of the 397 RMP facility inspections completed in FY 2017, close to 40 percent were conducted at high-risk facilities, determined by factors such as nearby population and accident history.</p> <p><b>Additional Information:</b> The Risk Management Plan (RMP) Rule implements Section 112(r) of the 1990 Clean Air Act amendments. RMP requires facilities (approximately 12,700) that use extremely hazardous substances to develop a Risk Management Plan. The information required from facilities under RMP helps local fire, police, and emergency response personnel prepare for and respond to chemical emergencies.</p>								

<p><b>Objective 2 - Preserve Land:</b> Conserve resources and prevent land contamination by reducing waste generation and toxicity, promoting proper management of waste and petroleum products, and increasing sustainable materials management.</p>
<p><b>Summary of progress toward strategic objective:</b>  EPA made steady progress under this objective. By FY 2017, 71.6% of underground storage tank (UST) facilities are in significant operational compliance with leak detection and release prevention requirements. The Agency reviewed more than 30 draft state Underground Storage Tank (UST) regulations. In FY 2017, EPA issued new or updated controls for 151 hazardous waste facilities, significantly exceeding the goal of 115 through efficiency improvements and better training for staff. A total of 9,037,319 tons of virgin materials were offset through Sustainable Materials Management in FY 2014 (most recent data). Participants in the Federal Green Challenge improved efficiency in materials management, saving more than \$17 million across natural gas, fuel oil, paper purchasing, water, and municipal solid waste categories. The Food Recovery Challenge participants worked on preventing and diverting over 740,000 tons of food from entering landfills in 2016.</p>
<p><b>Challenges:</b>  Challenges include the 2.5 billion tons of solid, industrial, and hazardous wastes produced each year; potential health and environmental risks from sudden releases at older waste management units and UST sites, due to aging infrastructure, emerging contaminants or new technologies, and units closed pre-RCRA that are not covered by current requirements; and constrained ability to engage in international waste issues such as toxic wastes being moved across borders and different standards being applied to treat and dispose of wastes. Numbers of UST facilities in significant operational compliance with leak detection and release prevention requirements, and UST releases, have remained level in recent years.</p>

Program Area	Performance Measures and Data							
<b>(1) Waste Generation and Recycling</b>	<b>(PM SM1) Tons of materials and products offsetting use of virgin resources through sustainable materials management.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	8,549,502	8,501,537	8,603,033	9,346,830	9,450,000	9,550,000	Tons
	<b>Actual</b>	9,002,588	8,795,750	9,037,319	Data Avail 05/2018	Data Avail 11/2018	Data Avail 05/2019	
	<i>Additional Information:</i> As part of its sustainable materials management program, EPA promotes three national strategies: The Federal Green Challenge, the Electronics Challenge, and the Food Recovery Challenge. These strategies are focused on using less environmentally intensive and toxic materials and employing downstream solutions, like reuse and recycling, to conserve resources for future generations. EPA is working with other federal agencies, state and tribal governments, and non-governmental organizations to promote sustainability goals through these and other initiatives.							
	<b>(PM MW8) Number of tribes covered by an integrated solid waste management plan.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	3	3	10	10	10	10	Tribes
	<b>Actual</b>	13	26	20	16	15	12	
	<i>Explanation of Results:</i> As of the end of September 2017, 236 of 574 federally-recognized tribes were covered by an integrated waste management plan.							
<i>Additional Information:</i> Tribal integrated waste management plans help to ensure that solid wastes are managed appropriately, preventing contamination and recovering resources to the maximum extent possible. These plans are developed with direct tribal funding as well as funds from EPA and other federal agencies. EPA also offers technical assistance to tribes, such as that provided through tribal circuit riders.								
<b>(2) Minimize Releases of Hazardous Waste and Petroleum Products</b>	<b>(PM HW0) Number of hazardous waste facilities with new or updated controls.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	100	100	100	110	115	115	Facilities
	<b>Actual</b>	117	114	129	120	111	151	
	<i>Explanation of Results:</i> The target was significantly exceeded through efficiency improvements and better training for new staff.							
<i>Additional Information:</i> Initial and updated controls for hazardous waste facilities are essential to maintaining protective standards, operating conditions, and up to date equipment for the safe management of hazardous wastes.								

<b>(PM PCB) Number of approvals issued for polychlorinated biphenyl (PCB) cleanup, storage and disposal activities.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>			150	200	200	200	Approvals
<b>Actual</b>			254	218	182	190	
<p><i>Explanation of Results:</i> EPA relies on past performance to predict future workload. EPA did not receive enough applications to meet the target in FY 2017. EPA issued 1,815 approvals between FY 2008 and FY 2017.</p> <p><i>Additional Information:</i> This measure tracks all approvals issued by EPA under Section 761 of the Toxic Substances Control Act (TSCA) for PCBs. Approvals are initiated by the individual/company and submitted to EPA for review. EPA does not have any way to identify all the PCB approval needs in a given year and relies mainly on historical information to estimate the upcoming "workload" for approvals in setting targets.</p>							
<b>(PM ST6) Increase the percentage of UST facilities that are in significant operational compliance (SOC) with both release detection and release prevention requirements by 0.5% over the previous year's target.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	66.5	67	70	70.5	71	71.5	Percent
<b>Actual</b>	71.3	71.6	72.5	72.6	72.5	71.6	
<p><i>Explanation of Results:</i> In FY 2017, there were 93,228 on-site inspections of USTs.</p> <p><i>Additional Information:</i> The Energy Policy Act of 2005 requires states and EPA to inspect all USTs every three years.</p>							
<b>(PM ST1) Reduce the number of confirmed releases at UST facilities to five percent (5%) fewer than the prior year's target.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	<8,120	<7,715	<7,330	<6,965	<6,615	<6,285	Releases
<b>Actual</b>	5,674	6,128	6,847	6,830	5,582	5,678	
<p><i>Explanation of Results:</i> Confirmed releases continued a long-term downward trend, after a temporary increase in releases reported in one state (New Jersey) from FY 2013 through FY 2015. There was a slight increase in the number of confirmed releases in FY 2017 because New Jersey again reported a higher number of confirmed releases while the rest of the nation continued to decrease.</p> <p><i>Additional Information:</i> The UST prevention program works to ensure that underground sources of drinking water (groundwater) are protected from petroleum and associated chemicals leaking from USTs. There are 555,079 federally regulated USTs in the United States at approximately 200,000 facilities.</p>							

**Objective 3 - Restore Land:** Prepare for and respond to accidental or intentional releases of contaminants and clean up and restore polluted sites for reuse.

**Summary of progress toward strategic objective:**

EPA made steady progress under this objective. In FY 2017, the Agency convened a Superfund Task Force that identified 42 recommendations to streamline and improve the Superfund process. The recommendations address: expediting the cleanup and remediation process; reducing financial burden on all parties involved in the entire cleanup process; encouraging private investment; promoting redevelopment and community revitalization; and building and strengthening partnerships. Cleanup programs remediate contaminated land so it can be safely reused or continue to be used, creating more resilient, healthy, and vibrant communities. More than 94% of Resource Conservation and Recovery Act Corrective Action (RCRA CA) sites have eliminated unacceptable human exposure to contaminants, and an additional 9,400 sites were made ready for anticipated use (RAU), which contributed to the FY 2016-2017 Agency Priority Goal (APG). Consistent with the Task Force recommendations, EPA brought 24 Superfund sites with human exposures brought under control, significantly exceeding the FY 2017 target.

In response to Hurricane Harvey, EPA deployed Airborne Spectral Photometric Environmental Collection Technology (ASPECT) and Portable High-throughput Integrated Laboratory Identification System (PHILIS). ASPECT provided over 100 hours of aerial pollution release screening over 28 missions; PHILIS completed over 600 impact analyses, processing over 2,500 samples from Texas NPL sites. Also in FY 2017, the Agency oversaw responses to drinking water contamination with Per- and Polyfluoroalkylated Substances (PFAS) at Federal Facility National Priorities List (NPL) sites with impacts on more than 25,000 people.

**Challenges:**

As more sites are cleaned up, some remaining sites are larger, more complex, and technically challenging, and may be subject to construction contract delays and other remedy implementation issues. Newly detected exposure pathways and emerging contaminants also complicate site investigations and remediation efforts, five year reviews, and ultimately affect project schedules when additional site work is required. Moreover, some exposure pathways, such as fish tissue contamination, can take many years to fully remediate and therefore can impede sites from reaching the Human Exposure Under Control milestone.

Program Area	Performance Measures and Data							
<b>(1) Emergency Preparedness and Response</b>	<b>(PM C1) Score on annual Core NAR.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	70	72	75	80	82	83	Percent
<b>Actual</b>	75.8	82.2	78.3	70.9	64.7	Data Avail 03/2018		

Program Area	Performance Measures and Data						
	<p><b>Explanation of Results:</b> The Core National Approach Response (NAR) evaluation score is derived from a combination of response readiness exercises at the regional level to identify strengths and gaps in response readiness. These exercises are designed to evaluate Regional standard operating procedures, Emergency Operations Center, procedures, equipment knowledge, area planning, coordination/outreach. With redesign of the Core NAR evaluations, the result has been decreasing during recent fiscal years. Reporting is delayed due to evaluation of complex data from all EPA regions. Beginning in FY 2014, EPA redesigned the evaluation to focus on a performance based approach, which resulted in lower results. With redesign of the Core NAR evaluations, the result has been decreasing during recent fiscal years.</p> <p><b>Additional Information:</b> The Core NAR score reported for this measure is based upon the combination of two scores, one which measures day-to-day response readiness and another that measures national preparedness for chemical, biological, radiological and nuclear incidents. The maximum score is 100. Beginning in FY 2014, the Core NAR evaluation has taken place after the end of the fiscal year in order to capture a more complete picture of response readiness. Results are reported in the following year.</p>						
	<b>(PM 137) Number of Superfund removals completed.</b>						
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>			275	275	275	Removals
	<b>Actual</b>			278	226	255	
	<p><b>Explanation of Results:</b> Target was missed due to difficulty in predicting how many threats will arise in a year. EPA quickly responds when these events take place. In recent years there has been a trend toward fewer removals due to factors including a shift in resources toward large time critical removals that cannot be listed on the National Priorities List (NPL).</p> <p><b>Additional Information:</b> Implemented in FY 2015, this measure combined the retired Superfund-lead (PM 132) and Potentially Responsible Party (PRP)-lead removals with EPA oversight (PM 135) measures. EPA continues to internally track results for both Superfund-lead and PRP-lead removals with Agency oversight.</p>						
	<b>(PM 337) Percentage of all Federal Response Plan (FRP) inspected facilities found to be non-compliant which are brought into compliance.</b>						
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	35	40	50	60	60	Percent
	<b>Actual</b>	73	78	79	79	82	
	<p><b>Explanation of Results:</b> This measure tracks FRP facilities that have been inspected and brought into compliance since FY 2010. From FY 2010 to FY 2017, 1,003 facilities were brought into compliance. In FY 2017, EPA brought 131 non-compliant facilities into compliance.</p> <p><b>Additional Information:</b> The FRP rule requires certain facilities (approximately 4,500) to submit a response plan and prepare to respond to a worst case oil discharge or threat of a discharge. Oil spills in these facilities have a greater potential than typical Spill Prevention, Control and Countermeasures (SPCC) facilities to cause harm to human health and the environment.</p>						

<b>(2) Clean Up Contaminated Land</b>	<b>(PM 338) Percentage of all Spill Prevention, Control and Countermeasure (SPCC) inspected facilities found to be non-compliant which are brought into compliance.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	35	40	50	60	60	60	Percent
	<b>Actual</b>	63	69	72	74	78	77	
	<p><i>Explanation of Results:</i> Percentages are artificially high and do not capture the declining rate of SPCC inspections conducted. This measure tracks SPCC facilities that have been inspected and brought into compliance since FY 2010. From FY 2010 to FY 2017, 2,867 facilities were brought into compliance out of a total of 3,724 facilities that were found to be out of compliance.</p> <p><i>Additional Information:</i> The SPCC rule helps facilities (approximately 540,000) prevent a discharge of oil into waters or adjoining shorelines. Oil spills at certain high-risk SPCC facilities have a greater potential than non-high risk SPCC to cause harm to human health and the environment.</p>							
	<b>(PM 115) Number of Superfund remedial site assessments completed.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	900	650	700	850	675	675	Assessments
	<b>Actual</b>	1,151	772	794	869	703	747	
	<p><i>Explanation of Results:</i> Through FY 2017, EPA and its state and tribal partners completed a cumulative total of 95,341 remedial site assessments.</p> <p><i>Additional Information:</i> Remedial site assessments collect site data to determine if cleanup attention may be needed at a potential hazardous waste site. Multiple and progressively more complex assessments may be required to make this determination at a site.</p>							
<b>(PM 151) Number of Superfund sites with human exposures brought under control.</b>								
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>	
<b>Target</b>	10	10	10	9	9	9	Sites	
<b>Actual</b>	13	14	9	10	12	24		
<p><i>Explanation of Results:</i> Through FY 2017, EPA ensured that 1,439 final and deleted NPL sites, and 36 non-NPL sites with Superfund Alternative Approach (SAA) agreements in place, met the criteria to be determined human exposure under control. EPA significantly exceeded the FY 2017 target due to factors including remedial investigations concluding ahead of schedule, Five-Year reviews concluding in favorable outcomes, remedial investigations sites previously determined as "Insufficient Data," changing to "Under Control," and the Superfund Task Force effort that has heightened focus on bringing additional sites "Under Control."</p> <p><i>Additional Information:</i> This measure documents human health protection by measuring progress achieved in controlling unacceptable human exposures at Superfund sites. Beginning in FY 2014, performance results have included non-NPL Superfund Alternative Approach (SAA) sites.</p>								

<b>(PM CA1) Percentage of RCRA corrective action facilities with human exposures to toxins under control.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	81	85	87	90	92	94	Percent
<b>Actual</b>	81	85	87	90	92	94	
<p><i><b>Explanation of Results:</b></i> Through FY 2017, EPA achieved human exposures under control at 94 percent of RCRA corrective action facilities (3,534 out of 3,779 facilities).</p> <p><i><b>Additional Information:</b></i> There are a total of 3,779 corrective action facilities in the priority 2020 corrective action universe. EPA is continually assessing the priority facilities and every three years makes necessary modifications to the priority baseline, in conjunction with the EPA Strategic Plan cycle.</p>							
<b>(PM CA2) Percentage of RCRA corrective action facilities with migration of contaminated groundwater under control.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	69	73	77	80	84	88	Percent
<b>Actual</b>	72	76	79	82	84	87	
<p><i><b>Explanation of Results:</b></i> Through FY 2017, EPA achieved groundwater contamination under control at 87 percent of RCRA corrective action facilities (3,276 out of 3,779 facilities). EPA missed the FY 2017 target due to a variety of challenges, including the complexity of remaining sites, emerging contaminants, and changing screening/toxicity values.</p> <p><i><b>Additional Information:</b></i> There are a total of 3,779 corrective action facilities in the priority 2020 corrective action universe. EPA is continually assessing the priority facilities and every four years makes necessary modifications to the priority baseline, in conjunction with the EPA Strategic Plan cycle. Safe drinking water and the protection of ground water are Agency priorities.</p>							
<b>(PM CA5) Percentage of RCRA corrective action facilities with final remedies constructed.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	46	51	55	60	64	69	Percent
<b>Actual</b>	47	51	56	60	64	67	
<p><i><b>Explanation of Results:</b></i> Through FY 2017, EPA achieved final remedies at 67 percent of RCRA corrective action facilities (2,547 out of 3,779 facilities). The target was missed because the remaining sites tend to be larger, more complex, and technically challenging.</p> <p><i><b>Additional Information:</b></i> There are a total of 3,779 corrective action facilities in the priority 2020 corrective action universe. EPA is continually assessing the priority facilities and every three years makes necessary modifications to the priority baseline, in conjunction with the EPA Strategic Plan cycle.</p>							

<b>(PM CA6) Percentage of RCRA corrective action facilities with corrective action performance standards attained.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>			21	24	30	32	Percent
<b>Actual</b>			24	28	31	34	
<p><i>Explanation of Results:</i> Through FY 2017, EPA achieved the goal of performance standards attained (these are the cleanup standards required to ensure protection of human health and the environment at an individual facility) at 34 percent of RCRA corrective action facilities (1,271 out of 3,779 facilities).</p> <p><i>Additional Information:</i> There are a total of 3,779 corrective action facilities in the priority 2020 corrective action universe. EPA is continually assessing the priority facilities and every three years makes necessary modifications to the priority baseline, in conjunction with the EPA Strategic Plan cycle.</p>							
<b>(PM 111) Percentage of confirmed releases pending cleanup completion at LUST facilities.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	No Target Established	No Target Established	15	14	13	12	Percent
<b>Actual</b>	16	15	14	14	13	13	
<p><i>Explanation of Results:</i> As of the end of FY 2017, 538,193 releases have been reported, 468,898 (or 87 percent) of which have been cleaned up. As the backlog gets smaller, the remaining cleanups tend to be those which are more complex and time-consuming.</p>							
<b>(PM 112) Number of LUST cleanups completed that meet risk-based standards for human exposure and groundwater migration.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	11,250	10,100	9,000	8,600	8,600	8,600	Cleanups
<b>Actual</b>	10,927	11,582	10,393	9,869	8,977	8,775	
<p><i>Explanation of Results:</i> The performance trend reflects a variety of challenges, including the complexity of remaining sites, an increased state workload, a decrease in available state resources and the increasing costs of cleanups.</p> <p><i>Additional Information:</i> A 2017 EPA study found that high profile UST releases decrease nearby property values by 2%-6%. Once cleanup is completed, nearby property values rebound by a similar margin.</p>							
<b>(PM 113) Number of LUST cleanups completed that meet risk-based standards for human exposure and groundwater migration in Indian country.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	42	42	37	30	26	26	Cleanups
<b>Actual</b>	47	18	26	32	30	21	

**Explanation of Results:** A large percentage of the remaining sites are more complex, which has led to the slowdown of number of cleanups completed in Indian Country. Through FY 2017, EPA completed a cumulative total of 1,149 leaking underground storage tank cleanups in Indian country, out of a universe of approximately 1,412 confirmed releases. This is a subset of the national total of 469,898 leaking underground storage tanks cleanups completed. As of the end of FY 2017, there were 263 Leaking Underground Storage Tank (LUST) cleanups remaining to be completed in Indian country.

**(PM 141) Number of Superfund sites with remedy construction completed.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	22	19	15	13	13	13	Completions
<b>Actual</b>	22	14	8	14	13	10	

**Explanation of Results:** Through FY 2017, EPA completed construction at 1,195 final and deleted NPL sites and 13 non-NPL sites with SAA agreements in place. The pool of candidates sites is shrinking and the remaining projects tend to be large, more complex, and technically challenging. In addition, cleanup projects are also subject to construction, contract, and other remedy implementation delays.

**Additional Information:** A construction completion Superfund site has completed physical construction of all cleanup actions. Beginning in FY 2014, performance results have included non-NPL Superfund Alternative Approach (SAA) sites.

**(PM 152) Number of Superfund sites with contaminated groundwater migration brought under control.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	15	15	15	13	13	13	Sites
<b>Actual</b>	18	18	11	15	17	14	

**Explanation of Results:** Through FY 2017, EPA ensured that 1,143 final and deleted NPL sites, and 26 sites with SAA agreements in place, met the criteria to be determined Groundwater Migration Under Control.

**Additional Information:** Bringing groundwater migration under control ensures that contamination is below protective, risk-based levels or that, where the migration is stabilized, there is no acceptable discharge to surface water. Beginning in FY 2014, performance results have included non-NPL Superfund Alternative Approach (SAA) sites.

**(PM 170) Number of remedial action projects completed at Superfund sites.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	130	115	115	105	105	105	Projects
<b>Actual</b>	142	121	115	104	105	97	

**Explanation of Results:** From FY 2011 through FY 2017, EPA completed 801 remedial action projects at final and deleted NPL sites and 15 remedial action projects at non-NPL sites with SAA agreements in place. EPA missed the target because the remaining remedial action projects that tend to be larger, more complex, and technically challenging, and are also subject to construction contract delays, bad weather, and other remedy implementation issues. EPA will continue to focus both funds and personnel resources on completing construction projects to protect human health and the environment.

**Additional Information:** A remedial action project completion at a Superfund site refers to the construction or implementation of a discrete scope of activities supporting Superfund site cleanup. Beginning in FY 2014, performance results have included non-NPL Superfund Alternative Approach (SAA) sites.

**(PM FF1) Percentage of Superfund federal facility sites construction complete.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>			86	87	88	85	Percent
<b>Actual</b>			84	84	84	85	

**Explanation of Results:** Through FY 2017, construction has been completed at 79 sites out of the total Federal Facility NPL Universe of 174 sites which contain 2,225 Operable Units.

**Additional Information:** This measure is based on the average of three specific factors: 1) Operable unit (OU) percent complete; 2) Total cleanup actions percent complete; and 3) Duration of cleanup actions percent complete.

**(PM S10) Number of Superfund sites made ready for anticipated use site-wide.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	65	60	55	45	45	45	Sites
<b>Actual</b>	66	56	45	45	41	43	

**Explanation of Results:** Through FY 2017, EPA ensured that 828 final and deleted NPL sites, and 8 non-NPL sites with SAA agreements in place, met the criteria to be determined site-wide ready for anticipated use. Meeting this target frequently requires working with entities outside of EPA to perform tasks and consent to actions outside the Agency's control including implementation of Institutional Controls and 5-year reviews to identify any potential issues that are not consistent with human exposure under control criteria, emerging contaminants, or vapor intrusion issues. EPA plans to implement the recommendations of the Superfund Task Force in FY 2018 to improve results.

**Additional Information:** This measure reflects the importance of considering future land use as part of the cleanup process by tracking the number of sites meeting the following criteria: All aspects of the cleanup are in place and have been achieved for any media that may affect current and reasonably anticipated future land uses, so that there are no unacceptable risks; all land use restrictions or other controls required as part of the cleanup are in place; and sites are final or deleted NPL sites, or non-NPL Superfund Alternative Approach (SAA) sites, that have reached the construction completion milestone. SAA sites were included in performance results beginning in FY 2014.

**Objective 4 - Strengthen Human Health and Environmental Protection in Indian Country:** Directly implement federal environmental programs in Indian country and support federal program delegation to tribes. Provide tribes with technical assistance and support capacity development for the establishment and implementation of sustainable environmental programs in Indian country.

**Summary of progress toward strategic objective:**

EPA is conducting a multi-pronged direct implementation assessment to ensure that environmental regulatory programs are as effective in Indian country as they are outside of Indian country. Efforts continue in three identified areas: 1) increasing consistency and access to tribal data in Agency data systems through use of the tribal identifier code or equivalent; 2) use of EPA-Tribal Environmental Plans (ETEPs) by all EPA offices to align tribal and EPA priorities through EPA-tribal joint planning; and 3) making EPA direct implementation programs more effective through individual program assessments. The Agency is conducting the first DI program assessment, for the Resource Conservation Recovery Act (RCRA) Subtitle C Treatment, Storage and Disposal Facilities (TSDFs) program.

EPA is on track to meet the long-term goal of an ETEP for each applicable tribe. ETEPs are being developed to identify the sphere of regulated entities per tribe, define mutual roles and responsibilities for program implementation, and document each tribe’s intermediate and long-term goals for developing, establishing and implementing environmental protection programs.

**Challenges:**

Only a small number of programs have been delegated to tribes, and a much smaller number of tribes have received compliance and enforcement authority in those delegations. As of the end of FY 2017, although EPA has approved 112 non-grant treatment in a manner similar to a state (TAS) applications for certain parts of EPA statutes for 82 tribes, only 12 individual tribal programs include compliance and enforcement authority. As a result, EPA directly implements the vast majority of federal environmental in Indian country. EPA direct implementation faces multiple challenges:

- limited information for decision-making,
- competing demands and priorities to implement more than nine major federal environmental statutes for 567 federally recognized tribes,
- tribal diversity (population, culture, geography, economic development, expertise, income, priorities), and
- unique legal and policy issues associated with federal, tribal, and state law.

These factors may increase the risk of failure to adequately understand, prevent or address harms in Indian country through programs under EPA regulatory authority. In addition, with only limited or inadequate data to fully, uniformly and successfully assess the extent of EPA direct implementation activities and tribal delegated programs, EPA risks inefficient use and possible misallocation of limited resources.

Program Area	Performance Measures and Data							
<b>(1) Improve Human Health and the Environment in Indian Country</b>	<b>(PM 5PQ) Percent of Tribes implementing federal regulatory environmental programs in Indian country.</b>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	22	24	25	25	25	25	Percent
	Actual	21	19	19	20	20	23	

Program Area	Performance Measures and Data						
	<p><b>Explanation of Results:</b> Challenges include tribal diversity (population, culture, geography, income, economic development, program management expertise, priorities, etc.); unique legal and policy issues with federal, tribal and state law; and competing demands and priorities. Opportunities include the Indian Environmental General Assistance Program (GAP) Performance Management System currently under development, which will assess the progress of GAP grant funding to encourage development of tribal capacity to implement federal environmental programs in Indian country.</p> <p><b>Additional Information:</b> There are 572 tribal entities, including tribes and inter-tribal consortia, that are eligible for GAP funding.</p>						
	<p><b>(PM 5PR) Percent of Tribes conducting EPA approved environmental monitoring and assessment activities in Indian country.</b></p>						
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	54	57	58	58	58	Percent
	Actual	54	56.5	31	36	54	
	<p><b>Additional Information:</b> There are 572 tribal entities, including tribes and inter-tribal consortia, that are eligible for GAP funding.</p>						

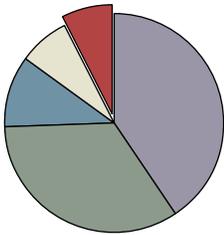
# Goal 4 at a Glance

## ENSURING THE SAFETY OF CHEMICALS AND PREVENTING POLLUTION

*Reduce the risk and increase the safety of chemicals and prevent pollution at the source.*

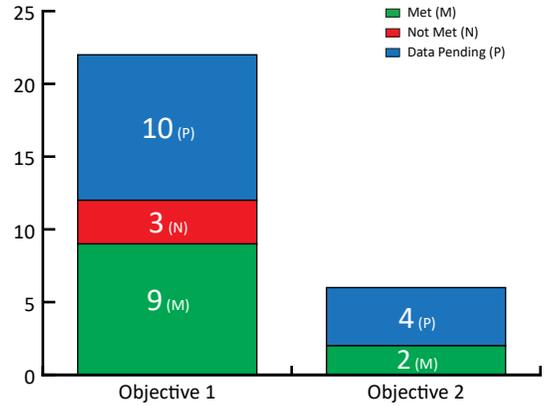
### FY 2017 Performance Measures

Met: 11 Not Met: 3 Data Unavailable: 14  
(Total Measures: 28)



- FY 2017 Obligations\***
- Taking Action on Climate Change and Improving Air Quality, \$1,091,160
  - Protecting America's Waters, \$4,196,956
  - Cleaning Up Communities and Advancing Sustainable Development, \$3,530,571
  - Ensuring the Safety of Chemicals and Preventing Pollution, \$749,419
  - Enforcing Environmental Laws, \$779,531

### FY 2017 Performance Measures



Strategic Objective Overview	FY 2016 Obligations*	% of Goal 4 Funds
<b>Objective 4.1: Ensure Chemical Safety.</b> Reduce the risk and increase the safety of chemicals that enter our products, our environment and our bodies.	\$697,839	93.1%
<b>Objective 4.2: Promote Pollution Prevention.</b> Conserve and protect natural resources by promoting pollution prevention and the adoption of other sustainability practices by companies, communities, governmental organizations, and individuals.	\$51,580	6.9%
<b>Goal 4 Total</b>	<b>\$749,419</b>	<b>100.0%</b>

\*All figures in thousands

## **FY 2016 EPA Programs and Activities Contributing to Goal 4**

Chemical Risk Review and Reduction  
Chemical Safety and Sustainability Research  
Endocrine Disruptors  
Lead Risk Reduction and Lead Categorical Grant Programs  
International Sources of Pollution  
Pesticides Program Implementation Categorical Grant Program  
Pollution Prevention  
Pollution Prevention Categorical Grant Programs  
Protect Human Health from Pesticide Risk  
Protect the Environment from Pesticide Risk  
Realize the Value of Pesticide Availability  
Science Policy Biotechnology  
Toxics Release Inventory  
Trade and Governance

## GOAL 4: ENSURING THE SAFETY OF CHEMICALS AND PREVENTING POLLUTION

Reduce the risk and increase the safety of chemicals and prevent pollution at the source

<p><b>Objective 1 - Ensure Chemical Safety:</b> Reduce the risk and increase the safety of chemicals that enter our products, our environment and our bodies.</p> <p><b>Summary of progress toward strategic objective:</b> Pesticide Registration and Registration Review ensure that pesticides now available and coming to market meet current safety standards. EPA has achieved significant results within this objective by placing special emphasis on completing all docket openings and accelerating the pace of development of final pesticide review work plans to meet the objectives of the <i>FY 2014-2018 EPA Strategic Plan</i> and statutorily mandated deadlines. Progress includes reductions since 2008 of 33% in the number of exposures of children to rodenticides and 34% in moderate to severe exposure incidents to carbamates and organophosphates. The pesticide program is on track to meet all strategic targets and most performance measures. The program continues to meet or exceed targets for the registration goal under the Pesticide Registration Improvement Act (PRIA) which includes comprehensive risk assessment, while also exceeding the risk assessment targets under registration review. Moving forward, the program will continue to look for efficiencies with partners and stakeholders to maintain an aggressive rate of progress in meeting targets, goals and objectives, while protecting human health and the environment.</p> <p>EPA continues to make progress toward reducing the risk and ensuring the safety of other commercial chemicals. Since June 2016, when the Frank R. Lautenberg Chemical Safety for the 21<sup>st</sup> Century Act was enacted, amending the Toxic Substances Control Act (TSCA), EPA has focused its efforts on timely and successful implementation of the new law’s requirements. In FY 2017, EPA finalized three “framework” rules pertaining to the chemical risk evaluation process, prioritization of chemicals for evaluation, and reporting by industry of active/inactive chemicals. EPA also issued scoping documents for the initial 10 chemicals under evaluation, guidance for external parties on submitting draft evaluations, and a statutory interpretation on upfront substantiation of confidential business information (CBI) claims. EPA finalized rules on nanoscale materials and formaldehyde exposure from composite wood products, published proposed risk management requirements for 3 chemicals assessed prior to the new law (TCE, NMP, methylene chloride), completed existing and new chemical Significant New Uses Rules (SNURs), and released additions to the Mercury Export Ban and an initial mercury inventory report.</p> <p><b>Challenges:</b> EPA faces continuing challenges in addressing the extensive new requirements of the TSCA amendments, many involving technical complexity and requiring adherence to high scientific standards.</p>
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Program Area	Performance Measures and Data							
(1) Protect Human Health from Chemical Risks	<b>(PM J11) Reduction in moderate to severe exposure incidents associated with organophosphates and carbamate insecticides in the general population.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	10	15	25	30	30	30	Percent
	<b>Actual</b>	20	25	27	34	Data Avail 10/2018	Data Avail 10/2019	

Program Area	Performance Measures and Data							
	<p><b>Explanation of Results:</b> The overall downward trend continues as a result of past regulatory actions. Within year fluctuations are to be anticipated. The calculation for this measure is (American Association of Poison Control Centers (AAPCC) incident count from Jan 2008 – Dec 2008) minus (AAPCC incident count from Jan 2015 – Dec 2015) / (AAPCC incident count from Jan 2008 – Dec 2008). Result – 108 / 316 = 0.34 or 34%.</p> <p><b>Additional Information:</b> Percent reduction to moderate to severe exposure incidents are calculated from 2008 data (316 exposure incidents) as reported in the American Association of Poison Control Centers' National Poisoning Data System (NPDS) for organophosphates and carbamate pesticides. Two-year reporting lag.</p>							
	<p><b>(PM 008) Percent of children (aged 1-5 years) with blood lead levels (&gt;5 ug/dl).</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	1.5	No Target Established	1.0	No Target Established	1.0	No Target Established	Percent
	Actual	2.1	Biennial	1.2	Biennial	Data Avail 10/2018	Biennial	
	<p><b>Explanation of Results:</b> No reporting; biennial year.</p>							
	<p><b>Additional Information:</b> Data released by the Centers for Disease Control (CDC) from the National Health and Nutritional Evaluation Survey (NHANES) for the 2007-2010 sampling period showed that an estimated 2.6% of children ages 1 - 5 had elevated blood lead levels (5 ug/dl or greater). Background information is available on EPA's website at <a href="http://www.epa.gov/lead">www.epa.gov/lead</a>. Data for this measure are reported biennially.</p>							
	<p><b>(PM 10D) Percent difference in the geometric mean blood level in low-income children 1-5 years old as compared to the geometric mean for non-low income children 1-5 years old.</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	13	No Target Established	20	No Target Established	25	No Target Established	Percent
Actual	34.8	Biennial	34.0	Biennial	Data Avail 10/2018	Biennial		
<p><b>Explanation of Results:</b> No reporting; biennial year.</p>								
<p><b>Additional Information:</b> Data released by the CDC from the NHANES for the 2007-2010 sampling period showed that the estimated difference in the geometric mean blood level in low-income children 1-5 years old as compared to the geometric mean for non-low income children 1-5 years old was 28.4%. Data for this measure are reported biennially.</p>								

<b>(PM D6A) Reduction in concentration of PFOA in serum in the general population.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	1	No Target Established	25	No Target Established	41	No Target Established	Percent Reduction
<b>Actual</b>	32	Biennial	37	Biennial	Data Avail 10/2018	Biennial	
<p><b>Explanation of Results:</b> The Agency has taken a range of voluntary and regulatory actions to address concerns with Perfluorooctanoic Acid (PFOA). One of these actions is the 2010/2015 PFOA Stewardship Program that was launched in 2006 with the eight major companies in the industry committing to work toward eliminating emissions and product content of PFOA by 2015. All of the participating companies in the voluntary program have met the PFOA Stewardship Program goals. As a result of these actions, blood concentrations of PFOA have been decreasing, as evidenced by NHANES reports. The FY 2014 result demonstrates that EPA has substantially exceeded the long-term target for reduction in PFOA concentrations in blood serum in the general population.</p> <p><b>Additional Information:</b> Data for this measure were derived from Centers for Disease Control’s National Health and Nutrition Examination Survey (NHANES) on PFOA concentration in the general population. The geometric mean concentration in serum as determined from 2009-2010 sampling data is 3.07 µg/L. Data for this measure were reported biennially. Perfluoroalkyl substances, including PFOA, are a class of manmade chemicals that are very persistent in the environment and in the human body. As a result, people may become exposed to these chemicals manufactured months or years in the past. Because they have been used in an array of consumer products, most people have been exposed to these chemicals. Studies indicate that PFOA can cause reproductive and developmental liver, kidney and immunological effects in laboratory animals and humans. In addition, PFOA has caused tumors in animal studies.</p>							
<b>(PM E01) Number of chemicals for which Endocrine Disruptor Screening Program (EDSP) decisions have been completed</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	5	20	59	0	0	1,000	Chemicals
<b>Actual</b>	1	0	3	54	1	1,812	

**Explanation of Results:** EPA now has 1,812 estrogen bioactivity scores for chemicals in the EDSP chemical universe. The estrogenic bioactivity scores are calculated using the Office of Research and Development's ToxCast data and the validated ToxCast "ER Model" for bioactivity. The estrogenic bioactivity scores are publicly available at <https://actor.epa.gov/edsp21/>. EPA is currently communicating these decisions to stakeholders.

**Additional Information:** These chemicals have the potential to interact with the estrogen, androgen, steroidogenesis and/or thyroid systems. The EDSP has a universe of chemicals of approximately 10,000 chemicals that is described at: <https://www.epa.gov/endocrine-disruption/endocrine-disruptor-screening-program-edsp-universe-chemicals>. Tier 1 screening determines whether a chemical has the potential to interact with the endocrine system and requires more thorough testing. Tier 2 testing is conducted to rule out bioactivity for chemicals that show more potential for endocrine bioactivity. If a chemical is determined to indeed have endocrine bioactivity after completing EDSP Tier 2 testing, EPA would most likely conduct a complete risk assessment and risk mitigation exercise for that chemical. High throughput screening (HTS) and computational toxicology (CompTox) tools for Estrogen Receptor (ER) are now used as alternatives to the Tier 1 assays. Implementing HTS and CompTox methods allows EPA to screen a greater number of chemicals, while also reducing animal use. This measure tracks the number of chemicals with screening level decisions based on integrated scientific reviews of: 1) Tier 1 assays; 2) other scientifically-relevant information (e.g., CFR158 data, published literature, high throughput endocrine activity and exposure information); and 3) decisions based on other information that determines whether further endocrine-related testing is necessary for a chemical (e.g., regulatory status of the chemical). EDSP decisions for a chemical can range from determining potential to interact with the estrogen, androgen, steroidogenesis and/or thyroid hormone systems to otherwise determining whether further endocrine related testing is necessary. Fifteen decisions were completed through FY 2012. In FY 2015, EPA published a Federal Register Notice incorporating Toxicity ForeCaster (ToxCast) data for more than 1,800 chemicals that, combined with additional data, could be used to complete the screening decisions.

**(PM 012) Percent reduction of children's exposure to rodenticides.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	5	5	10	25	25	25	Percent
<b>Actual</b>	17	24	25	33	Data Avail 10/2018	Data Avail 10/2019	

**Explanation of Results:** The overall downward trend continues, the result of past regulatory actions. The calculation for this measure is (AAPCC incident count from Jan 2008 – Dec 2008) minus (AAPCC incident count from Jan 2015 – Dec 2015) / (AAPCC incident count from Jan 2008 – Dec 2008). Result for 2015 is 3, 849 / 11,674 = 0.33 or 33%.

**Additional Information:** Percent reduction of the total number of confirmed and likely rodenticide exposures to children is calculated from 2008 data (11,674 rodenticide exposures to children) from the Poison Control Centers' National Poison Data System. Two-year reporting lag.

**(PM RA1) Annual number of chemicals for which risk assessments are finalized through EPA's TSCA Existing Chemicals Program.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>			3	7	12	0	Chemicals
<b>Actual</b>			4	1	0	0	

**Explanation of Results:** This measure is discontinued after FY 2017 as it measures progress against a list of chemicals developed under the previous TSCA law. In June 2016, Congress passed amendments to TSCA, establishing, among other things, a new plan for assessing existing chemicals. The program is currently making the changes needed to implement the new law, which requires each risk evaluation to be completed within three and one half years. In addition, the scope of each assessment is broadened to include all commercial uses of the chemical rather than only certain specific uses as determined by EPA. In FY 2017, risk evaluations commenced for the first ten chemicals under the new law, and the statutory deadline for completing scoping documents within six months was met for all ten chemicals.

**Additional Information:** The universe for this measure comprises TSCA Work Plan Chemicals and related/similar chemicals under the previous TSCA law. Zero chemicals had completed risk assessments through FY 2013. All five of the chemicals for which the five risk assessments were completed in FY 2014 and FY 2015 are from the list of 67 TSCA Work Plan Chemicals that was refreshed in October 2014. Background information is available on EPA's website at [www.epa.gov/assessing-and-managing-chemicals-under-TSCA](http://www.epa.gov/assessing-and-managing-chemicals-under-TSCA).

**(PM 009) Cumulative number of active certified Renovation Repair and Painting firms**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	140,000	140,000	138,000	145,000	96,000	97,000	Firms
<b>Actual</b>	126,323	133,587	139,702	108,623	90,970	89,998	

**Explanation of Results:** FY 2017 target not met. In large part this reflects the fact that EPA's Lead Renovation, Repair and Painting Program is reaching the end of the first 5-year cycle of initial certifications and firms have to decide whether to recertify. To date only about 25% of firms have sought recertification. The reasons may include a decision to leave the industry, a shift in business emphasis to new home construction or a lack of local demand for lead safe renovation services. On the other hand, some new renovation firms do continue to emerge and seek certification. The Agency is not aware of an acute shortage of certified lead renovation firms, but that is due in part to lower than expected demand. Within limits of funding and authority, EPA will continue to promote the benefits to consumers of using lead-safe certified renovation firms.

**Additional Information:** Firms can become certified directly through EPA (tracked through Federal Lead-based Paint Program (FLPP)) or through an authorized state program (tracked through grant reports). FY 2010 was the first year that firms submitted applications to EPA to become certified. Background information is available on EPA's website at [www.epa.gov/lead/renovation-repair-and-painting-program](http://www.epa.gov/lead/renovation-repair-and-painting-program).

**(PM 011) Number of Product Reregistration Decisions**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	1,200	1,200	900	600	550	600	Decisions
<b>Actual</b>	1,255	709	292	562	306	255	

**Explanation of Results:** EPA continued to face constraints on resources, including hiring constraints and Pesticide Registration Improvement Act (PRIA) science reviews taking precedence over reviewing reregistration submissions. By FY 2017, a total of 20,605 product registration decisions were made.

**Additional Information:** By FY 2012, a total of 18,208 product re-registrations decisions were made according to internal tracking as part of the product reregistration process. The product reregistration universe is 24,975. Product reregistration is for products that are already registered and therefore available in the market. Missing the target will delay labeling and use changes EPA has prescribed (typically toward more restrictive use) but will have little effect on a product's market availability. Additional information is available on <https://www.epa.gov/pesticide-reevaluation/reregistration-and-other-review-programs-predating-pesticide-registration#Product>.

**(PM 091) Percent of decisions completed on time (on or before PRIA or negotiated due date).**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	99	99	97.0	96	96	97	Percent
<b>Actual</b>	99.1	98.8	85	98.4	99	99	

**Explanation of Results:** The calculation for this measure is based on 18 late completions out of 2,021 PRIA decisions completed in FY 2017.

**Additional Information:** Annual average percentage of decisions completed on time from FY 2010-2012 was 99.0% according to EPA internal data. More information on PRIA can be found on <https://www.epa.gov/pria-fees/pria-overview-and-history>.

**(PM 10A) Annual percentage of lead-based paint certification and refund applications that require less than 20 days of EPA effort to process.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	95	95	95	95	95	95	Percent
<b>Actual</b>	97	99	100	99	99	100	

**Explanation of Results:** In FY 2017, EPA processed all 1,746 lead-based paint certification and refund applications within 20 days of receipt. Continued exceedance of this target reflects years of concerted and successful efforts to expedite handling of abatement individual certification and refund applications, ensuring that homeowners will have access to a sufficient pool of qualified abatement professionals to perform lead inspections, risk assessments and abatement work.

**Additional Information:** Data are obtained from Federal Lead Based Paint Program (FLPP) information system. Lead-based paint certification and refund applications are applications received by EPA from firms for certification to perform lead-based paint activities or renovation, repair and painting work; or from individuals for certification as risk assessor, inspector, abatement supervisor or abatement worker. In addition, EPA receives accreditation applications from training providers to provide training in lead-based paint disciplines and for renovator and dust sampling technician work. Applications for refunds of certification fees are sometimes received by EPA from these same sources (for example, if an application was mistakenly sent twice or an incorrect discipline requested).

<b>(PM 143) Percentage of agricultural acres treated with reduced-risk pesticides.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	22	22.5	22.5	22.5	22.5	22.5	Percent
<b>Actual</b>	22.5	23	23	22	Data Avail 10/2018	Data Avail 10/2019	

**Explanation of Results:** FY 2015 result due to a relatively small revision (7 million acres) in the usage estimates for conventional and reduced risk acre treatments. FY 2015 result calculation – 406 million agricultural reduced risk acre treatments / 1,821 million total agricultural acre treatments.

**Additional Information:** Percentage of acres treated with reduced-risk pesticides was 22% of total acreage in FY 2011 when the reduced-risk pesticide acre-treatments was 315 million and total (all pesticides) was 1,444 million acre-treatments. Each year's total acre-treatments, as reported by USDA National Agricultural Statistic Service and private marketing research data sources, serve as the basis for computing the percentage of acre-treatments using reduced risk pesticides. Acre-treatments count the total number of pesticide treatments each acre receives each year. Results are reported the end of the calendar year and have a one-year reporting data lag. Most reduced-risk acre treatments are Bt (*Bacillus thuringiensis*) corn and cotton and the use of glyphosate and others in field crops. Bt corn is a variant of maize that has been genetically altered to express one or more proteins from the bacterium Bt (a built in pesticide).

<b>(PM 164) Number of pesticide registration review docket opened.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	70	72	73	73	66	25	Dockets
<b>Actual</b>	79	77	75	84	88	25	

**Explanation of Results:** All 725 pesticide cases currently going through registration review have completed their docket opening milestones.

**Additional Information:** By FY 2012, a total of 376 chemical case work dockets were opened according to EPA internal data.

<b>(PM 230) Number of pesticide registration review final work plans completed.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	70	72	73	73	75	40	Work Plans
<b>Actual</b>	70	79	81	89	78	41	

**Explanation of Results:** A total of 695 final work plans of a universe of 725 for pesticide cases currently going through registration review were completed according to EPA internal data (program has completed all final work plans).

**Additional Information:** By FY 2012, a total of 327 final work plans for registered pesticides were completed according to EPA internal data.

**(PM 247) Percent of new chemicals or organisms introduced into commerce that do not pose unreasonable risks to workers, consumers, or the environment.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	100	100	95	96	99	Data Avail 10/2018	

**Explanation of Results:** Measure subject to one-year reporting lag due to the need for completion and review of the annual contractor report.

**Additional Information:** Percent of new chemicals or organisms introduced into commerce that do not pose unreasonable risks to workers, consumers, or the environment was 97 percent over the period FY 2009-2012, as determined by averaging the annual performance results for this measure. Data obtained from the annual report, "Study Comparing Premanufacture Notices (PMNs)/Low Volume Exemptions (LVEs) to Related 8(e) Chemicals." Results are calculated by comparing Section 8(e) notices received in the fiscal year to previously reviewed PMNs. If a risk identified in a new Section 8(e) notice would not have been identified and mitigated by the review, then the program has not met the performance target. Approximately 30 Section 8(e) notices submitted annually are compared to previous PMNs for purposes of determining the annual performance result for this measure. Background information is available on EPA's website at [www.epa.gov/reviewing-new-chemicals-under-toxic-substances-control-act-tsca](http://www.epa.gov/reviewing-new-chemicals-under-toxic-substances-control-act-tsca).

**(PM 998) EPA's TRI program will work with partners to conduct data quality checks to enhance accuracy and reliability of environmental data.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>		500	500	600	600	600	Quality Checks
<b>Actual</b>		600	600	600	775	1,090	

**Explanation of Results:** In FY 2017, EPA augmented its usual data quality check procedures by running a comparison of Toxics Release Inventory (TRI) data with Risk Management Program (RMP) data for reporting years 2012-2015. Unexpectedly, a very large number of facilities (approximately 1,000) with potential data quality issues were identified through this comparison, and as a result, the FY 2017 target of 600 data quality checks was significantly exceeded.

**Additional Information:** TRI data checks improve the accuracy and reliability of environmental data. More than 21,000 facilities report to EPA's TRI Program annually. The universe of facilities subject to the TRI reporting requirements includes all federal facilities (pursuant to Executive Order) that meet the applicability criteria described in part 372, subpart B of Title 40 of the Code of Federal Regulations and, with some exceptions and/or limitations, facilities that are classified within (under) any of the specific North American Industrial Classification System (NAICS) codes that correspond to Standard Industrial Classification (SIC) codes: 10, 20-39, 4911, 4931, 4939, 4953, 5169, 5171, and 7389.

**(PM C19) Percentage of CBI claims for chemical identity in health and safety studies reviewed and challenged, as appropriate, as they are submitted.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	100	100	100	100	100	N/A	

	<p><b>Explanation of Results:</b> The TSCA amendments of June 2016 included significant new requirements relating to Confidential Business Information (CBI) review for both EPA and submitters. Upon enactment of the new CBI requirements, EPA discontinued the prior CBI review activities reflected in this measure and began implementation of the new CBI requirements. In response to the new TSCA law’s stringent new requirements for substantiation of CBI claims, EPA gave submitters additional time to substantiate claims submitted between June 22, 2016 and March 21,2017; as a result, the Agency was not able to complete its review of all FY 2017 CBI cases by the end of the fiscal year. Additionally, because the new law no longer requires EPA to distinguish between CBI cases with health and safety studies and those without them, EPA is unable to track and report CBI review data in a manner that conforms to the specific wording of this measure. Thus, CBI review outputs for FY 2017 cannot be meaningfully compared to prior year results, given the significant differences between the old and new requirements. In FY 2017, EPA received 845 cases with CBI claims for chemical identity (with or without health and safety studies), completed review of 481 of these and is continuing review of the other 364 cases.</p> <p><b>Additional Information:</b> Effective CBI review ensures that incoming claims are approved only where warranted and that all non-CBI data from health and safety studies are made available to the public. Approximately 500 TSCA CBI claims are submitted per year for chemical identity, which potentially contain health and safety studies.</p>							
	<p><b>(PM E07) Annual number of EDSP Tier 1 screening assays for which validated alternatives have been developed, based on high throughput assays and computational models.</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target					2	2	Assays and Tools
	Actual					3	0	
	<p><b>Explanation of Results:</b> The availability of the two additional validated alternatives to the traditional EDSP Tier 1 screening assays were delayed due to the rescheduled July 2017 Federal Insecticide, Fungicide, and Rodenticide Act Scientific Advisory Panel (FIFRA SAP) meeting. The FIFRA SAP meeting is an important step in the validation of the alternative assays.</p> <p><b>Additional Information:</b> In FY 2014, there were zero (of the 11) Tier 1 assays for which validated alternatives had been developed, based on high throughput assays and computational models.</p>							
(2) Protect Ecosystems from Chemical Risks	<p><b>(PM 268) Percent of selected urban watersheds that exceed EPA aquatic life benchmark maximum concentrations for three key pesticides of concern (diazinon, chlorpyrifos and carbaryl).</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	5, 0, 10	No Target Established	0, 0, 0	No Target Established	0, 0, 0	No Target Established	Percent
Actual	0, 0, 9	Biennial	7, 0, 0	Biennial	0,0,9	Biennial		

**Explanation of Results:** No reporting; Biennial year.

**Additional Information:** Urban watersheds are sampled by the USGS National Water Quality Assessment (NAWQA) program. Data for this measure are reported biennially. The number of sampling and the sampling points in USGS data were constantly changing year to year, depending on their funding. Results from previous reports showed that the exceedances were at different monitoring sites. Starting in FY 2015, the Agency is using data from 10 specified urban sites from the USGS national monitoring sites in the future to provide consistency in data reporting. The monitoring sites were selected based on history of monitoring results, and anticipated consistency in reporting from these national sampling sites. The 10 selected Urban Streams in National Network sites are: Norwalk River at Winnipauk, CT; Accotink Creek near Annandale, VA; Swift Creek near Apex, NC; Sope Creek near Marietta, GA; Clinton River at Sterling Heights, MI; Shingle Creek at Minneapolis, MN; Cherry Creek at Denver, CO; White Rock Creek at Dallas, TX; Little Cottonwood Creek at Salt Lake City, UT; Fanno Creek at Durham, OR. The exceedances are calculated based on the number of exceedances divided by the total number of watersheds. The USGS NAWQA sites selected are the best long term source of surface water monitoring data for a large number of pesticides and their degradates, with consistent QA procedures for both sampling and lab analysis, low detection limits, and have been used by EPA for risk assessment work for over the last 15 years. The most sensitive aquatic benchmark for the chemical are posted on the website: [http://www.epa.gov/oppefed1/ecorisk\\_ders/aquatic\\_life\\_benchmark.htm](http://www.epa.gov/oppefed1/ecorisk_ders/aquatic_life_benchmark.htm): Diazinon: 0.105 ug/L; Chlorpyrifos: 0.040 ug/L; Carbaryl: 0.5 ug/L.

**(PM 269) Percent of selected agricultural watersheds that exceed EPA aquatic life benchmark maximum concentrations for two key pesticides of concern (azinphos-methyl and chlorpyrifos).**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	0, 10	No Target Established	0, 0	No Target Established	0, 0	No Target Established	Percent
<b>Actual</b>	7, 7	Biennial	0, 0	Biennial	0,0	Biennial	

**Explanation of Results:** No reporting; Biennial year.

**Additional Information:** Agricultural watersheds are sampled by the USGS National Water Quality Assessment (NAWQA) program. Data for this measure are reported biennially. The number of sampling and the sampling points in USGS data were constantly changing year to year, depending on their funding. Results from previous reports showed that the exceedances were at different monitoring sites. Starting in FY 2015, the Agency is using data from 10 specified agricultural sites from the USGS national monitoring sites in the future to provide consistency in data reporting. The monitoring sites were selected based on history of monitoring results, and anticipated consistency in reporting from these national sampling sites. The 10 selected Agricultural Streams in National Network sites are: Canajoharie Creek near Canajoharie, NY; Contentnea Creek at Hookerton, NC; South Fork Iowa River near New Providence, IA; Maple Creek near Nickerson, NE; Bogue Phalia near Leland, MS; Orestimba Creek near Crows Landing, CA; Granger Drain at Granger, WA; Rock Creek at Twin Falls, ID; Zollner Creek near Mt. Angel, OR; Sugar Creek at New Palestine, IN. The exceedances are calculated based on the number of exceedances divided by the total number of watersheds. The USGS NAWQA sites selected are the best long term source of surface water monitoring data for a large number of pesticides and their degradates, with consistent QA procedures for both sampling and lab analysis, low detection limits, and have been used by EPA for risk assessment work for over the last 15 years. The most sensitive aquatic benchmark for the chemical are posted on the website: [http://www.epa.gov/oppefed1/ecorisk\\_ders/aquatic\\_life\\_benchmark.htm](http://www.epa.gov/oppefed1/ecorisk_ders/aquatic_life_benchmark.htm): Malathion=0.035 ug/L; Methomyl=0.7 ug/L.

<b>(PM 240) Maintain timeliness of FIFRA Section 18 Emergency Exemption Decisions</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	45	45	45	45	45	45	Days
<b>Actual</b>	43	27	44	45	48	40	
<p><i><b>Explanation of Results:</b></i> The 45-day annual target is an historical average. The end-of-year measure reduction was attributed to Section 18 cases involving multiple renewals, re-certifications, and crisis exemptions that allowed for shorter turnaround times.</p> <p><i><b>Additional Information:</b></i> Section 18 of FIFRA authorizes EPA to allow an unregistered use of a pesticide for a limited time if it is determined that an emergency condition exists (i.e. a serious pest problem which jeopardizes production of agricultural goods or public health). Average number of days for Section 18 decisions from FY 2009-2012 was 46 days, according to EPA internal data.</p>							
<b>(PM 276) Percent of registration review chemicals with identified endangered species concerns, for which EPA obtains any mitigation of risk prior to consultation with DOC and DOI.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	5	5	15	5	5	65	Percent
<b>Actual</b>	0	0	0	65	80	97	
<p><i><b>Explanation of Results:</b></i> The program anticipated exceeding the target based on empirical data from Q1 of FY 2017 which indicated an increasing trend in the percentage of registration review chemicals with identified endangered species concerns for which EPA obtains any mitigation prior to consultation with the Services (U.S. Fish and Wildlife Service (FWS) and the U.S. National Oceanic and Atmospheric Administration (NOAA) Fisheries Service). The numbers are increasing as we are in the stage of registration review where more interim decisions are being made. (The number of registration review chemicals for which the ecological risk assessment and/or effects determination identifies endangered species concerns and for which mitigation of risk is obtained prior to consultation with the Services within a given reporting year) / (The total number of registration review chemicals for which the ecological risk assessment and/or effects determination identifies endangered species concerns within the same reporting year) x 100 for FY 2017 is: <math>(38/39)*100 = 97</math>.</p> <p><i><b>Additional Information:</b></i> The data are tracked internally by EPA. The data are obtained from ecological risk assessments and effects determinations prepared to support a registration review case. Any mitigation of risk refers to label changes that are intended to reduce the environmental exposure and associated risk of pesticides to listed species and/or their designated critical habitat. This may include such mitigation measures as reduction in the pesticide application rate and/or frequency of application, changes to the timing of application, spray drift, buffers or more geographically specific mitigation measures via EPA's Bulletins Live! Two web-based tool in specific areas where listed species and/or critical habitat are known to co-occur with potential pesticide use based on labeled registered uses.</p>							

**Objective 2 - Promote Pollution Prevention:** Conserve and protect natural resources by promoting pollution prevention and the adoption of other sustainability practices by companies, communities, governmental organizations, and individuals

**Summary of progress toward strategic objective:**

EPA continued to make better than expected progress in its Safer Choice Program, recognizing 226 additional products brought under the Safer Choice label in FY 2017, nearly double the target, and meeting the target for chemicals added to the Safer Chemical Ingredients List. Following a multi-stakeholder pilot, EPA assessed and recommended product environmental performance standards and ecolabels for federal procurement covering 21 product categories from computers to cleaners to carpeting. Additionally, EPA conducted more than 1,131 facility assessments of small and medium-sized businesses through the Energy, Environment and Economy (E3) Initiative and the Green Suppliers Network (GSN) Program. In FY 2016 (data became available in FY 2017), EPA reached a new high in achieving cost savings through pollution prevention efforts, helping businesses and governments save over \$842 million.

**Challenges:**

EPA continues to explore options for more fully capturing the environmental benefits of pollution prevention activities through performance measures. Recent progress includes surveying consumers to assess recognition and impact (purchasing influence) of the Safer Choice Products label introduced in 2015. While the survey showed progress (76% of consumers responded that they would use the Safer Choice label to inform purchasing decisions; 83% and 86% for parents and millennials respectively), the Agency continues work to draw on such information as well as actual purchasing/sales data to support its analysis (see Measure PM P2X below).

Program Area	Performance Measures and Data							
<b>(1) Promote Pollution Prevention</b>	<b>(PM 264) Pounds of hazardous materials reduced through pollution prevention.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	88.7	71.6	23.4	204.2	214.2	214.2	Pounds (Millions)
	<b>Actual</b>	214.9	231.5	190.3	205.2	283.1	Data Avail 10/2018	
	<p><i><b>Explanation of Results:</b></i> EPA’s consistent record of exceeding annual targets for this measure reflects successful implementation of the P2 grant program and positive experience in developing product standards for electronics. Grant-based technical assistance to businesses stays up to date on effective “greening” operations and measurement of impacts; Electronic Product Environmental Assessment Tool (EPEAT) product standards and registered products maintain a steady increase as sales data continue to rise.</p> <p><i><b>Additional Information:</b></i> There is a one-year data lag. From FY 2008 through FY 2012, 1,437 million pounds were reduced—after removing 626 million pounds in reported results that should not be expected to continue in future years due to: 1) atypical results, and 2) increased quality assurance standards for the results that come from states and other grant recipients. For FY 2016, EPA reported "recurring results" of an additional 76 million pounds of hazardous materials reduced. "Recurring results" are benefits produced in prior years that continue to deliver benefits over multiple years. By presenting solely new annual results for GPRA performance targets and results, the targets and results show a clearer alignment to the actual budget request and enacted levels. Within the P2 Program, there is not a fixed standard number of years that results will recur; rather, each P2 activity has a recurring results formula specific to the type of results and activities. Background information also is available on EPA’s website at <a href="http://www.epa.gov/p2">www.epa.gov/p2</a>.</p>							

<b>(PM 297) Metric Tons of Carbon Dioxide Equivalent (MTCO2Eq) reduced or offset through pollution prevention.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	1.74	1.46	1.0	2.0	2.2	2.2	MTCO2Eq (Millions)
<b>Actual</b>	3.9	3.4	3.0	3.16	4.32	Data Avail 10/2018	
<p><b>Explanation of Results:</b> EPA’s consistent record of exceeding annual targets for this measure reflects successful implementation of the P2 grant program and positive experience in developing product standards for electronics. Grant-based technical assistance to businesses stays up to date on effective “greening” operations and measurement of impacts; EPEAT product standards and registered products maintain a steady increase as sales data continue to rise.</p> <p><b>Additional Information:</b> There is a one-year data lag. From FY 2008 through FY 2012, 11.1 Million Metric Tons of Carbon Dioxide Equivalent (MMTCO2e) were reduced—after removing 3.5 MMTCO2e in reported results that should not be expected to continue in future years due to: 1) atypical results, and 2) increased quality assurance standards for the results that come from states and other grant recipients. For FY 2016, EPA reported "recurring results" of an additional 2.6 MMTCO2e reduced. "Recurring results" are benefits produced in prior years that continue to deliver benefits over multiple years. By presenting solely new annual results for GPRA performance targets and results, the targets and results show a clearer alignment to the actual budget request and enacted levels. Within the P2 Program, there is not a fixed standard number of years that results will recur; rather, each P2 activity has a recurring results formula specific to the type of results and activities. Background information also is available on EPA’s website at <a href="http://www.epa.gov/p2">www.epa.gov/p2</a>.</p>							
<b>(PM 262) Gallons of water reduced through pollution prevention.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	785	771	932	1,156	1,390	1,390	Gallons (Millions)
<b>Actual</b>	1,175	936	1,618	1,433	1,036	Data Avail 10/2018	
<p><b>Explanation of Results:</b> Performance on this measure declined in FY 2016 toward the low end of the six-year range (FY 2011-2016). P2 implementation steps vary from year to year in programmatic impact and consequently affect relative performance among the four P2 outcome measures.</p> <p><b>Additional Information:</b> There is a one-year data lag. From FY 2008 through FY 2012, 6.9 billion gallons were reduced--after removing 24 billion gallons in reported results that should not be expected to continue in future years due to: 1) atypical results, and 2) increased quality assurance standards for the results that come from states and other grant recipients. For FY 2016, EPA reported "recurring results" of an additional 3.9 billion gallons of water reduced. "Recurring results" are benefits produced in prior years that continue to deliver benefits over multiple years. By presenting solely new annual results for GPRA performance targets and results, the targets and results show a clearer alignment to the actual budget request and enacted levels. Within the P2 Program, there is not a fixed standard number of years that results will recur; rather, each P2 activity has a recurring results formula specific to the type of results and activities. Background information also is available on EPA’s website at <a href="http://www.epa.gov/p2">www.epa.gov/p2</a>.</p>							

**(PM 263) Business, institutional and government costs reduced through pollution prevention.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	196.9	195.6	133.3	362.6	445.6	445.6	Dollars Saved (Millions)
<b>Actual</b>	737.4	594.9	587.5	609	842.3	Data Avail 10/2018	

**Explanation of Results:** EPA’s consistent record of exceeding annual targets for this measure reflects successful implementation of the P2 grant program and positive experience in developing product standards for electronics. Grant-based technical assistance to businesses stays up to date on effective “greening” operations and measurement of impacts; EPEAT product standards and registered products maintain a steady increase as sales data continue to rise.

**Additional Information:** There is a one-year data lag. From FY 2008 through FY 2012, \$1.85 billion were saved—after removing \$231 million in reported results that should not be expected to continue in future years due to: 1) atypical results, and 2) increased quality assurance standards for the results that come from states and other grant recipients. For FY 2016, EPA reported "recurring results" of an additional \$277 million dollars saved. "Recurring results" are benefits produced in prior years that continue to deliver benefits over multiple years. By presenting solely new annual results for GPRA performance targets and results, the targets and results show a clearer alignment to the actual budget request and enacted levels. Within the P2 Program, there is not a fixed standard number of years that results will recur; rather, each P2 activity has a recurring results formula specific to the type of results and activities. Background information also is available on EPA’s website at [www.epa.gov/p2](http://www.epa.gov/p2).

**(PM P2X) Annual Number of Additional Products Recognized by the Safer Choice program**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>				375	100	125	Product
<b>Actual</b>				101	248	226	

**Explanation of Results:** The increase in safer products, similar to last year’s total, can be attributed to continued strong interest in the program among corporate partners and the value they place in the Safer Choice label.

**Additional Information:** Approximately 2,500 safer chemical products were recognized in FY 2013 by the Safer Choice Program. The number of products placed on the Safer Choice Products list in FY 2014 was 171. The total number of products certified is affected by consolidation in the industry and other factors that would make it less useful as a measure of performance. The Safer Choice program is also in the process of developing data and other market research on actual purchasing, to track changes (increases) in volume and aggregate value of purchases of Safer Choice labeled products, in particular product sectors, relative to growth/changes in overall purchasing for that market segment (e.g., laundry detergents, all-purpose cleaners). Early indications are that Safer Choice may be performing well in product category markets where Safer Choice products are available. More information about the Safer Choice program, including currently recognized products and the criteria manufacturers must meet to be recognized, is available at [www.epa.gov/saferchoice](http://www.epa.gov/saferchoice).

<b>(PM P2Y) Annual Number of Additional Chemicals Added to the Safer Chemical Ingredients List</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>				100	100	100	Chemicals
<b>Actual</b>				77	100	100	
<p><b>Additional Information:</b> Approximately 600 chemicals were on the Safer Chemical Ingredients List in FY 2013 under the Safer Choice Program. The number of products placed on the Safer Chemicals Ingredients List in FY 2014 was 49. The total number of chemicals on the Safer Chemicals Ingredients List is affected by consolidation in the industry and other factors that would make it less useful as a measure of performance. More information about the Safer Chemical Ingredients List, including currently listed chemicals and criteria for listing, is available at <a href="http://www2.epa.gov/saferchoice/safer-ingredients">http://www2.epa.gov/saferchoice/safer-ingredients</a>.</p>							

# Goal 5 at a Glance

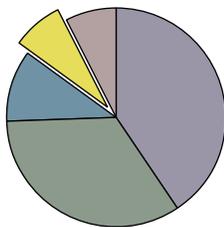
## PROTECTING HUMAN HEALTH AND THE ENVIRONMENT BY ENFORCING LAWS AND ASSURING COMPLIANCE

Protect human health and the environment through vigorous and targeted civil and criminal enforcement. Use Next Generation Compliance strategies and tools to improve compliance with environmental laws.

### FY 2017 Performance Measures

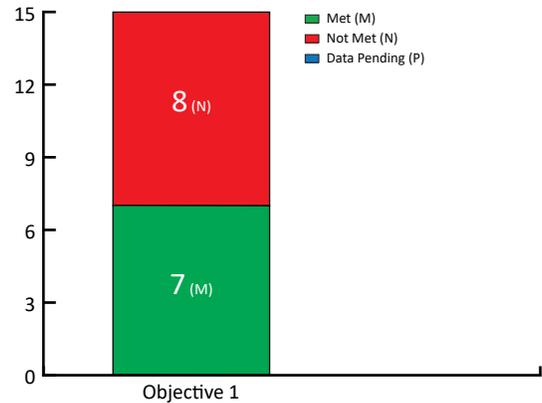
Met: 7 Not Met: 8 Data Unavailable: 0  
(Total Measures: 15)

#### FY 2017 Obligations\*



- Taking Action on Climate Change and Improving Air Quality, \$1,091,160
- Protecting America's Waters, \$4,196,956
- Cleaning Up Communities and Advancing Sustainable Development, \$3,530,571
- Ensuring the Safety of Chemicals and Preventing Pollution, \$749,419
- Enforcing Environmental Laws, \$779,531

### FY 2017 Performance Measures



Strategic Objective Overview	FY 2016 Obligations*	% of Goal 5 Funds
<b>Objective 5.1: Enforce Environmental Laws to Achieve Compliance.</b> Pursue vigorous civil and criminal enforcement that targets the most serious water, air, and chemical hazards in communities to achieve compliance. Assure strong, consistent and effective enforcement of federal environmental laws nationwide. Use Next Generation Compliance strategies and tools to improve compliance and reduce pollution.	\$779,531	100.0%
<b>Goal 5 Total</b>	<b>\$779,531</b>	<b>100.0%</b>

\*All figures in thousands

## **FY 2016 EPA Programs and Activities Contributing to Goal 5**

Compliance Assistance Program  
Economic Decision Sciences Research  
Environmental Justice  
Environmental Technology Verification Program, Monitoring and Enforcement Program  
National Center for Environmental Innovation  
National Partnership for Environmental Priorities  
Pesticide Enforcement Grant Program  
RCRA Corrective Action  
Sector Grant Program  
Superfund Enforcement  
Sustainability Research  
Sustainable Materials Management  
Toxic Substances Compliance Grant Program

## GOAL 5: PROTECTING HUMAN HEALTH AND THE ENVIRONMENT BY ENFORCING LAWS AND ASSURING COMPLIANCE

Protect human health and the environment through vigorous and targeted civil and criminal enforcement. Use Next Generation Compliance strategies and tools to improve compliance with environmental laws.

**Objective 1 - Enforce Environmental Laws to Achieve Compliance:** Pursue vigorous civil and criminal enforcement that targets the most serious water, air, and chemical hazards in communities to achieve compliance. Assure strong, consistent, and effective enforcement of federal environmental laws nationwide. Use Next Generation Compliance strategies and tools to improve compliance and reduce pollution.

### Summary of progress toward strategic objective:

In FY 2017, EPA – in cooperation with its state, tribal, and local partners – made steady progress towards its objective of pursuing the most serious water, air, and chemical hazards within communities. EPA achieves such progress by focusing on the highest impact environmental problems through the National Enforcement Initiatives (NEIs), other national priorities (e.g., drinking water, Superfund, etc.), and Regional enforcement priorities. EPA’s actions compel facilities to clean up contaminated sites and install pollution control technologies, resulting in health and environmental benefits. Specifically, in FY 2017, EPA met and/or exceeded 7 of its 15 annual performance metrics. Notably, the Agency’s Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and Resource Conservation and Recovery Act (RCRA) corrective action cases resulted in approximately 400 million cubic yards of total contaminated soil and water to be cleaned up, and concluded enforcement actions led to the reduction, treatment, or elimination of 10.9 million pounds of toxic and pesticide pollutants. EPA’s focused case work on the most significant violations led to a record settlement against [Volkswagen](#) for violations of the Clean Air Act that resulted in approximately \$17.6B in remedies and \$4.3B in civil and criminal penalties. The Agency also achieved a record settlement against two affiliated subsidiaries of [Freeport-McMoran Inc.](#), that provides for the cleanup of 94 abandoned uranium mines on the Navajo Nation, valued at over \$600 million, the 8<sup>th</sup> largest settlement for the Superfund enforcement program to date.

EPA’s criminal enforcement program also made strong progress in FY 2017, with a criminal conviction rate of 89 percent. Also in FY 2017, significant cases often were tied to individual conduct, and that conduct resulted in 153 years of incarceration, \$2.8 billion in fines to be paid by individuals and corporations, \$147 million in restitution, and \$3 million in court ordered environmental projects. As part of EPA’s commitment to protect vulnerable communities from environmental crimes, in FY 2017 the Agency’s work directly led to the sentencing of several defendants, including a former [Cleveland Housing Network official](#), for bribery, kickbacks, and illegal abatement of lead-based paint in low-income housing. Aside from this progress however, some of the Agency’s FY 2017 enforcement program measures faced challenges, contributing to missed targets for the number of federal inspections and evaluations, civil judicial and administrative cases initiated and concluded, and pounds of air, water, and hazardous waste pollutants reduced.

In addition to enforcement, EPA also used other effective compliance assurance tools to promote compliance, and worked to enhance state and tribal partnerships in furtherance of cooperative federalism. For example, EPA, with the Environmental Council of the States (ECOS), launched a workgroup to strengthen state-EPA compliance assurance work. The Agency also sought to engage partners and stakeholders to reinvigorate Superfund cleanups by developing (and now implementing) [42 EPA Task Force recommendations](#) to accelerate the cleanup and reuse of Superfund sites. Furthermore, EPA’s 17 virtual [compliance assistance web sites](#), designed to help businesses, colleges and universities, local governments, tribes and federal facilities understand and comply with environmental requirements and save money through pollution prevention techniques, had more than 2 million visits in FY 2017. In addition, EPA partnered with a number of states to address a variety of serious RCRA, Clean Water Act (CWA), and Clean Air Act (CAA) violations throughout FY 2017 and ultimately split penalties from enforcement cases with many co-plaintiff states, including Louisiana ([Innophos](#): \$1.4M), West Virginia ([Pikewood](#): \$1.8M), and Texas ([Vopak](#): \$2.5M, and [City of Tyler](#): \$563,000).

**Challenges:**

Aside from this progress however, funding challenges, combined with normal year-to-year variability in results obtained from enforcement case conclusions, affected some of the Agency’s FY 2017 enforcement program measures, contributing to missed targets for eight of the EPA’s Office of Enforcement and Compliance Assurance’s (OECA’s) 15 annual performance metrics. Competing priorities have contributed to delays in data system modernizations, adoption of advanced monitoring, and has hindered EPA’s progress on E-discovery.

Advanced monitoring technology and information technology are rapidly evolving, and advances in these fields offer great opportunities for improving the ability of EPA, states, and tribes to ensure compliance. EPA, states, and tribes face challenges in keeping up with the rapid pace of change in these technologies, especially when experiencing resource constraints. The Agency will continue to collaborate with ECOS and state associations to maximize the use of these technologies and modernize programs. For example, EPA will work with states and academics to pilot and evaluate innovative compliance methods ([ECOS Resolution 17-2](#)). EPA will work with states to integrate advanced pollution monitoring and information technology into Agency work.

Program Area	Performance Measures and Data							
<b>(1) Maintain Enforcement Presence</b>	<b>(PM 409) Number of federal inspections and evaluations.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	19,000	17,000	17,000	15,500	15,500	14,000	Inspections/Evaluations
	<b>Actual</b>	20,000	18,000	16,000	15,400	13,500	11,800	
	<i><b>Explanation of Results:</b></i> Inspections are an integral part of EPA’s enforcement and compliance assurance program. They are an important tool for officially assessing compliance with environmental requirements. EPA is prioritizing the most significant inspections and evaluations and that has caused the overall number of federal inspections to decrease. EPA also conducts off-site evaluations of facilities that are not historically counted as part of this measure.							
	<b>(PM 410) Number of civil judicial and administrative enforcement cases initiated.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	3,300	3,200	3,200	2,700	2,700	2,700	Cases
	<b>Actual</b>	3,000	2,400	2,300	2,400	2,400	1,900	
	<i><b>Explanation of Results:</b></i> EPA continued to pursue larger more complex, risk-based enforcement cases. This strategy leads to significant environmental and health gains, but generally lower numbers of cases overall. These enforcement actions are initiated when the regulated community does not comply with environmental laws, or cleanup is required for the protection of public health and the environment.							

<b>(PM 411) Number of civil judicial and administrative enforcement cases concluded.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	3,200	3,000	2,800	2,400	2,400	2,400	Cases
<b>Actual</b>	3,000	2,500	2,300	2,400	2,400	2,000	
<i>Explanation of Results:</i> EPA continued to pursue larger more complex, risk-based enforcement cases. This strategy leads to significant environmental and health gains, but generally lower numbers of cases overall.							
<b>(PM 412) Percentage of open consent decrees reviewed for overall compliance status.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	91	91	100	99	100	100	
<b>(PM 078) Percentage of all Superfund statute of limitations cases addressed at sites with unaddressed past Superfund costs equal to or greater than \$500,000.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	100	100	100	100	100	98	
<i>Explanation of Results:</i> The FY 2017 result is slightly lower than the target due to past costs not being addressed before the statute of limitations (SOL) at one Superfund site. The sole liable party at the site was determined by the Region to have an inability to pay EPA's unreimbursed past costs, so these past costs were written off as unrecoverable. Although the costs were written off after the SOL expired, there was no loss to the Fund due to the responsible parties' inability to pay, which is documented in the site file.							
<b>(PM 285) Percentage of Superfund sites having viable, liable responsible parties other than the federal government where EPA reaches a settlement or takes an enforcement action before starting a remedial action.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	99	99	99	99	99	99	Percent
<b>Actual</b>	100	100	100	100	100	100	
<i>Additional Information:</i> EPA's enforcement program is based on the "polluter pays" principle, which provides that a party responsible for the pollution pays for cleaning it up. The enforcement program applies this principle to preserve taxpayer dollars and the scarce resources of the Superfund trust fund to address truly abandoned and orphaned sites, which helps to make a visible difference in communities around the country by maximizing Superfund cleanups. EPA enforcement works to ensure that a settlement is reached or an enforcement action is taken at sites with liable, viable responsible parties prior to the start of new remedial cleanup work at Superfund sites (excluding federal facilities).							

<b>(2) Support Addressing Climate Change and Improving Air Quality</b>	<b>(PM 400) Millions of pounds of air pollutants reduced, treated, or eliminated through concluded enforcement actions.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	480	450	350	310	310	240	Million Pounds
	<b>Actual</b>	250	610	140	430	240	70	
	<p><i>Explanation of Results:</i> Results for this measure are highly variable from year to year because they are driven by a small number of very large cases. This results in substantial variability from year to year.</p> <p><i>Additional Information:</i> As OECA continues to make progress addressing large air pollution violators, such as utilities, OECA's annual enforcement actions comprise cases with significant public health impacts but a smaller number of pounds of pollution. We are increasingly focused on large sources of air toxics, where even small emissions reductions can have significant health benefits. We would therefore expect to see pounds reduced results go down in future years, as a combined result of success in addressing the largest sources and a greater focus on toxic air pollutants.</p>							
<b>(3) Support Protecting America's Waters</b>	<b>(PM 402) Millions of pounds of water pollutants reduced, treated, or eliminated through concluded enforcement actions.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	320	320	280	250	250	200	Million Pounds
	<b>Actual</b>	500	660	340	90	70	130	
	<p><i>Explanation of Results:</i> Results for this measure are highly variable from year to year because they are driven by a small number of very large cases. This results in substantial variability from year to year.</p> <p><i>Additional Information:</i> As we complete work on compliance agreements with the largest cities and begin to address non-compliance in smaller cities, the total pounds of pollution achieved per case is expected to decline. This reduction will be a combined result of addressing some of the largest and most serious violations and putting those dischargers on a path to remediation, as well as our focus on other sources of water pollution that are smaller in number of pounds but very important to protecting water quality.</p>							
<b>(4) Support Cleaning Up Communities and Advancing Sustainable Development</b>	<b>(PM 405) Millions of pounds of hazardous and non-hazardous wastes reduced, treated, or eliminated through concluded enforcement actions.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	6,500	6,000	5,000	2,400	2,400	2,000	Million Pounds
	<b>Actual</b>	4,400	150	700	500	61,900	250	

	<p><b>Explanation of Results:</b> Hazardous: 245 M lbs. Non-Hazardous: 1 M lbs. The results for this measure are driven by a small number of very large cases and, therefore, can cause significant fluctuations in the results from year to year. For example, in FY 2016 over 98% of the total 61.9 billion pounds of hazardous and non-hazardous waste reduced, treated, or eliminated came from one case - Mosaic (61.7). Given the types of cases that are nearing completion, OECA's shift in focus is expected to result in many fewer millions of pounds of pollution reduced overall.</p> <p><b>Additional Information:</b> Prior to FY 2016, this measure only included hazardous waste. Beginning in FY 2016, this measure reports (separately) both hazardous and non-hazardous waste subtotals addressed and remediated through EPA enforcement actions. Non-hazardous waste subtotals were previously included in PM 404.</p>							
	<p><b>(PM 417) Millions of cubic yards of contaminated soil and groundwater media EPA has obtained commitments to clean up as a result of concluded CERCLA and RCRA corrective action enforcement actions.</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	300	275	225	200	200	200	Million Cubic Yards
	Actual	400	750	900	70	190	400	
	<p><b>Explanation of Results:</b> Results for this measure are highly variable from year to year because they are driven by a small number of very large cases. The significant exceedance of this measure's target in FY 2017 is primarily the result of three very large concluded CERCLA cases: Omega Chemical Co. (200M), Shieldalloy Metallurgical Corp. (119M), and Letterkenny Army Depot (85M).</p> <p><b>Additional Information:</b> Contaminated groundwater media, as defined for the Superfund and RCRA corrective action programs, is the volume of physical aquifer (both soil and water) that will be addressed by the response action. The results for this measure are usually driven by a small number of very large cases, which can cause a significant fluctuation in results from year to year depending on the types of cases concluded in any given year.</p>							
(5) Support Ensuring the Safety of Chemicals and Preventing Pollution	<p><b>(PM 404) Millions of pounds of toxic and pesticide pollutants reduced, treated, or eliminated through concluded enforcement actions.</b></p>							
		FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
	Target	3.8	3.0	2.5	2.3	2.3	2.3	Million Pounds
Actual	1,400	4.6	41	10	13	10.9		
	<p><b>Explanation of Results:</b> Results for this measure are highly variable from year to year because they are driven by a small number of very large cases. The significant exceedance of this measure's target in FY 2017 is primarily the result of a few very large concluded cases including ECCO USA (1.7M), Inc., Dow Agrosciences LLC (1.1M), and Fabco Industries, Inc. (800K).</p> <p><b>Additional Information:</b> Prior to FY 2016, this measure included non-hazardous wastes. Beginning in FY 2016, non-hazardous wastes addressed and remediated through EPA enforcement actions, which have been reported as part of this measure, are reported as part of PM 405. The results for this measure are usually driven by a small number of very large enforcement cases, which yielded the majority of the pounds addressed and can cause significant fluctuations in results from year to year, depending on the types of cases concluded in any given year.</p>							

<b>(6) Enhance Strategic Deterrence through Criminal Enforcement</b>	<b>(PM 418) Percentage of criminal cases having the most significant health, environmental, and deterrence impacts.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	43	43	43	45	45	45	Percent
	<b>Actual</b>	45	44	48	62	68	72	
	<i>Additional Information:</i> The mission of EPA's Criminal Enforcement Program is to investigate, help prosecute, and thereby deter the most egregious environmental offenders. The criminal program collects data on a variety of case attributes to evaluate the range, complexity, and quality of our national docket. In 2010, the program developed a case selection methodology to ensure the identification, investigation, and prosecution of cases with significant environmental, human health, and deterrence impact. The data elements used in this tier methodology include information about the human health and environmental impacts, the nature of the pollutant and the release, and the profile and compliance history of the subject(s). Since instituting the tiering system, the percentage of "higher tier" cases has steadily risen.							
	<b>(PM 419) Percentage of criminal cases with individual defendants.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	75	75	75	75	75	75	Percent
	<b>Actual</b>	70	80	87	83	85	90	
	<i>Additional Information:</i> During the early years of EPA's criminal program, organizational defendants made up approximately 70% of the total defendants charged and individual defendants made up the remaining 30%. By FY 2017, these figures had greatly changed: 90% of cases had an individual charged and 10% were cases where only an organizational defendant(s) was charged.							
	<b>(PM 420) Percentage of criminal cases with charges filed.</b>							
		<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
	<b>Target</b>	40	40	40	45	45	45	Percent
<b>Actual</b>	44	38	39	38	37	43		
<i>Explanation of Results:</i> EPA's Criminal Enforcement Program has emphasized focusing on more significant cases, which by nature are more complex, lengthy investigations. In the past four years, results for PM 420 have ranged from 37 to 43 percent. During that same period, three factors contributed to significant changes in the open case docket: (1) The number of case-carrying agents declined resulting in fewer cases being opened each year; (2) With the implementation of PM 418 (the case tiering measure), EPA has increased the percentage of criminal cases having the most significant health, environmental, and deterrence impacts (going from 44% to 72% in that same period); (3) As a result, the criminal docket went from over 700 open cases to 410 (down from 475 in 2016).								

<b>(PM 421) Percentage of conviction rate for criminal defendants.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	85	85	85	85	85	85	Percent
<b>Actual</b>	95	94	95	92	94	91	
<p><b>Additional Information:</b> While case outcomes fluctuate based on their specific characteristics, as well as the prosecutorial and sentencing decisions made by the U.S. Department of Justice and the federal courts, EPA’s Criminal Enforcement Program has maintained a historically high conviction rate for defendants charged with environmental crimes.</p>							

## Research Performance Array

### OFFICE OF RESEARCH AND DEVELOPMENT

Performance Measures and Data							
<b>(PM AC1) Percentage of planned research products completed on time by Air, Climate, and Energy research program.</b>							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	100	92	87	87	100	100	
<p><b>Explanation of Results:</b> In FY 2017, the Office of Research and Development's (ORD's) Air, Climate and Energy (ACE) research program completed 100% (11 of 11) of its high-priority research products as planned. Included among these products are 27 Federal Reference Method and Federal Equivalent Method designations and modifications. These designations serve as key support to states and localities working towards National Ambient Air Quality Standards (NAAQS) attainment. In addition, ORD supported community level air quality planning by releasing work on the role community characteristics and environmental justice factors play in the relationship between criteria air pollutants and public health events. These products, as well as other ACE products, provide key data and tools needed by individuals, communities, and governmental agencies to prevent and reduce emissions of pollutants, assess effects associated with pollutants and climate change, and make informed decisions to protect public health.</p> <p><b>Additional Information:</b> A research product is "a deliverable that results from a specific research project or task. Research products may require translation or synthesis before integration into an output ready for partner use." This secondary performance measure tracks the timely completion of research products. Working with its partners, each program develops a list of planned research products and their associated outputs. The list reflects high priority products the program plans to complete by the end of each fiscal year. The estimated completion date is based on when the output is needed for partner use and when the research products must be transformed into the output. The actual product completion date is self-reported. The program strives to complete 100% of its planned products each year so that it can best meet EPA and other partners' needs.</p>							
<b>(PM AC2) Percentage of planned research outputs delivered to clients for use in taking action on climate change or improving air quality.</b>							
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	77	83	92	74	85	100	

**Performance Measures and Data**

**Explanation of Results:** In FY 2017, ORD’s ACE research program completed 100% (6 of 6) of its research outputs. Among these outputs were a series of grantee webinars that focused on disseminating research results, collecting publication and bibliographical information, and synthesizing research results to more effectively transmit scientific findings to partners and stakeholders. In addition, ORD rolled out an updated version of the Community Multiscale Air Quality (CMAQ) modeling system, including improved capabilities for modeling aerosol composition, atmospheric chemistry, scale interactions, and diagnostic analysis. CMAQ uses state-of-the-science air quality modeling techniques to provide near and long-term data to inform NAAQS policymaking. These projects further support EPA’s mission of protecting human health and the environment by furthering public outreach, supplementing the regulatory monitoring network to explore local-scale pollution trends, and increasing data available for research purposes.

**Additional Information:** Research outputs result from the translation or synthesis of one or more research products into the format compatible with the partner's decision needs. "Delivery of a research output" means that the output is transferred to ORD's research partner ready for the intended partner use. EPA identifies and describes the planned outputs in the program's Research Program Strategic Plan. At the end of the fiscal year, the program reports on its success in meeting its planned annual outputs. The program strives to complete 100% of its planned outputs each year so that it can best meet EPA and other partners' needs. To ensure the ambitiousness of its annual output measures, ORD has better formalized the process for developing and modifying program outputs, including requiring that ORD programs engage partners when making modifications. Involving partners in this process helps to ensure the ambitiousness of outputs on the basis of partner utility.

**(PM CS1) Percentage of planned research products completed on time by the Chemical Safety for Sustainability research program.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	100	100	100	100	100	100	

**Explanation of Results:** In FY 2017, ORD’s Chemical Safety for Sustainability (CSS) research program completed 100% (15 of 15) of its high-priority research products as planned. Among these products were a series of publications, models and datasets to continue the development of advanced Human Exposure Modeling techniques. This work focused on capturing population variability in consumer product and household exposure sources, which will be used to support decision makers in both Agency and Regional air and chemical programs. ORD also enhanced collaboration and impact for CSS and Predictive Toxicology efforts by promoting interdisciplinary research between EPA scientists and grantees on virtual tissue modeling and computational toxicology. These and other CSS products provide toxicological data and tools needed by individuals, communities, and governmental agencies to prevent and reduce chemical exposure, assess effects associated with pollutants, and make informed decisions to protect public health.

**Additional Information:** A research product is "a deliverable that results from a specific research project or task. Research products may require translation or synthesis before integration into an output ready for partner use." This secondary performance measure tracks the timely completion of research products. Working with its partners, each program develops a list of planned research products and their associated outputs. The list reflects high priority products the program plans to complete by the end of each fiscal year. The estimated completion date is based on when the output is needed for partner use and when the research products are needed to be transformed into the output. The actual product completion date is self-reported. The program strives to complete 100% of its planned products each year so that it can best meet EPA and other partners' needs.

**(PM CS2) Percentage of planned research outputs delivered to clients and partners to improve their capability to advance the environmentally sustainable development, use, and assessment of chemicals.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	50	100	100	100	100	100	

**Performance Measures and Data**

**Explanation of Results:** In FY 2017, ORD's CSS research program completed 100% (3 of 3) of its research outputs as planned. These outputs included the demonstration of novel approaches for combining data and models through application in a variety of decision contexts to inform specific EPA chemical evaluation objectives. This output provides examples that enable the EPA to integrate data from any variety of legacy and novel data sources using innovations in computational science and "big data" approaches to make more informed decisions. This and other CSS research outputs empower individuals, communities, and governmental agencies to better evaluate potential risks from chemical exposure and to make more informed, more timely decisions about chemicals with impacts on public health and the environment.

**Additional Information:** Research outputs result from the translation or synthesis of one or more research products into the format compatible with the partner's decision needs. "Delivery of a research output" means that the output is transferred to ORD's research partner ready for the intended partner use. EPA identifies and describes the planned outputs in the program's Research Program Strategic Plan. At the end of the fiscal year, the program reports on its success in meeting its planned annual outputs. The program strives to complete 100% of its planned outputs each year so that it can best meet EPA and other partners' needs. To ensure the ambitiousness of its annual output measures, ORD has better formalized the process for developing and modifying program outputs, including requiring that ORD programs engage partners when making modifications. Involving partners in this process helps to ensure the ambitiousness of outputs on the basis of partner utility.

**(PM HC1) Percentage of planned research products completed on time by the Sustainable and Healthy Communities research program.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	100	83	81	100	100	100	

**Explanation of Results:** In FY 2017, ORD's Sustainable and Healthy Communities (SHC) research program completed 100% (16 of 16) of its high-priority research products as planned. Included among these products was the release of the Decision Analysis for a Sustainable Environment, Economy, and Society (DASEES) tool. This tool provides an environment where communities can build common understanding of complex problems, and then create and evaluate management alternatives through a multi-objective decision analysis. The tool serves as an integrative framework for combined assessment of environmental, economic, and social aspects of a decision problem where there is uncertainty or risk. This product, as well as other SHC products, provides tools and methods that help protect public health at a community level, communicate community environmental risks, and protect the environment.

**Additional Information:** A research product is "a deliverable that results from a specific research project or task." Research products may require translation or synthesis before integration into an output ready for partner use. This secondary performance measure tracks the timely completion of research products. Working with its partners, each program develops a list of planned research products and their associated outputs. The list reflects high priority products the program plans to complete by the end of each fiscal year. The estimated completion date is based on when the output is needed for partner use and when the research products must be transformed into the output. The actual product completion date is self-reported. The program strives to complete 100% of its planned products each year so that it can best meet EPA and other partners' needs.

**(PM HC2) Percentage of planned research outputs delivered to clients, partners, and stakeholders for use in pursuing their sustainability goals.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	50	68	100	50	92	100	

**Performance Measures and Data**

**Explanation of Results:** One output was delayed from an FY17 delivery to FY18. All other outputs are on schedule.

**Additional Information:** Research outputs result from the translation or synthesis of one or more research products into the format compatible with the partner's decision needs. "Delivery of a research output" means that the output is transferred to ORD's research partner ready for the intended partner use. EPA identifies and describes the planned outputs in the program's Research Program Strategic Plan. At the end of the fiscal year, the program reports on its success in meeting its planned annual outputs. The program strives to complete 100% of its planned outputs each year so that it can best meet EPA and other partners' needs. To ensure the ambitiousness of its annual output measures, ORD has better formalized the process for developing and modifying program outputs, including requiring that ORD programs engage partners when making modifications. Involving partners in this process helps to ensure the ambitiousness of outputs on the basis of partner utility.

**(PM HS1) Percentage of planned research products completed on time by the Homeland Security research program.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	100	100	100	100	100	100	

**Explanation of Results:** In FY 2017, ORD's Homeland Security Research Program (HSRP) completed 100% (4 of 4) of its high-priority research products as planned. Included among these products was a collaboration with the Department of Defense and Department of Homeland Security to advance underground transportation system decontaminations after biological attacks. In addition, ORD completed a pilot scale demonstration of mobile water device treatments for biological agents, which will increase treatment capacity in the event of biological contamination incidents. These products, as well as other HSRP products, supports EPA's mission by providing the data and tools necessary to prepare our communities for the threats of disasters including biological, chemical and radiological attacks.

**Additional Information:** A research product is "a deliverable that results from a specific research project or task." Research products may require translation or synthesis before integration into an output ready for partner use. This secondary performance measure tracks the timely completion of research products. Working with its partners, each program develops a list of planned research products and their associated outputs. The list reflects high priority products the program plans to complete by the end of each fiscal year. The estimated completion date is based on when the output is needed for partner use and when the research products must be transformed into the output. The actual product completion date is self-reported. The program strives to complete 100% of its planned products each year so that it can best meet EPA and other partners' needs.

**(PM HS2) Percentage of planned research outputs delivered to clients and partners to improve their capabilities to respond to contamination resulting from homeland security events and related disasters.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	78	100	100	100	100	100	

**Performance Measures and Data**

**Explanation of Results:** In FY 2017, ORD’s HSRP completed 100% (8 of 8) of its research outputs as planned. Included among these outputs is the Water Network Tool for Resilience (WNTR), which is a new software tool designed to help water utilities measure and improve the resilience of their drinking water systems to disasters. In addition to this, operating procedures were developed to help manufacturers bring to market commercially available robotic cleaners designed to sample Bacillus anthracis (anthrax) spores. These and other HSRP outputs continue to support EPA’s ability to respond to potential attacks on our water systems and other potential impacts to human health.

**Additional Information:** Research outputs result from the translation or synthesis of one or more research products into the format compatible with the partner's decision needs. "Delivery of a research output" means that the output is transferred to ORD's research partner ready for the intended partner use. EPA identifies and describes the planned outputs in the program's Research Program Strategic Plan. At the end of the fiscal year, the program reports on its success in meeting its planned annual outputs. The program strives to complete 100% of its planned outputs each year so that it can best meet EPA and other partners' needs. To ensure the ambitiousness of its annual output measures, ORD has better formalized the process for developing and modifying program outputs, including requiring that ORD programs engage partners when making modifications. Involving partners in this process helps to ensure the ambitiousness of outputs on the basis of partner utility.

**(PM RA1) Percentage of planned research products completed on time by the Human Health Risk Assessment research program.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	100	88	80	45	68	85	

**Explanation of Results:** In FY 2017, ORD’s Human Health Risk Assessment (HHRA) Research Program completed 85% (11 of 13) of its high priority research products as planned. The Integrated Risk Information System (IRIS) pipeline was delayed, and a decision was made to sunset two products. As an alternative, new, more relevant and responsive replacement products were proposed. Key assessment products completed for HHRA include three IRIS Assessment Plans (nitrate/nitrite, chloroform, and ethylbenzene) and two external review drafts for IRIS assessments (ethyl tert-butyl ether, tert-butanol). Several Integrated Science Assessment (ISA) key products were completed as planned including the second draft ISA for Oxides of Sulfur – Health Criteria, the ISA chapter in the Final Integrated Review Plan (IRP) for the Secondary NAAQS for ecological effects of oxides of nitrogen, oxides of sulfur, and particulate matter, and the ISA chapter in the Draft IRP to support the primary and secondary NAAQS for particulate matter. These and other HHRA products are needed by individuals, communities, and governmental agencies to improve risk analyses, better inform regulatory decisions, and protect human health and the environment.

**Additional Information:** A research product is "a deliverable that results from a specific research project or task." Research products may require translation or synthesis before integration into an output ready for partner use. This secondary performance measure tracks the timely completion of research products. Working with its partners, each program develops a list of planned research products and their associated outputs. The list reflects high priority products the program plans to complete by the end of each fiscal year. The estimated completion date is based on when the output is needed for partner use and when the research products must be transformed into the output. The actual product completion date is self-reported. The program strives to complete 100% of its planned products each year so that it can best meet EPA and other partners' needs.

**(PM RA2) Percentage of planned research outputs delivered to clients and partners for use in informing human health decisions.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	38	100	67	60	67	100	

**Performance Measures and Data**

**Explanation of Results:** In FY 2017, ORD’s HHRA Research Program completed 100% (2 of 2) of its research outputs as planned. The outputs included release of two final IRIS assessments, IRIS Evaluation of the Inhalation Carcinogenicity of Ethylene Oxide and the IRIS Assessment of Benzo[a]pyrene. These IRIS assessments support policy and regulatory decisions for EPA’s programs and regions, and state and other federal agencies by providing hazard identification and dose-response assessments. HHRA also completed 12 Provisional Peer-Reviewed Toxicity Value (PPRTV) assessments, which are used by EPA’s Superfund program and regional decision-makers to characterize the contamination of a Superfund site and when making site-specific clean-up decisions, such as when to pursue monitoring and remediation for a contaminant of concern.

**Additional Information:** Research outputs result from the translation or synthesis of one or more research products into the format compatible with the partner's decision needs. "Delivery of a research output" means that the output is transferred to ORD's research partner ready for the intended partner use. EPA identifies and describes the planned outputs in the program's Research Program Strategic Plan. At the end of the fiscal year, the program reports on its success in meeting its planned annual outputs. The program strives to complete 100% of its planned outputs each year so that it can best meet EPA and other partners' needs. To ensure the ambitiousness of its annual output measures, ORD has better formalized the process for developing and modifying program outputs, including requiring that ORD programs engage partners when making modifications. Involving partners in this process helps to ensure the ambitiousness of outputs on the basis of partner utility.

**(PM RA6) Number of regulatory decisions in which decision-makers used HHRA peer-reviewed assessments (IRIS, PPRTVs, exposure assessments and other assessments)**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>		20	20	20	20	20	Number
<b>Actual</b>		140	100	100	100	120	

**Explanation of Results:** In FY 2017, ORD’s HHRA Research Program significantly exceeded its goal for this measure by continuing its efforts to develop efficient, high quality, and translatable assessments that are useful and relevant to program managers. HHRA peer-reviewed assessments are used by EPA program and regional offices to inform critical decisions to protect human health. For example, PPRTV assessments are used by EPA’s Superfund program and regional decision makers to characterize the contamination of a Superfund site and when making site-specific cleanup decisions. These assessments advance science and technology to help improve the health and quality of life in communities affected by hazardous waste sites and improve industry environmental practices.

**Additional Information:** The measure calculates the number of Agency regulatory decisions for which clients use HHRA peer-reviewed health assessments. The measure is calculated by reviewing regulatory decisions and Records of Decision (ROD) made by EPA, determining how many quantitative health assessment values were used in these EPA program decisions, and what percentage of these values had been developed by the HHRA Program. This measure was piloted in FY 2013 and FY 2014 and was based on available information for FY 2010 that is unlikely to be reproducible and has since been calculated using data collected from the Superfund Enterprise Management System and EPA regulatory docket information collected from Regulations.gov.

**(PM RA7) Annual milestone progress score for completing draft IRIS health assessments.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	50	50	40	40	40	40	Score
<b>Actual</b>	8	17	30	7	4	11	

**Performance Measures and Data**

**Explanation of Results:** In FY 2017, ORD’s HHRA Research Program achieved a score of 11 for draft IRIS assessments. Though the target was not met, key assessment products completed for HHRA include three IRIS Assessment Plans (nitrate/nitrite, chloroform, and ethylbenzene) and two external review drafts for IRIS assessments (ethyl tert-butyl ether, tert-butanol). In FY 2017, the IRIS pipeline was placed on hold while new EPA and ORD leadership was being appointed. In addition to this, the implementation of NAS and Government Accountability Office (GAO) recommendations, notably development and application of systematic review methodologies, introduced competing priorities that contributed to the challenges in meeting this goal. The scoring method used for this measure was developed many years ago and does not reflect significant IRIS programmatic changes that began in 2011. IRIS assessments evaluate potential health effects that may result from exposure to environmental contaminants, such as chemicals in drinking water, pollutants in air, and contaminants in soil.

**Additional Information:** At the end of the fiscal year, the program reports on its success in meeting its planned annual outputs. Points are scored by multiplying the weight of each assessment by the number of milestones completed in the assessment process. The program targets represent a steady and timely completion of draft assessments throughout each fiscal year. Near-term targets are based on the large volume of ongoing assessments that have not been released in draft due to the change in the process for external review. In 2011, the National Research Council (NRC) made several recommendations to EPA for improving the development of IRIS assessments, which EPA has made progress on that has subsequently been recognized by NRC. To increase its transparency, accessibility, and efficiency, EPA is using a new document structure for draft assessments, including an Executive Summary presenting major conclusions, a description of methods used to develop the assessment, distinct sections on Hazard Identification and Dose-Response Analysis, and more tables and figures to clearly present data. To better support policy and regulatory decisions for EPA’s programs and regions, as well as state agencies, IRIS is reconfirming their priority chemicals and product needs, and aligning those with appropriate allocation of resources. In addition to Superfund, water, air, and children’s health drivers, IRIS has sharpened its focus on the new Toxic Substances Control Act (TSCA) law, and has been providing the needed scientific support to meet its expedited timelines.

**(PM RA8) Annual progress score for finalizing IRIS health assessments.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	20	20	15	15	15	15	Score
<b>Actual</b>	17	8	0	5	5	4	

**Performance Measures and Data**

**Explanation of Results:** In FY 2017, ORD’s HHRA Research Program achieved a score of 4 for final IRIS assessments. In FY 2017, the IRIS pipeline was placed on hold while new EPA and ORD leadership was being appointed. In addition to this, the implementation of NAS and GAO recommendations, notably development and application of systematic review methodologies, introduced competing priorities that contributed to the challenges in meeting this goal. Though the target was not met, key assessments for ethylene oxide and benzo[a]pyrene were both posted as final. Now final, these IRIS assessments that identify potential health hazards and evaluate dose-response resulting from exposure to ethylene oxide or benzo[a]pyrene in drinking water, air, and soil will be used by EPA’s program and regional offices to inform decisions under an array of environmental laws (e.g., Clean Air Act; Safe Drinking Water Act; Comprehensive Environmental Response, Compensation, and Liability Act).

**Additional Information:** This measure tracks the program's ability to make progress in finalizing and releasing IRIS assessments. The annual score, tracked cumulatively throughout the year, is based on the relative weighting of each chemical. Chemicals are weighted using a 3-tier system that includes client interest, complexity of science, and level of effort required. Points are scored by multiplying the weight of each assessment by the number of milestones completed in the assessment process. The program targets represent a steady and timely completion of final assessments throughout each fiscal year. Near-term targets are based on the large volume of ongoing assessments that have not been finalized due to the change in the process for external review and completion. This measure will be assessed as rolling average. In 2011, the NRC made several recommendations to EPA for improving the development of IRIS assessments. EPA has made progress in implementing these recommendations; accordingly, the NRC 2014 report commended EPA’s efforts to modernize IRIS. To increase its transparency, accessibility, and efficiency, EPA is using a new document structure for draft assessments, including an Executive Summary presenting major conclusions, a description of methods used to develop the assessment, distinct sections on Hazard Identification and Dose-Response Analysis, and more tables and figures to clearly present data. To better support policy and regulatory decisions for EPA’s programs and regions, as well as state agencies, IRIS is reconfirming their priority chemicals and product needs, and aligning those with appropriate allocation of resources. In addition to Superfund, water, air, and children’s health drivers, IRIS has sharpened its focus on the new TSCA law, and has been providing the needed scientific support to meet its expedited timelines.

**(PM SW1) Percentage of planned research products completed on time by the Safe and Sustainable Water Resources research program.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	86	70	90	100	100	100	

**Explanation of Results:** In FY 2017, ORD’s Safe and Sustainable Water Resources (SSWR) research program completed 100% (7 of 7) of its planned high priority products. Among these products was a years-long collaboration with the Office of Water to explore the use of a Multi-Metric Marine Biotic Index (M-AMBI) that has been tested for nationwide use for coastal benthic zone assessments. The use of a single, standard index will allow for more consistent assessments and comparisons of coastal zones. ORD also optimized Harmful Algal Bloom mitigation strategies by initiating a series of bench-scale engineering trials and full-scale sampling campaigns. These products, as other SSWR products, provide the data and tools needed by individuals, communities, and governmental agencies to promote water conservation, safeguard our water resources from ongoing threats, and protect public health.

**Additional Information:** A research product is "a deliverable that results from a specific research project or task." Research products may require translation or synthesis before integration into an output ready for partner use. This secondary performance measure tracks the timely completion of research products. Working with its partners, each program develops a list of planned research products and their associated outputs. The list reflects high priority products the program plans to complete by the end of each fiscal year. The estimated completion date is based on when the output is needed for partner use and when the research products are needed to be transformed into the output. The actual product completion date is self-reported. The program strives to complete 100% of its planned products each year so that it can best meet EPA and other partners' needs.

**Performance Measures and Data**

**(PM SW2) Percentage of planned research outputs delivered to clients and partners to improve the Agency's capability to ensure clean and adequate supplies of water that support human well-being and resilient aquatic ecosystems.**

	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit
<b>Target</b>	100	100	100	100	100	100	Percent
<b>Actual</b>	50	100	100	100	100	100	

**Explanation of Results:** In FY 2017, ORD’s SSWR research program completed 100% (1 of 1) of its planned outputs. This output was a synthesis of the science on groundwater quality impacts around uranium in-situ recovery sites. This synthesis report will provide decision makers with key information on protecting groundwater while developing energy and mineral resources. This synthesis work, as well as other SSWR research, provides the science and innovative technologies that the Agency and the nation need to maintain drinking water resources and systems, as well as to protect the chemical, physical and biological integrity of the nation’s waters.

**Additional Information:** Research outputs result from the translation or synthesis of one or more research products into the format compatible with the partner's decision needs. "Delivery of a research output" means that the output is transferred to ORD's research partner ready for the intended partner use. EPA identifies and describes the planned outputs in the program's Research Program Strategic Plan. At the end of the fiscal year, the program reports on its success in meeting its planned annual outputs. The program strives to complete 100% of its planned outputs each year so that it can best meet EPA and other partners' needs. To ensure the ambitiousness of its annual output measures, ORD has better formalized the process for developing and modifying program outputs, including requiring that ORD programs engage partners when making modifications. Involving partners in this process helps to ensure the ambitiousness of outputs on the basis of partner utility.

## Enabling Support Programs Performance Array

### OFFICE OF ADMINISTRATION AND RESOURCES MANAGEMENT

Performance Measures and Data							
<b>(PM 009) No reduction in percentage of certified acquisition staff (1102).</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	335 / 80	323 / 80	85	85	85	85	Number/ Percent
<b>Actual</b>	323/85	285 / 85	93	95	93	95	
<i>Explanation of Results:</i> As of October 1, 2017, there were 265 acquisition (1102) staff on board, of which 251 (95%) were certified. Certification ensures that acquisition staff are properly trained and qualified.							
<b>(PM 010) Reduction in Greenhouse Gas (GHG) Scopes 1 &amp; 2 emissions below 2008 baseline.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	6.4	12.2	16.3	16.3	20.1	23.0	Percent
<b>Actual</b>	54.1	57.4	59.5	63	60.2	Data Avail 2018	
<i>Additional Information:</i> See EPA's FY 2016 Strategic Sustainability Performance Plan page 4 at <a href="https://www.epa.gov/sites/production/files/2016-09/documents/epa_2016_strategic_sustainability_performance_plan.pdf">https://www.epa.gov/sites/production/files/2016-09/documents/epa_2016_strategic_sustainability_performance_plan.pdf</a> .							
<b>(PM 098) Reduction in energy consumption below 2003 baseline.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	21	24	27	27	32.5	35	Percent
<b>Actual</b>	23.7	25.6	28.9	32.7	34.6	Data Avail 2018	
<i>Additional Information:</i> See EPA's FY 2016 Strategic Sustainability Performance Plan page 4 at <a href="https://www.epa.gov/sites/production/files/2016-09/documents/epa_2016_strategic_sustainability_performance_plan.pdf">https://www.epa.gov/sites/production/files/2016-09/documents/epa_2016_strategic_sustainability_performance_plan.pdf</a> .							

## OFFICE OF ENVIRONMENTAL INFORMATION

Performance Measures and Data							
<b>(PM 052) Number of major EPA environmental systems that use the CDX electronic requirements enabling faster receipt, processing, and quality checking of data.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	67	75	80	77	80	90	Systems
<b>Actual</b>	68	73	89	107	125	174	
<p><b>Explanation of Results:</b> The 39% spike in flows is indicative of EPA’s shift towards cooperative federalism. The Office of Enforcement and Compliance (OECA) rolled out its Network Discharge Monitoring Report System (NETDMR) to Regions, States and Tribes, creating 38 unique CDX flows.</p> <p><b>Additional Information:</b> The Central Data Exchange (CDX) program began in FY 2001 to enable states, tribes and others to send environmental data to EPA through a centralized electronic process. The CDX program estimates its results as the net of new systems using CDX services (increase) and retirement of older systems that are being phased out (decrease). As a result, these results may increase or decrease in subsequent years. The unit of measure "system" is defined as the number of data flows/exchanges that occur through CDX by EPA program offices, states and tribes. There are 16 Vehicle Engine Regulation (VERIFY) data flows/exchanges that occur in CDX. Each serves a different need and is counted individually. Because CDX is used for these 16 unique needs, separate systems have not been developed to fulfill this need; rather, the one CDX solution serves them all.</p>							
<b>(PM 053) States, tribes and territories will be able to exchange data with CDX through nodes in real time, using standards and automated data-quality checking.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	80	95	98	103	140	140	Users
<b>Actual</b>	92	97	102	104	140	157	
<b>Additional Information:</b> Users are defined for this measure as the total number of physical and virtual nodes in production and test.							
<b>(PM 999) Total number of active unique users from states, tribes, laboratories, regulated facilities and other entities that electronically report environmental data to EPA through CDX.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	58,000	70,000	75,000	84,000	90,000	100,000	Users
<b>Actual</b>	65,238	79,818	96,000	85,894	116,636	116,837	
<b>Additional Information:</b> To calculate unique users of the CDX system, CDX takes all users whose accounts have been active in the last two years and eliminates duplicate registrations under the same email address. Because many EPA regulations require periodic reporting, i.e., once every two, three or five years, a two-year span was utilized to capture the majority of users without overstating their “active” status.							

**OFFICE OF THE INSPECTOR GENERAL**

Performance Measures and Data							
<b>(PM 35A) Environmental and business actions taken for improved performance or risk reduction.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	334	307	248	268	274	274	Actions
<b>Actual</b>	216	215	324	296	285	204	
<p><i>Explanation of Results:</i> Due to the manner in which audits are planned, a significant number of the reports issued by the Office of the Inspector General (OIG) in FY 2017 were issued within the last three months of the Fiscal Year. As a result, the Agency did not have sufficient time to initiate or complete corrective actions related to OIG recommendations.</p> <p><i>Additional Information:</i> This measure captures implemented corrective actions taken by the Agency based on OIG recommendations to improve EPA programs and/or processes. Results are typically from prior years and may fluctuate depending on the Agency’s ability to complete agreed-upon corrective actions. The target for this measure is developed by taking the actual performance for two or three fiscal years and adjusted to reflect any significant changes in priorities.</p>							
<b>(PM 35B) Environmental and business recommendations or risks identified for corrective action.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	903	786	687	967	1,094	1,094	Recommendations
<b>Actual</b>	1,242	1,003	944	1,110	1,127	1150	
<p><i>Additional Information:</i> This measure captures the number of OIG outputs (recommendations for improvement, outreach activities to plan and promote OIG work, congressional testimonies delivered, best practices identified, and risks identified). One key activity during an OIG audit/evaluation is identifying risks to EPA operations and programs. Risk identification is based on federal standards for internal control. Internal control is a process for assuring achievement of an organization’s objectives in operational effectiveness and efficiency, reliable reporting, and compliance with laws, regulations and policies. Ultimately effective internal controls assure that operations run efficiently and effectively. The target reflects the average of actual performance for two or three fiscal years, adjusted to reflect any significant changes in priorities.</p>							
<b>(PM 35C) Return on the annual dollar investment, as a percentage of the OIG budget, from audits and investigations.</b>							
	<b>FY 2012</b>	<b>FY 2013</b>	<b>FY 2014</b>	<b>FY 2015</b>	<b>FY 2016</b>	<b>FY 2017</b>	<b>Unit</b>
<b>Target</b>	110	125	132	220	220	220	Percent
<b>Actual</b>	743	248	734	1,656	2,098	722	

Performance Measures and Data																														
<p><b>Additional Information:</b> Results under this measure identify the potential return on investment and do not include actual recoveries. The OIG's role is to question costs and identify cost efficiencies and funds put to better use (recommended efficiencies). The target reflects the average of actual performance for two or three fiscal years, adjusted to reflect any significant changes in priorities. In FY 2012 and FY 2014 the OIG issued a single report with usually high recommended efficiencies (FY 2012-\$372M; FY 2014-\$230M). These were excluded from the average calculations given that reports with massive ROI do not materialize every year.</p>																														
<p><b>(PM 35D) Criminal, civil, administrative, and fraud prevention actions.</b></p> <table border="1"> <thead> <tr> <th></th> <th>FY 2012</th> <th>FY 2013</th> <th>FY 2014</th> <th>FY 2015</th> <th>FY 2016</th> <th>FY 2017</th> <th>Unit</th> </tr> </thead> <tbody> <tr> <td><b>Target</b></td> <td>85</td> <td>90</td> <td>125</td> <td>175</td> <td>145</td> <td>145</td> <td rowspan="2">Actions</td> </tr> <tr> <td><b>Actual</b></td> <td>152</td> <td>256</td> <td>213</td> <td>304</td> <td>181</td> <td>298</td> </tr> </tbody> </table>									FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit	<b>Target</b>	85	90	125	175	145	145	Actions	<b>Actual</b>	152	256	213	304	181	298
	FY 2012	FY 2013	FY 2014	FY 2015	FY 2016	FY 2017	Unit																							
<b>Target</b>	85	90	125	175	145	145	Actions																							
<b>Actual</b>	152	256	213	304	181	298																								
<p><b>Additional Information:</b> This measure captures criminal, civil, and administrative actions as a result of OIG investigations on fraud, waste and abuse. To a large extent, results are influenced by factors outside the control of OIG (judges, juries, etc.).</p>																														

## Cross-Agency Strategies

The table below summarizes progress that the Environmental Protection Agency has achieved under the cross-agency strategies (CAS) established in the *FY 2014-2018 EPA Strategic Plan*.

<p><b>Working to Make a Visible Difference in Communities</b> – Align community-based activities to provide seamless assistance to communities, both urban and rural, while maximizing efficiency and results. Expand support of community efforts to build healthy, sustainable, green neighborhoods and reduce and prevent harmful exposures and health risks to children and underserved, overburdened communities.</p>
<p>EPA has held seventeen webinars to date highlighting EPA University and other outreach activities that support community-based work. Five of those webinars took place in FY 2017 and highlighted various topics (e.g., equitable development, resilient design, community-university partnerships, public health). One in-person full day training on equitable development was conducted for EPA staff. The Communities CAS also developed and piloted a Resource Request Platform that is now ready to be used in FY 2018 to enable regions and program offices to match available resources from National Program Managers in support of high-need communities identified by the regional offices. This Platform is more user-friendly than the interim resource matching process EPA used in FY 2017 and improves cross-agency coordination, maximizing the impact of government resources.</p>
<p><b>Launching a New Era of State, Tribal, Local, and International Partnerships</b> – Strengthen partnerships with states, tribes, local governments, and the global community that are central to the success of the national environmental protection program through consultation, collaboration, and shared accountability. Modernize the EPA–state relationship, including revitalizing the National Environmental Performance Partnership System and jointly pursuing E-Enterprise, a transformative approach to make environmental information and data more accessible, efficient, and evidence-based through advances in monitoring, reporting, and information technology.</p>
<p>As of FY 2017, EPA has finalized 319 EPA-Tribal Environmental Plans (ETEPs) – jointly developed documents outlining how the EPA and the tribe will work together to implement programs on tribal lands – with more than 100 additional ETEPs in progress. Over the past four years, EPA and tribes have maintained steady focus on ETEP development. EPA also completed the development of a model lead paint law in collaboration with United Nations Environment Program as well as key industry, government and NGO stakeholders. The Partnerships Cross-Agency Strategy augmented Agency efforts to implement E.O. 13777, “Enforcing the Regulatory Agenda,” by briefing representatives of seventeen national intergovernmental associations, eight governors’ offices, several state attorneys general, state regulatory agencies, county officials and mayors, all to inform the efforts of EPA’s Regulatory Reform Task Force as it identifies regulation and policy candidates for revision, repeal or replacement. The Partnerships CAS also worked with state, local, and tribal partners through the support of E-Enterprise and developed a Shared Services strategy in September 2017 which is currently being implemented to integrate shared information technology services.</p>